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ADAS

FOOD, FARMING, LAND & LEISURE



Agricultural Land Classification

Vixengrove Farm, Chaily,

East Sussex

Resource Planning Team

Guildford Statutory Group

GOLF COURSE APPLICATION, VIXENGROVE FARM, CHAILY, EAST SUSSEX :
REPORT OF SURVEY

1. Introduction : In June 1992, an Agricultural Land Classification (ALC) was carried out on 62 hectares of land at Chaily in East Sussex. ADAS was commissioned by MAFF to determine the land quality affected by the application for planning permission for a private golf course.

The work was conducted by members of the Resource Planning Team within the Guildford Statutory Group at a reconnaissance level with approximately 1 soil observation per 3.0 hectares. A total of 22 borings and 1 soil pit was 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 a scale of 1:20,000; the information is accurate at this level and any enlargement would be misleading. More than 20 ha of 'best and most versatile land' is affected directly by the application. The higher quality land is placed in Grade 2 either because of a minor soil wetness problem or a minor droughtiness limitation. The poorer quality, Sub-grade 3B, soils experience a significant wetness limitation as a result of shallow slowly permeable clay layers.

Table 1 : Distribution of Grades and Subgrades

<u>Grade</u>	<u>Area (ha)</u>	<u>% of Agricultural Area</u>
2	24.3	45.2
3B	29.4	<u>54.8</u>
		100% (53.7 ha)
Woodland	<u>8.7</u>	
Total	62.4 ha	

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 a climatic limitation are average annual rainfall, a measure of overall wetness, and accumulated temperature, a measure of the relative warmth of a locality.

A detailed assessment of the prevailing climate has been made by interpolation from a 5km grid point 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	TQ 392 206	TQ 394 202
Altitude (m)	46	30
ATO (deg)	1479	1497
AAR (mm)	789	776
FCD (days)	169	166
MD wheat (mm)	107	110
MD potatoes (mm)	102	105

3. Agricultural Land Classification : The soils are developed over varied geology which comprises Tunbridge Wells Sands and Ardingley Sandstone, with smaller areas of Clays, Head and Alluvium.
- 3.1 Grade 2 : Approximately 24 hectares of this grade has been mapped in several map units across the site. This higher quality land occurs predominantly on the higher land and developed over Sands and Sandstone geology. Soil droughtiness is the main physical limitation with light textured soils throughout the profile, low subsoil stone contents and moderate to good subsoil structural conditions.
- 3.2 Subgrade 3B : The poorer quality land in the application area comprises soils which suffer from a significant wetness limitation

due to the presence of slowly permeable layers at shallow depths. Pit 1 is typical of these soils which have poorly structured clay horizons immediately below the topsoil. Clear evidence of wetness and the low percentage of biopores together with the poor structure of these layers significantly impeded the movement of drainage water through the profile, causing the soil to be wet for considerable periods of the year. The soils are placed in Wetness Class IV which means that the profile is wet within 70cm for >180 days (but not wet within 40cm for >210 days in most years). This degree of wetness considerably limits the range of crops that can be grown and the number of days that the land can be trafficked by machinery or livestock without causing structural damage.

Some land adjacent to the farm buildings has also been placed in this grade due to locally limiting gradients.

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 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: 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 : VIXEN GROVE FM E.SUSSEX Pit Number : 1P

Grid Reference: TQ393 204 Average Annual Rainfall : 794 mm
 Accumulated Temperature : 1479 degree days
 Field Capacity Level : 169 days
 Land Use : Linseed
 Slope and Aspect : 2 degrees S

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 35	MCL	10YR5/3 0/0	0	0		
35- 50	HCL	2.5Y 6/3 7/3	0	0	M	MCP
50- 65	HCL	0.5Y 7/3 0/0	0	0	M	MCPL

Wetness Grade : 3B Wetness Class : IV
 Gleying : 0.35 cm
 SPL : 0.35 cm

Drought Grade : 3A APW : 0.92mm MBW : -15 mm
 APP : 0.99mm MBP : -3 mm

FINAL ALC GRADE : 3B
 MAIN LIMITATION : Wetness