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**Land at Green Street,
Chorleywood, Hertfordshire**

**Agricultural Land Classification
March 1997**

**Resource Planning Team
Eastern Statutory Group
ADAS Cambridge**

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AGRICULTURAL LAND CLASSIFICATION REPORT

LAND AT GREEN STREET, CHORLEYWOOD, HERTFORDSHIRE

INTRODUCTION

1. This report presents the findings of a semi-detailed Agricultural Land Classification (ALC) survey of 23.1 ha of land at Green Street, Chorleywood, Herts. The survey was carried out during March 1997 and was conducted at a semi-detailed level to verify the findings of an ADAS Commercial ALC report.
2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) Land Use Planning Unit, Cambridge in connection with an application for a golf course. This survey supersedes previous ALC surveys on this land.
3. The work was conducted by members of the Resource Planning Team in the Eastern Statutory Group in ADAS. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.
4. At the time of survey the land use on the whole site was under grassland.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10 000 it is accurate at this scale but any enlargement would be misleading.
6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% Surveyed Area
Subgrade 3b	23.1	100
Total surveyed area	23.1	100

7. The fieldwork was conducted at an average density of one auger boring per 2 hectares. A total of 12 borings and at each location topsoils were riddled using a 2 cm riddle.
8. The whole site has been graded 3b (moderate quality agricultural land). The main limitation on the site is topsoil stone content which typically is in excess of 20% of soil volume greater than 2 cm.

FACTORS INFLUENCING ALC GRADE

Climate

9. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.
10. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5 km grid datasets using the standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	TQ 025 967
Altitude	m, AOD	110
Accumulated Temperature	day°C (Jan-June)	1381
Average Annual Rainfall	mm	726
Field Capacity Days	days	154
Moisture Deficit, Wheat	mm	100
Moisture Deficit, Potatoes	mm	90

11. 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.
12. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.
13. The combination of rainfall and temperature at this site mean there is no overriding climatic limitations, and therefore the climatic grade 1 is assigned.

Site

14. The site is situated on the north western side of Chorleywood and is bounded by Green Street to the west, houses to the south and east and grassland to the north. The land falls from a maximum altitude of approximately 112 m AOD along the northern boundary to 90 m AOD at the south east corner of the site which lies in the bottom of a dry valley which dissects the site and runs in a south easterly direction. At the head of this valley on the western boundary of the site some landraising has occurred creating an artificial raised area. The eastern edge of this filled area has slopes in excess of 7° and thus limits this localized area to subgrade 3b. Over the rest of the site gradient and microrelief are not limiting factors

Geology and soils

15. The published 1:50 000 scale drift edition geology map (Geological Survey, 1974) shows the whole site to comprise Cretaceous Upper Chalk. This is overlain on the higher land to the west and north by glacial sand and gravel.

16. There is no detailed soil map of the area, however the 1:250 000 reconnaissance scale soil map (SSEW, 1993) shows the whole site to be mapped as the Marlow Association. This soil association is summarized as well drained fine loamy over clayey and clayey soils. Some coarse and fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging.

17. During the semi-detailed survey one main soil type was identified. However due to the high stone content within the profiles most borings were impenetrable at relatively shallow depth. Topsoils typically comprise non calcareous moderately stony sandy clay loam (occasionally medium sandy loam, medium clay loam or medium silty clay loam). Upper subsoils (where augerable) comprise a similar range of textures which are typically also non calcareous and moderately or very stony. Lower subsoils comprise lighter textures in the north, typically loamy medium sand or medium sandy loam and in the southern part of the site clay. The lighter textured lower subsoils are moderately stony whilst the clay tend to be slightly stony. Typically profiles are free draining except where clay is encountered in the lower subsoil.

18. A small area on the western part of the site has been disturbed by land raising and soil profiles contain a mix of materials. Topsoils typically comprise slightly stony medium clay loam, which overlies a mix of soft chalk, clay and heavy clay loam. Within the top 30 cm bricks and other inert material is found.

Agricultural Land Classification

19. The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1, page 1.

20. The location of the auger borings are shown on the attached sample location map.

Grade 3b

21. The whole of the site has been graded 3b (moderate quality agricultural land). The main limitation is topsoil stone content. Topsoils were riddled and stones greater than 2 cm typically exceeded 20% of soil volume, with total stone often over 30%. The main effects of stones are to act as an impediment to cultivation, harvesting and crop growth and also to cause a reduction in the available water capacity of the soil. These high levels of topsoil stone restrict the land to subgrade 3b.

22. The land affected by land raising has also been graded 3b, due to the mixed nature of the topsoil and the amount of inert material in the topsoil and upper subsoil. A small area on the eastern edge of the land raised area is also limited by slope.

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SOURCES OF REFERENCE

British Geological Survey (1974) *Sheet No. 255, Beaconsfield*.
BGS: London.

Ministry of Agriculture, Fisheries and Food (1988) *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land*. MAFF: London.

Met. Office (1989) *Climatological Data for Agricultural Land Classification*.
Met. Office: Bracknell.

Soil Survey of England and Wales (1983) *Sheet 4, Soils of Eastern England*.
SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in Eastern England*
SSEW: Harpenden

APPENDIX I

DESCRIPTION OF THE GRADES AND SUBGRADES

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 or horticultural crops can usually be grown but on some land of this 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 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When 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 that 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 the 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 severe limitations that restricts use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

APPENDIX II

SOIL WETNESS CLASSIFICATION

Definitions of Soil Wetness Classes

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile. Six soil wetness classes are identified and are defined in the table below.

Wetness Class	Duration of waterlogging ¹
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years. ²
II	The soil profile is wet within 70 cm depth for 31-90 days in most years or, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 90 days, but only wet within 40 cm depth for 30 days in most years.
III	The soil profile is wet within 70 cm depth for 91-180 days in most years or, if there is no slowly permeable layer present within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31-90 days in most years.
IV	The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth for more than 210 days in most years or, if there is no slowly permeable layer present within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years.
V	The soil profile is wet within 40 cm depth for 211-335 days in most years.
VI	The soil profile is wet within 40 cm depth for more than 335 days in most years.

Assessment of Wetness Class

Soils have been allocated to wetness classes by the interpretation of soil profile characteristics and climatic factors using the methodology described in *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988).

¹ The number of days is not necessarily a continuous period.

² 'In most years' is defined as more than 10 out of 20 years.