



Agricultural Land Classification:

Maes-y-Droell Quarry,
Graianrhyd, Denbighshire

Prepared for:
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CONTENTS

1 INTRODUCTION 1

1.1 Background 1

1.2 Methodology 1

1.3 Structure of the Remainder of this Report 1

2 PLANNING POLICY FRAMEWORK 2

2.1 Background 2

2.2 Planning Policy Wales February 2024 2

2.3 Technical Advice Note 6 2

3 AGRICULTURAL LAND CLASSIFICATION 3

3.1 Background 3

3.2 Climate 3

3.3 Site 4

3.4 Soil 5

3.5 Interactive Limitations 6

4.0 ALC AT THE SITE IN A WIDER GEOGRAPHICAL CONTEXT 7

4.1 Introduction 7

4.2 Predictive ALC Information 7

5 SUMMARY AND CONCLUSIONS 8

FIGURES

- Figure 1: Site Boundary
- Figure 2 : Welsh Government’s Predictive Agricultural Land Classification

APPENDICES

- Appendix 1: Site Location

1 INTRODUCTION

1.1 Background

- 1.1.1 Stephenson Halliday commissioned this desk-based report to determine the quality of agricultural land at Maes-y-Droell Quarry, Graianrhyd, Denbighshire, CH7 4QR ('the Site'). The approximately 22-hectare (ha) Study Area is located to the south of Mold, as shown in **Figure 1** and **Appendix 1**. The approximate centre of the Site is located at British National Grid (BNG) reference SJ218566. The assessment was made in accordance with the Agricultural Land Classification (ALC) system for England and Wales (see 'Methodology' below).

1.2 Methodology

- 1.2.1 This report has been prepared by a Chartered Scientist (CSci), who is a Fellow (F.I. Soil Sci) of the British Society of Soil Science (BSSS). The survey was carried out by a highly experienced ALC surveyor who each meet the requirements of the BSSS Professional Competency Standard (PCS) scheme for Agricultural Land Classification (ALC), which is endorsed, amongst others, by the Welsh Government, the Science Council, and the Institute of Environmental Assessment and Management (IEMA), now the Institute of Sustainability and Environmental Professionals (ISEP) (see BSSS PCS Document 2 'Agricultural Land Classification of England and Wales')¹.
- 1.2.2 This assessment is based upon the findings of a study of published information on climate, geology and soil, ALC information available from the Welsh Government ALC website². The ALC survey and report follow the approach of the national 'Agricultural Land Classification of England and Wales: Guidelines for Grading the Quality of Agricultural Land', October 1988, updated in December 2025 (JP069) (henceforth referred to as the 'ALC Guidelines')³.
- 1.2.3 The ALC system provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The ALC system divides agricultural land into five grades (Grade 1 'Excellent' to Grade 5 'Very Poor'), with Grade 3 subdivided into Subgrade 3a 'Good' and Subgrade 3b 'Moderate'. Agricultural land classified as Grade 1, 2, and Subgrade 3a falls in the 'best and most category as set out in paragraphs 3.58 and 3.39 of Planning Policy for Wales (Edition 12, February 2024)⁴ and Technical Advice Note 6 'Planning for Sustainable Rural Communities (30th July 2010)⁵. Further details of the ALC system and the national planning policy implications are set out in a guidance note published by the Welsh Government, which is available online⁶.

1.3 Structure of the Remainder of this Report

- 1.3.1 The remainder of this report is structured as follows: (i) Section 2 – Planning Policy Framework; (ii) Section 3 – Predicted Agricultural Land Classification; (iii) Section 4 – ALC at the Site in a Wider Geographical Context; and (iv) Section 5 – Summary and Conclusions.

2 PLANNING POLICY FRAMEWORK

2.1 Background

- 2.1.1 This section of the report sets out the national and local planning framework in which to assess the opportunities and constraints to development at the Study Area in agricultural land quality terms.

2.2 Planning Policy Wales February 2024

- 2.2.1 National planning policy guidance on development involving agricultural land is set out in paragraphs 3.58 and 3.59 of Planning Policy Wales (PPW)^{Error! Bookmark not defined.} as follows:

'3.58 Agricultural land of grades 1, 2 and 3a of the Agricultural Land Classification system (ALC) is the best and most versatile, and should be conserved as a finite resource for the future.'

'3.59 When considering the search sequence and in development plan policies and development management decisions, considerable weight should be given to protecting such land from development, because of its special importance. Land in grades 1, 2 and 3a should only be developed if there is an overriding need for the development, and either previously developed land or land in lower agricultural grades is unavailable, or available lower grade land has an environmental value recognised by a landscape, wildlife, historic or archaeological designation which outweighs the agricultural considerations. If land in grades 1, 2 or 3a does need to be developed, and there is a choice between sites of different grades, development should be directed to land of the lowest grade.'

2.3 Technical Advice Note 6

- 2.3.1 Planning policy regarding development involving agricultural land, which is set out in Planning Policy Wales published in January 2024 (see above), is supplemented by Technical Advice Note (TAN) 6 'Planning for Sustainable Rural Communities' (July 2010)⁴.

- 2.3.2 TAN6 provides advice on areas including sustainable rural communities and economies, rural affordable housing, rural enterprise dwellings, one planet developments, sustainable rural services and sustainable agriculture. Specific advice for development involving agricultural land is given in Section 6.2 of TAN6. Paragraph 6.2.1 states that:

'When preparing development plans and considering planning applications, planning authorities should consider the quality of agricultural land and other agricultural factors and seek to minimise any adverse affects on the environment.'

3 AGRICULTURAL LAND CLASSIFICATION

3.1 Background

3.1.1 This section of the report sets out the findings of an Agricultural Land Classification (ALC) based on a desk-based study of relevant published information on climate, topography, geology, and soil, and ALC information available online^{Error! Bookmark not defined.}.

3.1.2 As described in the ALC Guidelines, the main physical factors influencing agricultural land quality are:

- Climate;
- Site;
- Soil; and
- Interactive limitations.

3.1.3 These factors are considered in turn below.

3.2 Climate

3.2.1 Based on a dataset of 5km gridpoints⁷, site-specific, interpolated climate data relevant to the determination of the Agricultural Land Classification (ALC) grade of land in the Study Area is given in Table 3.1 below.

Table 3.1: ALC Climate Data for Maes-y-Droell Quarry	
Climate Parameter	Grid Ref. SJ218566
Average Altitude (m)	329
Average Annual Rainfall (mm)	975
Accumulated Temperature above 0°C (January – June)	1102
Field Capacity Days (FCD)	222
Moisture Deficit (mm) Wheat	51
Moisture Deficit (mm) Potatoes	26
Grade According to Climate	3b

3.2.2 Regarding Figure 1 ‘Grade according to climate’ on page 6 of the ALC Guidelines, the agricultural land in the Study Area cannot be classified higher than Subgrade 3b due to the climate. In particular, the agricultural land is limited to Subgrade 3b based on the relationship

between the amount of energy (sunlight) available for photosynthesis during the growing season (i.e., AT0) and the water supplied to plant roots (i.e., AAR) at this location.

- 3.2.3 Agricultural land at the Site is predicted to be at a range of field capacity (i.e., the amount of soil moisture or water content held in the soil after excess water has drained away) for 222 Field Capacity Days (FCD) per year, mainly over the late autumn, winter and early spring.
- 3.2.4 The combination of topsoil texture, drainage status (Wetness Class) of the profile, and number of FCD affects the degree to which agricultural land is limited by soil wetness. The climate at the Site falls in the 176-225 category (regarding Table 6 of the ALC Guidelines), as described in more detail under '*interactive limitations*' below.

3.3 Site

- 3.3.1 As described in the introduction, the approximately 22ha Site is located to the south of Mold. Graiarhyd Road borders the site to the south, with unnamed roads to the west and east and agricultural land to the north. The site has previously been worked for mineral extraction. The location and boundaries of the Site are shown in **Figure 1**.
- 3.3.2 With regard to the ALC Guidelines, agricultural land quality can be limited by one or more of three main site factors as follows:
- gradient;
 - micro-relief (i.e., complex change in slope angle over short distances); and
 - risk of flooding.

I. Gradient and Micro-Relief

- 3.3.3 The Study Area is located on a broadly south-facing slope at approximately 354 metres (m) above Ordnance Datum (AOD) at the highest point and approximately 295 m above AOD at the lowest elevation. Based on a desktop assessment, it is highly likely that there will be gradient limitations at the site where the gradient exceeds 7° (see Table 1 of the ALC Guidelines). There is also a high likelihood that the quality of agricultural land in the Study Area is limited by micro-relief, i.e., complex changes in slope angle and direction over short distances.

II. Risk of Flooding

- 3.3.4 From the Welsh Government's Flood Map for Planning website⁸, the site is at low risk of flooding. The MAFF ALC Guidelines (1988) take account of the frequency, duration and timing of flooding in the summer and winter (re Table 2 '*Grade according to flood risk in summer*' and/or Table 3 '*Grade according to flood risk in winter*'). There is no evidence the grade of agricultural land at the Site is limited by flood risk during the summer or winter following the ALC Guidelines.

3.4 Soil

I. Geology/Soil Parent Material

- 3.4.1 British Geological Survey (BGS) information available online⁹ has been utilised to identify the Bedrock underlying the Site and any Superficial (Drift) Deposits over the Bedrock. This information helps to determine the parent material from which the soil has formed.
- 3.4.2 The BGS information indicates that, prior to any quarrying operations, the land in the Study Area was underlain by interbedded limestone and sandstone of the Minera Formation and interbedded limestone and argillaceous rocks of the Cefn Mawr Limestone formation. The BGS Superficial Deposit map (1:50,000) indicates that most of the bedrock is not covered by superficial deposits, apart from some glacial till in the north and south, as well as some Head, consisting of clay, silt, sand, and gravel, in the north.

II. Published Information on Soil

- 3.4.3 The National Soil Map¹⁰ reports that agricultural land in the Study Area is covered by soils in the Anglezarke Association. As described by the Soil Survey of England and Wales (SSEW)¹¹, the Anglezarke association is found throughout the Pennines from Staffordshire to Northumberland, and on the North York Moors; also in Wales and the Forest of Dean. It is composed mainly of the Anglezarke series, humo-ferric podzols, and the Revidge series, humic rankers, over sandstones, grits and related Head. It occurs on gently to strongly sloping land but includes some steeper valley sides and craggy, irregular escarpments. These soils are confined mainly to north and east Derbyshire and north Staffordshire, where they cover about 68 km² on coarse grained sandstones and grits of Carboniferous age which fringe the limestone core of the southern Peak District. Near Glossop and north of Stoke-on-Trent, the coarse sandstones belong to the Coal Measures sequence and form prominent ridges which protrude above the surrounding drift covered terrain. Brown Edge, Wetley Rocks and Mow Cop are the most distinctive of these. Around Errwood and Fernilee reservoirs, west of Buxton, and above Charlesworth, the soils occur on outcrops of Rough Rock. The constituent soils are exclusively Anglezarke and Revidge series in all these localities. On the moorlands above the Derwent valley between Matlock and Hathersage, the Anglezarke association is much more extensive with common inclusions of other podzols such as the Maw and Belmont series. Revidge soils occur mainly alongside the boulder-strewn gritstone edges and other rock outcrops. In Wales quartzitic sandstones and grits of the basal beds of the Millstone Grit outcrop form the soil parent material. Most of the soils are at field capacity for a long period but are seldom waterlogged (Wetness Class I). There is also an excess of winter rainfall; but this is not absorbed on steep slopes due to run-off. In Wales the climate is wet and cold, annual precipitation exceeding 1,300 mm everywhere and ranging to more than 2,000 mm. The field capacity period is long and excess of winter rainwater is not readily absorbed by the peaty topsoils, so the amount of run-off is large.

3.5 Interactive Limitations

3.5.1 An assessment of soil wetness is given below.

I. Soil Wetness

3.5.2 A soil wetness limitation occurs where the soil water regime adversely affects plant growth or imposes restrictions on cultivations or grazing by livestock. The ALC grade according to soil wetness at the Site is given in Table 3.2 below (based on Table 6 'Grade According to Soil Wetness – Mineral Soils' in the ALC Guidelines).

Table 3.2: ALC Grade According to Soil Wetness		
Wetness Class	Texture of the Top 25 cm	176-225 Field Capacity Days
I	Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	1
	Sandy Clay Loam/Medium Silty Clay Loam /Medium Clay Loam*	2
	Heavy Silty Clay Loam/Heavy Clay Loam**	3a
	Sandy Clay/Silty Clay/Clay	3b
II	Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	2
	Sandy Clay Loam/Medium Silty Clay Loam /Medium Clay Loam*	3a
	Heavy Silty Clay Loam/Heavy Clay Loam**	3a
	Sandy Clay/Silty Clay/Clay	3b
III	Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	3a
	Sandy Clay Loam/Medium Silty Clay Loam /Medium Clay Loam*	3a
	Heavy Silty Clay Loam/Heavy Clay Loam**	3b
	Sandy Clay/Silty Clay/Clay	4
IV	Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	3b
	Sandy Clay Loam/Medium Silty Clay Loam /Medium Clay Loam*	3b
	Heavy Silty Clay Loam/Heavy Clay Loam**	4
	Sandy Clay/Silty Clay/Clay	4
Key * <27% clay; and ** >27% clay		

3.5.3 In a climate area with 222 FCD, well-drained (Wetness Class I) soil profiles in the Anglezark Association (i.e., well-drained, very acid coarse (sandy) loamy soils over sandstone with a bleached subsurface horizon. Some shallow soils with a peaty or humose surface horizon) will not be limited significantly by soil wetness in ALC terms, although careful consideration should be given to handling these soils in wet weather conditions.

4.0 ALC AT THE SITE IN A WIDER GEOGRAPHICAL CONTEXT

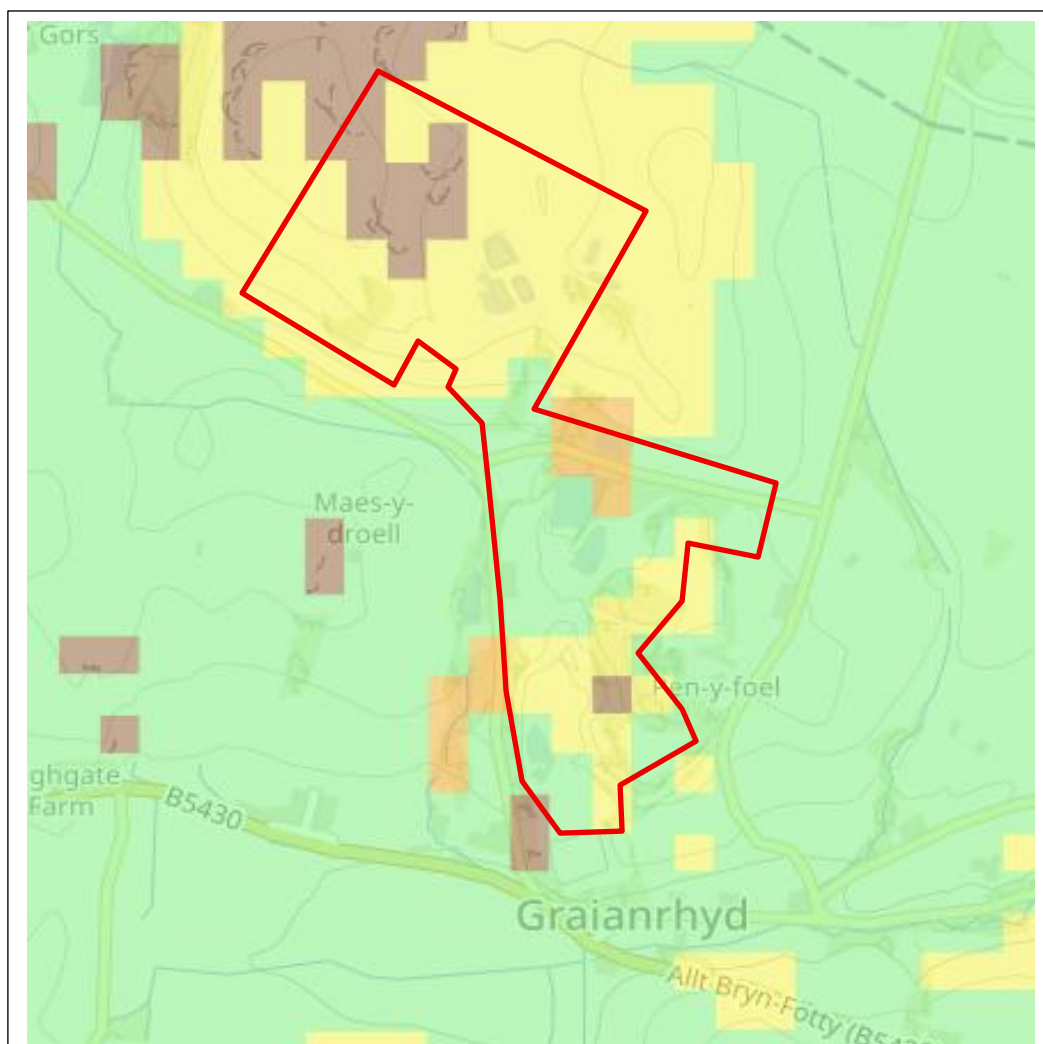
4.1 Introduction

- 4.1.1 The aim of this section is to examine agricultural land quality at the Site in a national, regional, county and local context.

4.2 Predictive ALC Information

- 4.2.1 The Welsh Government has developed a Predictive ALC map for Wales online¹². A map showing the Welsh Government's prediction of ALC grades at the Site is given below in **Figure 2**.
- 4.2.2 The Welsh Government's Predictive ALC map¹³ shows the grade at the Site is a mix of Subgrade 3b, Grade 4 and Grade 5, as shown in an extract below.

Figure 2: Welsh Government's Predictive ALC for Maes-y-Droell Quarry



5 SUMMARY AND CONCLUSIONS

- 5.1.1 Stephenson Halliday commissioned this desk-based report to determine the quality of agricultural land at Maes-y-Droell Quarry, Graianrhyd, Denbighshire, CH7 4QR ('the Site'). The approximately 22-hectare (ha) Study Area is located to the south of Mold, as shown in **Figure 1** and **Appendix 1**. The approximate centre of the Site is located at British National Grid (BNG) reference SJ218566. The assessment was made in accordance with the Agricultural Land Classification (ALC) system for England and Wales.
- 5.1.2 Regarding Figure 1 '*Grade according to climate*' on page 6 of the ALC Guidelines, **the agricultural land in the Study Area cannot be classified higher than Subgrade 3b due to the climate**. In particular, the agricultural land is limited to Subgrade 3b based on the relationship between the amount of energy (sunlight) available for photosynthesis during the growing season (i.e., AT0) and the water supplied to plant roots (i.e., AAR) at this location.
- 5.1.3 British Geological Survey (BGS) information indicates that, prior to any quarrying operations, the land in the Study Area was underlain by interbedded limestone and sandstone of the Minera Formation and interbedded limestone and argillaceous rocks of the Cefn Mawr Limestone formation. The BGS Superficial Deposit map (1:50,000) indicates that most of the bedrock is not covered by superficial deposits, apart from some glacial till in the north and south, as well as some Head, consisting of clay, silt, sand, and gravel, in the north.
- 5.1.4 The National Soil Map indicates the Study Area is covered by soils in the Anglezarke Association (i.e., well-drained, very acid, coarse loamy soils over sandstone with a bleached subsurface horizon. Some shallow soils with a peaty or humose surface horizon. Rocks and boulders locally).
- 5.1.5 The Welsh Government's **Predictive ALC Map** predicts that the agricultural land at Maes-y-Droell Quarry is a mixture of **Subgrade 3b, Grade 4 and Grade 5**.

I. Conclusion

- 5.1.6 The Welsh Government (WG) has produced a Predictive ALC Map (Version 2) online¹⁴. The WG's guidance states that: '*3. When to commission a survey*' that '*Where the Predictive Agricultural Land Classification Map identifies grades 1, 2 or 3a, a survey will be required to determine Grades present and in what proportion.*'
- 5.1.7 From an extract of the WG's Predictive ALC Map covering the Study Area given in **Figure 2**, the land is identified as Subgrade 3b, Grade 4, and Grade 5. Therefore, no further ALC survey is required.

Figures



Key

— Study Area

ASKEW LAND+SOIL

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Client:

Stephenson-Halliday

Project:

Maes-y-Droll Quarry, Graianrhyd

Title:

Figure 1: Site Boundary

Scale @ Size:

Not to Scale

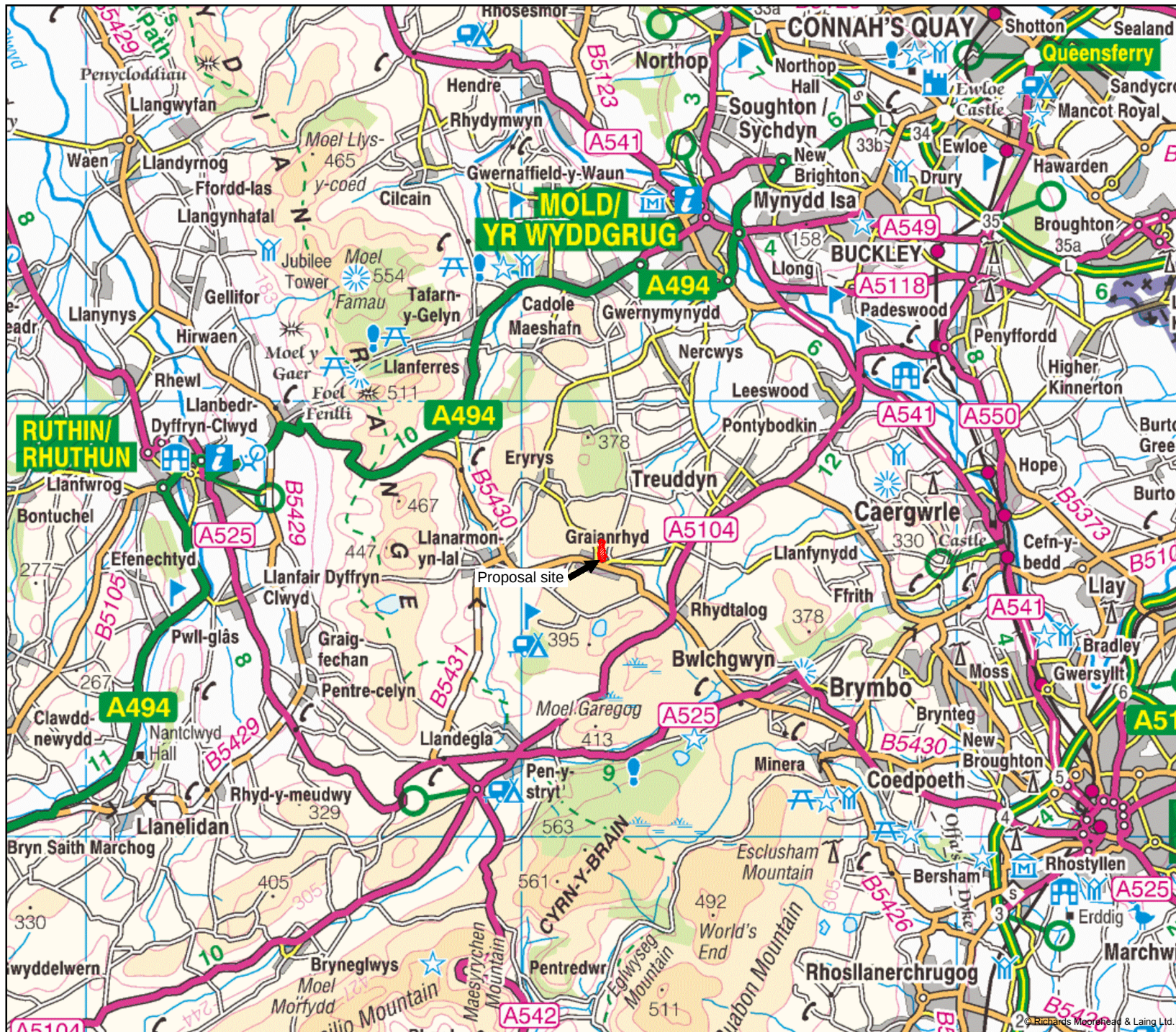
Date:

30/04/2026

Project No: C1355

Drawing No: RWA/01

Appendix 1: Site Location



Cleient / Client:
G & K Edwards Ltd
Erwau Cottage
Pant y Ffordd
Treuddyn
Mold CH7 4LE

Erw project / Project name:
MAES Y DROELL QUARRY

Teitl luniad / Drawing title:
Site Location Plan

Eglurhad / Key:

Proposal site

02	18/04/2011	issued for planning	RhE	SMB	IGR
01	18/03/2011	issued to client for comment	RhE	SMB	IGR
Cyfl. Rev.	Dyddiad Date	Disgrifiad Description	Gan By Checked	Gwneir Checked	Cymer. Appr.

0 0.5 1 2 3 4 5 6 km

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Graddfa / Scale:
1:125,000 @ A4

Dyddiad / Date:
Nov 2010

Darlunwyd gan:
RhE

Gwneir gan:
DJ

Cyflutir:
Revision:
02

Rhif luniad / Drawing number:
2893 / 21

Darparwyd gan / Prepared by:
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- ¹¹ Soil Survey of England and Wales, National Soil Resource Institute, Cranfield University (2023). *The Soils Guide*. Available online at <https://www.landis.org.uk/soilsguide/mapunitlist.cfm> Last accessed May 2026
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