

AGRICULTURAL LAND CLASSIFICATION

LAND OFF HARROWDEN ROAD, ORLINGBURY, NORTHAMPTONSHIRE

1.0 BACKGROUND

- 1.1 An Agricultural Land Classification (ALC) survey of the 23.5 ha site was undertaken on behalf of MAFF in January 1994, using guidelines contained in MAFF publication, Revised Guidelines and Criteria for Grading the Quality of Agricultural Land.
- 1.2 A survey was undertaken using a hand held dutch auger and soils were sampled at one boring per 1.5 ha to at least 100 cm depth or to an impenetrable layer if closer to the surface. This information was supplemented by data collected from 1 soil profile pit.
- 1.3 On the provisional 1:63,360 scale ALC map, sheet No 133, the site has been mapped as grade 3. This map is of a provisional nature and does not subdivide grade 3. The current survey was therefore undertaken to provide more detailed site specific information on land quality.
- 1.4 The site was under permanent pasture with a few parkland trees on the northern part. In addition a small reservoir/pond has been recently constructed in the centre of the site.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

- 2.1 Climate data for the site was extrapolated from data published in Agricultural Climatic Dataset (Meteorological Office 1989). This indicates that for an average site altitude of 80 m AOD, the annual average rainfall is 603 mm (23.7"), the field capacity days are 126 and moisture deficits for wheat and potatoes are 109 mm and 101 mm respectively. These climatic characteristics do not impose any limitation on the ALC grade for the site.

Altitude and Relief

- 2.2 From the northwestern edge of the site which lies at an altitude of 88 m AOD the land gently slopes in a southeasterly direction levelling out half way down the site and then meeting the stream which constitutes the south eastern boundary. From the southwestern edge, alongside the Harrowden Road, the land slopes in a northeasterly direction meeting the broad flat area alongside the ditch which runs in an east-west direction. There are areas of woodland on the northern boundary and the southeastern boundary, and a pond/reservoir in the centre of the site.

Geology and Soils

- 2.3 The geology map sheet 186 (Geol. Survey 1974), shows that the site is situated on Upper Lias Clay which is exposed on the majority of the area. A small area in the northwestern corner of the site is overlain with Inferior Oolite Series Northampton Sand with Ironstone.
- 2.4 No detailed soil map exists for the area, but the reconnaissance 1:250,000 scale map "Soils of England and Wales" (Soil Survey 1987) shows the vast majority of the site typically to comprise soils of the Denchworth Association (*1) with a very small area in the northwest of the site comprising Banbury Association soils (*2).
- 2.5 The first soil type occurs over virtually the whole site except for a small area on the highest ground at the northwestern edge of the site. In general terms profiles typically comprise very slightly stony (1-5%) non calcareous heavy clay loam or clay topsoils over very slightly stony non calcareous clay. The subsoil structure is generally very coarse sub-angular blocky or coarse prismatic breaking to coarse sub-angular blocky over coarse and very coarse prismatic breaking to coarse angular blocky. Gleying invariably occurs within 35 cm and is evident to depth giving rise to wetness class III.

(*1) Denchworth Association - slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils. Some fine loamy over clayey soils with only slight season waterlogging and some slowly permeable calcareous clayey soils. Landslips and associated irregular terrain locally.

(*2) Banbury Association - well drained brashy fine and coarse loamy ferruginous soils over ironstone. Some deep fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging.

2.6 The second soil type, a small band on the northwestern edge, comprises very slightly stony non calcareous medium clay loam, with a heavy clay loam upper sub-soil over clay at depth. Gleying occurs at 65-70 cm giving rise to wetness class II.

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The distribution of Agricultural Land Classification (ALC) grades is shown below.

Grade	ha	%
2	0.75	3.1
3a	1.20	4.9
3b	18.50	75.5
Non Agricultural	0.20	0.8
Woodland	2.30	9.4
Open Water	1.15	4.7
Farm Buildings	<u>0.40</u>	<u>1.6</u>
TOTAL	24.50	100.00

The definition of the ALC grades are shown in Appendix 1.

Grade 2

3.2 Land of this grade occurs on the northwestern boundary of the site and corresponds with the moderately well drained (wetness class II) fine loamy over clayey soils described in paragraph 2.6. These soils have medium clay loam topsoils and are therefore subject to minor workability and restrictions limiting them to this grade.

Subgrade 3a

3.3 A small area of grade 3a has been mapped downslope from the area of grade 2. This area represents an intergrade between the moderately well drained soils described in paragraph 2.6 and the imperfectly drained soils described in paragraph 2.5. These soils have also been assessed as wetness class II, but with heavy clay loam topsoils, which results in a more severe wetness/workability limitation. This land has therefore been restricted to subgrade 3a.

Subgrade 3b

- 3.4 Subgrade 3b occupies the majority of the site and comprises the imperfectly drained (wetness class III) clayey and fine loamy over clayey soils described in paragraph 2.5. These soils have non calcareous heavy clay loam or clay topsoils and therefore are subject to a moderately severe wetness and workability restriction limiting them to this grade.

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REFERENCES

GEOLOGICAL SURVEY OF ENGLAND WALES 1974. Solid and Drift Edition Sheet 186, Kettering. Scale 1:50,000.

MAFF, 1970. Agricultural Land Classification Map Sheet 133. Provisional. Scale 1:63,360.

MAFF, 1988. Agricultural Land Classification of England and Wales (Revised Guidelines and Criteria for grading the quality of land). Alnwick.

METEOROLOGICAL OFFICE 1989. Published climatic data extracted from the agricultural dataset, compiled by the Meteorological Office.

SOIL SURVEY OF ENGLAND AND WALES 1983. Sheet 4, Soils of Eastern England. Scale 1:250,000.

Appendix 1

Grade 1 - excellent quality agricultural land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly include top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

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 crops. The level of yield is generally high but may be lower or more variable than Grade 1.

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 the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

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.

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.

Grade 4 - poor quality agricultural land

Land with severe limitations which significantly restrict the range of crops and/or levels of yields. It is mainly suited to grass with occasional arable crops (eg. cereals and forage crops) the yield of which are variable. In most climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5 - very poor quality agricultural land

Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.