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Barton Willmore LLP

Agricultural Land Quality

at

Land at Woodcock Estate, Farington, Lancashire

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Contents

1	INTRODUCTION.....	1
2	SITE AND CLIMATIC CONDITIONS	2
3	AGRICULTURAL LAND QUALITY AND LAND USE	3
4	SUMMARY AND CONCLUSIONS	6
	APPENDIX 1: ADAS PROFILE SUMMARIES.....	7
	FIGURE RAC9365-1: ADAS AGRICULTURAL LAND CLASSIFICATION.....	9

1 Introduction

- 1.1 Reading Agricultural Consultants Ltd (RAC) is instructed by Barton Willmore LLP to assess the Agricultural Land Classification (ALC) of land at Woodcock Estate, Farington, Lancashire, by means of a desk appraisal of soil and site characteristics.
- 1.2 Paragraph 174 of the National Planning Policy Framework (NPPF¹) indicates that planning policies and decisions should contribute to and enhance the natural and local environment by recognising, amongst other matters, the benefits from natural capital and ecosystem services, including the economic and other benefits of the best and most versatile (BMV) agricultural land.
- 1.3 Paragraph 175 goes on to state that plans should allocate land with the least environmental or amenity value, where consistent with other policies in the NPPF, and footnote 58 explains that where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality.
- 1.4 Guidance for assessing the quality of agricultural land in England and Wales is set out in the Ministry of Agriculture, Fisheries and Food (MAFF) revised guidelines and criteria for grading the quality of agricultural land (1988)², and summarised in Natural England's Technical Information Note 049³.
- 1.5 Agricultural land in England and Wales is graded between 1 and 5, depending on the extent to which physical or chemical characteristics impose long-term limitations on agricultural use. The principal physical factors influencing grading are climate, site and soil which, together with interactions between them, form the basis for classifying land into one of the five grades.
- 1.6 Grade 1 land is excellent quality agricultural land with very minor or no limitations to agricultural use. Grade 2 is very good quality agricultural land, with minor limitations which affect crop yield, cultivations or harvesting. Grade 3 land has moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield, and is subdivided into

¹ **Ministry of Housing, Communities and Local Government (2021)**. *National Planning Policy Framework*.

² **MAFF (1988)**. *Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land*. MAFF Publications.

³ **Natural England (2012)**. *Technical Information Note 049 - Agricultural Land Classification: protecting the best and most versatile agricultural land*, Second Edition.

Subgrade 3a (good quality land) and Subgrade 3b (moderate quality land). Grade 4 land is poor quality agricultural land with severe limitations which significantly restrict the range of crops and/or level of yields. Grade 5 is very poor quality land, with very severe limitations which restrict use to permanent pasture or rough grazing.

- 1.7 Land which is classified as Grades 1, 2 and 3a in the ALC system is defined in Annex 2 of the NPPF as BMV agricultural land.

2 Site and climatic conditions

General features, land form and drainage

- 2.1 The site is located north of the settlement of Farington and extends to approximately 16ha of mostly agricultural grassland. Non-agricultural land within the site boundary includes a small pocket of woodland and land associated with residential properties lying outside the site boundary. The site is bounded to the east by the B5254, to the west by Fowler Avenue and to the north and south by other agricultural land.
- 2.2 The topography is gently sloping, falling from an altitude of around 35m above Ordnance Datum (AOD) in the south-east toward the River Lostock which lies at around 30m AOD north-west of the site. Drainage of the land is via the slope and by peripheral field ditches which drain toward the River Lostock.

Agro-climatic conditions

- 2.3 Agro-climatic data for the site have been interpolated from the Meteorological Office's standard 5km grid point data set at a representative altitude of 32m AOD, and are given in Table 1. The climate at the site is wet and fairly warm. Moisture deficits are moderate to moderately small. The number of Field Capacity Days (FCD) is much larger than is typical for lowland England (150) and is very unfavourable for agricultural land working.

Table 1: Local agro-climatic conditions

Parameter	Value
Grid Ref	SD 54732 24775
Average Annual Rainfall	965mm
Accumulated Temperatures >0°C	1,442 day°
Field Capacity Days	226 days
Average Moisture Deficit, wheat	76mm
Average Moisture Deficit, potatoes	60mm

Soil parent material and soil type

- 2.4 The bedrock geology mapped by the British Geological Survey⁴ is the Singleton Mudstone Member of the Sidmouth Mudstone Formation. Superficial deposits of glacial till are mapped across the site and include poorly sorted material of a range of particle size, from clay to boulders.
- 2.5 The Soil Survey of England and Wales soil association mapping⁵ (1:250,000 scale) shows the Salop association across the site, bordering on the Newport 1 association in the south. Salop association soils consist of fine loamy over clayey soils, or fine loamy textures throughout. Profiles are typically waterlogged for long periods in winter and are of Wetness Class (WC) IV.
- 2.6 The contrasting Newport 1 association is characterised by deep well drained sandy and coarse loamy soils developed in river terrace deposits. Profiles are WC I⁶.

3 Agricultural land quality and land use

Existing data

- 3.1 Provisional ALC mapping shows the site as undifferentiated good to moderate quality Grade 3 agricultural land. Grade 3 is defined as:

“Grade 3 – good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or level of yield. Where more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.”

- 3.2 Grade 3 was later subdivided into Subgrades 3a and 3b, defined as:

“Subgrade 3a – good quality agricultural land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.”

and

⁴ **British Geological Survey (2021)**. *Geology of Britain viewer*, <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>.

⁵ **Soil Survey of England and Wales (1984)**. *Soils of Midland and Western England (1:250,000), Sheet 3*.

⁶ **Jarvis et al (1984)**. *Soils and Their Use in South East England. Soil Survey of England and Wales Bulletin 15, Harpenden*.

“Subgrade 3b – moderate quality agricultural land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.”

- 3.3 The Provisional ALC maps are not suitable for assessing the quality of individual sites, as explained in Natural England's TIN049:

"These maps are not sufficiently accurate for use in assessment of individual fields or development sites, and should not be used other than as general guidance. They show only five grades: their preparation preceded the subdivision of Grade 3 and the refinement of criteria, which occurred after 1976. They have not been updated and are out of print. A 1:250 000 scale map series based on the same information is available. These are more appropriate for the strategic use originally intended ..."

- 3.4 TIN049 goes on to say:

“Since 1976, selected areas have been resurveyed in greater detail and to revised guidelines and criteria. Information based on detailed ALC field surveys in accordance with current guidelines (MAFF, 1988) is the most definitive source. Data from the former Ministry of Agriculture, Fisheries and Food (MAFF) archive of more detailed ALC survey information (from 1988) is also available on <http://magic.defra.gov.uk/>.”

- 3.5 The site was surveyed in detail by ADAS in 1996⁷ as part of a wider survey remit extending as far east as the M6. The survey was carried out in accordance with the ALC guidelines at a sample density approximately one auger observation per hectare, and is the definitive classification for the land. As the ALC system is concerned with the long-term inherent physical properties of land and soil, rather than short-term management, use or fertility, the results of the survey remain valid. The site was classified as mostly Subgrade 3b with a small area of Subgrade 3a in the centre.

Agricultural Land Quality

- 3.6 Eighteen soil profiles were observed within the current site boundary at a density of more than one observation per hectare. Data is available for 15 of these soil profiles, and is reproduced in Appendix 1.

⁷ ADAS (1996). *South Ribble Local Plan, Land at Cuerden, Agricultural Land Classification. Job Re. 008/96*

- 3.7 The two profiles in the small area of Subgrade 3a comprise medium clay loam topsoil of 30cm to 35cm depth. The topsoil is very dark greyish brown (10YR3/2 in the Munsell soil colour charts⁸) and has no stones. The subsoil is also medium clay loam. In one profile the subsoil is dark yellowish brown (10YR4/4) and in the second is reddish brown (5YR4/3). The subsoil is permeable and the profiles are WC I as there is no evidence of gleying. The limitation to Subgrade 3a is from wetness and workability due to the large number of FCD (226).
- 3.8 Two soil types are classified as Subgrade 3b. The main type has a medium clay loam, sandy clay loam or medium sandy loam topsoil which is very dark greyish brown to dark grey (10YR3/2 to 10YR4/1). Upper subsoil is sandy clay loam, medium clay loam or occasionally sandy loam, which varies in colour from brown (7.5YR4/3) to yellowish brown (10YR5/4) and grey (10YR6/1). Profiles which show evidence of wetness within 40cm are WC II where the topsoil and upper subsoil is sandy loam, or WC III where the textures are clay loam. Where the subsoil is slowly permeable, the profiles are WC IV. Profiles of WC II, III or IV with medium clay loam or sandy clay loam topsoil, and profiles of WC III or IV with sandy loam topsoil are all limited by wetness to Subgrade 3b.
- 3.9 In the south of the site, the topsoil is stoneless, medium clay loam or sandy clay loam which is also very dark greyish brown to dark grey (10YR3/2 to 10YR4/1). The average depth is 30cm. Some of the topsoil is mottled from the surface.
- 3.10 This overlies heavy clay loam or clay which is mainly dark grey or grey (10YR4/1 or 10YR5/1). The subsoil is mottled and gleyed. With 226 FCD, gleying within 40cm of the surface places the profiles in WC III. Profiles which become slowly permeable in the subsoil horizons are WC IV.
- 3.11 The available profile logs from the ADAS survey are reproduced in Appendix 1. The areas of each ALC grade are given in Table 2 and shown in Figure RAC9365-1.

Table 2: ALC Areas

Grade	Description	Area (ha)	%
Subgrade 3a	Good quality	1.8	11
Subgrade 3b	Moderate quality	14.0	87
Non-agricultural		0.3	2
Total		16.1	100

⁸ **Munsell Color (2009).** *Munsell Soil Color Book*. Grand Rapids, MI, USA

4 Summary and Conclusions

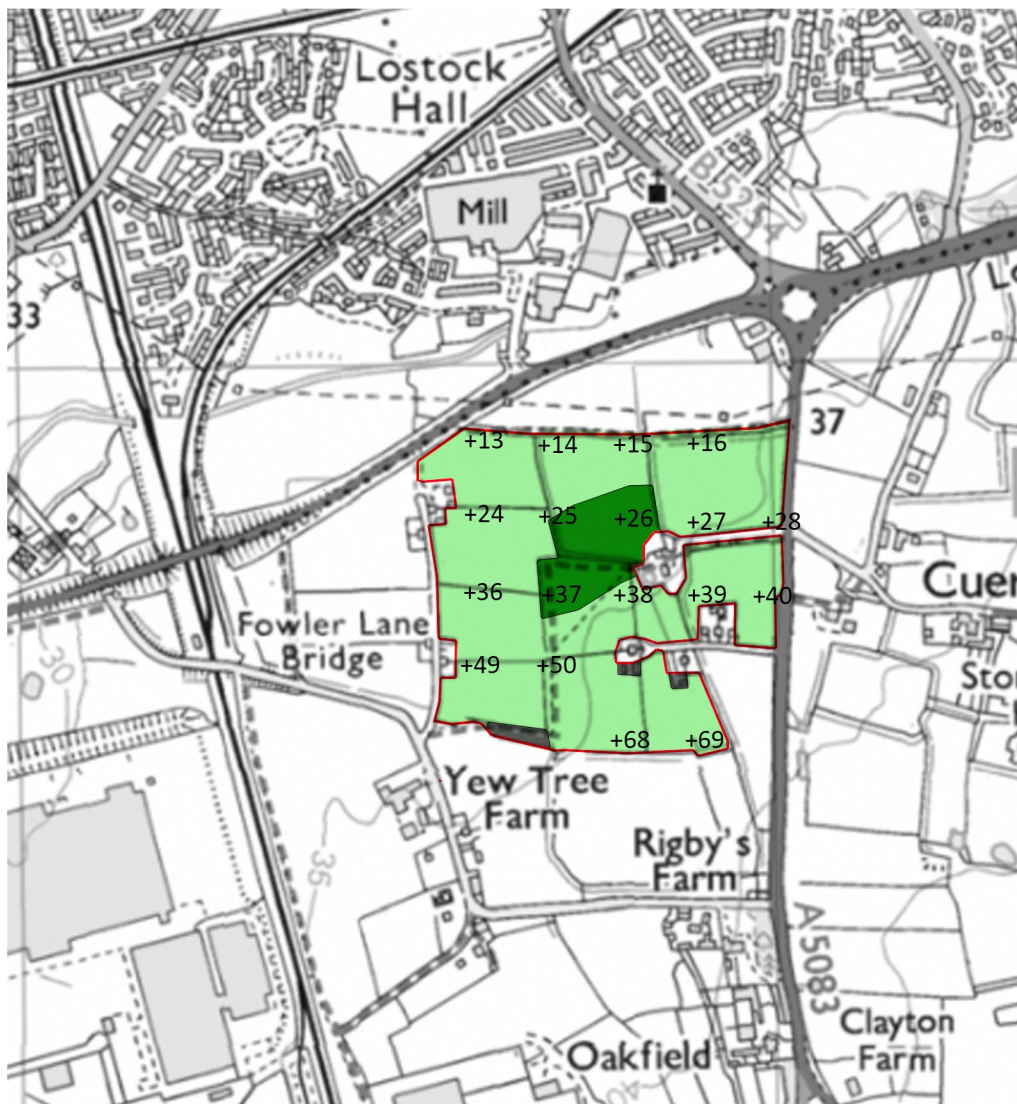
- 4.1 The site at Woodcock Estate, Farington extends to around 16ha of mostly agricultural grassland.
- 4.2 The site is provisionally mapped as good to moderate quality Grade 3 quality agricultural land and has been subject to a detailed ALC survey undertaken in 1996 in accordance with the ALC guidelines which classified most (87%) of the site as Subgrade 3b with a small area (1.8ha or 11% of the site) of Subgrade 3a in its centre.
- 4.3 As the ALC system is concerned with the long-term inherent physical properties of land and soil, rather than short-term management, use or fertility, the results of the survey remain valid and represent the definitive classification for the land.
- 4.4 The soil profiles mainly comprise medium loamy topsoil with some sandy loam, and overlie similar textures in the north of the site and heavier loam and clay in the south. Profiles range from WC I to WC IV. Those of WC I are limited to Subgrade 3a; the remainder are limited by soil wetness to Subgrade 3b.
- 4.5 The area of BMV land in Subgrade 3a is limited in extent, surrounded by non-BMV land in Subgrade 3b, and within two fields that are mixed Subgrades 3a and 3b. As such, the BMV land on site cannot be managed any differently to the surrounding Subgrade 3b land and, in terms of paragraph 174 of the NPPF, does not offer any economic or other benefits for being BMV land that are not offered by the surrounding and majority non-BMV land.
- 4.6 Instead, the development of the site is consistent with the advice in the footnote to paragraph 175 of the NPPF to prefer the use of poorer quality agricultural land to that of a higher quality.

Appendix 1: ADAS Profile Summaries

BORING	HORIZON	TEXTURE	TOPDEPTH	BTMDEPTH	COLOUR	MOTCOL	MOTABUND	TOTSTONE	WC	GRADE
13	1	mcl	0	30	10YR32			0	2	3B
13	2	mcl	30	70	10YR54	10Y	C	0	2	3B
15	1	mcl	0	30	10YR32			0	4	3B
15	2	hcl	30	50	10YR52	10Y	C	0	4	3B
16	1	mcl	0	28	10YR31			0	3	3B
16	2	mcl	28	45	75YR42	75Y	C	0	3	3B
16	3	mcl	45	57	75YR31			0	3	3B
16	4	mcl	57	80	25Y 62	10Y	C	0	3	3B
25	1	mcl	0	35	10YR32			0	2	3B
25	2	mcl	35	70	10YR61	10Y	C	0	2	3B
26	1	mcl	0	35	10YR32			0	1	3A
26	2	mcl	35	70	10YR44			0	1	3A
27	1	mcl	0	28	10YR31			0	3	3B
27	2	scl	28	50	10YR41	10Y	C	0	3	3B
28	1	mcl	0	44	10YR42			0	3	3B
28	2	scl	44	55	10YR41	10Y	C	0	3	3B
28	3	c	55	80	75YR42	75Y	C	0	3	3B
36	1	mcl	0	30	10YR41	10Y	C	0	4	3B
36	2	c	30	50	75YR53	75Y	C	0	4	3B
37	1	mcl	0	30	10YR32			0	1	3A
37	2	mcl	30	70	05YR43			0	1	3A
38	1	mcl	0	30	10YR32			0	2	3B
38	2	mcl	30	60	75YR44			0	2	3B
38	3	szl	60	80	10YR64	10Y	C	0	2	3B
39	1	mcl	0	30	10YR32			1	2	3B
39	2	scl	30	60	10YR44			2	2	3B
39	3	scl	60	90	10YR62	10Y	C	5	2	3B
40	1	mcl	0	30	10YR32			0	4	3B

40	2	scl	30	45	10YR52	10Y	C	0	4	3B
40	3	c	45	70	10YR51	10Y	C	0	4	3B
49	1	mcl	0	30	10YR32			0	4	3B
49	2	mcl	30	42	10YR53	10Y	C	0	4	3B
49	3	c	42	60	75YR53	75Y	C	0	4	3B
50	1	mcl	0	30	10YR41	10Y	C	0	4	3B
50	2	c	30	50	75YR53	75Y	C	0	4	3B
69	1	mcl	0	30	10YR32			1	3	3B
69	2	hcl	30	70	10YR41	75Y	C	1	3	3B

Abbreviations: c- clay; hcl – heavy clay loam; mcl – medium clay loam; scl – sandy clay loam; szl – sandy silt loam; msl – medium sandy loam



- Survey Area
 - +1 Auger Observation
 - * Grade 1 - excellent quality
 - * Grade 2 - very good quality
 - * Subgrade 3a - good quality
 - * Not Present
 - * Subgrade 3b - moderate quality
 - * Grade 4 - poor quality
 - * Grade 5 - very poor quality
 - * Non-agricultural
- } Best and most versatile land

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Scale 1:10,000@A4 Oct/2021

Figure RAC9365-1: ADAS Agricultural Land Classification

Site: Land at Farington, Lancashire

Client: Barton Willmore LLP



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