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Maidstone Borough Local Plan
Site 9 Cowbeck Woods, Lordswood
Agricultural Land Classification
ALC Map and Report
July 1994

AGRICULTURAL LAND CLASSIFICATION REPORT

MAIDSTONE BOROUGH LOCAL PLAN
SITE 9, COWBECK WOODS, LORDSWOOD

1 Summary

1 1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality for a number of sites in the Maidstone district of Kent This work forms part of MAFF's statutory input to the Maidstone Borough Local Plan

1 2 Site 9 comprises approximately 14 hectares of land on the south eastern edge of Walderslade near Maidstone Kent An Agricultural Land Classification (ALC) survey was carried out in July 1994 The survey was undertaken at a detailed level of approximately one boring per hectare of agricultural land A total of 7 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 At the time of the survey the agricultural land was being used for cereal cultivation and as rough grassland Land mapped as urban includes areas of hard standing and old foundations Over half the site was woodland

1 4 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
3b	1 4	10 1	29 8
4	3 3	23 7	70 2
Total Agricultural Area	4 7		100 0 (4 7 ha)
Urban	1 0	7 2	
Woodland	8 2	59 0	
Total area of site	13 9	100 0	

1 5 Appendix 1 gives a general description of the grades and landuse categories identified in this survey The main classes are described in terms of limitation that can occur the typical cropping range and expected level and consistency of yield

1 6 Land quality on this site is either moderate quality Subgrade 3b or poor quality Grade 4 The land has been classified principally on the basis of soil wetness soil droughtiness and/or high topsoil stone contents Soils consist of clay loams or silty clay loams overlying clay subsoils which have high flint contents in the topsoil and throughout Where land is Grade 4 the topsoil may have been removed giving rise to the very stony top 25 cm of the profile and the severe restrictions this causes Where land is graded 3b slight soil wetness and/or droughtiness limitations apply as well as topsoil stone restrictions

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 Estimates of climatic variables relevant to the assessment of agricultural land quality were obtained by interpolation from a 5 km grid point dataset (Met Office 1989) for representative locations in the survey area

Table 2 Climatic Interpolations

Grid Reference	TQ780622	TQ782619
Altitude (m AOD)	145	160
Accumulated Temperature (degree days Jan-June)	1338	1321
Average Annual Rainfall (mm)	685	693
Field Capacity (days)	139	140
Moisture Deficit Wheat (mm)	103	101
Moisture Deficit Potatoes (mm)	95	92

2 3 The details given in the table above show that there is a small area in the south-west of the site that suffers a minor overall climatic limitation but the rest of the site has no overall climatic limitation

2 4 Climatic factors do however interact with soil properties to influence soil wetness and droughtiness limitations At this locality the climate is relatively cool in regional terms

3 Relief

3 1 The site lies at an altitude of approximately 140-170 m AOD, rising gently from north east to south west The south east part of the site has two man made banks running across it from north east to south-west but these do not act to restrict land quality

4 Geology and Soil

4 1 British Geological Survey (1977) Sheet 272 Chatham shows the whole site to be underlain by clay with flints deposits

4 2 Soil Survey of England and Wales (1983), Sheet 6 shows the site to comprise soils of the Batcombe Association These are described as being fine silty over clayey and fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging' (SSEW 1983)

4 3 Soils on the site were found to comprise medium or heavy clay loam horizons over clayey horizons The clayey horizons were found to contain flint nodules and were affected by imperfect drainage caused by the low porosity and poor structure

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 and profile pits are given on the attached boring location map

Subgrade 3b

5 3 Moderate quality land has been mapped where minor soil wetness and droughtiness limitations exist However a topsoil stone limitation is overriding The profiles typically comprise non-calcareous medium silty clay loam topsoils over heavier subsoils The topsoil was found to be slightly stony (15% total flints by volume 8%-15% of which are > 2 cm in size) The stone content increases to 40% flint by volume in the heavy clay loam upper subsoils before decreasing again in the clay lower subsoils The poorly structured clay impedes drainage causing manganese concretions to form below 70 cm The clayey subsoil horizons also have low porosity and are assessed as being slowly permeable These drainage characteristics equate to Wetness Class II Given the topsoil textures and the local climatic regime the land is slightly limited in terms of opportunities for cultivations and grazing as well as slightly adverse effects on crop growth and development resulting from soil wetness The stone contents of the profiles also reduces the amount of available water for use by any crops with a minor reduction in land quality In addition 8%-15% flints > 2 cm in size in the topsoil represents a restriction affecting crop establishment and development and causing wear and tear to farm machinery Overall land cannot be graded higher than Subgrade 3b therefore

Grade 4

5 4 The majority of the agricultural land surveyed has been mapped as Grade 4 poor quality agricultural land as a result of its high stone content in the top 25 cm which will cause 'mechanical limitations The high stone contents (40% flints > 2 cm in size by volume) will increase wear on mechanical implements and tyres so

increasing production costs There may also be problems in plant establishment and growth because of the lower proportion of rooting material The medium or heavy clay loam topsoils rest over clay subsoils which are slightly less stony (20% flint by volume) The clay horizons suffer from imperfect drainage causing manganese concretions to form due to their low porosity and poor structure It should be noted that it is possible that the topsoil has been striped from this area, thereby giving rise to the extreme stoniness of the top 25 cm

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Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1977) Sheet 272 Chatham, 1 50 000 (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 bulletin