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AGRICULTURAL LAND CLASSIFICATION
FROGS ISLAND FARM, HERNE BAY
KENT

ADAS Ref : 2002/86/92
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Resource Planning Team
Guildford Statutory Group
ADAS Reading

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1. INTRODUCTION

1.1 The site, an area of approximately 60 hectares, is the subject of an application for a golf course. ADAS was commissioned by MAFF to determine the quality of land affected by the proposal and carried out an Agricultural Land Classification (ALC) survey in September 1992.

1.2 The survey work was undertaken at a semi detailed level of approximately 1 boring per 2 hectares. A total of 28 borings were described and a soil inspection pit was dug to assess subsoil conditions and to supplement soil auger boring information. This was done 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 agricultural land according to the extent to which its physical or chemical characteristics impose long term limitations to agricultural use.

At the time of the survey the land use was permanent grassland and cereal stubble.

1.3 The distribution of the grades and subgrades is shown on the attached ALC map and areas in hectares and % terms are given below. The map has been drawn at a scale of 1:10,000. Any enlargement of this scale would be misleading.

Distribution of Grades and Subgrades

	Area (ha)	% total agricultural land
Grade 3b	58.7	100
Total Agricultural Area	58.7	100
Woodland	2.07	
Total Area of Site	60.77	

1.4 Appendix 1 gives a general description of the grades and land use categories identified in this survey.

1.5 The site is graded 3b, moderate quality agricultural land. Soils on the site have developed over Eocene London Clay, and are clayey in nature.

Consequently land is limited to 3b due to significant wetness/ workability problems associated with the heavy textured, slowly permeable soils.

2. PHYSICAL FACTORS AFFECTING LAND QUALITY

Relief

2.1 The site lies at an altitude of 15-30 m AOD. The highest land being towards the south of the site, and gently falling northwards to West Brook. Neither gradient or altitude represent a significant limitation to agricultural land quality at this locality.

Climate

2.2 The 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	TR 147 653
Altitude (m AOD)	20
Accumulated Temperature (°days, Jan-June)	1471
Average Annual Rainfall (mm)	586
Field Capacity Days	120
Moisture Deficit, wheat (mm)	126
Moisture Deficit, potatoes (mm)	124

2.3 There is no overall climatic limitation at this locality, although it should be noted that both average annual rainfall and field capacity days are relatively low in a regional context. In addition, soil moisture deficits are particularly high. Climate and soil factors do, however, interact to affect soil wetness and droughtiness limitations.

Geology and Soils

2.4 The published 1:50,000 scale solid and drift edition geology map sheet 273, Faversham (Geological Survey, 1974) shows the majority of the site to be mapped as Eocene London Clay with a small deposit of Recent and Pleistocene Head Brickearth overlying London Clay skirting West Brook in the vicinity of West End to the north of the site.

2.5 The Soil Survey of England and Wales, Sheet 6, Soils of South-East England, (1983) shows the occurrence of the Windsor Association. These soils are described as "slowly permeable seasonally waterlogged clayey soils, mostly with brown subsoils" (SSEW, 1984).

2.6 Detailed field examination of soils broadly confirms the presence of one main soil type similar to that described by the Soil Survey of England and Wales.

3. AGRICULTURAL LAND CLASSIFICATION

3.1 The ALC grading of the site is primarily determined by the interaction between climate and soil factors which results in a soil wetness/ workability limitation. An ALC grade of 3b has been mapped for the entire agricultural land area of 58.7 hectares. 2.07 hectares of woodland was mapped to make a total land area of 60.77 hectares.

3.2 Grade 3b

Moderate quality agricultural land represents the majority of the area surveyed. Profiles are typically stone free and comprise non calcareous clay or occasionally heavy clay loam topsoils. These overlie subsoils of gleyed clay to depth which are slowly permeable. A wetness class of III is appropriate given the soil characteristics and climatic regime. Consequently these soils suffer from significant wetness/workability problems which limit the land to subgrade 3b. Timeliness in cultivation is essential to avoid structural damage to these soils.

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SOURCE OF REFERENCE

- BRITISH GEOLOGICAL SURVEY (1974) Solid and Drift edition, Sheet 273 (Faversham) 1:50,000 scale.

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

- METEOROLOGICAL OFFICE (1989) Climatological datasets for agricultural land classification.

- SOIL SURVEY OF ENGLAND AND WALES (1983) Sheet 6, "Soils of South-East England", 1:250,000 scale.

- SOIL SURVEY OF ENGLAND AND WALES (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 or 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 reuse 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.