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Proposed Golf Course,
Lingfield, Surrey
Agricultural Land Classification
ALC Map and Report
October 1994

AGRICULTURAL LAND CLASSIFICATION REPORT

PROPOSED GOLF COURSE, LINGFIELD, SURREY

1. Summary

1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land to the south-west of Lingfield in Surrey. This work forms part of MAFF's statutory input to the proposed development of the land for a golf course.

1.2 The site comprises approximately 41 hectares of land south of the B2028, west of Lingfield in Surrey. An Agricultural Land Classification (ALC) survey was carried out during October 1994 at a detailed level of approximately one boring per hectare. A total of 45 borings and two soil inspection pits were described in accordance with MAFF's revised guidelines and criteria for grading the quality of agricultural land, (MAFF, 1988). These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose a long term limitation on its use for agriculture

1.3 The work was carried out by members of the Resource Planning Team in the Guildford Statutory Group of ADAS.

1.4 At the time of the survey the agricultural land on the site was under permanent pasture. Jacksbridge Farm and its associated buildings have been mapped as agricultural buildings whilst a tarmac road and house and garden have been shown as urban.

1.5 The distribution of grades and subgrades is shown on the attached ALC map and the areas are given in the table below. The map has been drawn at a scale of 1:10,000. It is accurate at this scale, but any enlargement would be misleading.

Table 1 : Distribution of Grades and Subgrades

Grade	Area (ha)	% of site	% of Agricultural Land
2	3.0	7.2	7.4
3a	18.9	45.5	46.7
3b	18.6	44.8	45.9
Agricultural buildings	0.8		100% (40.5 ha)
Urban	0.2		
Total area of site	41.5 ha	100%	

1.6 Appendix 1 gives a general description of the grades and landuse categories identified in this survey. The main classes are described in terms of the type of limitation that can occur, the typical cropping range and expected level and consistency of yield.

1.7 The site has been assigned to a range of grades from very good quality, Grade 2, land to moderate quality, Subgrade 3b, land. The land is primarily affected by soil wetness limitations. Soil profiles were found to comprise silty clay loam textures, becoming heavier with depth and sometimes passing to silty clay at depth. Soils are imperfectly drained as a result of slowly permeable subsoil horizons at variable depths across the site. The depth to slowly permeable horizons determines the grade. Where it is shallow in the profile, the land is severely affected by soil wetness and land is assigned to Subgrade 3b, whilst Grade 2 is mapped where slowly permeable horizons occur deep in the profile. Soil wetness will restrict the opportunities for cultivations and/or grazing whilst adversely affecting crop growth and development.

2. Climate

2.1 The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

2.2 The main parameters used in the assessment of an overall 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.

2.3 A detailed assessment of the prevailing climate was made by interpolation from a 5km grid point dataset (Met. Office, 1989). The details are given in the table below and these show that there is no overall climatic limitation affecting the site.

2.4 No climatic factors such as exposure or frost risk are believed to affect the site. However, climatic factors do interact with soil properties to influence soil wetness and droughtiness. At this locality the climate is relatively warm and moist. The likelihood of soil wetness restrictions is thereby enhanced.

Table 2 : Climatic Interpolation

Grid Reference	TQ382432
Altitude (m, AOD)	60
Accumulated Temperature (degree days, Jan-June)	1453
Average Annual Rainfall (mm)	781
Field Capacity (days)	165
Moisture Deficit, Wheat (mm)	107
Moisture Deficit, Potatoes (mm)	100
Overall Climatic Grade	1

3. Relief

3.1 The site lies at an altitude of approximately 55-65m AOD, falling gently from the north towards Eden Brook along the southern site boundary. Nowhere on the site do gradient or microrelief affect agricultural land quality.

4. Geology and Soil

4.1 British Geological Survey (1978), shows the majority of the site to be underlain by Tunbridge Wells sand whilst a narrow band of alluvium has been mapped in association with Eden Brook.

4.2 Soil Survey of England and Wales (1983), shows the entire site to comprise soils of the Curtisden association. These soils are described as 'silty soils over siltstone, with slowly permeable subsoils and slight seasonal waterlogging', (SSEW, 1984).

4.3 Detailed field examination found the soils on the site to comprise mainly non-calcareous silty clay loams becoming heavier with depth. The drainage status of the soils was found to be variable due to variation in the depth to subsoil horizons which cause drainage to be impeded.

5. Agricultural Land Classification

5.1 Table 1 provides the details of the area measurements for each grade and the distribution of each grade is shown on the attached ALC map.

5.2 The location of the soil observation points are shown on the attached sample point map.

Grade 2

5.3 Very good quality land is relatively limited in extent on the site, being confined to a small valley running north to south through the centre of the area surveyed.
Profiles comprise medium silty clay loam topsoils which are free of stones. These overlie similar or heavy silty clay loam upper subsoils and pass to variable lower subsoils including sandy silt loam, silty clay loam, sandy clay loam or silty clay textures. Occasional profiles were found to be impenetrable from about 75-85 cm over siltstone fragments. Profiles are imperfectly drained, as evidenced by gleyed topsoils and/or upper subsoils, as a result of slowly permeable silty clay loam horizons in the lower subsoil impeding drainage. Such drainage characteristics equate to Wetness Class II. Given the prevailing climate and medium textured workable topsoils such land is classified as Grade 2 on the basis of minor soil wetness restrictions.

Subgrade 3a

5.4 Good quality land has been mapped across the mid-slopes of the site. The land has been classified as such on the basis of soil wetness limitations.
Profiles are similar to those described above in paragraph 5.3, with the most common soil type comprising silty clay loam topsoils and subsoils which are generally stone free. However, where the land has been mapped as Subgrade 3a the soil wetness limitations present are a degree worse than land classified as Grade 2 because slowly permeable subsoil horizons occur higher in the profile. In general, soils are gleyed from the topsoil or directly below in the upper subsoil and slowly permeable silty clay loam horizons are encountered below 47-65 cm depth.

Such drainage characteristics are consistent with Wetness Class III which equates to Subgrade 3a given the local climatic regime. Soil wetness will affect the utilisation of the land in terms of the timings of cropping, cultivations or grazing by livestock.

Subgrade 3b

5.5 Moderate quality land has been mapped across the remainder of the site, it being severely affected by soil wetness. Silt loam or medium silty clay loam topsoils overlie similar or heavy silty clay loam upper and lower subsoils. Slowly permeable horizons occur at relatively shallow depths, generally immediately below the topsoil, thereby causing drainage to be severely impeded. Wetness Class IV is appropriate to these soils, and consequently, Subgrade 3b given the prevailing climate. This land will be affected by significant restrictions on trafficking by machinery or grazing by livestock. Soil wetness will also adversely affect crop growth and development.

SOURCES OF REFERENCE

British Geological Survey (1978) Sheet No. 288, Maidstone, 1:50,000. Solid & Drift Edition.

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

Meteorological Office (1989), Climatic datasets for Agricultural Land Classification.

Soil Survey of England and Wales (1983), Sheet 6, Soils of South-East England, 1:250,000 and accompanying legend.

Soil Survey of England and Wales (1984) Bulletin 15, Soils and their use in South-East England.