

CONTENTS

INTRODUCTION 6-3

Scope and Definitions 6-3

Outline Methodology..... 6-4

Technical Guidance..... 6-4

Consultation 6-6

LANDSCAPE PLANNING CONTEXT 6-6

Planning Policy Context 6-6

Planning Policy Wales (PPW), Edition 11 (February 2021)..... 6-7

Anglesey and Gwynedd Joint Local Development Plan 2011-2026. Adopted 31 July 2017 6-8

Snowdonia National Park Authority – Eryri Local Development Plan (2016-2031)..... 6-10

Planning Permissions and Applications..... 6-11

THE DEVELOPMENT PROPOSAL..... 6-12

Timescales and Permanency of Development 6-13

Design Development and Built-in Mitigation 6-13

Potential Sources of Landscape and Visual Effects 6-15

Pre-Extraction Activities..... 6-16

Extraction..... 6-16

Restoration 6-16

LANDSCAPE EFFECTS..... 6-17

Character of the landscape..... 6-17

Overall Trends and Change..... 6-22

Landscape Value for Designations and Character Areas..... 6-23

Prediction of Landscape Effects..... 6-24

The Proposed Extension 6-25

The Modified Restoration Landform 6-26

Levels of Landscape Effect for Specified Receptors..... 6-26

Landscape of Penrhyn Quarry..... 6-27

Landscape and Landscape Related Designations..... 6-27

Summary..... 6-29

VISUAL EFFECTS	6-29
Visual Baseline	6-29
Assessment of Significance of Residual Visual Effects	6-31
Residual Visual Effects	6-33
CONCLUSIONS	6-36

INTRODUCTION

This chapter of the ES assesses the potential landscape and visual effects arising from the proposed extension to Penrhyn Quarry, coupled with the extension of the operational period by 3 years. Full details of the proposed development are contained within Chapter 3 of this volume.

6.1 The assessment is divided into the following sections:

- Introduction, containing Scope and Definitions, Outline Methodology (a detailed Methodology cross referenced in the text is contained in **Appendix 6/1**), and details of Consultation;
- Landscape planning context, including a review of restoration proposals;
- Summary of the development proposal and identification of the elements likely to cause landscape and visual effects, as relevant to this topic;
- Establishment of the landscape baseline, prediction of Landscape effects and assessment of significance based on a tabular assessment contained in **Appendix 6/2**;
- Establishment of the landscape baseline, prediction of Visual effects and assessment of significance based on a tabular assessment contained in **Appendix 6/3**; and
- Conclusion.

6.2 The LVIA is supported by the five Appendices and 15 drawings.

Scope and Definitions

6.3 Paragraph 1.1 of the Guidelines for Landscape and Visual Impact Assessment (3rd Edition), published by Landscape Institute and Institute of Environmental Management and Assessment (hereafter referred to as “GLVIA3”) states that “*Landscape and Visual Impact Assessment (LVIA) is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and on people’s views and visual amenity*”.

6.4 Paragraph 5.1 of GLVIA3 describes how landscape effects are concerned with “*how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character*”.

6.5 Allied to this, paragraph 6.1 of GLVIA3 describes how visual effects are concerned with “*assessing how the surroundings of individuals or groups of people may be specifically affected by changes in the content and character of views as a result of the change or loss of existing elements of the landscape and/or introduction of new elements*”.

- 6.6 This assessment deals separately with landscape and visual effects, although where relevant and appropriate, cross references may be made to the same features or elements where they are relevant to both.
- 6.7 The proposed development would be present for approximately 3 additional years before being absorbed into the long-term restoration scheme through regrading works and vegetation establishment. The revised restoration scheme has been reviewed as part of the LVIA as part of an iterative design and assessment process; no further mitigation has been considered necessary due to the low level of landscape and visual impact generated.

Outline Methodology

- 6.8 The detailed methodology that has been used for assessing landscape and visual effects is set out in **Appendix 6/1**. A summary of the assessment process and key parts of the GLVIA3 technical guidance is provided below.
- 6.9 Further guidance on LVIA has been released by the Landscape Institute comprising ‘Assessing Landscape Value Outside National Designations’ (TGN 02/21). Consideration of value outside designated landscapes is considered in the LVIA as defined in the referenced methodology.
- 6.10 Initially, a desktop study was undertaken to review the relevant publications, maps and plans relating to the application site and surrounding study area (approximately 4km radius from Penrhyn Quarry and as indicated on **Drawing PQ 6/1**). This was supplemented by fieldwork and photography from various parts of the study area in October 2019. Earlier LVIA work undertaken as part of a previous planning application for a lateral extension to the working area in 2012 and a ‘Review of Mineral Permission’ (often referred to as a ROMP submission) were also used to help inform this study including the choice of viewpoints used.
- 6.11 The assessment makes use of Zone of Theoretical Visibility (ZTV) study to inform the potential degree of visibility and extent of visibility across the study area for the proposed application area.
- 6.12 No technical difficulties were encountered in assessing the landscape and visual impacts of the proposed development.

Technical Guidance

- 6.13 The below information explains the broad principles behind our Methodology, as derived from GLVIA3. For ease of reference, the core components of LVIA identified in GLVIA3 are reproduced in Table 6-1 below.

Table 6-1
Core Components of LVIA (taken from GLVIA3)

Component of EIA Process	Brief description of action in this part of the process
Project description / specification	Provides a description of the proposed development for the purpose of the assessment, identifying the main features of the proposals and establishing parameters such as maximum extent of the development or sizes of the elements. Normally includes description of any alternatives considered.
Baseline Studies	Establishes the existing nature of the landscape and visual environment in the study area, including any relevant changes likely to occur independently of the development proposals. Includes information on the value attached to the different environmental resources.
Identification and description of effects	Systematically identifies and describes the effects that are likely to occur, including whether they are adverse or beneficial.
Assessing the significance of effects	Systematically and transparently assess the likely significance of effects identified.
Mitigation	Makes proposals for measures designed to avoid/prevent, reduce or offset (or compensate for) any significant negative (adverse) effect.

- 6.14 Paragraph 3.23 of GLVIA3 describes how *“The EIA Directive and UK Regulations refer to projects likely to have significant effects on the environment. This means that identifying and describing the effects of a project is not enough in itself. They must also be assessed for their significance. This is a key part of the LVIA process and is an evidence-based process combined with professional judgement. It is important that the basis of such judgements is transparent and understandable, so that the underlying assumptions and reasoning can be understood by others.”*
- 6.15 Both Major effects and Major/Moderate effects are regarded as *“significant”* in the context of the EIA Regulations (refer to Chapter 4 above). This process is not a quantitative process; there is not an absolute scoring system. Instead, the correlation of the two factors, although reflecting recognised features and methods of working outlined in this section, is in the end a matter of professional judgement of the qualified landscape architect. Moderate effects are considered on a case by case basis and can also be considered significant, as identified in **Appendix 6/1**.
- 6.16 The nature of the change resulting from the proposed development may be described as beneficial (i.e. providing enhancement or improvement to the landscape), adverse (i.e. resulting in losses of characteristic elements or degradation/fragmentation of the landscape resource), or neutral (i.e. effects are neither adverse nor beneficial, or impacts may be balanced between adverse and beneficial).

Consultation

- 6.17 As noted in Chapter 4 above, the Scoping Opinion dated 29th January 2019 included feedback from consultation with several stakeholders. The following paragraphs summarise how the scoping opinion has been accommodated within the LVIA. It should be noted that the scoping opinion related to a different scheme in so far as the proposed extension covered 4.3 ha and changes were proposed to two tips.
- 6.18 The LVIA includes an appraisal of the site during the progressive development of proposed tipping development and as a final restored landform. A revised restoration proposal forms part of the application and has responded to the proposed North-West extension.
- 6.19 With reference to section 7.4 of the Scoping Opinion the following potential receptors have been considered in the LVIA:
- Bethesda (Residents – Viewpoint 1).
 - Snowdonia National Park (Walkers – Viewpoints 2, 3, 4 and 5);
 - Open Access Land at Elidr Fach and Carnedd y Ffilliast (Walkers – Viewpoints 4 and 5);
 - Public footpath at Cefn yr Orsedd to the east of the Nant Francon Valley (Walkers – Viewpoint 3), and;
 - Mynedd Llandygai (Residents – Viewpoints 8 and 9).
- 6.20 Natural Resources Wales (NRW) identified that the proposed tipping operations on Tip 2 are identified in the Scoping Opinion as *'likely to be the most contentious element of the development proposals both in terms of visual and landscape impacts but also in terms of residential amenity.'* These proposals for additional tipping have now been dropped following the statutory Pre-Application Consultation process.
- 6.21 Consideration has been given to the potential for cumulative landscape and visual effects of the development proposal with regard to mineral development. The existing Penrhyn Quarry and other historic quarries within the area form part of the established baseline, against which the proposed developments within Penrhyn Quarry and the proposed quarry extension are judged. The restricted nature of the resultant landscape and visual effects are thus considered to be unlikely to lead to further additional or combined cumulative landscape and visual effects as change will be viewed within the baseline of the existing permitted works.

LANDSCAPE PLANNING CONTEXT

Planning Policy Context

- 6.22 Full details of the relevant planning policy context of the application site are contained in other documents that accompany the planning application (including chapter 5 of this volume); relevant landscape policies are set out in this section of the LVIA.

- 6.23 The site is located within the boundary of Gwynedd County Council in North Wales. The following planning documents are considered relevant to the landscape of the application site and the surrounding area:
- Planning Policy Wales, the latest edition of which was adopted by Welsh Government in February 2021 and is used in conjunction with Technical Advice Notes (TAN's), circulars and ministerial letters;
 - Gwynedd County Council adopted the Anglesey and Gwynedd Joint Local Development Plan (LDP) in July 2017 which superseded the Gwynedd Unitary Development Plan (2009). This document is used in conjunction with Supporting Documents including Supplementary Planning Guidance (SPG's).
 - Gwynedd and Anglesey residents are taking part in a public consultation on the Gwynedd and Anglesey Well-Being Plan (2018) that aims to improve social, economic, environmental and cultural well-being in the area; and
 - Part of the study area to the east lies within the boundary of the Snowdonia National Park Authority.

Planning Policy Wales (PPW), Edition 11 (February 2021)¹

- 6.24 In relation to Character (Page 27, paragraph 3.9) it is stated that *'The special characteristics of an area should be central to the design of a development. The layout, form, scale and visual appearance of a proposed development and its relationship to its surroundings are important planning considerations.'* Under point 3.10, it is further noted that *'In areas recognised for their particular landscape, townscape, cultural or historic character and value it can be appropriate to seek to promote or reinforce local distinctiveness. In those areas, the impact of development on the existing character, the scale and siting of new development, and the use of appropriate building materials (including where possible sustainably produced materials from local sources), will be particularly important.'*
- 6.25 Under Characteristics of Local Landscapes (Page 136, paragraph 6.3.20) it is stated that: *'LANDMAP is an important information resource, methodology, and monitoring baseline for the landscapes of Wales, which can help inform planning for the sustainable management of natural resources in an area. LANDMAP describes and evaluates the physical, ecological, visual, cultural and historic aspects of the landscapes of Wales, and provides the basis of a consistent, quality assured national approach to landscape assessment. LANDMAP assessments can help to inform green infrastructure assessments, SPG on landscape, development management decisions, landscape character assessment, special landscape areas (SLAs), local distinctiveness, design, and landscape sensitivity studies.'*
- 6.26 Minerals policy is included in Chapter 5 of PPW (replacing the separate Minerals Planning Policy Wales document). Paragraph 5.14.2 states that *'The role of the planning authority in relation to mineral extraction is to balance the fundamental requirement to ensure the adequate supply of*

¹ Planning Policy Wales, Edition 11, Welsh Government, February 2021 available online at: <https://gov.wales/planning-policy-wales>

minerals with the protection of amenity and the environment. The key principles (of relevance to landscape and visual considerations) are to:

‘protect environmental and cultural characteristic of places, including those highly cherished for their intrinsic qualities, such as wildlife, landscapes, ancient woodlands and historic features, and to protect human health and safety and general well-being...

...achieving, without compromise, a high standard of restoration and aftercare so as to avoid dereliction and to bring discernible benefits to communities, heritage and/or wildlife, including beneficial after uses or opportunities for enhancement of biodiversity and the historic environment’.

6.27 In relation to Protecting Special Characteristics and Qualities of Places, it is stated under paragraph 5.14.36 that *‘Minerals development proposed adjacent or close to a National Park or AONB that might affect the setting of these areas, should be assessed carefully to determine whether the environmental and amenity impact is acceptable or not, or whether suitable, satisfactory conditions can be imposed to mitigate the impact’.*

6.28 Paragraph 5.14.43 states that: *‘Development plans should set out clearly the criteria that will be applied to minerals proposals to ensure that they do not have an unacceptably adverse impact on the environment and the amenity of nearby residents. Issues that must be addressed (specific to the LVIA) include:*

- *visual intrusion and general landscaping;*
- *impact on sites of nature conservation, geodiversity and historic assets, setting out clear and distinct policies for statutorily designated areas and non-statutorily designated areas;*
- *cumulative impact; and*
- *restoration, aftercare and after-use.’*

Anglesey and Gwynedd Joint Local Development Plan 2011-2026. Adopted 31 July 2017²

6.29 The Anglesey and Gwynedd Joint Local Development Plan (LDP) supersedes the Gwynedd Unitary Development Plan (2009).

6.30 **Policy AMG 2: Special Landscape Areas** states that:

‘SLA is a non-statutory designation based on LANDMAP. LANDMAP, developed by Natural Resources Wales (formerly the Countryside Council for Wales) is a landscape resource that is based on a Geographical Information System where the features and characteristics of the landscape and influences on the landscape are recorded and evaluated to form a data set that is consistent on a

² Anglesey and Gwynedd Joint Local Development Plan 2011-2026. Adopted 31 July 2017. Available online at: <https://www.gwynedd.llyw.cymru/en/Council/Strategies-and-policies/Environment-and-planning/Planning-policy/Joint-Local-Development-Plan/Joint-Local-Development-Plan.aspx>

national level. The aim of the SLA protection is to ensure that any development proposal considers maintaining, enhancing or restoring the recognised character and quality of the areas. There will be a need to demonstrate a good standard of design, location and landscaping’.

‘When considering a proposal within Special Landscape Areas (SLA), as identified by the Proposals Map... there will be a need to appropriate consideration to the scale and nature of the development ensuring that there is no significant adverse detrimental impact on the landscape. The development should aim to maintain, enhance or restore the recognised character and qualities of the SLA. The proposal should have regard to the relevant ‘Statement of Value and Significance’.

6.31 Policy AMG 3: Protecting and Enhancing Features and Qualities that are Distinctive to the Local Landscape Character states that:

‘Proposals that would have significant adverse impact upon landscape character as defined by the Landscape Character Areas included within the current Landscape Strategy for the relevant authority, must demonstrate through a landscape assessment how landscape character has influenced the design, scale, nature and site selection of the development.... Measures should be taken to ensure that the development does not:

- 1. Cause significant adverse impact to the character of the built or natural landscape;*
- 2. Fail to harmonise with, or enhance the landform and landscape;*
- 3. Lose or fails to incorporate traditional features, patterns, structures and layout of settlements and landscape of both the built and natural environment’.*

6.32 Policy PS 20: Preserving and Where Appropriate Enhancing Heritage Assets states that:

Proposals that will preserve and where appropriate enhance the following heritage assets, their setting and significant views into and out of the building/area will be granted:

- 1. Scheduled Ancient Monuments and other areas of archaeological importance (in line with Policy AT 4).*
- 2. Listed Buildings and their curtilages.*
- 3. Conservation Areas (in line with Policy AT 1).*
- 4. Beaumaris Castle and Caernarfon Castle and Town Walls World Heritage Sites (in line with Policy AT 1).*
- 5. Candidate World Heritage Sites.*
- 6. Registered Historic Landscapes, Parks and Gardens (in line with Policy AT 1).*
- 7. Buildings of architectural/ historic/ cultural merit that are not designated or protected (in line with Policy AT 3).*

Snowdonia National Park Authority – Eryri Local Development Plan (2016-2031)³

6.33 Development **Policy 1: General Development Principles (1)**

To conserve and enhance the ‘Special Qualities’ and purposes of the National Park development will only be permitted where all the following apply (as relevant to the LVIA):

The nature, location and siting, height, form and scale of the development is compatible with the capacity and character of the site and locality within which it is located.

The development is not unduly prominent in the landscape and will not significantly harm the amenity of neighbouring property.

The development does not result in the loss of landscape features, including woodland, and Ancient Semi-Natural woodland in particular, healthy trees, hedgerows, dry stone walls or damage any important open space or public view.

The development will not have an unacceptable adverse impact on the quiet enjoyment of the area by the public.

The development will not have an unacceptable adverse impact on public rights of way, other recreational routes or open country’.

6.34 Development **Policy 2: Development and the Landscape** states that:

‘The scale and design of new development, including its setting, landscaping and integration should respect and conserve the character, qualities and views of the landscape. Unacceptable impacts on the landscape will be resisted and particular regard will be had to the protection of:

- The Snowdonia Dark Skies Reserve, in particular Core Areas;
- Section 3 areas of natural beauty; and
- Panoramas visible from significant viewpoints.’

Sensitive Landscape Character Areas as defined in the Supplementary Planning Guidance documents the Landscapes of Eryri and the Landscape Sensitivity and Capacity Assessment’.

6.35 Strategic **Policy Ff: Historic Environment (Ff)** states that:

‘The historic landscape, heritage assets and cultural heritage of Snowdonia National Park will be conserved and enhanced, due to their contribution to the character and ‘Special Qualities’ of the National Park. Particular protection will be given to the following archaeological, architectural, historic or cultural assets and where appropriate, their settings.

³ Snowdonia National Park Authority – Eryri Local Development Plan (2016-2031). Pre-Publication Issue. Available online at: http://www.snowdonia.gov.wales/_data/assets/pdf_file/0008/1471985/Pre-Pub-LDP-Hyperlinks.pdf

Development will not be permitted that will adversely affect in any way the following Heritage Assets, or where appropriate their settings and significant views:

- i. Conservation Areas*
- ii. World Heritage Sites*
- iii. Candidate World Heritage Sites*
- iv. Scheduled Monuments and other sites of archaeological importance*
- v. Historic landscapes, parks and gardens*
- vi. Listed Buildings*
- vii. Traditional Buildings'*

Planning Permissions and Applications

- 6.36 Currently, planning permission C16/1164/16/MW (issued under the Environment Act 1995) requires that the extraction of minerals and ancillary operations shall cease by 31 December 2032, with restoration completed by 31 December 2034.
- 6.37 The currently consented restoration scheme (illustrated on Drawing P7/106A) superseded all previous restoration schemes for the site. This scheme was originally permitted by the MPA in June 2014 having satisfied the requirements of planning conditions attaching to the following permissions:
- PP C96A/0020/16/MW January 2000, Conditions 8 & 9;
 - PP C08A/0039/16/MW June 2008, Conditions 7 & 8, and;
 - PP C12/0874/16/MW December 2012, Condition 11.
- 6.38 The scheme was included within the ROMP submission (ref. C16/1164/16/MW) and thus forms part of the approved documentation for the quarry. Drawing P7/106A has provided a basis from which to develop the newly revised restoration proposal. The restoration scheme has been updated to absorb increased tipping volumes, but it has been important that in doing this, the key principles of the 2014 restoration strategy have been retained.
- 6.39 It should be noted that under the Zip Line Permission (PP C11/1113/16/LL) Welsh Slate is exempt of restoration liabilities for the areas of land involved with responsibility for this being held by Zip World Ltd.
- 6.40 Condition 47 of PP C16/1164/16/MW states that *'Restoration shall be subject to a five-year aftercare and monitoring scheme, which shall be implemented to the satisfaction of the Mineral Planning Authority upon completion of each restoration phase and/or final restoration in accordance with condition 44 and shall include a full audit of aftercare measures and/or biodiversity*

management applied to all areas subject to restoration works of the previous and ensuing years of development. ...”.

- 6.41 The duration of working the mineral reserves within the proposed extension would increase the duration of quarrying operations at the Penrhyn Quarry by around 3 years. There are effects associated with the continued use / presence of associated structures within the existing quarry. However, the focus of this assessment is the mineral extension area and proposed tips, whereas the existing plant site area is enclosed and screened and effects from a short-term extension to the duration of operations would be limited.

THE DEVELOPMENT PROPOSAL

- 6.42 As noted from Chapter 3 above the proposed extension would be contiguous with the current working area, it is located on the far western end of the existing quarry workings but to the north and is referred to as the north-western extension. The extension would be wholly within the confines of the area covered by planning permission C12/0874/16/MW (dated 18 December 2012) but out with the extraction limits shown on the approved plans attached to that permission. The proposed extension would be worked in an identical fashion to the current workings, for which a comprehensive working scheme was approved in 2017 as part of a review under the Environment Act 1995 (the ‘ROMP review’ ref. C16/1164/16/MW). The extension would form a logical progression from the previous extension to the workings (planning permission ref. C12/0874/16/MW) expanding the workings along the north western side.
- 6.43 The proposed extension is approximately rectangular shaped, measuring around 1.6 ha and effectively ‘squares off’ the quarry workings by re-aligning the north-western boundary of the working area to create a straighter edge. This is illustrated on Drawing PQ 2/3 in Chapter 2 above.
- 6.44 The proposed extension is bounded to the south and east by the permitted quarry with areas of open upland land (Gwaen Gynfi) forming the northern and western boundaries. The ‘leat’ (drainage channel) runs along part of the northern boundary would not need to be diverted around the extension area.
- 6.45 In addition to the proposals to extend the quarry workings and small increase in timescales is required to allow the processing of the additional mineral made accessible by the proposed extension by approximately 3 years.
- 6.46 The following items have been examined in detail due to their specific landscape and visual implications:
- The proposed extension area would be cleared of vegetation, stripped of soils and overburden to enable the progressive working;
 - The proposed extension would release additional reserves of slate (for both roofing and aggregates) which would increase the duration of operations by between 3 years; and
 - The existing processing/works area would continue to be used during the proposed extended period of operation only.
- 6.47 Restoration of the proposed extension area would follow the principles of the comprehensive restoration scheme approved for the quarry workings submitted as part of the ROMP submission.

Timescales and Permanency of Development

- 6.48 As noted above, under the current planning permission the above operations can continue until 31 December 2032, with final restoration to be completed by 31 December 2034 (condition 2 of planning permission C16/1164/16/MW refers). As such, the permission has 10 years to run.
- 6.49 Chapter 3 identifies the current reserves are sufficient to sustain production for up to 10 years. Without the extension it is assumed that working would be extended to the end of the permitted planning permission, to ensure continued employment within the local area.
- 6.50 If consented, the proposed extension would increase reserves resulting in an additional 3 years of working/tipping prior to restoration operations.
- 6.51 The presence of tips and tipping activities would need to be prolonged for the proposed extended operational period. The waste tips would then be regraded to create the final moorland restoration, across the centre of the quarry, with this moorland restoration potentially being delayed by 3 years beyond the current permitted period.
- 6.52 The main component of the restoration is the backbone of moorland restoration stretching from the edge of the final southern quarry void northwards to the plant and processing area. This area is formed by the regrading of the quarry tips.
- 6.53 The permitted restoration includes general principles for the revegetation of the southern quarry. The changed alignment of faces, due to the proposed extension, would not affect this approach which would remain valid.
- 6.54 Other areas would be restored as per the permitted restoration scheme with no changes caused by the proposed development.

Design Development and Built-in Mitigation

- 6.55 Mitigation and enhancement measures have been incorporated into the development proposal and its design. This is often referred to as “*built-in*” or “*designed in mitigation*” and is relevant to the assessment of potential landscape and visual effects.
- 6.56 The development proposals seek to mitigate any potentially adverse landscape and visual effects, either by avoidance, reduction or replacement / compensation. The following sets out the landscape strategy for the site.

Landscape Mitigation

- 6.57 Mitigation for the loss of vegetation within the extension area vegetation is described in Chapter 7 – Ecology.
- 6.58 Mitigation for the loss the ‘sheepfold’ archaeological feature is described in Chapter 9 – Cultural Heritage.

6.59 In terms of landscape mitigation the most beneficial mitigation would be the successful restoration of the site after working has finished. This is already covered by the previously submitted and permitted restoration details.

Visual Mitigation

6.60 Visually, the most prominent element of the proposed extension would be the initial pre-extraction activities on the surface of the application site, such as the stripping of overburden, quarrying of the upper benches and the movement of vehicles and general disturbance created. However, similar effects would occur during the stripping of the permitted extraction area to the south and the increase in level of activity is not anticipated to be any greater, although this may last for slightly longer overall. Once the quarry excavation descends below existing ground level the proposed extension area would comprise part of the overall south quarry void and be largely hidden from view.

6.61 As a means to mitigate the pre-extraction activities these works would be carried out promptly to limit the duration of their effects. With regard to the upper, and therefore more visible, quarry benches these would be restored in line with the 'Typical Restoration Details' (shown on Drawing P7/11A.01 and 02 submitted as part of the ROMP submission). Where practicable these works would be carried out early in the development process. As previously discussed, broader details relating to the proposed restoration options are described in 'Restoring Habitats of High Conservation Value after Quarrying – Best Practice Manual' (January 2003: prepared by the Institute of Environmental Science, University of Wales, Bangor) again the methodologies set out in this document are intended to be applied where practicable.

6.62 As the slate from the proposed extension would be worked using the existing plant within the works area, there would be no new buildings or structures required as part of the extension proposal.

6.63 The final restoration scheme remains focused upon the potential for landscape and biodiversity enhancements based on the incorporation of new habitats as follows:

- The moorland vegetation, as detailed in the agreed restoration scheme, would be established on the surface of the recontoured tip material. Stripped overburden from the extension area would be stored separately and used to provide soil materials to help assist in assimilation of site with surrounding moorland landscape;
- Continued encouragement of natural revegetation in key areas of the site, including priority sites for re-vegetation;
- Retention of historic tips to preserve landscape character; and
- Retention/protection of archaeological sites where possible.

6.64 The restoration details as identified in previously submitted and approved documents⁴ remain active and relevant in terms of the objectives of the restoration and detailed methodology of the restoration.

Potential Sources of Landscape and Visual Effects

6.65 One of the main landscape and visual elements of the proposed development include the disturbance and clearance of existing vegetation and soils / overburden in the proposed extension area and the progressive extraction of mineral within the newly widened void. This disturbance and the effect of the additional void created by the proposed extension are considered in this LVIA.

6.66 The proposed extension would also contribute to the tip volumes required across other parts of the quarry which have been factored into the revised restoration scheme. It is still the intention for all tip material to be directly placed in accordance with permitted restoration contours as defined by the ROMP restoration scheme. This would be kept under review as part of the regular (5 yearly) 'working schemes' that are to be submitted under the extant planning permission (see chapter 3 above).

6.67 The proposed planting and final restoration surface treatment would follow the consented restoration scheme, and thus cause no change in themselves. The final restoration may be delayed by the extension to the working period if this is required, although increased processing rates may negate this requirement.

6.68 The proposed extraction and haulage of extracted slate for processing or the formation of the final restoration landform would require ongoing use of existing access tracks/haul roads used for the permitted workings and use of the works area. Such use is permitted within the agreed lifespan of the current extraction and these have are not covered by this LVIA.

6.69 There are potential direct effects upon landscape character, elements and features within the extension area and then potential effects upon landscape character and visual amenity on offsite receptors in the immediate surrounding area from the extension area, revised tipping arrangements and altered landform levels.

6.70 Potential landscape effects are anticipated to arise from:

- The continued use of the quarry for a further 3 years, delaying final restoration;
- the change in land use to a mineral extraction void which would result in the loss of approximately 1.6 ha of acid grassland from within the SAC;
- soil stripping and extraction activities in the proposed extraction area. This has the potential for direct, temporary effects on the local landscape character and indirect changes to views; and

⁴ Penrhyn Quarry, Bethesda, North Wales: Written Statement and Drawings detailing Revised Restoration Proposals (March 2014) and Penrhyn Quarry Restoration and Aftercare Scheme for the Former Green Quarry (Dec 2013).

- the proposed permanent change (upon final restoration) to a marginally wider extraction void with bench planting and potential effects on local landscape character.

6.71 The above changes would influence the site's appearance and therefore may also have potential effects on the visual amenity of offsite receptors in the immediately surrounding area. Potential visual receptors include:

- Visitors/tourists to the area engaged in leisure activities;
- Residents of nearby properties with views towards the existing quarry;
- Road users travelling through the study area; and
- Users of local public rights of way (PRoW).

6.72 The proposed changes are relatively small in comparison to the overall quarry site and it is considered that the perception of change would therefore be restricted to the adjacent landscape within 0-3km of the proposed developments. Representative viewpoints up to 2-3km have therefore been chosen to assess the potential levels of change based on consultation responses.

Pre-Extraction Activities

6.73 Prior to any quarrying, surface materials such as soils and any unusable rock below would be stripped and removed. These works would take place gradually throughout the life of the quarry operation.

Extraction

6.74 The proposed extension would become part of the general progression of the quarry. The continued extraction in line with the ROMP permission is expected to take place over the next 10 years. GWP drawing 19WPENP2110GS 'Proposed final excavation design incorporating proposed realignment extension area' (see Appendix 2/1 of this volume) shows the direction and extent of the proposed working which would extend working beyond the realignment area, effectively squaring off the extraction void.

Restoration

6.75 Restoration works would be carried out gradually as some works would be implemented earlier in the process as a means to mitigate potential visual impacts. The final restoration scheme would not be finished until the full extraction has been completed as it relies on the waste material generated by the quarrying process.

6.76 The final proposed 'Restoration Landform' is shown on **Drawing PQ 6/15**, which illustrates the scope of restoration works. Broadly the restoration methodologies would remain as per the permitted scheme, with full details being described in 'Restoring Habitats of High Conservation Value after Quarrying – Best Practice Manual' (January 2003: prepared by the Institute of Environmental Science, University of Wales, Bangor).

LANDSCAPE EFFECTS

- 6.77 The assessment of the potential landscape effects caused by the proposed development has been recorded in **Appendix 6/2** in a tabular format.
- 6.78 As a result of the ZTV map and experience of similar projects, a study area of up to 4km from the existing quarry boundary has been adopted for this assessment.
- 6.79 Baseline conditions for the application site and surrounding study area have been assessed and are described below.

Character of the landscape

- 6.80 The landscape character of the study area, as illustrated on **Drawing PQ 6/3** (Landscape Character), is defined by The Gwynedd Supplementary Planning Guidance Landscape Character Assessment⁵ and the Snowdonia Landscape and Seascapes Landscape Character Assessment⁶ (2014).
- 6.81 Landscape assessment is therefore based on landscape character with landscape designations providing guidance on assigning levels of value to the identified landscape character areas as well as their own innate value. Key characteristics of the various landscape character areas (LCA) found within the study area are set out below.

Bangor Coastal Plain

- 6.82 Located in the northern section of the study area and including the coast to the east of Bangor. The LCA adjoins the Snowdonia National Park (SNP) to the north east and includes the transportation corridor of the A55. There are a number of important habitats in this area, including broad-leaved woodland, saltmarsh, intertidal sand and mudflats, mire and grassland. A significant part of the area is included in the Register of Landscapes of Outstanding Historic Interest in Wales, including all of Traeth Lafan. The area exhibits a mix of historic landscape characters, with the medieval town of Bangor, Nantlle Slate Quarries (including outstanding industrial relics from the 19th century), the 19th century realigned field patterns along the northern coastal strip and the legacy of the Penrhyn Estate predominant.

- Narrow coastal plain, bounded inland by Snowdon Massif and overlooked from the National Park;
- Dissected by a number of small south-north running streams, often small, wooded valleys;
- Landscape pattern largely reflects influence of Penrhyn Estate – planned, formal parkland, estate farms and settlements. It also includes historically important industrial relics at Nantlle Slate Quarries;
- Large expanse of intertidal sand and mudflats at Traeth Lafan;
- Dissected by A55 road, opened up vista of area, important in setting sense of entrance to Gwynedd;
- Vernacular boundaries, especially slate fences, cloddiau and hedges; and

⁵ Gwynedd Council Supplementary Planning Guidance: Landscape Character (November 2009)

⁶ Snowdonia National Park Authority Supplementary Planning Guidance: Landscape and Seascapes of Eryri (July 2014)

- Strong visual links with the Menai Straits and southern edge of the Anglesey AONB.

Penisarwaun Plateau

6.83 There are a number of important habitat types in this area, including marshy grassland, reed beds, mire, saltmarsh and broadleaf woodland. All of the area has been included in the Register of Landscapes of Outstanding Historic Interest in Wales. It exhibits a distinct historic landscape character, which is built on elements (some relict, many still in use) which date from the prehistoric period (including the Iron Age hillfort of Dinas Dinorwig) and demonstrate centuries of continuity.

- Agricultural area with distinct small/regular gently undulating;
- Occupying an intermediate zone between coast on or around 100m contour;
- Exhibits a number of post glacial landforms such as alluvial fans;
- Number of small, densely clustered settlements; and
- Large areas of woodlands and plantations.

Llanberis-Bethesda

6.84 Much of the area has been included in the Register of Landscape of Outstanding Historic Interest in Wales. The areas of abandoned slate quarries and waste tips provide perhaps the over-riding historical and cultural landscape identity of Gwynedd, as well as offering potential for a number of opportunities for the future e.g. recreational, habitat management, reclamation, employment. The majority of the area has been included in the Register of Landscapes of Outstanding Historic Interest in Wales. It includes a range of medieval and industrial landscapes, including part of the wooded Penrhyn Estate and relics of the slate mining industry (e.g. in and around Bethesda – one of the best preserved 19th century industrial towns in Wales).

- Fringe of Snowdon Massif, includes extensive areas of former slate workings;
- Typified by small, nucleated quarrying communities;
- Water bodies, woodlands and wet marshy areas important features; and
- Tourism becoming increasingly important.

Caernarfon Coast and Plateau

6.85 Some of the eastern and northern parts of the LCA have been included in the Register of Landscapes of Outstanding Historic Interest in Wales (Dinorwig and the Nantle Valley). In addition, the castle and town walls of Caernarfon are internationally recognised as a World Heritage Site. The area displays a complex mix of historic landscapes of different characters and periods, dominated by 19th century estate farmland with valued areas of parkland remaining (e.g. at Glynllifon). Interspersed amongst the estate lands are prehistoric remains including ancient hut circles and hillforts. The areas of abandoned slate quarries and waste tips provide perhaps the over-riding historical and cultural landscape identity of Gwynedd, as well as offering potential for a number of opportunities for the future e.g. recreational, habitat management, reclamation, employment.

- A long broad fringe adjacent to the Menai Coast LCA, extending to the upland fringes of MoelTryfan and Mynydd y Cillgwyn;
- Character of landscape influenced by glacial actions and resultant deposits and landforms;

- Mixture of settlement types – small villages to large towns. Caernarfon, important historic core, with modern settlement edges of varying quality;
- Range of coastal habitats and landscapes, which contribute to character of the area; and
- Area provides an important setting to the Anglesey AONB to the north (beyond the Menai Straits) and Llŷn AONB to the south.

Menai Coast

6.86 The area contains a number of important habitats relating to the Menai Straits and associated littoral areas, such as Foryd Bay. The Vaynol Estate is an important feature of the area, located between Felinheli and Bangor and included on the Register of Outstanding Landscapes of Historic Interest in Wales (as part of the wider Dinorwig landscape).

- Narrow coastal area running from Dinas Dinlle in the west to Bangor;
- Typified by a varied range of landscape types – woodland, educational, historic, nature conservation, commercial airfield;
- Varied landscape pattern reflecting land use; and
- Overriding feature is visual and sensory influence of the sea – tides, wind, patterns of movement.
- Range of distinct boundary features;
- Excludes urban area of Caernarfon which is covered by the Conservation Area and World Heritage Site Designation; and
- Area provides a setting to the Menai Straits as well as the Anglesey AONB, which lies on the opposite side of the water.

Ucheldir y Gogledd

6.87 Ucheldir y Gogledd forms the first significant upland landscape in the northern part of the National Park. It includes a series of peaks - Moel Wnion, Drosogl, Foel Ganol, Pen y Castell, Drum, Carnedd Gwenllian, Tal y Fan and Conwy Mountain rising between 600 and 940m AOD. The area extends from Bethesda (which is located outside the National Park boundary) in the west to the western flanks of the Conwy valley in the east. It also encompasses the outskirts of Conwy to the north to form an immediate backdrop to the coast.

- Dramatic and varied topography; rising up steeply from the Conwy coast at Penmaen-bach Point to form a series of mountains, peaking at Foel-Fras (942 metres). Foothills drop down from the mountains to form a more intricate landscape to the east and west.
- Complex, internationally renowned geological and geomorphological landscape, with a mixture of igneous and sedimentary rocks shaped by ancient earth movements and exposed and re-modelled by glaciation.
- Multiple streams draining from the mountains, in some places plunging down hanging valleys as waterfalls. U-shaped valleys carving through the mountains, often with extensive moraine and head deposits.
- Reservoirs at Llyn Anafon, Dulyn, Melynlllyn and Llyn Eigiau.
- Small bands of woodland and spinneys associated with the lower-lying farmland and valley sides, including nationally designated native woodlands at Coedydd Aber, Coed Merchlyn, Coed Gorswen and Coed Dolgarrog. Prominent forestry blocks on the lower slopes of Llwytmor Bach and at Parc Mawr.

- Large-scale, unenclosed mountains contrasting with small historic field patterns on the foothills. The intermediate area defined by large regular enclosures of ffridd, providing valuable cultural and natural links between the uplands and their surrounding lowlands.
- Enclosed pasture fields divided by stone walls or hedgerows, often with frequent hedgerow trees. Rough common land grazing by sheep on the mountains.
- Internationally important montane habitats and species within the Eryri SAC/SSSI, including rare arctic-alpine plants, montane heaths, cliff ledges and wetlands. Wet and sessile oak woodlands found within the Coedydd Aber SAC/SSSI/NNR, linking the mountains to the north coast.
- Sychnant Pass SSSI, in the north-east of the LCA, comprising dry heath, acid grassland, bracken, marshland, ponds and streams – providing a naturalistic backdrop to the nearby Conwy Estuary.
- Wealth of nationally important archaeological features including Bronze Age funerary and ritual monuments (e.g. standing stones at Bwlch y Ddeufaen), prominent Iron Age hillforts (e.g. Maes y Gaer and Dinas) and evidence of early settlement, field systems and transport routes (e.g. the Roman road passing through Bwlch y Ddeufaen and 11th century Aber Castle).
- The remains of 19th and 20th century slate quarrying found throughout, including disused quarries and tips.
- Uninhabited mountains, with large areas of open access land and a sparse network of rights of way (but no road access). Lower level enclosed farmland includes scattered stone and slate-built farmsteads and occasional clustered hamlets linked by winding rural roads.
- Historic settlement of Abergwyngregyn (a Conservation Area) occupying a sheltered location on the banks of the River Aber; a strategic starting point for travellers crossing the Menai Strait. The village of Llanllechid (also a Conservation Area) straddles the National Park boundary in the western foothills.
- Mountains forming a dramatic backdrop to the nearby coast and seascape (including the A55 coast road) frequently characterising views from Anglesey, the Menai Strait and the Conwy coastline.
- Long views north across the coastline, out to sea and to the Isle of Anglesey. The offshore windfarms in the Irish Sea are visible features on the distant horizon. Views south are contained by the mountains of the Carneddau Range.
- A highly tranquil, remote landscape with few modern intrusions and a pervading ‘wilderness’ quality associated with the mountains.

Y Carneddau

6.88 This is an upland landscape situated between the A5 road and the Northern Uplands (LCA 1). It is bounded to the west by the distinctive U- shaped valley of Nant Ffrancon, and to the south by the Afon Llugwy and A5. The landscape is dominated by the Carneddau mountain range, in particular Carnedd Llywelyn, the second highest peak in Snowdonia at 1,064 metres AOD.

- High and prominent ridgeline of the Carneddau mountain range, rising to the summit of Carnedd Llywelyn (1,064 mAOD).
- Complex, internationally renowned geological and geomorphological landscape, underlain by volcanic deposits with a series of fault trended valleys.

- Significant evidence of glaciation, including corries (cymoedd), hanging valleys, deposits of boulder clay within valley floors, scree and moraine. Cwm Glas Crafnant NNR and Cors Geuallt SSSI are designated for their glacial features.
- U-shaped valley of Nant Ffrancon forming a prominent landform feature. Multiple streams draining from the mountains into the Afon Llugwy and Nant Ffrancon below.
- Lakes scattered throughout, including Llyn Ogwen (at the head of Nant Ffrancon), the cwm lakes of Ffynnon Lloer, Ffynnon Caseg and Ffynnon Llyffant and the reservoirs of Llyn Cowlyd and Ffynnon Llugwy.
- A largely treeless and open landscape, with woodland cover limited to scatterings of ash trees on the slopes of Craig Wen.
- Open mountain summits and upper slopes surrounded by large, regular enclosures of ffridd. Smaller scale fields define the broad valley floor of Nant Ffrancon.
- Rough common land grazing by sheep on the mountains, with semi- improved pastures and rough grassland fields on lower slopes.
- Internationally important montane habitats and species within the Eryri SAC/SSSI (covering the whole LCA), including rare arctic-alpine plants, montane heaths, cliff ledges and wetlands. These are interspersed with areas of bracken and acid/marshy grassland.
- Includes land within the Ogwen Valley Landscape of Outstanding Historic Interest, displaying evidence of prehistoric land use (funerary and ritual sites) and the industrial exploitation of slate in 19th and 20th century.
- Primarily unsettled landscape, with buildings limited to small clusters of slate-built cottages and hamlets along the A5.
- A5 road corridor following an historic, scenic route through this northern gateway into the wider National Park. No road access into the mountains, but much is open access land with a small number of defined footpaths.
- Remote and wild mountains. Overall strong perceptions of tranquillity eroded locally by the A5, as well as tourist-related developments in the Llugwy valley and around Llyn Ogwen and Rhaeadr Ogwen waterfall.
- Panoramic views from the mountains, including north to the coast and seascapes of Conwy and Anglesey, where off-shore wind turbines are visible, and south towards the Snowdon massif.

Yr Wyddfa A'R Glyderau

6.89 The LCA forms both the visual and historic core of the National Park. It is roughly encircled by the A4085 (west), A4086 (south and east) and A5 (north) with pass along valley floors which carve through the surrounding mountains. The main feature of the landscape is Mount Snowdon (Yr Wyddfa) itself, which rises to 1,086 mAOD and is flanked by a number of other iconic peaks such as Crib Goch and Y Lliwedd. The area is cut roughly in two by the Pass of Llanberis (A4086); north of which is the Glyderau mountain range (Snowdon falls to the south).

- Rugged mountainous terrain, with rocky ridges, summits strewn with rock and numerous corries (cymoedd) encircling mountain tops. Yr Wyddfa (Snowdon) rises to (1,086 mAOD) as the highest mountain in Wales.
- Complex geology: a mixture of igneous and sedimentary rocks, subject to the actions of tectonic plates, volcanism and glaciation with a number of corries separated by prominent

arêtes and rocky cliffs. Nationally important area for the study of glacial and post-glacial features, including at Cwm Idwal NNR2 and Cwm Dwythwch SSSI.

- Fast-flowing streams and waterfalls draining from the mountains to meet the valleys below, including the steep V-shaped valley of the Afon Nant Peris, which roughly splits the LCA in half.
- Mountains dotted by a number of cwm lakes, including Llyn Dwythwch and Glaslyn, as well as reservoirs at Llyn Ffynnon-y-gwas and Llyn Llydaw.
- Tree/woodland cover limited to the lower-lying valley slopes, particularly above the Afon Glaslyn and around Betws Garmon.
- Open mountain summits and upper slopes surrounded by large, regular enclosures of ffridd divided by stone walls. Lower valley slopes and floors defined by a smaller scale pattern of irregular fields.
- Rough common land grazing by sheep on the mountains, with semi-improved pastures and rough grassland fields on lower slopes. Valleys include some fields of improved pasture.
- Internationally important montane habitats and species within the Eryri SAC/SSSI, including rare arctic-alpine plants, montane heaths, cliff ledges and wetlands. Llyn Idwal valued internationally for rich wetland vegetation associated with the hanging valley and nutrient-poor glacial lake.
- Large area within the Dinorwic Landscape of Outstanding Historic Interest, including evidence for prehistoric land use and settlement (e.g. huts and enclosures overlooking Llyn Ogwen) and 19th and 20th century slate mining relics such as quarries and tips.
- Settlement limited to the fringes of the mountains, including the edges of the tourist centre of Llanberis, occasional valley-side hamlets, and the historic village of Nant Peris (a Conservation Area).
- The majority of the mountains are open access land, with occasional rights of way. The LCA includes the Snowdonia mountain railway (a popular tourist attraction) and is encircled by main roads (including the Llanberis Pass) serving the National Park.
- An inspirational and iconic landscape popular with artists and writers, closely associated with Wales, Welsh identity and folklore.
- Overriding sense of remoteness, tranquillity and wildness, heightened by the landscape's close relationship with the mountains of the surrounding LCAs.

Overall Trends and Change

- 6.90 In the absence of this proposed development, it is assumed that the proposed extension area would continue as moorland and the existing quarry and plant site areas would be used for slate extraction until 2032 and the site then restored by 2034.
- 6.91 The designated World Heritage Site (WHS) would encourage the development and preservation of heritage assets connected with the slate industry and may generate further controls on development through the planning system.
- 6.92 It is unclear what the potential effects of global warming may be on the area but the main concern would be rising sea levels around the coast line effecting Anglesey and Bangor within the study area, along with more extreme weather events, including prolonged periods of intense rainfall (which may cause changes to streams).

Landscape Value for Designations and Character Areas

6.93 The use of Landscape Character Assessment as the baseline for assessing potential landscape changes is now an accepted method within the LVIA as identified in GLVIA3.

'5.26 The fact that an area of landscape is not designated either nationally or locally does not mean that it does not have any value. ...The European Landscape Convention promotes the need to take account of all landscapes, with less emphasis on the special and more recognition that ordinary landscapes also have their value, supported by the landscape character approach.'

6.94 The area of study of the LVIA and relevant designations are indicated on **Drawing PQ 6/1** (Landscape Designations), Penrhyn Quarry lies directly to the north west of the Snowdonia National Park (SNP) boundary at the centre of the study area. This area comprises the coastal plain and the Menai Strait near to Bangor, extending to the south and east into the SNP and the mountainous landscape illustrated on the topography drawing (**Drawing PQ 6/2** Landscape Topography).

6.95 The north west of the study area includes the Anglesey AONB on the far side of the Menai Strait (8km from Penrhyn Quarry); two Historic Parks and Gardens (HPG) Vaynol (7.7km) and Penrhyn Castle (5km); and the Bangor Mountain Special Landscape Area (SLA)(4km). The Menai SLA (8.3km) extends along the southern side of the Menai Strait.

6.96 A number of Landscapes of Outstanding Historic Interest (LOHI) are present along the coastal plain, extending inland into the SNP. Penrhyn Quarry is included in the Ogwen Valley LOHI which covers the centre of the study area and also Penrhyn Castle. The Dinorwig LOHI is centred on Llanberis to the south west and abuts the Ogwen Valley LOHI close to the southern extent of Penrhyn Quarry.

6.97 The North Western Fringes SLA runs around the edge of the SNP, excluding the area of Bethesda and majority of Penrhyn Quarry. However, this SLA does include the south quarry area and proposed extension area.

6.98 Within north west Wales a number of slate related sites have been grouped and designated by UNESCO as a World Heritage Site (WHS). The Slate Landscape of Northwest Wales Management Plan⁷ provides details of the various sites that comprise the designation. These sites include non-operational parts of Penrhyn Quarry and local settlements (Bethesda/Mynydd Llandegai), and the Ogwen Valley to Port Penrhyn (identified as Component Part 1 in the WHS management plan). This designation increases the value of parts of the landscape included in the study area, although the continuation of slate working at Penrhyn Quarry is part of the heritage for this industry and future working of the slate industry is supported through the aims of the Slate Landscapes of Northwest Wales Management Plan⁸.

6.99 As well as having their own innate value landscape designations also provide evidence of perceived landscape value within the general landscape and landscape character areas. Some landscape character may be wholly within designated landscape and thus likely to have similar levels of value. Other landscape areas may comprise some parts that are designated (or in the setting of designated

⁷ Gwynedd Council and its Partners: The Slate Landscape of Northwest Wales (August 2019)

⁸ Slate Landscapes of Northwest Wales Management Plan: Property Management Plan (2020-2030) Section 6.2 (<https://whc.unesco.org/en/list/1633/documents/>)

areas) and parts with no landscape designations. In addition, other designations such as those relating to heritage and ecological value may also support or reflect levels of landscape value.

- 6.100 Landscape character areas may also have their own particular attributes of features that contribute to their landscape value, and these may differ from the innate value of associated landscape designations. Representative levels of value are defined in Table 6/1 within Appendix 6/1 with reference to the GLVIA3. Value is one component of sensitivity the other component being susceptibility as detailed in Appendix 6/1. A combination of sensitivity and the identified magnitude of change are used to predict the overall level of landscape effect caused by the proposed development.
- 6.101 The existing quarry site is not located within any specific landscape designations (although is within a LOHI); however, it is located directly north of the Snowdonia National Park. The proposed extension site lies within a Special Area of Conservation which reflects the ecological value of the wet moorland/grassland to the west of Penrhyn Quarry. Aspects of the landscape value for the quarry and immediate surroundings are summarised in Table 1 of **Appendix 6/2**, with Table 2 considering the aspects of the landscape which reflect susceptibility and identifying the aspects susceptible to the proposed development.
- 6.102 The value for the various landscape (and landscape related) designations, as well as the landscape character areas is recorded in Table 3 of **Appendix 6/2**. The susceptibility of the same receptors is then considered in Table 4.

Prediction of Landscape Effects

- 6.103 As described in paragraph 5.34 of GLVIA3, landscape receptors that may be affected by the scheme include overall character and key characteristics, individual elements or features and specific aesthetic or perceptual aspects. Landscape effects can occur during the initial construction / site establishment phase, during operations and after restoration.
- 6.104 The potential effects as a result of the proposed quarry extension relate to the following changes:
- physical disturbance resulting in the permanent loss of moorland, associated vegetation and landscape features (such as the sheep fold) and subsequent introduction of mineral extraction activity and widening of extraction void which would remain at restoration;
 - alteration to aesthetic and perceptual aspects such as scale, simplicity, form and texture and sense of tranquillity; and
 - alteration to overall landscape character and key characteristics.
- 6.105 Table 4 in **Appendix 6/2** examines and assesses the potential magnitude of change caused by the proposed development on the landscape receptors in terms of the scale and size of change, its geographical extent and its duration and reversibility.
- 6.106 Table 5 in **Appendix 6/2** then compares the overall sensitivity and magnitude of change to define the predicted landscape effect on each landscape receptor.

- 6.107 The following section examines the effects identified in the assessment tables in **Appendix 6/2**, but concentrating on those receptors where effect levels are greatest and effects thus considered in a proportional manner.
- 6.108 There are two elements of the proposed development to be considered in the assessment of landscape effects as follows:
- the proposed extension area; and
 - alterations to the permitted restoration scheme (to accommodate the extension).

The Proposed Extension

- 6.109 The proposed extension is a relatively limited increase (1.6 ha) in the extent of quarrying, proposed due to an increase in geological knowledge and development of optimal extraction methods. The extension area is contained wholly within the Llanberis – Bethesda Landscape Character Area (LCA) which covers the landscape on the north western edge of the SNP from the centre of the study area to the south western corner. The description of the LCA reflects the heavy influence of the quarry industry as follows:

‘Much of the area has been included in the Register of Landscape of Outstanding Historic Interest in Wales. The areas of abandoned slate quarries and waste tips provide perhaps the over-riding historical and cultural landscape identity of Gwynedd...

...including part of the wooded Penrhyn Estate and relics of the slate mining industry (e.g. in and around Bethesda – one of the best preserved 19th century industrial towns in Wales).’

- 6.110 The surface of the extension area includes a sheep fold overlying an Iron Age Settlement with the connected heritage value and the effects on these features are considered in Chapter 8 (Cultural Heritage). The remains visible on the surface are minimal and do not create any obvious landscape value other than evidence of human occupation. The Llanberis – Bethesda LCA states;

‘Ensure that direct and indirect impacts on both upstanding features and buried remains (known and unknown) are taken into account (this could include visual impacts upon the setting of historic landscapes, or disruption to the pattern and scale of these elements).’

- 6.111 The vegetation within the extension area is a very small part of the designated Snowdonia Special Area of Conservation (SAC), which includes the Gwaen Gynfi moorland/grassland to the west of Penrhyn Quarry and the majority of the Snowdonia National Park land within the study area. Details of the SAC and the potential effects on this designation are examined in Chapter 7 (Ecology). It is considered that the SAC adds value to the landscape character as well as providing a measure of protection and control to development.

‘New development and management proposals should seek to...provide for wider management of key habitats – broadleaf woodlands, heaths, mires, grassland and exposed rock/quarry tips.’

- 6.112 Soils beneath the surface vegetation would be stripped and stored for use in the overall quarry restoration. Restoration proposals would include the treatment of the top faces and benches as defined in the restoration proposals included within the ROMP submission. Changes to the

restoration of the final void would therefore be limited in footprint with the northern faces being located slightly further north to include the extension area.

The Modified Restoration Landform

6.113 The proposed restoration scheme would take a very similar form to the permitted restoration scheme. All of the permitted restoration methodologies for the main moorland landcover, integration with existing levels, bench and face restoration etc. would all be retained as per the permitted details. The only changes to the restoration would be the slight enlargement of the quarry as illustrated on the new restoration plan, with permitted quarry faces and benches being worked back through the extension area. The proposed extension to the working period would delay the final restoration works by up to 3 years, due to the requirement for continued access and working operations.

Levels of Landscape Effect for Specified Receptors

- 6.114 The level of landscape effect for each of the identified receptors is set out in **Appendix 6/2** and summarised below. Additional description is recorded below for the greater levels of effect identified.
- 6.115 Landscape effects on the following designated landscapes are not considered sufficiently large to warrant detailed consideration in this section. The assessment process and final level of effect are fully recorded in **Appendix 6/2** for the receptors listed and summarised in Table 6-2.

Table 6-2
Landscape Receptors with Effect Levels

Designation	Landscape Effect
Penrhyn Quarry	Minor/Negligible Adverse
Snowdonia National Park	Minor Adverse
Anglesey AONB	No effect
Menai SLA	No effect
Bangor Mountain SLA	No effect
North Western Fringes SLA	Moderate/Minor and Adverse
Penrhyn Castle HPG	No effect
Vaynol HPG	No effect
North Arllechwedd LOHV	No effect

Designation	Landscape Effect
Ogwen Valley LOHV	Minor and Adverse
Dinorig LOHV	Minor and Adverse
World Heritage Site	Minor and Adverse
Menai Coast LCA	No effect
Bangor Coastal Plain LCA	No effect
Caernafon Coast and Plateau LCA	Minor
Penisarwaun LCA	No effect
Ucheldir y Gogledd	Minor and Adverse
Y Carneddau	No effect
Yr Wyddfa a'r Glyderau	Moderate/Minor and Adverse

6.116 Where landscape effects are identified they are considered for further examination below.

Landscape of Penrhyn Quarry

6.117 The level of effect for Penrhyn Quarry and its immediate landscape is considered to be Minor/Negligible and adverse for the proposed extension area and this is considered adverse due to the loss of SAC grassland on the edge of the quarry.

6.118 The proposed quarry restoration would follow the same principles and objectives as the permitted restoration details. The restoration details, such as surface treatments and quarry face/bench restoration, would remain the same.

6.119 The overall landscape effects on this receptor are not considered significant.

Landscape and Landscape Related Designations

Snowdonia National Park

6.120 The SNP to the south is well insulated from Penrhyn Quarry by the Fronllwydd and Elidir Fach ridges which create the restricted visibility illustrated on the ZTV shown on **Drawing PQ 6/5**. The level of screening is illustrated by Viewpoint 4 – Ridge at Carnedd y Filiast. More open visual connections are present from the Fronllwydd ridge in the foreground of Viewpoint 5, where the whole of Penrhyn Quarry is apparent in the landscape directly north of the SNP.

6.121 Visual connections between the SNP and Penrhyn Quarry are much more apparent across the landscape to the east and north-east. Such connections are seen within the context of the tall

vertical features and existing quarry workings and tips. The potential here is for parts of the permitted restoration to appear on the skyline as illustrated by Viewpoint 3 with a short-term increase in effect from the delayed restoration. However, this would be a temporary short-term delay to the restoration period and is not considered significant.

- 6.122 The proposed extension area would result in a Minor and adverse landscape effect due to the loss of the small area of SAC grassland which as a whole extends across most of the SNP within the study area (as shown on **Drawing PQ 6/1** Landscape Designations). This would be apparent within the landscape as seen from Viewpoint 5 particularly during the stripping stages and initial opening up of the extraction area but would be seen within the context of the permitted quarry void directly to the south east of the extension area.
- 6.123 The overall landscape effects on the SNP are considered minor and not significant.

North Western Fringes SLA

- 6.124 The North Western Fringes SLA is susceptible to changes in skylines and aesthetic/perceptual changes caused by the proposed developments. This SLA includes land adjacent to the SNP and extends from the north east to south west part of the study area as shown on **Drawing PQ 6/1**. The SLA excludes the main area of Penrhyn Quarry and the settled land around Mynydd Landegai and Bethesda. However, it does include the quarry extension area and permitted south quarry extraction area. Direct loss from the proposed development would include the grassland/moorland at Gwaen Gynfi (including the proposed extension area).
- 6.125 The proposed mineral extension area is always perceived as a narrow band of landscape but would result in the physical loss of land within the Snowdonia SAC. This would be most apparent during the stripping of soils and overburden, although seen within the context of the permitted extraction. Due to the narrow acute views of the extension area the extent of the perceived changes would be restricted. In the long term the differences between the permitted restoration with or without and proposed extension would be minimal.
- 6.126 The magnitude of landscape change caused to this area is assessed as Slight for the proposed extension area, resulting in a Moderate/Minor and adverse landscape effect on the SLA. The overall landscape effects on this designation are not considered significant.

Ogwen Valley LOHV

- 6.127 The Ogwen Valley LOHV covers the central part of the study area and Penrhyn Quarry, as illustrated on **Drawing PQ 6/1**, including the SNP land to the east. It also includes land immediately to the west and east of the quarry that forms part of the WHS.
- 6.128 The proposed extension area would be apparent in the landscape to the west of the quarry, but its narrow shape and position on higher ground would minimise perception of change. The level of landscape effect is therefore considered to be Minor and adverse.
- 6.129 The overall landscape effects on this LOHV are not considered significant.

Designated World Heritage Site (WHS)

- 6.130 The WHS is focussed on the extensive cultural value of the historic slate industry across North Wales. In many cases this includes historic elements with different scales, forms and lines, compared to modern slate extraction. The designation extends around Penrhyn Quarry and includes the settlement of Mynydd Landegai and parts of the Ogwen Valley. The value of the designation is International but the level of susceptibility to the proposed developments is considered to be medium due to the common thread of the slate industry.
- 6.131 The extension area is not within the WHS boundary and would become part of the permitted south quarry void and its landscape effects would be much more restricted. The landscape effect is considered to be Minor and adverse.
- 6.132 The overall landscape effects on the WHS are not considered significant. This is also considered further in Chapter 8 within this volume.

Landscape Character Areas

- 6.133 The Lanberis-Bethesda LCA is defined in Table 3 (**Appendix 6/2**) as having a High/Medium sensitivity to the proposed developments reflecting the value of various designations present within this area and its position adjacent to the SNP including land which forms the setting of the National Park. The LCA includes the whole of Penrhyn Quarry which forms part of the landscape baseline. The scale and size of change is considered small within the context of the existing quarry but with the change potentially perceived across a medium/small extent of the LCA, specifically its northern extent within the Gwaen Gynfi area and raised sides of the Ogwen Valley; less so in the valley base.
- 6.134 The proposed extension forms a marginal element of the perceived landscape of the LCA with an overall Moderate/Minor and not significant effect.

Summary

- 6.135 In summary, no significant landscape effects are predicted to occur due to the proposed extension to the approved quarry workings. In addition, the potential short term delay to the implementation of the permitted restoration (due to additional processing) would also not be sufficient to generate any significant effects.

VISUAL EFFECTS

Visual Baseline

Viewpoints – Representative, Specific, Illustrative

- 6.136 As stated in paragraph 6.19 of GLVIA3 (op cit), *'viewpoints selected for inclusion in the assessment for illustration of potential visual effects fall broadly into three groups: representative; specific; and illustrative.'*
- 6.137 In general, the final viewpoints have been chosen to be representative of visual receptors within the study area, although some have been specified in consultation.

- 6.138 Viewpoint photography has been used from the ROMP submission to represent potential effects from agreed viewpoints. This allows a comparison between the latest proposals and the previously submitted ROMP visualisations as shown on Drawings PQR 7/6 to 7/16 (2016 ROMP submission) and included in **Appendix 6/4** of this LVIA for reference.
- 6.139 Photography and fieldwork analysis of the views of the application site has been carried out from the surrounding landscape. This determined which locations offer the clearest views of the application site and/or are most accessible to the public. Nine representative viewpoints have been selected for detailed viewpoint analysis. Photographs illustrating views from a selected series of viewpoints were taken using either a Nikon D90 (ROMP photography) or D600 (new viewpoint photography) digital SLR camera. Both cameras used a focal length which is the equivalent of a 50mm lens for a 35mm format camera. Views comprised relatively wide panoramas and it was therefore considered beneficial to present the photographs as panoramic views to demonstrate their context. The panoramic views consist of three or four photographic frames and were digitally merged together using industry standard software and in accordance with recognised guidance.
- 6.140 A number of additional viewpoints identified in consultation have been included to represent views from the Snowdonia National Park. The viewpoint photography was undertaken during appropriate conditions for assessment work, when the weather was clear and visibility good. Use has been made of 3D computer models to generate a Zone of Theoretical Visibility ('ZTV'), in order to refine the positions of the new viewpoints.
- 6.141 The chosen viewpoints are shown on **Drawing PQ 6/5** and have been numbered 1-9 to avoid confusion with the letter numbering (A, B, C etc.) used in the previous assessment work.

Visual Receptors

- 6.142 Paragraph 6.13 of GLVIA3 defines visual receptors as people living in the area; people who work there; people passing through on road, rail or other forms of transport; people visiting promoted landscapes or attractions; and people engaged in recreation of different types.
- 6.143 The nine viewpoints included have been chosen to represent different types of receptor with a focus on residents (Bethesda and Mynydd Llandegai) and users of Public Rights of Way and Open Access Land, particularly in Snowdonia National Park.
- 6.144 The names, descriptions, distances from developments and grid co-ordinates of the viewpoints are recorded in Table 1 of **Appendix 6/3**. Subsequent tables record the assessment of sensitivity, magnitude of change and final levels of visual effect based on professional judgement, guided by the methodology in **Appendix 6/1**.

Communities and Residential Views

- 6.145 Consideration has been given to the communities of Bethesda and Mynydd Llandegai, which have evolved from workers accommodation linked largely to Penrhyn Quarry. These receptors are represented by Viewpoints 1, 8 and 9.

Users of Promoted walking/riding routes, Cycle routes, Open Access Land and local PRoW

6.146 The viewpoints selected have also been used to be representative of views from local PRoW and Open Access Land. A number of viewpoints have been included to represent this category including Viewpoints 2, 3, 4, 5, 6 and 7.

Sequential Views

6.147 The viewpoints selected have also been used to be representative of views above include key routes and transport corridors where the ZTVs indicate potential theoretical visibility. Routes assessed by this method include:

- the Snowdonia Slate Trail represented by viewpoints 1, 6, 8 and 9; and
- the path of the A5 through the Nant Ffrancon Valley and Ogwen Valley utilising previous assessment work and Google Street View.

6.148 The North Wales Path/Wales Coast Path, Anglesey Coastal Path and National Cycle Route 5 are important routes but considered too distant for anything more than a negligible magnitude of change to occur. Therefore no significant effects are predicted in relation to the people using these routes to be affected by more than a negligible level of visual effect from the proposed development.

6.149 A number of other routes exist within the area including the Snowdonia Way, North Wales Castles Trail, Cambrian Way many of which share routes in part. The Snowdonia Slate Trail has been assessed due to its proximity to Penrhyn Quarry and shared route sections as shown on **Drawing PQ 6/5**. The slate trail shares routes with the Snowdonia Way and National Cycle Route 82 along the northern edge of the quarry and the Nant Ffrancon Valley.

Visitors to Gardens, designed landscapes or historic sites

6.150 No such features have been identified near to the proposed development and both Penrhyn Castle and Vaynol Park have been excluded from detailed assessment due to distance and lack of any anticipated visual effects greater than negligible.

Visitor Attractions

6.151 The Penrhyn Quarry Zip World attraction advertises the quarry environment as part of the attraction experience and no significant visual effects are considered likely.

Assessment of Significance of Residual Visual Effects

Criteria

6.152 The criteria for assessing the significance of residual visual effects (i.e. after the built-in mitigation) is described above and in GLVIA3 and is based on the combination of the nature of the receptor likely to be affected (sensitivity) and the nature of effect likely to occur (magnitude) as detailed in **Appendix 6/1**.

6.153 As described in paragraph 6.44 of GLVIA3, the following may apply to visual effects:

- effects on people who are particularly sensitive to changes in views and visual amenity are more likely to be significant;
- effects on people at recognised and important viewpoints or from recognised scenic routes are more likely to be significant;
- large-scale changes which introduce new, non-characteristic or discordant or intrusive elements into the view are more likely to be significant than small changes or changes involving features already present in the view.

Extent of Theoretical Visibility

- 6.154 A ZTV study has been prepared indicating the extent of theoretical visibility for the proposed extension to the working area based on a 1.8m eye height for viewers within the study area. The ZTV is based on the calculation of the subtended vertical angle of view created by the target area across the study area. A higher value indicates the potential for a more prominent target area, and a lower value a more distant, marginal or vertically restricted view. The ZTV studies do not include vegetation or buildings/structures both of which may screen the target area and reduce or eliminate the subtended vertical angle of view, thus the term theoretical visibility. The ZTVs clearly indicate where views are not possible and where views may be most prominent and help guide the locating of viewpoints as well as indicating the nature and extent of visibility.
- 6.155 **Drawing PQ 6/5** illustrates the theoretical visibility of the proposed extension area. This indicates theoretical visibility is largely confined to the Gwaen Gynfi area as follows:
- Views from the Ogwen Valley between Bethesda and Mynydd Landegai are generally absent as the extension area is elevated and hidden by the rising valley sides;
 - very limited theoretical visibility is present around Penrhyn Castle to the north and the raised valley side around Moel Faban, with visibility constrained by the existing tip landforms on the north west edge of Penrhyn Quarry. A narrow band of theoretical visibility is present to the south east of Moel Faban where a view along the line of the current quarry extraction is present (shown as green);
 - no visibility along the Ogwen/Nant Ffrancon valley or the Glyder range in general to the south east, due to the landform screening provided by the Fronllwydd ridge; and
 - theoretical visibility across the open grassland of Gwaen Gynfi which is generally enclosed by slightly higher ground to the north and west and the rising landform of Elidir Fach to the south.
- 6.156 The same colour banding as used in the 2016 ROMP submission has been used for the ZTV included in this submission.
- 6.157 In previous submissions for the development of Penrhyn Quarry more distant viewpoints have also been used including views from Anglesey (Viewpoints G and H in the 2016 ROMP submission). These have shown that although the quarry may be visible, the distance prevents anything more than a marginal visual effect occurring, and one unlikely to be perceived in the wider environment. With this factor in mind this LVIA has concentrated on viewpoints within approximately 4km of the tips and extension area where significant effects are more likely to occur and complies with the principle of proportionality in LVIA.

Residual Visual Effects

Visual Effect at Viewpoint Locations

- 6.158 **Appendix 6/3** provides an analysis of potential change for each individual representative viewpoint, as detailed in this section.

Viewpoints 1 and 2

- 6.159 These two viewpoints look out across the Ogwen Valley from rising ground on the fringes of in the Carneddau range. Viewpoint 1 representing residential receptors in Bethesda and Viewpoint 2 the Open Access Land within the SNP at Moel Faban. The views are very similar in composition with Penrhyn Quarry visible at the foot of the Glyder range and existing tips visible extending from the Glyder range northwards as they descend towards the quarry plant site area. Above these the descending ridge of Elidir Fach is visible. The tall back face to the west of the northern quarry void forms a large notable feature in views, with the area of Green Quarry and older tipping visible to the left (south), the existing tips present above and the main quarry processing area to the right (north) as a lower level. The increased elevation at Moel Faban allows views over the tops of the existing tip area and back face to the permitted southern quarry void and extension area, with more of the Elidir Fach ridge and the open grassland/moorland of Gwaen Gynfi visible beyond.
- 6.160 The extension area would be screened by the existing tips in Viewpoint 1 but visible from Viewpoint 2 as a limited area adjacent to the permitted void.
- 6.161 The proposals would continue over an additional 3 years beyond the permitted extraction period for the quarry, with restoration work carried out after slate extraction has been completed.
- 6.162 No visual effects for residents with views in Bethesda (as represented by Viewpoint 1) would occur due to the proposed extension area for residents or road users.
- 6.163 The views represented by Viewpoint 2 - Moel Faban are more distant and proposed mineral extension area would be visible due to the increased elevation, but only to a limited degree, with a minor, adverse and not significant visual effect.
- 6.164 The permitted restoration would remain unchanged in terms of land use and cover, but a short term, negligible but adverse delay to the restoration.

Viewpoint 3

- 6.165 This viewpoint (PRoW, Cefn Yr Orstedd) represents views from the western edge of the Carneddau range. Changes to the existing view are similar to those identified in Viewpoint 1 above, although receptors would not be residents but users of the PRoW network and Open Access Land within the SNP to the east of the site. Viewpoint 3 is considered to represent the existing worst-case for views from the Carneddau range, due to proximity to Penrhyn Quarry and the extent of the quarry visible.
- 6.166 However, the current quarry workings are screened by the existing tips and permitted restoration landform, and thus the extension area is screened from view and no visual effects would occur due to the development of the extension area. None of these visual effects are considered significant,

with changes to the skylines after restoration in line with the permitted restoration concept but delayed by 3 years and thus considered negligible.

Viewpoints 4 and 5

- 6.167 These two viewpoints represent views from the Glyder range of the SNP directly to the south of Penrhyn Quarry. The ZTV for the extension area shows the limited extent of visibility within the SNP to the south, with the landforms of Elidir Fach and Fronllwydd screening the developments from view.
- 6.168 Viewpoint 4 is located on the summit of Carnedd y Filiast where a small area of visibility exists, limited to the northern extent of Penrhyn Quarry, this location would represent the natural objective for walkers traversing this area. Wider more open views down into Penrhyn Quarry are visible from the north slopes of the Fronllwydd ridge but would be more transient in nature as walkers pass through the area. The convex landform of the Elidir Fach mean that views toward the developments are limited to the lower slopes in the location of Viewpoint 5.
- 6.169 The view from Viewpoint 5 looks down into the permitted quarry void. The visual effects of the proposed extension to the extraction area are considered to be Moderate/Minor and adverse due to the removal of part of the existing grassland area and a slightly wider extraction area created, seen within the baseline context. Restoration of the final upper faces and benches of the extension area would reflect the objectives of the permitted restoration but within the proposed revised quarry landform. Changes in line with the permitted restoration concept would potentially be delayed by 3 years and this effect is considered negligible. After restoration the regrading of the tips would produce a more rounded natural looking landform reducing existing visual effects.
- 6.170 The visual effect of the proposed mineral extension development is not considered significant.

Viewpoints 6, 7, 8 and 9

- 6.171 These viewpoints represent the views from around the Gwaen Gynfi area from the higher open elevations near to the proposed mineral extraction area to the lower elevations of views from the residential areas of Mynydd Llandegai and are affected by the proposed extension development.
- 6.172 Viewpoint 6 represents views from local PRow and the Snowdonia Slate trail, Viewpoint 7 the view from a local road and a small number of residential properties, Viewpoint 8 a local PRow/Snowdonia Slate Trail and residential properties on the edge of Mynydd Llandegai and Viewpoint 9 views from near the settlement of Mynydd Llandegai.
- 6.173 In all these views the proposed mineral extension area is seen as a narrow ribbon of land directly in front of the permitted extraction area. The removal of this area through soils and overburden stripping and excavation within the context of the same operations for the permitted extraction would have a Minor/Negligible adverse effect during extraction and in restoration.
- 6.174 The permitted restoration would remain unchanged in terms of land use and cover, but with a short term, negligible, adverse delay to the restoration. After restoration regrading of the tips would produce a more rounded natural looking landform reducing existing visual effects.

Interpreted Visual Effects at Identified Receptors

Communities and Residential Views

- 6.175 These receptors are represented by Viewpoints 1, 8 and 9.
- 6.176 Residents in Bethesda would not experience any change related to the proposed extension area.
- 6.177 The area of Mynydd Llandegai is represented by Viewpoints 8 and 9, with Viewpoint 8 being located on the more open land to the south of the community and Viewpoint 9 at a lower level where woodland and hedgerows create a more enclosed landscape. The level of identified visual effect from the proposed extension would be Moderate/Minor at both viewpoints. Potentially less from Viewpoint 9, due to the greater enclosure/screening and slightly greater distance. None of the recorded effects are significant and the visual changes would be seen in the context of already disturbed quarry land.

Users of Promoted walking/riding routes, Cycle routes, Open Access Land and local PRoW

- 6.178 The viewpoints selected have also been used to be representative of views from local PRoW and Open Access Land. A number of viewpoints have been included to represent this category including Viewpoints 2, 3, 4, 5, 6, 7 and 8. The highest level of visual effect recorded is Moderate/Minor and not significant at viewpoints 5 and 8. It is therefore concluded that no significant visual effects are anticipated for this type of receptor.

Sequential Views

- 6.179 The viewpoints selected have also been used to be representative of views above include key routes and transport corridors where the ZTVs indicate potential theoretical visibility. Routes assessed by this method include:
- the Snowdonia Slate Trail and represented by viewpoints 1, 2, 6, 8 and 9; and
 - the path of the A5 through the Nant Ffrancon Valley and Ogwen Valley utilising previous assessment work and Google Street View.
- 6.180 The Snowdonia Slate Trail runs from the coast near Penrhyn Quarry southwards along the edge of the Ogwen Valley through an area of small field and woodlands to Rachub. Open views are present from this agricultural landscape towards Penrhyn Quarry, Viewpoint 2 (Moel Faban) is located on more elevated Open Access Land to the east of Rachub, it is not anticipated that views from the trail would be as great in level of effect (Minor) as this viewpoint. The slate trail then descends into the Ogwen Valley on the edge of Bethesda, and Viewpoint 1 indicates the absence of view of the proposed extension area. On reaching the A5 on the valley floor the Slate Trail splits with the eastern section running south along the Ogwen Valley and into the Nant Ffrancon Valley. The first section of the route passes through woodland and is then screened by roadside vegetation before becoming screened by natural landform for the rest of its route through the Nant Ffrancon valley. The western spur of the Slate Trail is likely to have glimpses of views similar to Viewpoint 9 (Moderate/Minor) as it passes to the north of the quarry before running close to Viewpoint 8 (Moderate/Minor), where views are more open and then following an existing PRoW to Viewpoint 6 (Minor/Negligible), before starting to descend into the valley of Llyn Padarn. Visual effects for users of this section would be expected to be Moderate/Minor at most, as the route passes over

the open grassland of Gwaen Gyfni, before losing visibility again further to the west as the landform descends towards Llanberis. Therefore, no significant effects on the trail would be anticipated.

- 6.181 The A5 would be entirely screened from the proposed extension development as it extends through the study area.

CONCLUSIONS

- 6.182 This LVIA has assessed the potential landscape and visual implications of the proposed developments at Penrhyn Quarry. This included a baseline study of the existing site and its surroundings, a study of the landscape and visual characteristics of the proposed development and an assessment of the residual landscape and visual effects likely to be generated after mitigation has been considered and their significance.
- 6.183 In the case of the proposed development adverse landscape and visual effects would occur from the proposed mineral extension, although this is a very limited area within the context of the large-scale landscape of the study area, and outside the Snowdonia National Park. Any changes resulting from this extension would also be in the context of the existing quarry and no significant effects are predicted to occur. The importance of the Fronllwydd and Elidir Fach ridges are identified in the LVIA and these limit the effects of the existing quarry, as well as the extension area within the wider Snowdonia National Park.
- 6.184 The level of landscape effects identified in the LVIA are summarised in Table 5 in Appendix 6/2, the higher levels of effect identified are described in greater detail in the main text of the LVIA under 'Assessment of Significance of residual Landscape Effects'. Overall there are no significant landscape effects predicted as a result of the proposed development.
- 6.185 The level of visual effects identified in the LVIA are summarised in Table 4 in Appendix 6/3, the higher levels of effect identified are described in greater detail in the main text of the LVIA under 'Assessment of Significance of Residual Visual Effects'. The effects on the identified visual receptors within the local landscape is examined with reference to the identified viewpoints to describe the effects of the proposed development. Overall there are no significant visual effects predicted as a result of the proposed development.