Cambs 50/91

AGRICULTURAL LAND CLASSIFICATION

LAND AT SNAILWELL, CAMBS

INTRODUCTION

1.1 The site, an area of 14.6 hectares, is the subject of an application for an area of business development. The ALC survey described in this report was carried out by MAFF in October 1991 at an auger boring density of approximately 1 per hectare.

1.2 On the published Agricultural Land Classification Map Sheet No. 135 (Provisional, Scale 1:63,360 MAFF, 1971) the area is mapped as grade 2. The current survey was undertaken to provide a more detailed representation of agricultural land quality.

2.0 **PHYSICAL FACTORS AFFECTING LAND QUALITY**

Climate

2.1 Climate data for the site was obtained from the published agricultural climatic dataset (Met. Office, 1989). This indicates that for the site's modal altitude of 15m AOD the annual average rainfall is 577mm (22.7"). This data also indicates that the field capacity days are 101 and moisture deficits are 121mm for wheat and 117mm for potatoes. The climatic characteristics do not impose any climatic limitation on the ALC grading of the survey site.

Altitude and Relief

2.2 The survey area comprises gently undulating land with an average altitude of approximately 15m AOD and a maximum altitude of 18m AOD on the northern boundary of the site. Gradient and altitude do not constitute limitations to the ALC grade.

Geology and Soils

2.3 The published 1:50,000 scale solid and drift edition geology map sheet 188 (1981) shows the solid geology mainly to comprise lower chalk with a small area of middle chalk along the northern edge of the site. This

map also shows the occurrence of a small area of Pleistocene terrace deposits to the south of Plantation Cottages.

2.4 The Soil Survey of England and Wales have mapped the soils in the area on two occasions. Firstly in 1963, at a scale of 1:63,360 and secondly in 1983 at a reconnaissance scale of 1:250,000. These maps broadly agree and the latter map indicates that the land comprises Moulton Association (*) which includes a range of well drained soil types. The soils observed during this more detailed MAFF survey were generally consistent with the published maps. Two soil types were identified.

2.4.1 The first soil type is located in the southern half of the site. Profiles typically comprise medium clay loam or occasionally sandy loam topsoils over clay loam subsoils which become weathered chalk at depth (60/75cm+). Locally, on the eastern edge of the site the weathered chalk material is encountered at shallower depths and consequently the subsoils are thinner. All the soils are freely draining and have been assessed as Wetness Class I.

2.4.2 The northern part of the site has sandier, stonier but typically less chalky soils. Profiles comprise very slightly or slightly stony medium sandy loam topsoils which overlie similar or moderately stony upper subsoils. These typically overlie rootable chalk sand mix material. This material comprises sandy or coarse loamy textures with approximately 10% chalk fragments. As with the first soil type these soils are well drained (Wetness Class I).

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The definitions of the Agricultural Land Classification grades are included in Appendix 1.

(*) MOULTON ASSOCIATION Well drained coarse and fine loamy soils with similar shallow calcareous coarse loamy soils over chalk or chalk rubble in places. Patterned ground of stripes and polygons gives very variable soil depth.

3.2 The table below shows the breakdown of the ALC grades for this site.

Agricultural Land Classification

Grade	ha	%
2	6.5	44.5
3a	8.1	55.5
TOTAL	14.6	100

3.3 Grade 2

The area graded 2 is associated with the deeper subsoil version of the soils described in section 2.4.1. These soils are slightly droughty due to the occurrence of chalk at depth which reduces the available water holding capacity of the profile. Droughtiness is therefore the overriding limitation to the grade.

3.4 Subgrade 3a

3.4.1 The subgrade 3a land comprises 2 areas. The larger area in the north of the site is associated with soils described in section 2.4.2. These soils are moderately droughty due to the combination of coarse profile textures and subsoil stone content.

3.4.2 The smaller area of subgrade 3a land to the south of the site is associated with the shallower variant of the soils described in section 2.4.1. These soils are moderately droughty due to the thin subsoils and the low available water holding capacity of the chalk.

3.4.3 In both these areas droughtiness is the overriding limitation to the grade.

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References

GEOLOGICAL SURVEY OF ENGLAND & WALES (1981). 1:50,000 scale, sheet 188 Drift and Solid Geology.

MAFF (1971). Provisional 1:63,360 scale Agricultural Land Classification sheet 135.

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

METEOROLOGICAL OFFICE, (1989). Climate data extracted from the published Agricultural Climatic Dataset.

SOIL SURVEY OF ENGLAND & WALES, (1963). 1:63,360 scale, sheet 188.

SOIL SURVEY OF ENGLAND & WALES, (1983). 1:250,000 scale reconnaissance survey entitled 'Soils of Eastern England' sheet 4.

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 3 - 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 cereal and forage crops) the yields of which are variable. In moist 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.