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ADAS, Guildford Statutory Centre

GOLF COURSE PROPOSAL, CHEVENING ROAD, CHIPSTED, KENT
AGRICULTURAL LAND CLASSIFICATION

Report of Survey

1. Introduction

In July 1992 an Agricultural Land Classification Survey (ALC) was carried out on 79 ha of land between the villages of Chipsted and Longford adjacent to the M26 in Kent. ADAS was commissioned by MAFF to determine the land quality affected by the application for planning permission for a private golf course.

Fieldwork was conducted by members of the Resource Planning Team within the Guildford Statutory Centre with approximately 1 soil observation per 2 ha. A total of 30 borings and 2 soil pits were described using MAFF's revised guidelines and criteria for grading the quality of agricultural land. These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose long term limitations on its agricultural use.

The distribution of the grades and subgrades is shown on the attached ALC map and the area of each grade is given in the table below. The map has been drawn at a scale of 1:10,000; the information is accurate at this level and any enlargement would be misleading.

Subgrade 3B is the main grade on the site with minor areas of Grade 2 and Subgrade 3A. The poor quality of the land is related to the presence of upper subsoils of clay which cause a significant wetness limitation. The areas of higher quality land identify soils with poorly structured clays at a greater depth which cause a less severe wetness limitation. The application area contains less than 20 ha of best and most versatile land.

Table 1 : Distribution of Grades and Subgrades

Grade	Area (ha)	% of Agricultural Area
2	4.0	5.7
3A	2.0	2.8
3B	64.6	91.5
Non Agric	5.2	100% (70.6 ha)
Woodland	2.9	
Urban	0.5	
Total	79.2	

2. Climate

The climatic criteria are considered first when classifying land. Climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable soil or site conditions. The main parameters used in the assessment of the climatic limitation are average annual rainfall, as a measure of overall wetness, and accumulated temperature, as a measure of the relative warmth of a locality.

A detailed assessment of the prevailing climate has been made by interpolation from a 5 km gridpoint dataset. The details are presented in the table below and show that there is no overall climatic limitation affecting the site. In addition, no local climatic factor is significant. The site is climatically Grade 1.

Table 2: Climatic Interpolations

Grid Reference	TQ506572	TQ499570
Height (m)	75	80
Accumulated Temperature (°days)	1426	1421
Average Annual Rainfall (mm)	759	771
Field Capacity (days)	159	162
Moisture deficit, Wheat (mm)	107	106
Moisture deficit, Potatoes (mm)	98	97

3. Agricultural Land Classification

3.1 Grade 2

A small area of this grade has been picked out in the extreme west of the site which closely relates to a geological change with soils in this area developed over Head deposits. Pit 2 is typical of these soils which show some evidence of gleying within 40 cm but, despite the presence of heavy clay loam upper subsoils and clay lower subsoils, there is no slowly permeable layer present within 80 cm. These soils are therefore placed in Wetness Class II (ie, the soils are believed to be wet within 70 cm for more than 90 days, but are not wet within 40 cm depth for more than 30 days in most years). This Wetness Class, in combination with the topsoil textures (medium clay loam) and the prevailing Field Capacity range (159-162 days), limits these soils to Grade 2.

3.2 Sub-grade 3A

A small area of this sub-grade has been identified on the southern margin of the site. This map unit represents soils which are clearly gleyed within 40 cm and which have slowly permeable clay layers starting between approximately 55-60 cm which place the soils in Wetness Class III (ie, the soil profile is believed to be wet within 70 cm depth for 91-180 days in most years). Topsoil textures are again medium clay loams.

3.3 Sub-grade 3B

The rest of the survey area has been placed in this sub-grade with soils developed mainly over Gault Clay. Pit 1 is typical of the majority of the soils in this grade. As with the Sub-grade 3A unit, slowly permeable layers are present from approximately 55 cm with gleying within 40 cm, and the profiles are therefore placed in a similar Wetness Class, III. The difference in the final grading relates to the presence of heavier topsoil textures of heavy clay loam or clay which, in combination with the Wetness Class and the Field Capacity range, significantly limits the flexibility of the land by decreasing the number of days when the soil is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock.

DESCRIPTION OF THE GRADES AND SUB-GRADES

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 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 an 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: golf courses, 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.

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.

SOIL PIT DESCRIPTION

Site Name : CHIPSTEAD GOLF COURSE Pit Number : 2P

Grid Reference: TQ49734973 Average Annual Rainfall : 771 mm
Accumulated Temperature : 1421 degree days
Field Capacity Level : 162 days
Land Use : Fallow
Slope and Aspect : 01 degrees E

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 30	MCL	10YR43 00	0	2		
30- 50	HCL	10YR53 00	0	0	M	MDCSB
50- 85	C	10YR52 00	0	0	M	MDCSB

Wetness Grade : 2 Wetnesss Class : II
Gleying :030 cm
SPL :000 cm

Drought Grade : 2 APW : 113mm MBW : 7 mm
APP : 117mm MBP : 20 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : CHIPSTEAD GOLF COURSE Pit Number : 1P

Grid Reference: TQ50185700 Average Annual Rainfall : 771 mm
Accumulated Temperature : 1421 degree days
Field Capacity Level : 162 days
Land Use : Fallow
Slope and Aspect : 01 degrees NW

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 20	C	10YR42 00	0	2		
20- 40	C	10YR61 00	0	0	M	WCSAB
40- 56	C	10YR61 00	0	0	M	MCAB

Wetness Grade : 3B Wetnesss Class : IV
Gleying :020 cm
SPL :055 cm

Drought Grade : 3B APW : 77 mm MBW : -29 mm
APP : 80 mm MBP : -17 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Wetness