Cambs 80/92

AGRICULTURAL LAND CLASSIFICATION

STUBTON GORSE FARM

NR GRANTHAM LINCS

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STUBTON GORSE FARM, STUBTON, NR GRANTHAM, LINCS

1.0 INTRODUCTION

1.1 The site, an area of 50.6 hectares is the subject of an application for a proposed golf course, kart circuit and lake. The Cambridge based Resource Planning Team carried out a detailed Agricultural Land Classification survey of the site in October 1992 at an auger density of approximately one per hectare. These borings were supplemented by three soil inspection pits in order to assess subsoil conditions.

1.2 On the published Agricultural Land Classification Map sheet No. 113 (MAFF 1972) the site is mapped as grade 2 with a small area of land in urban use. The current survey was undertaken to provide a more detailed representation of the agricultural land quality.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 Climate data for the site was extrapolated from data in the published Agricultural Climatic Dataset (Meteorological Office 1989). This indicates that the site average annual rainfall is 618 mm (24.3"). This data also indicates that the field capacity days are 123 and moisture deficits are 116 mm for wheat and 110 mm for potatoes. These climatic characteristics do not impose any climatic limitation on the ALC grade of the survey site.

Altitude and Relief

2.2 The survey area is level and lies at approximately 17m AOD.

Geology and Soils

2.3 The published 1:50,000 scale solid and drift geology map, sheet 127 (Geological Survey of England and Wales 1972) shows the whole area to be covered by Pleistocene and Recent river sand and gravels. This overlies Jurassic Lower Lias Clay with shale and thin Limestone.

2.4 The Soil Survey of England and Wales mapped the soils of the area in 1983, at a reconnaissance scale of 1:250,000. This map indicates the whole of the site comprises the Ruskington Association* which is derived from glaciofluvial sand and gravels. During the recent field survey two soil types were identified.

2.5 Soils in the south eastern and north western parts of the site are predominantly clayey. These soils comprise non-calcareous heavy clay loam or clay topsoils (occasionally sandy clay) over clay subsoils. Occasionally sandy loam lenses occur in the lower subsoils which are variably calcareous. These profiles are generally stone free.

2.6 The remainder of the site, a broad band stretching from the south west corner to the northern edge of the site, comprises predominantly sandier soils. These profiles are typically non-calcareous sandy clay loam and sandy loam topsoils over calcareous sandy clay loam and medium sandy loam upper subsoils. The lower subsoils are calcareous loamy sands which are moderately to very stony (16% to 70% flint and ironstone).

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* Ruskington Association - Deep permeable calcareous coarse and fine loamy and sandy soils affected by groundwater.

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The distribution of grades are shown in the table below. The definition of the Agricultural Land Classification grades are included in Appendix 1.

	AGRICULTURAL LAND CLASSIFICATION	
Grade	ha	%
3a	29.4	58.1
3b	20.8	41.1
Non-Agricultural	0.4	0.8
Total	50.6	100.0

3.2 Irrigation

Irrigation is available on the site although there is insufficient supply for the grading to be affected.

Subgrade 3a

3.3 The subgrade 3a land corresponds to the sandy soils described in paragraph 2.6. The coarse textures and high stone contents in the lower subsoils reduce the water available to plant roots. This causes a moderate droughtiness limitation and the land is graded subgrade 3a.

Subgrade 3b

3.4 Land graded 3b corresponds to the clayey soils described in paragraph 2.5. The soils are slowly permeable from within 40 cm (Wetness Class III), and this combined with the clay topsoil textures imposes a moderately severe limitation on workability of land. Consequently a grade of 3b has been assigned to this land.

Non Agricultural Land

3.5 There is a small area of woodland in the north eastern corner of the site which is mapped as non-Agricultural land.

REFERENCES

GEOLOGICAL SURVEY OF ENGLAND AND WALES (1972). Solid and Drift edition. Sheet 127 Grantham Provisional 1:50,000 scale.

MAFF (1974). Agricultural Land Classification Map sheet 113 Provisional 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 agroclimatic dataset, compiled by the Meteorological Office.

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

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 yields 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 winter 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 level 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.

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Map 1: Agricultural Land Classification