

AGRICULTURAL LAND CLASSIFICATION
SWAYNESLAND FARM
OXTED, SURREY

AGRICULTURAL LAND CLASSIFICATION

SWAYNESLAND FARM, OXTED, SURREY
RECONNAISSANCE SURVEY

1. INTRODUCTION

1.1 A total of 38.2 ha of land to the north-west of Edenbridge in Surrey was inspected on 6th July 1992. ADAS was commissioned by MAFF to determine the quality of land affected by the proposals for a change of land use to a golf course.

1.2 An Agricultural Land Classification (ALC) survey was carried out in accordance with the revised guidelines and criteria for grading the quality of agricultural land outlined in 'Agricultural Land Classification of England and Wales,' (MAFF, 1988). These guidelines provide a framework for classifying land according to the degree to which its physical and chemical characteristics impose long term limitations on agricultural use. 20 auger boring samples were examined with samples being taken at approximately 140 m intervals across the site. Further information was obtained from a soil inspection pit. At the time of survey, the land was in neglected grassland.

1.3 The results of the survey are presented on the accompanying coloured plan at a scale of 1:10,000. The plan is accurate only at this scale and any enlargement would be misleading. Grade 3b has been mapped across the entire site as shown below.

	<u>Area (ha)</u>	<u>% Total agricultural area</u>
Grade 3b	37.57	100
Total agricultural area	<u>37.57</u>	
Urban	0.63	
Total area of site	<u>38.20</u>	

1.4 A general description of the grades and sub-grades identified in this survey is attached at Appendix 1.

1.5 One broad soil type was identified across the site. Profiles comprise medium or heavy clay loam or silty clay loam topsoils. These overlie similar textures in the upper subsoils which are gleyed and pass to gleyed and slowly permeable clay or silty clay within 45 cm. Soils are assigned to wetness class III or more usually IV and are limited by soil wetness to the extent that sub-grade 3b is appropriate. In addition, small areas on the site are limited by steep slopes.

2. PHYSICAL FACTORS AFFECTING LAND QUALITY

Relief

2.1 The site lies at an altitude of 70-85 m A.O.D, the highest land occurring towards the middle of the site and falling towards the north-west and south-east. Along the western site boundary, gradients of 8-10° were measured using an optical reading clinometer. The safe operation of farm machinery will be limited on these slopes and land can be graded no higher than sub-grade 3b, accordingly.

Climate

2.2 Estimates of climatic variables for a representative location in the survey area were obtained by interpolation from grid point datasets (Met. Office, 1989). Figures are adjusted for altitude.

Climatic Interpolation

Grid Reference	TQ 428 500	TQ 423 502
Altitude (m. A.O.D)	70	85
Accumulated Temperature (°days, Jan-June)	1437	1420
Average Annual Rainfall (mm)	773	776
Field capacity days	165	165
Moisture Deficit, wheat (mm)	108	105
Moisture Deficit, potatoes (mm)	101	97

2.3 There is no overall climatic limitation at this locality. Climatic factors do, however, interact with soil factors to affect soil wetness and droughtiness limitations.

Geology and Soils

2.4 British Geological Survey, Sheet 287, Sevenoaks (1971) shows the entire site to be underlain by Weald Clay described as consisting mainly of grey silty mudstones which weather to stiff grey clays (B.G.S, 1984).

2.5 Soil Survey of England and Wales (SSEW), Sheet 6 (1983) indicates that soils of the Wickham 1 association occur across the site. These soils are described as being 'silty or loamy over clay, typical stagnogleys, (SSEW, 1984).

2.6 Detailed field examination broadly confirms the presence of soils similar to those described by the Soil Survey of England and Wales.

3. AGRICULTURAL LAND CLASSIFICATION

3.1 Grade 3b

The survey area has been mapped as moderate quality agricultural land with moderate limitations to its agricultural use which may affect the choice of crops, timing and type of cultivation, harvesting or the level of yield.

The principal limitation is that of soil wetness and workability. Profiles comprise non-calcareous clay loam or silty clay loam topsoils overlying similar textures in the upper subsoil and passing to clay or silty clay within 45 cm. These lower subsoil horizons are slowly permeable and thereby impede water movement through the profile, as evidenced by prominent gleying below the topsoil. Profiles are assigned to wetness III or IV, accordingly. Occasional profiles are brashy in the subsoil, containing ironstone fragments, and become impenetrable, (to soil auger) at variable depths.

A small area of land along the western boundary of the site is also limited by steep slopes. Gradients of 8-10° were recorded which will have a significant effect on the safe operation of mechanised farm machinery.

August 1992
MAFF Ref: EL 9046
ADAS Ref: 4009/044/92

RESOURCE PLANNING TEAM
Guildford Statutory Centre
ADAS Reading

SOURCES OF REFERENCE

BRITISH GEOLOGICAL SURVEY (1971) Sheet 287, Sevenoaks.

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

METEROLOGICAL OFFICE (1989) Climatological datasets for agricultural land classification.

SOIL SURVEY OF ENGLAND AND WALES [SSEW] (1983) Sheet 6, Soils of South-East England.

SSEW (1984) Bulletin 15, Soils and their use in South-East England.

APPENDIX 1

DESCRIPTION OF THE GRADES AND SUBGRADES

The ALC grades and subgrades are described below in terms of the types of limitation which can occur, typical cropping range and the expected level and consistency of yield. In practice, the grades are defined by reference to physical characteristics and the grading guidance and cut-offs for limitation factors in Section 3 enable land to be ranked in accordance with these general descriptions. The most productive and flexible land falls into Grades 1 and 2 and Subgrade 3a and collectively comprises about one-third of the agricultural land in England and Wales. About half the land is of moderate quality in Subgrade 3b or poor quality in Grade 4. Although less significant on a national scale such land can be locally valuable to agriculture and the rural economy where poorer farmland predominates. The remainder is very poor quality land in Grade 5, which mostly occurs in the uplands.

Descriptions are also given of other land categories which may be used on ALC maps.

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 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 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.

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 level of yields. It is mainly suited to grass with occasional arable crops (eg cereals 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.

Descriptions of other land categories used on ALC maps

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

Agricultural buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg polythene tunnels erected for lambing) may be ignored.

Open water

Includes lakes, ponds and rivers as map scale permits.

Land not surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above land cover types, eg buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will usually be shown.