
Agricultural Land Classification

Land off Chester Road, Lavister

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Summary

The Agricultural Land Classification report of the site known as 'Land off Chester Road, Lavister' was prepared by Stephen Lockwood of Savills, and Daniel Baird of Daniel Baird Soil Consultancy Ltd, in May 2018. Daniel Baird is an experienced soil scientist, applying his knowledge from his BSc. (Hons) in Soil and Land Resources and MSc in Land Resource Management, coupled with extensive experience in Agricultural Land Classification surveying. Daniel is a full member of the British Society of Soil Scientists.

The area under investigation is proposed for development for residential use. The site totals approximately 5.27 hectares in area and is situated on the north east edge of Lavister, Wrexham. The land was under arable production when surveyed in May 2018.

The whole site lies at approximately 10m above ordnance datum and is level. The Soilscape information for the site lists the soil as Type 6, which is described as freely draining slightly acid loamy soils.

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Introduction

The purpose of this report is to classify the land at known as 'Land off Chester Road, Lavister' according to the extent to which its physical and chemical characteristics impose long term limitations on agricultural use.

The site totals approximately 5.27 hectares of agricultural land north east of the settlement of Lavister. The site was all in arable production at the time of the survey. A footpath and tree line run along the majority of the north eastern boundary, the tree line appearing to be a feature inherited from the former golf course on this site rather than a former field boundary

The site centers Grid Reference SJ 374 582. A survey was conducted in May 2018 by Daniel Baird, using a number of hand auger borings and trial pits to a maximum depth of 1.20m to examine soil profiles. This appraisal of agricultural land quality is consistent with the direction given by Planning Policy Wales (Edition 9 November 2016), updated February 2018.

Climatological data was used to determine any overriding site limitations and for interaction with soil parameters. The above information was cross referenced with geological surveys and the national 1:250,000 series ALC survey relevant to the site (see Appendix 1), to substantiate the findings. The ALC Grade was then determined for the site. Other factors used for ALC grading, but which give no limitation at this site, are not included in this report. Agricultural land is classified into the following categories according to the 1988 Guidelines.

Grade	Description
1	Excellent quality agricultural land with no or very minor limitations to agricultural use.
2	Very good quality agricultural land with minor limitations which affect crop yield, cultivation, or harvesting.
3a	Good quality agricultural land capable of producing moderate to high yields of a narrow range of arable crops or moderate yields of a wider range of crops.
3b	Moderate quality agricultural land with severe limitations which significantly restrict the range of crops and/or level of yields.
4	Poor quality agricultural land with severe limitations which significantly restrict the range of crops and/or level of yields.
5	Very poor quality agricultural land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

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Technical Advice Note 6: Planning for Sustainable Rural Communities and Planning Policy Wales set out the land use planning policies of the Welsh Assembly Government in respect development involving agricultural land. Planning Policy Wales - Chapter 4 (Planning Sustainability), Paragraph 4.9.1 states that 'preference should be given to previously developed land as opposed to land of high agricultural or ecological value'. Paragraph 4.10.1 indicates that agricultural land of grades 1, 2 and 3a are to be considered the best and most versatile and as such are finite resources. Both of these policy documents highlight the need for planning authorities to take account of the economic and other benefits of the 'best and most versatile agricultural land'. Ideally where significant development of the best and most versatile land is necessary, it should be directed to areas with the poorest land.

All of the land within the site falls within the Wrexham Local Planning Authority. The current Local Plan for Wrexham is the Unitary Development Plan adopted February 2005. Policy EC2 covers the non agricultural development of the best and most valuable agricultural land. It states '*Development on agricultural land of grades 1, 2 or 3a will only be permitted if it does not lead to the irreversible loss of that land*'.

Based on the wording of the policy guidance, this report will distinguish between sub-grades 3a and 3b where appropriate.



Methodology

Agricultural Land Classification (ALC) is undertaken in accordance with the Agricultural Land Classification of England and Wales: Guidelines and criteria for grading the quality of agricultural land (Revised guidelines 1988 and Draft second revision 1996, MAFF, London).

The classification includes an initial desktop investigation to examine previously mapped soil types and to note the drift and solid geology. This included consultation of the Soil Survey of England and Wales 1:250,000.

The soil removed during the augering was examined in accordance with the Soil Survey Field Handbook: Describing and Sampling Soil Profiles, Soil Survey of England and Wales, Technical Monograph No. 5, 1976, and the Soil Classification for Soil Survey: Monographs on Soil Survey, Butler, BE (1980) Clarendon Press, Oxford.



Baseline Conditions

The Agricultural Land Classification Provisional (England) map (1:250,000) published in 1983 by MAFF, indicates that the site is Grade 2 (Appendix 1). The Predictive Agricultural Land Classification Map (Wales) indicates the site to be Grade 1. This was determined from a search of the using the Land Classification layer (Appendix 1). Existing Post 1998 ALC survey work in and around Lavister show Grade 2 and Grade 3a (Appendix 1).

Soilscape information for the site, as published by DEFRA, indicates that there is one soil category present. Table 1 shows the profile description for the soil types.

Table 1 Soilscape Information		
ID	Description	Features
6	Freely draining slightly acid loamy soils	Texture: Loamy

The Land Information Service developed by Cranfield University states that Soil type 6 is suitable for a range of spring and autumn sown crops and when under grass, the soils have a long grazing season. Free drainage reduces the risk of soil damage from grazing animals or farm machinery. Shortage of soil moisture is the most likely limiting factor on yields, particularly where the soils are stony or shallow.

The British Geological Survey Geology of Britain Viewer shows the site to be underlain by a solid geology of the Salop Formation.

Climate

Climatological data for ALC are provided for 5km intersections of the National Grid by the Meteorological Office, in collaboration with the National Soil Resources Institute. The data from these points can be interpolated providing climate data for specific sites. Interpolated data for point SE374 581, within the site, is given in Table 2 below.

Table 2 Climatological Data		
Factor	Units	Value
Altitude AOD	m	10
Accumulated Temp.	Day °C (Jan-June)	1461
Moisture Deficit (Wheat)	mm	104
Moisture Deficit (Potatoes)	mm	95
Average Annual Rainfall	mm	728
Field Capacity Days	Days	166

The main parameters used in the assessment of an overall climatic limitation are AAR as a measure of overall wetness, and AT0 as a measure of the warmth of the site in the growing season.

Climate does not impose an overall limitation on ALC grade at this site. Climate does however have an important influence on the interactive limitations, soil wetness and soil droughtiness.

Geology, Topography and Soils

The site is currently in agricultural use and at the time of the survey the fields were in an arable rotation. The whole site lies at approximately 10 above ordnance datum and is level. Gradient, micro relief and flood risk do not limit the ALC grade at this site. It should be noted that the limited fall available at this elevation does compromise the effectiveness of standard agricultural drainage.

The Soilscape information for the site lists the soil as Type 6; “freely draining slightly acid loamy soils.”

The British Geological Survey Geology of Britain Viewer shows the site to be underlain by a solid geology of the Salop Formation (sandstone and mudstone conglomerate), which in turn is covered by alluvium. The sandy loam soil found at the site with intermittent presence of gravelly and clay loam material at depth, is consistent with an alluvium soil parent material.

Soil profiles are typically free draining but with evidence of prolonged soil wetness at depth, thought to be a result of a high water table in low lying land rather than caused by impeded drainage of water through the profile.

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This survey has resulted in an Agricultural Land Classification of the following grades:

Grade	Hectares (approximate)	%
1	-	-
2	3.59	68
3a	1.42	27
3b	-	-
4	-	-
5	-	-
Non Ag. Land	0.26	5
Not surveyed	-	-
Total	5.27	100%

Soil droughtiness is the dominant factor limiting land to Grades 2 and 3a. The texture of the soil retains a relatively high volume of water that is available to a crop, and where the soil profile is deep there is only a slight soil droughtiness limitation restricting the land to Grade 2. In the northern tip of the site the soil profile is shallower, heightening the soil droughtiness limitation sufficiently to restrict the land to Grade 3a.

Non Agricultural land on the site comprises the two access tracks connecting to the public highways to the north west and south east.

Conclusion

A review of the national ALC resources and a detailed site survey has determined the land known as 'Land off Chester Road, Lavister' to be ALC Grade 2 and 3a (Appendix 2). The site would therefore be considered 'best and most versatile' land.

Information Sources

Agricultural Land Classification of England and Wales. *Guidance and criteria for grading the quality of agricultural land*. (MAFF, 1988).

Planning Policy Wales Edition 9 November 2016.

Wrexham Unitary Development Plan.

Agricultural Land Classification of England and Wales. *Guidance and criteria for grading the quality of agricultural land*. Second Revision (MAFF, 1996) Draft.

Soil Survey Field Handbook. *Technical Monograph No.5 Soil Survey of England and Wales* (1976).

Climatological Data for Agricultural Land Classification. (Met Office, 1989).

Agricultural Land Classification Map. 1:250,000 (MAFF, 1983)

British Geological Survey. 1:50,000 National Map.

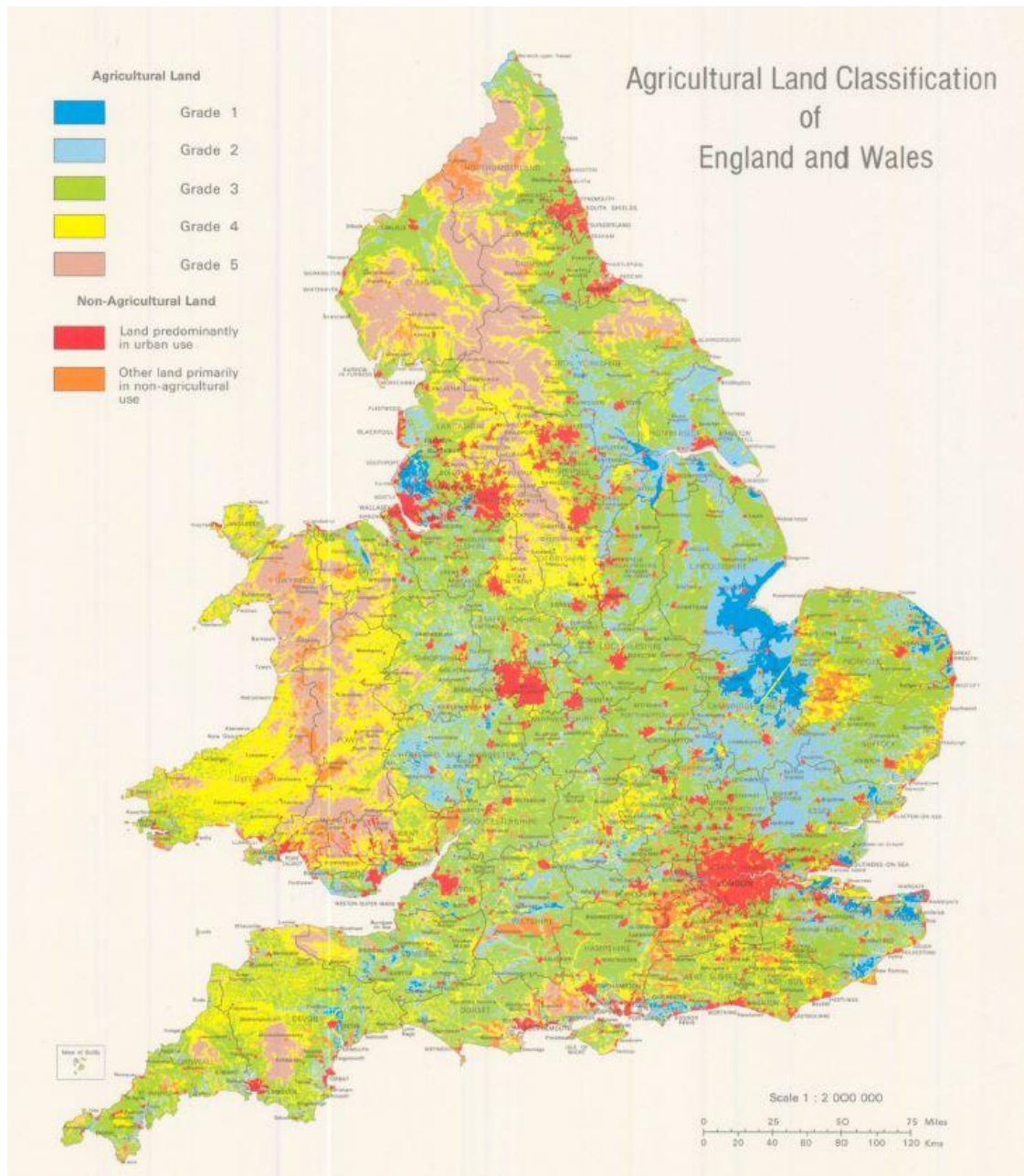
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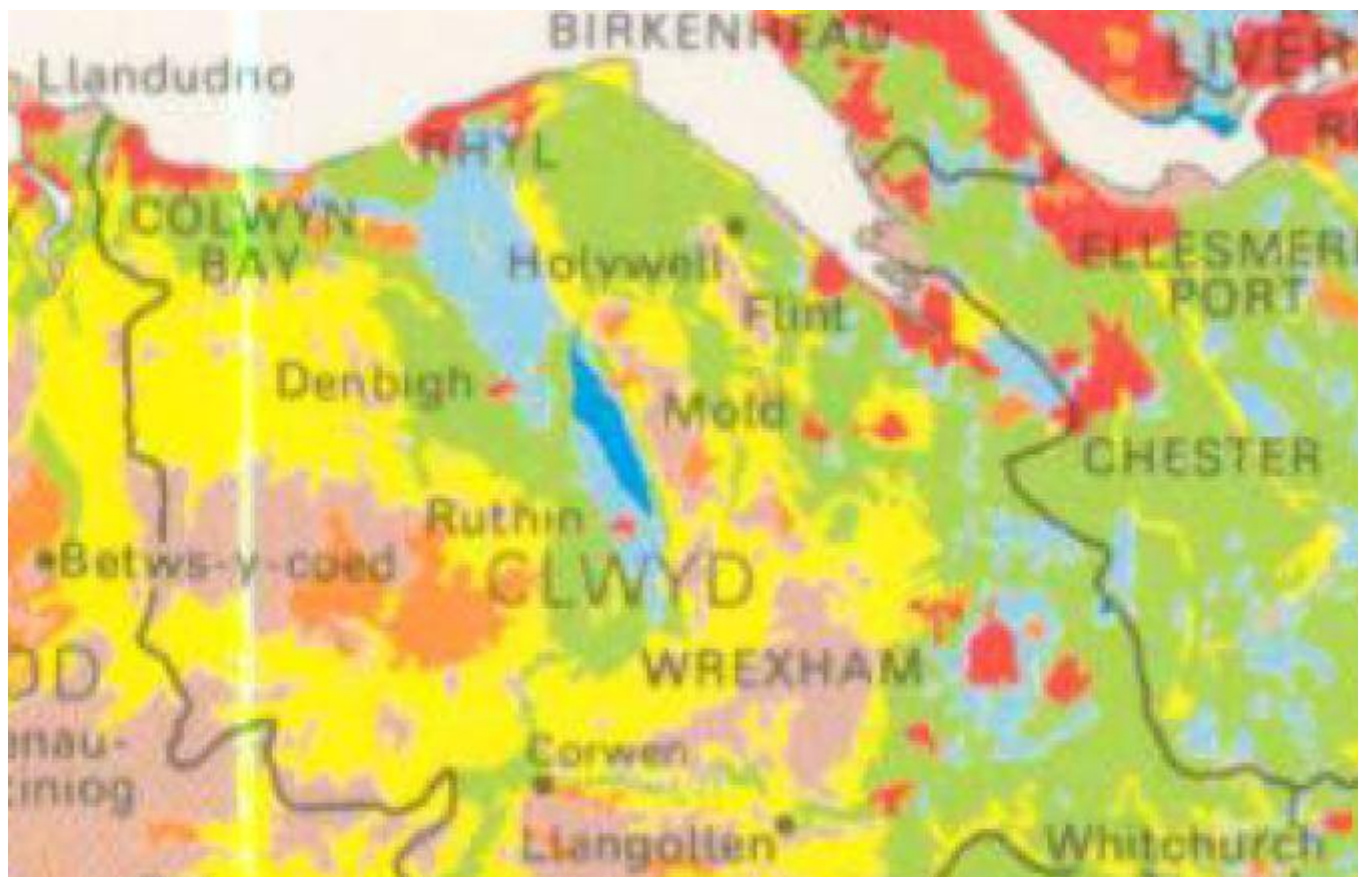
Appendix 1 - National ALC Map 1983, Post 1988 Revision, DEFRA Soilscape Map

Land off Chester Road, Lavister - ALC Provisional (England & Wales) 1983



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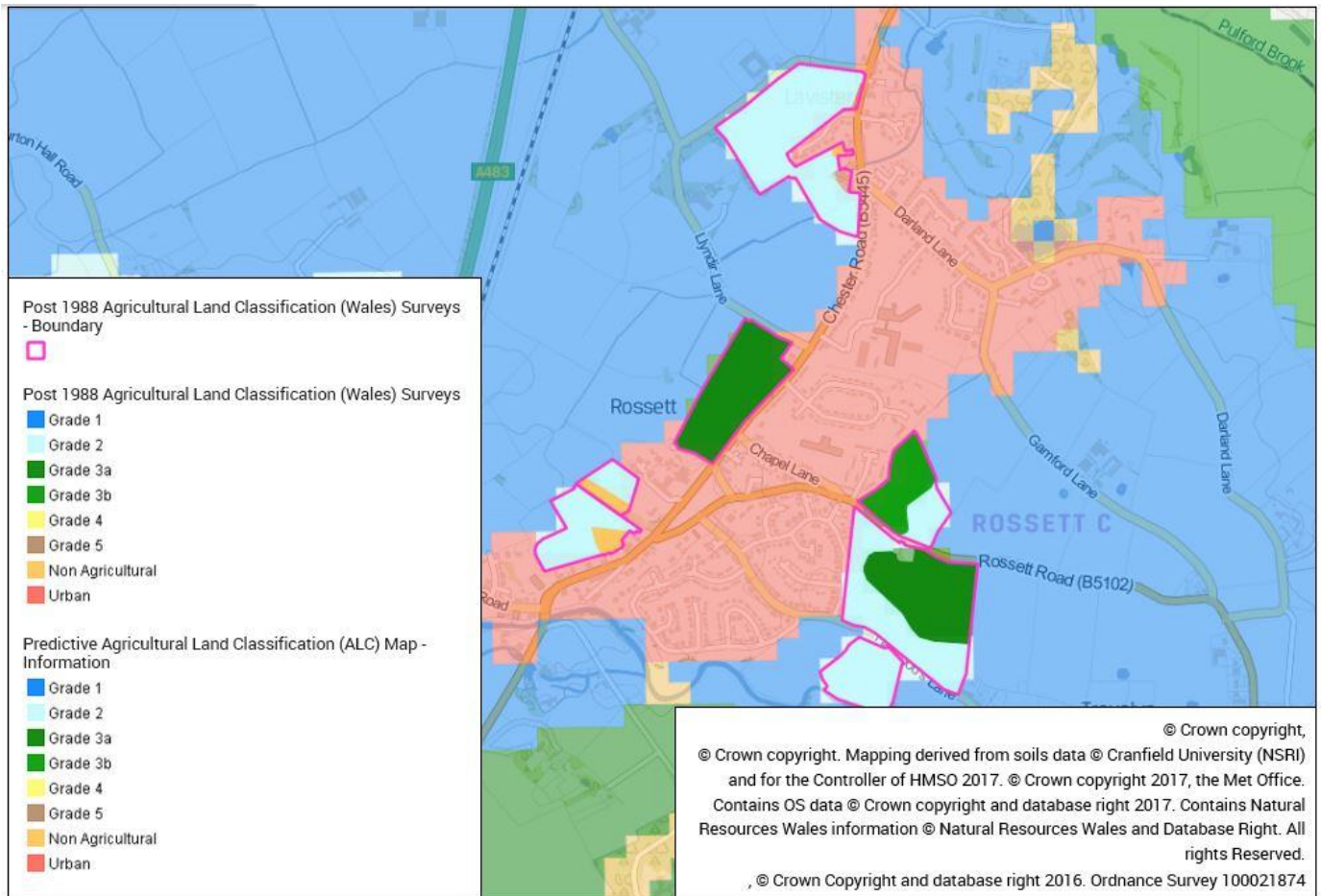


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Land off Chester Road - Post 1988 ALC (Wales) survey map & Predictive ALC (Wales) map.

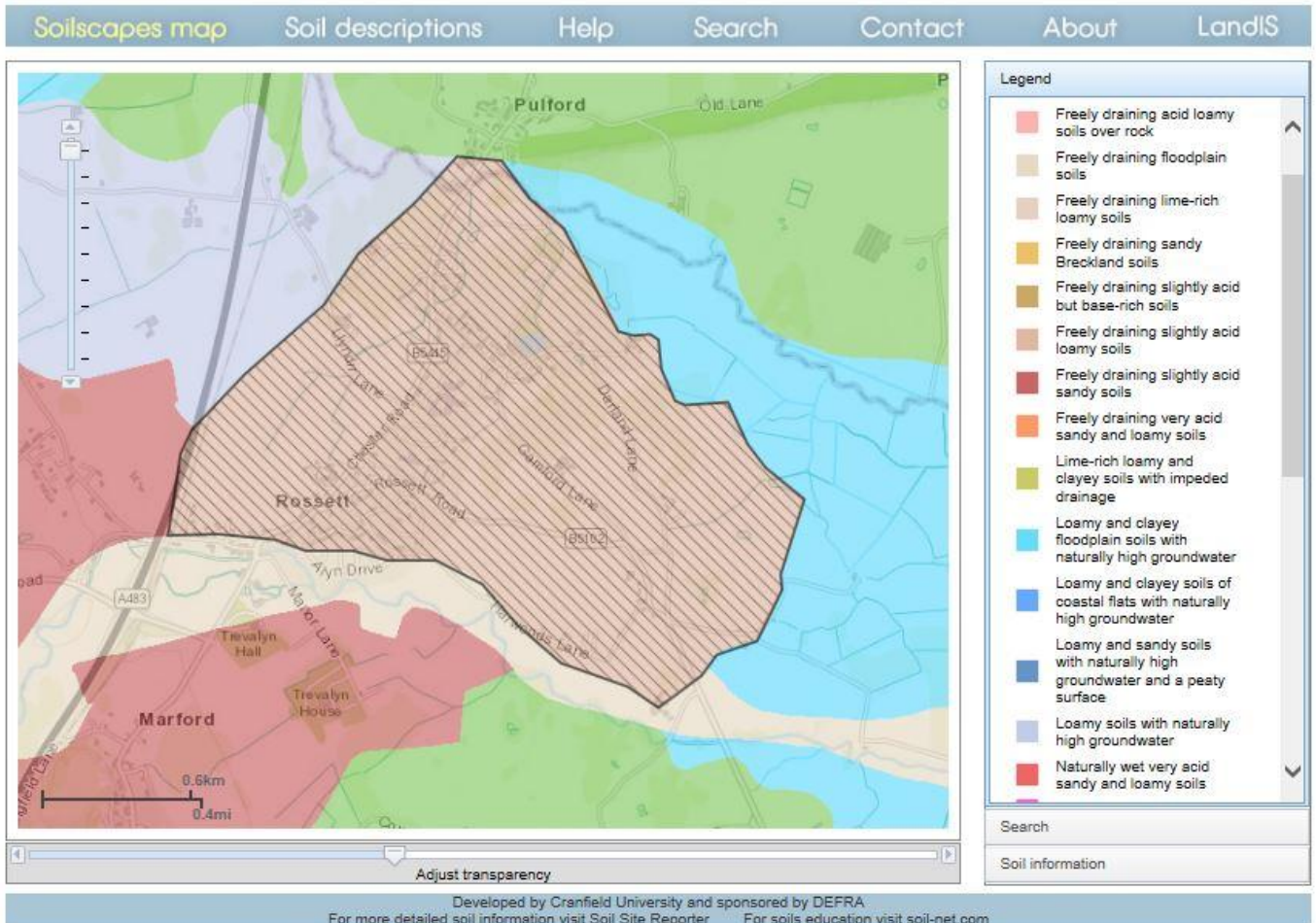


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Land off Chester Road – Cranfield University Soilscape

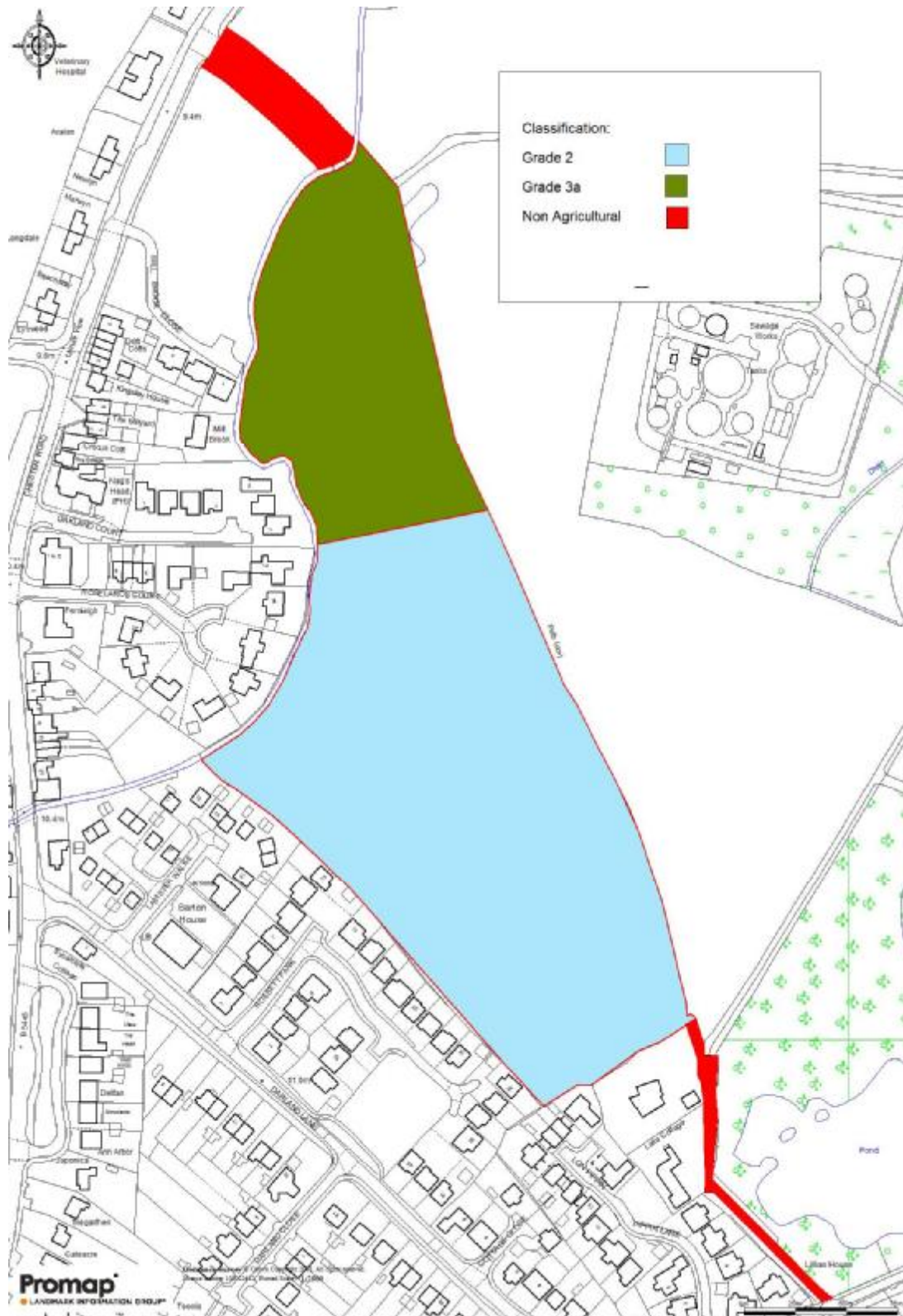


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Appendix 2 – Site Specific ALC and auger boring locations



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