ADAS

FOOD, FARMING, LAND & LEISURE

AGRICULTURAL LAND CLASSIFICATION

LAND AT WHITE HOUSE FARM,

SUTTON GREEN,

WOKING

AGRICULTURAL LAND CLASSIFICATION

LAND AT WHITE HOUSE FARM, SUTTON GREEN, WOKING

1. SUMMARY

1.1 Land on this 42.07 ha site was inspected on 13 May 1992 in connection with proposals to change the use of the land to an 18 hole Golf Course. An Agricultural Land Classification (ALC) Survey was undertaken in accordance with the guidelines and criteria contained in the MAFF publication "Agricultural Land Classification in England and Wales" (MAFF, 1988). These guidelines provide a framework for classifying land according to the degree to which its physical or chemical characteristics impose long term limitations on agricultural use.

1.2 23 auger boring samples were examined on a grid basis, with further information obtained from 4 soil inspection pits. At the time of survey all the land was in grass.

1.3 The results of the survey are presented on the accompanying coloured plan at a scale of 1:10,000. It is accurate only at this scale as any enlargement would be misleading. The extent of the ALC grades mapped on the site is as follows:

	Ha	% Agricultural Area
Grade		
3a	17.10	43
3b	22.92	57
Non-Agricultural	2.05	
Total site area	42.07	

1.4 Soils on this gently sloping site mainly comprise sandy loam topsoils over loamy sand and sand subsoils. Gravel or clay subsoil horizons may be encountered at variable depths in some locations. The land is typically well drained but some soil profiles show evidence of fluctuating groundwater. The soils typically have low to moderate available capacities which in this relatively dry climatic regime causes a droughtiness limitation. Consequently land is mapped as either grade 3a or 3b depending upon the relative severity of this limitation. A general description of the grades used in the ALC system is attached.

2. PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 Estimates of climatic variables were obtained by interpolation from a 5 km grid database (Met. office, 1989) for a representative location in the survey area:-

Climatic Interpolation

Grid Reference	TQ 003 555
Altitude (m)	30
Accumulated Temperature (day° Jan-June)	1491
Average Annual Rainfall (mm)	664
Field Capacity Days	140
Moisture deficit - wheat (mm)	117
Moisture deficit - potatoes (mm)	112

2.2 Climatic factors place no limitation on agricultural land quality but can affect the interaction of soil and climate factors, namely soil wetness and droughtiness.

Geology and Soils

2.3 The published geological survey map for the site (no. 285, Aldershot; BGS 1976) shows the lower land to the east of the site as river terrace gravels with the higher ground to the west as Bagshot Beds.

2.4 A semi-detailed soil map exists for the Woking area (Soil Survey Record No. 9, Sheet TQ05; SSEW, 1986). A number of soil series are identified on the site including the Swanwick, Wickham, Bursledon, Bearsted, Arrow/Loshes Series.

2.5 Site inspection indicates that soils on the site mainly comprise sandy loam (or occasionally loamy sand) topsoils over loamy sand and sand subsoils. Gravel or clay horizons may be encountered at variable depth. The land is typically well drained but some profiles show evidence of fluctuating groundwater. The soils have a low to moderate available water capacity which in this relatively dry climatic regime causes a droughtiness limitation.

3. AGRICULTURAL LAND CLASSIFICATION

Grade 3a

3.1 Land graded 3a comprises very slightly stony (<5% v/v flints) profiles of medium sandy loam texture to at least 65 cm depth over loamy medium sand, sand or gravel at depth. Occasional profiles are less deep but pass into slowly permeable clay. The majority of soils are freely draining (wetness class I), although where slowly permeable clay occurs soils are wetness class II. The main limitation to the agricultural quality of land graded 3a is drought risk since soils have a moderate available water capacity in what is a relatively dry climatic regime.

Grade 3b

3.2 Land graded 3b is similar to that grades 3a but generally coarser textured and/or shallower over gravel. Topsoils are medium sandy loams (occasionally loamy medium sand) with loamy medium sand subsoils passing to medium sand or sand and gravel with depth. Some deeper profiles contain clay horizons below 80-100 cm. All land is well drained (wetness class I) but some profiles show evidence of fluctuating groundwater. Stone content is variable; topsoils generally have 5% v/v or less of flints but this may increase with depth in some profiles. Overall soils have a lower available water capacity than those described under grade 3a and consequently have an increased risk of drought. This forms the main limitation in terms of their agricultural quality.

May 1992

ADAS Ref: 4011/025/92
MAFF Ref: EL 9134

J HOLLOWAY
Resource Planning Team
ADAS Reading

SOURCES OF REFERENCE

BRITISH GEOLOGICAL SURVEY (1976). Drift Edition geological map sheet no. 285 (Aldershot) 1:50,000 scale.

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

METEOROLOGICAL OFFICE (1989). Climatological datasets for Agricultural Land Classification.

SOIL SURVEY OF ENGLAND AND WALES (1986). Soil Survey Record No. 9. Soils in Surrey 1 Sheet TQ05 (Woking) 1:25,000 scale map and memoir.

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.