READING AGRICULTURAL CONSULTANTS

September 2022

Vistry Homes Ltd

Agricultural Land Quality

at

Land East of Warwick Road, Banbury

Beechwood Court,
Long Toll, Woodcote,
RG8 0RR

01491 684 233
www.reading-ag.com

Contents

1 Introduction

1.1 Reading Agricultural Consultants Ltd (RAC) is instructed by Vistry Homes Ltd to assess the Agricultural Land Classification (ALC) of land east of Warwick Road, Banbury, by means of a desk appraisal of soil and site characteristics.

1.2 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[1], and summarised in Natural England's Technical Information Note 049[2].

1.3 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 conditions and soil which, together with interactions between them, form the basis for classifying land into one of the five grades.

1.4 Grade 1 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 Subgrade 3a (good quality land) and Subgrade 3b (moderate quality land). Grade 4 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.

1.5 Land which is classified as Grades 1, 2 and 3a in the ALC system is defined in Annex 2 of the National Planning Policy Framework (NPPF[3]) as best and most versatile (BMV) agricultural land.

1.6 In a national context, paragraph 174 of the NPPF indicates that planning policies and decisions should contribute to and enhance the natural and local environment by:

---

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

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

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

- protecting and enhancing soils; and
- recognising, amongst other matters, the wider benefits from natural capital and ecosystem services, including the economic and other benefits of the BMV agricultural land.

1.7 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.

2 Site and climatic conditions

General features, land form and drainage

2.1 The site extends to 12.63ha to the north of Banbury, east of Warwick Road. The site comprises most of two arable fields, separated by Gullicotte Lane. Other agricultural land is to the north and east of the site. A short section of Warwick Road is included in the site area.

2.2 The topography is level to slightly undulating across a plateau at an altitude of around 145m above Ordnance Datum (AOD). Beyond the site boundary to the west and east, the landform slopes down into valleys containing Sor Brook and an unnamed brook respectively. Water from within the soils on the site drains to each of these watercourses.

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 145m AOD, and are given in Table 1. The climate at the site is cool and moderately moist. Moisture deficits are moderate. The number of Field Capacity Days (FCD) is slightly larger than is typical for lowland England (150) and is slightly unfavourable for agricultural land working. There is however no climatic limitation to the agricultural land quality at the site.

Table 1: Local agro-climatic conditions

Parameter	Measurement
National Grid Reference	SP 43395 43096
Average Annual Rainfall	703mm
Accumulated Temperatures >0°C	1,333 day°
Field Capacity Days	160 days
Average Moisture Deficit, wheat	98mm
Average Moisture Deficit, potatoes	86mm

Soil parent material and soil type

2.4 The bedrock geology mapped by the British Geological Survey[4] is the Marlstone Rock Formation, comprising sandy, shelly limestone, interbedded with calcareous sandstone. There are no superficial deposits mapped.

2.5 The Soil Survey of England and Wales soil association mapping[5] (1:250,000 scale) shows the Banbury association across the site. The principal Banbury soils are described as stony, fine- and coarse-loamy, ferritic brown earths that overlie shattered ironstone at 50cm to 70cm depth. Where developed over marlstone, bands of fine silty and clayey soils may be present, but are typically on steeper sites. The main Banbury soils are well drained, in Wetness Class (WC) I[6].

3 Agricultural land quality

Existing data

3.1 Provisional ALC mapping shows the site as very good quality Grade 2 land.

3.2 Grade 2 is defined as:

> "*Grade 2 – very good quality agricultural land*
>
> *Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1."*

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*

[4] **British Geological Survey (2022).** *Geology Viewer*, https://www.bgs.ac.uk/map-viewers/bgs-geology-viewer/

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

[6] **Ragg et al (1984).** *Soils and Their Use in Midland and Western England*. Soil Survey of England and Wales Bulletin 12, Harpenden.

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 Detailed ALC data is available for the site and for a large area (more than 300 ha) to the north and north-west of Banbury, much of which has since been developed.

Agricultural Land Quality

3.6 The ALC survey was undertaken by the Farming and Rural Conservation Agency (FRCA) on behalf of MAFF in 1999[7] as part of a wider survey. Within the present site boundary, five auger observations and two pit observations were made, which is slightly less than the recommended density of one observation per hectare. The site was classified as approximately half Grade 2 and half Subgrade 3a, with soil droughtiness being the main limitation to agricultural land quality.

3.7 As the ALC is concerned with the long-term inherent physical characteristics of land and soil, rather than its short-term use or management, the results of the ALC survey undertaken in 1999 are still valid.

3.8 The soils of Grade 2 quality include medium clay topsoil which is brown (7.5YR4/3, 7.5YR4/4 in the Munsell soil colour charts[8]). The topsoil is between 26cm and 30cm in depth and is slightly stony with up to 15% sandstone by volume.

3.9 Upper subsoil horizons also comprise brown (7.5YR4/4) and strong brown (7.5YR4/6) medium clay loam or heavy clay loam. The stone content increases in the upper subsoil, measured at up to 52% by volume in one of the two pits, although averages 33% across the auger observations.

3.10 In profiles of Grade 2 quality there is a lower subsoil horizon of brown (7.5YR4.4) medium clay loam or light yellowish brown (2.5Y6/3) clay. The lower subsoil was found to extend to full depth

[7] **FRCA (1999).** *Cherwell District Local Plan Review – Land North of Banbury, Oxfordshire*. RPT Job No.: 3301/049/99. MAFF Reference: EL 33/01588

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

(120cm) in one auger observation and one pit but was limited to 90cm in the second pit where the sandstone bedrock was encountered. The reason for termination of the second auger observation is not noted, however one of the pits is referenced for comparison. There is a slight droughtiness limitation in these profiles to Grade 2 due largely to the high volume of stone throughout the upper subsoil horizons.

3.11 The topsoils and upper subsoils in the Subgrade 3a land are similar to those in the Grade 2 land, with 26cm – 30cm of brown (7.5YR4/3) medium clay loam topsoil, and a stone content of up to 15% sandstone. This lies over a brown (7.5YR4/4) medium clay loam upper subsoil, with stone content increasing to up to 35%. The Subgrade 3a profiles were all observable to limited depths only, being hindered by stone between 48cm and 72cm, and the lower subsoil characteristics have been based upon the pit observations within the same soil type which showed increasingly stony subsoil material overlying sandstone at depth. The higher subsoil stone content leads to a greater droughtiness limitation in these profiles to Subgrade 3a.

3.12 The ALC across land to the south of the site was corroborated between RAC and MAFF as part of a local plan inquiry undertaken in 1993[9]. The two independent detailed ALC surveys both identified land of Grade 2 and Subgrade 3a quality within the same soil type, further confirming that the Banbury soils in the locality are limited to slight or moderate extents by soil droughtiness.

3.13 Although the survey undertaken at the site in 1999 comprised five auger observations and two pits, which is slightly below the recommended density of observation for detailed surveys, the results correlate with extensive detailed surveys in the locality and are therefore considered likely to be an accurate reflection of the ALC. The areas of each ALC grade are given in Table 2 and are shown in Figure RAC/9717/1.

Table 2: Agricultural Land Classification

Grade	Description	Area (ha)	%
Grade 2	Very good quality	6.1	48
Subgrade 3a	Good quality	5.5	44
Non-agricultural	Total Agricultural	1.0	8
Total	Non-agricultural	12.6	100

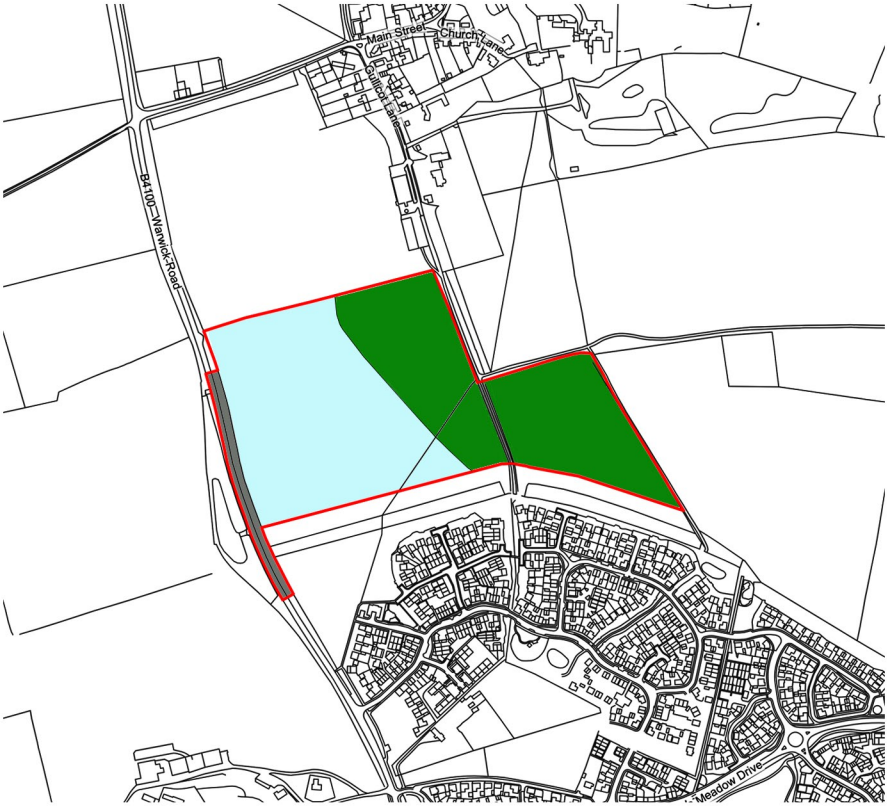
[9] **RAC (1993).** *Cherwell Local Plan Inquiry, Document No P/F10/2, Objections Submitted by Admiral Developments Limited in Relation to Land at Hanwell Field, Banbury.*

4 Summary

4.1 The site east of Warwick Road extends to 12.63ha, primarily of agricultural land in arable use.

4.2 The site is provisionally mapped as Grade 2. Surveys undertaken on behalf of MAFF in 1999 classified around half of the site as Grade 2 and half as Subgrade 3a. The limitation is soil droughtiness.

4.3 As the ALC is concerned with the long-term inherent physical characteristics of land and soil, rather than its short-term use or management, the results of the ALC survey are still valid and are also corroborated by . extensive survey work undertaken to the immediate south by RAC and MAFF which has confirmed that soils of the same mapped Banbury association are similarly limited by droughtiness to Grade 2 and Subgrade 3a.



Grade 1 - excellent quality	Best and most versatile land	Subgrade 3b - moderate quality	
Grade 2 - very good quality		Grade 4 - poor quality	
Subgrade 3a - good quality		Grade 5 - very poor quality	
Not Present		Non-agricultural	

N

Scale 1:10,000@A4 Sept/2022

Figure RAC/9717/1: FRCA Agricultural Land Classification

Site: East of Warwick Road, Banbury

Client: Vistry Homes Ltd

READING AGRICULTURAL CONSULTANTS