Cambs 51/90

AGRICULTURAL LAND CLASSIFICATION

COLLINGTREE EXTENTSION, NORTHAMPTONSHIRE

1. BACKGROUND

1.1 The site, an area of 62.3 hectares in the subject of an application for the extension of the Collingtree Golf Village near the M1 road Northamptonshire. The Ministry of Agriculture, Fisheries and Food assessed the quality of the majority of the site in 1987 using the Agricultural Land Classification system described in Technical Bulletins 11 and 11/1. Subsequently, in 1988, this Agricultural Land Classification system was revised. The current survey was undertaken, in November 1990, to assess the quality of the previously surveyed land and the additional area to the west using the Revised Agricultural Land Classification system (MAFF 1988).

1.2 In the area of overlap the land graded 3b and 3c in 1987 is shown as subgrade 3b on the 1990 ALC map because subgrade 3c does not exist in the revised ALC system. In the vicinity of the spring Grid Ref: SP 744566 the area of 3a, mapped in 1987, is shown as a reduced area on the 1990 map because an increased density of augering in that area has identified the predominance of subgrade 3b land. In the remaining overlap area the 1990 survey confirms the 1987 grading.

2 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 mid range altitude (76m AOD) the annual average rainfall is 631mm (24.8"). This also indicates that field capacity days are 135 and moisture deficits are 108 mm for wheat and 101 mm for potatoes. These climatic characteristics do not impose any climatic limitation on the ALC grading of the survey site.

Altitude and Relief

2.2 The land surveyed falls gently northwards from the M1 motorway to the brook at the edge of the existing development. The altitude ranges from a maximum of 85 m AOD to a minimum of 68 m AOD. Gradient and altitude do not constitute limitations to the ALC grade.

Geology

2.3 The published 1:63360 scale solid and drift edition geology sheet 202 shows the survey area to comprise mainly boulder clay over Upper Lias Clay with a narrow deposit of alluvium outcropping along the edge of the brook.

Soils

2.4 The Soil Survey of England and Wales have mapped the "Soils of Eastern England" at a reconnaissance scale of 1:250,000, this map shows the occurrence of mainly the Hanslope Association (*1) with a smaller tract of the Fladbury 1 Association (*2) outcropping adjacent to the brook. During the current more detailed survey two main soil types were identified.

(*1) Hanslope Association: Slowly permeable calcareous clayey soils. Some slowly permeable non-calcareaus clayey soils.

(*2) Fladbury 1 Association: Stoneless clayey soils, in places calcareous, variably affected by ground water. Flat land. Risk of flooding.

2.4.1 Over the majority of the survey area fine loamy over clayey soils predominate. Profiles typically comprise medium clay loam or occasionally heavy clay loam topsoils over heavy clay loam (or occasionally clay) upper subsoils which overlie clays at variable depths. (40/50 cm+). Soils are generally non-calcareaus, however occasionally lower subsoils contain chalk fragments. To the west of the site profiles occasionally contain brashy ironstone layers of 10-20% abundance.

2.4.2 In association with the alluvial deposits a narrow band of heavier soils follow the edge of the brook. These soils typically comprise non calcaraeus clay topsoils over similar subsoils.

3 AGRICULTURAL LAND CLASSIFICATION

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

3.2 The table below shows the breakdown of ALC grades in hectarage and percentage terms for the survey area.

AGRICULTURAL LAND CLASSIFICATION

Grade	ha	%
3a	14.6	23
3b	47.7	77
Total	62.3	100

4 SUBGRADE 3a

Land graded 3a occurs at the higher elevations in association with the better drained and lighter textured variant of the soil described in paragraph 2.4.1. Auger boring and soil profile pit observations indicate that these soils have slowly permeable horizons present in

the upper subsoils 40 cm+. (ie wetness class III*). This land is consequently limited by moderate wetness and workability imperfections which derive from the reduced subsoil permeability combined with fine loamy topsoils and relatively high rainfall. These limitations exclude the land from a higher grade.

5 SUBGRADE 3b

5.1 The majority of the survey area has been mapped as 3b. This land is associated with the poorly drained variant of the soils described in paragraphs 2.4.1 and 2.4.2. The subsoils are slowly permeable (wetness class IV) and the topsoils non-calcareous and fine loamy or clayey.

These factors combine to impose a significant limitation on the agricultural potential of this land. Thus the land is restricted to subgrade 3b (moderate quality agricultural land).

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*Occasionally profiles have been assessed as wetness class II. However such areas are too small to delineate at this scale.

References

GEOLOGICAL SURVEY OF ENGLAND & WALES 1969 Solid and Drift edition geology map sheet 202. 1:63360 scale.

MAFF 1965 Agricultural Land Classification Technical Report No 11

MAFF 1976 Agricultural Land Classification Technical Report No 11/1

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

METEOROLOGICAL OFFICE 1989, Published climate data extracted from the ALC agroclimatic dataset, compiled by the Meteorological Office.

SOIL SURVEY OF ENGLAND AND WALES 1983. The Soils of Eastern England. Sheet 4, 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 commonly includes, 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 of 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.

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. When more demanding crops and 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 very 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 the occasional pioneer forage crops.