

AGRICULTURAL LAND CLASSIFICATION
BOARS GREEN FARM
MERSTHAM, SURREY

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Resource Planning Team
ADAS Statutory Group
Reading

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1. INTRODUCTION

1.1 In December 1992 an Agricultural Land Classification (ALC) survey was carried out on approximately 65 hectares of land at Boars Green Farm, Merstham, Surrey. ADAS was commissioned by MAFF to determine the quality of land in connection with proposals for a change of land use to keep horses.

1.2 The survey work was carried out using a hand held Dutch soil auger at a detailed level of approximately one boring per hectare. A total of 42 auger borings and 2 soil inspection 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.

At the time of the survey, the land was in a variety of uses including horse grazing, pigs, cattle and permanent grassland.

1.3 Table 1 : Distribution of Grades and Subgrades

	<u>Area (ha)</u>	<u>% total agricultural land</u>
Grade 2	5.2	11.5
3A	2.8	6.2
3B	37.2	82.3
Woodland	12.8	100 (45.2 hectares)
Non Agricultural	5.5	
Urban	1.3	
Total Area of Site	64.8	

1.4 A general description of the ALC grades and subgrades and landcover categories is attached.

1.5 The majority of the site has been classified as subgrade 3B and is limited by significant wetness problems associated with slowly permeable subsoils. Also in places land is limited by slope in excess of 7° to this subgrade.

1.6 A small area of land in the vicinity of Boars Green Farm has been classified as subgrade 3A due to slight and moderate wetness limitations.

1.7 Deep clayey soils on lower lying land to the east and west of the site have been classified as grade 2 due to a slight wetness, and occasionally a droughtiness limitation.

2. PHYSICAL FACTORS AFFECTING LAND QUALITY

Altitude and Relief

- 2.1 The site comprises land at an altitude of 125-181 m AOD. Land slopes gently to the north, but more steeply south, east and west from a broad ridge situated in the south of the site area. Slope angles between 8°-9° limit much of this land to subgrade 3B.

Climate

- 2.2 Climate data for the site was obtained by interpolation of a 5 km grid dataset (Met Office, 1989) for representative locations in the survey area.

Table 2 : Climatic Interpolation

Grid Reference	TQ285541	TQ279549	TQ280542
Altitude (m)	125	160	180
Accumulated Temperature (day °)	1376	1336	1314
Annual Average Rainfall (mm)	778	793	799
Field Capacity Days	165	167	168
Moisture Deficit : wheat (mm)	98	93	91
Moisture Deficit : potatoes (mm)	87	81	78

- 2.3 These climatic characteristics do not impose any climatic limitation on the ALC grading of the site. However both climate and soil factors combine to affect soil wetness limitations.

Geology and Soils

- 2.4 The published 1:50,000 scale British Geological Survey sheet 286 Reigate (1978) shows the site to be mapped as Recent and Pleistocene Clay with flints over Cretaceous Upper and Middle Chalk on land at higher altitude. To the east and west of the site on sloping land is mapped Cretaceous Upper, Middle and Lower Chalk in a north to south progression respectively.

The published 1:250,000 scale Soils map, sheet 6 "Soils of South East England" shows the site to be mapped as Andover 1 Association, "... variably flinty and chalky, silty brown rendzinas over chalk". to the north. Land to the south of the site is mapped as Batcombe Association "Variably flinty fine silty and fine loamy over clayey..." (SSEW, 1984). A detailed examination of the soils indicates the presence of two soil types.

3. AGRICULTURAL LAND CLASSIFICATION

Grade 2

- 3.1 Land of this quality has been mapped at the western boundary of the site in the floor of a dry valley feature, and to the east at the foot of a scarp slope. Topsoils typically comprise very slightly stony (2-5% flints by volume) heavy clay loam over very slightly to moderately stony (5-20% flints) clay and heavy clay loam. Lower subsoils consist of similar textures which are slightly stony (10-15%

flints). Occasionally chalky heavy silty clay loam was encountered at depth but profiles were otherwise non calcareous and well drained, wetness class I. However topsoil texture and field capacity days combine to limit the land to grade 2 due to wetness/workability limitations.

Subgrade 3a

- 3.2 Good quality agricultural land has been mapped in the vicinity of Boars Green farm. Profiles typically comprise topsoils of very slightly stony (3-5% flints by volume) heavy clay loam over upper subsoils of similar texture which are very slightly to slightly stony (5-6% flints). Lower subsoils consist of very slightly to slightly stony (5-8% flints) clay which is occasionally slowly permeable. Profiles are slightly and moderately well drained, wetness class II, with gleyed topsoils or slowly permeable layers at depth. Consequently these drainage imperfections in combination with the topsoil textures limit the land to subgrade 3A.

Subgrade 3B

- 3.3 The majority of the site has been mapped as subgrade 3B and is limited by wetness and slope limitations. Profiles typically comprise topsoils of very slightly to slightly stony (1-10% flints by volume) clay, occasionally heavy clay loam. Upper subsoils consist of similar textures, very slightly to moderately stony (1-30% flints), which are occasionally slowly permeable. Lower subsoils comprise clay occasionally sandy clay loam with similar stone contents which are typically slowly permeable.
- 3.4 Profile drainage is significantly impaired, wetness class III and IV, with slowly permeable layers in the upper or lower subsoil. This interacts with the heavy topsoil textures to limit the land to subgrade 3B due to wetness limitations.
- 3.5 Other land in this subgrade is limited due to slope in excess of 7°. Slope gradients of 8°-9° can impede the safe and efficient use of machinery. Consequently land to the west of Coldroast Shaw and north of Marling Glen Wood has been classified as subgrade 3B.

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SOURCES OF REFERENCE

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