

London Borough of
Croydon Unitary Development Plan
Land at Mitchley Hill
Agricultural Land Classification
ALC Report
June 1995

Resource Planning Team
Guildford Statutory Group
ADAS Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

LONDON BOROUGH OF CROYDON UNITARY DEVELOPMENT PLAN LAND AT MITCHLEY HILL

INTRODUCTION

1 This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 2.4 hectares of land at Mitchley Hill near Sanderstead in the London Borough of Croydon. The survey was carried out in June 1995.

2 The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) Land Use Planning Unit, Reading, in connection with the preparation of the unitary development plan for the Croydon borough. The site is an objector site. This survey supersedes previous ALC surveys on this land.

3 The work was conducted by members of the Resource Planning Team in the Guildford 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 site was permanent grass with a small area of field beans.

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 All of the site has been classified as Subgrade 3b moderate quality land. The southern section experiences a gradient limitation whilst the northern section contains shallow soils developed over Chalk which experience a significant droughtiness limitation.

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 5km grid datasets using the standard interpolation procedures (Met Office 1989).

Table 2 Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	TQ 335 608
Altitude	m AOD	120
Accumulated Temperature	days C	1377
Average Annual Rainfall	mm	752
Field Capacity Days	days	155
Moisture Deficit Wheat	mm	101
Moisture Deficit Potatoes	mm	92

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 that there is no overall climatic limitation affecting the site There are also no local climatic factors that are significant at the site Climatically the site may be classified as Grade 1

Site

14 The site occupies the southern slopes of a dry valley feature Slopes are steep enough in the southern part of the site for there to be a significant gradient limitation There are no microrelief or flooding limitations on the site

Geology and soils

15 The published geological information for the area (BGS 1978) show the entire site to be underlain by Upper Chalk

16 The published soils information for the area (SSEW 1983 & 1984) show the entire site to be mapped as containing Batcombe Association soils These normally contain flinty loamy soils over subsoil clays that show evidence of impeded drainage which are developed over Chalk at depth On the site shallow soils over chalk were discovered

AGRICULTURAL LAND CLASSIFICATION

17 The details of the classification of the site are shown on the attached ALC map

18 The location of the single auger boring is shown on the attached sample location map and the details of the soils data are presented in Appendix III

Subgrade 3b

19 All of the land on the site has been placed in this grade. Gradient and soil droughtiness are the active limitations on the site.

20 Land along the southern boundary experiences a gradient limitation. Slopes between 7.5 and 10 degrees were measured. This degree of gradient will restrict the safe use of mechanised farm equipment and therefore affects the flexibility of this land.

21 Land along the northern boundary is more gently sloping but experiences a droughtiness limitation. Given the small extent of this land, no soil pit was described and the classification is based on one soil observation in this area. The soil resource is believed to be thin over Chalk deposits, with chalk encountered at approximately 35 cm. Even if roots can easily penetrate the chalk in search of water, this depth of soil restricts the total amount of water that is available for extraction by crop roots. There is a significant soil droughtiness limitation that means that this area cannot be classified higher than Subgrade 3b.)

SOURCES OF REFERENCE

British Geological Survey (1978) *Sheet No 270 South London*
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 6 Soils of South East England*
SSEW Harpenden

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

APPENDIX I

DESCRIPTIONS 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 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 the level of yields. It is mainly suited to grass with occasional arable crops (e.g. 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 which restrict 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 the¹ 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

SAMPLE NO	GRID REF	ASPECT USE	WETNESS GRDNT	WHEAT GLEY SPL	POTS CLASS	M REL GRADE	EROSN AP	FROST MB	CHEM AP	ALC MB	COMMENTS	
							DRT	FLOOD	EXP	DIST	LIMIT	
1	TQ33606070	PGR S	06	000	1	1	080	21	083	9	38	DR 3B IMPX4QCK

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES			PED		STONES			STRUCT/		SUBS			
				COL	ABUN	CONT	COL	GLE	2	6	LITH	TOT	CONSIST	STR	POR	IMP	SPL
1	0 20	mc1	10YR43 00						0	0	CH	5					
	20 32	hc1	10YR54 00						0	0	CH	15			M		
	32 62	ch	00ZZ00 00						0	0		0			M		