A1

Arun District Local Plan

Site 4 : Land south of the A27, Angmering

Agricultural Land Classification

ALC Map and Report

May 1994

AGRICULTURAL LAND CLASSIFICATION REPORT

ARUN DISTRICT LOCAL PLAN
SITE 4 : LAND SOUTH OF THE A27, ANGMERING

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 Arun District of West Sussex. The work forms part of MAFF's statutory input to the preparation of the Arun District Local Plan.

1.2 Site 4 comprises 2.0 hectares of land immediately south of the A27 and east of Dapper's Lane at Angmering in West Sussex. An Agricultural Land Classification, (ALC), survey was carried out during April 1994. The survey was undertaken at a detailed level of approximately two borings per hectare. A total of four borings and one soil inspection pit 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 land use was a grass ley. Land mapped as Non-Agricultural adjacent to the A27 and Dapper's Lane had been fenced off because of a road improvement scheme.

1.4 The distribution of grades and subgrades is shown on the attached ALC map and the areas and extent are given in the table below. The map has been drawn at a scale of 1:5,000. 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	70.0	100.0
Non-Agricultural	0.6	30.0	
Total area of site	2.0	100.0	

1.5 Appendix I gives a general description of the grades, subgrades and land use categories identified in the survey. The main classes are described in terms of the type of limitation that can occur, the typical cropping range and the expected level and consistency of yield.

1.6 All of the agricultural land surveyed has been classified as Subgrade 3b, moderate quality. Medium silty clay loam topsoils overlie similar textured or clay upper subsoils and clay lower subsoils. The subsoils are slowly permeable and act to significantly impede drainage, resulting in soil wetness and workability limitations.

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 The main parameters used in the assessment of an overall climatic limitation are average annual rainfall, as a measure of overall wetness, and accumulated temperature (degree days Jan-June), as a measure of the relative warmth of a locality.

2.3 A detailed assessment of the prevailing climate was made by interpolation from a 5km gridpoint dataset (Met. Office 1989). The details are given in the table below and these show that there is no overall climatic limitation affecting the site. However, climatic factors do interact with soil properties to influence soil wetness and droughtiness limitations. At this locality the crop adjusted moisture deficits are relatively high,in a regional context. High crop adjusted moisture deficits increase the likelihood of soil droughtiness limitations.

2.4 No local climatic factors such as exposure or frost risk are believed to affect the site.

Table 2 : Climatic Interpolation

Grid Reference	TQ074056
Altitude (m)	40
Accumulated Temperature (degree days, Jan-June)	1499
Average Annual Rainfall (mm)	798
Field Capacity (days)	164
Moisture Deficit, Wheat (mm)	113
Moisture Deficit, Potatoes (mm)	108
Overall Climatic Grade	1

3. Relief

3.1 The survey area occupies a gentle hillside, falling from approximately 41m AOD along the northern boundary of the site to approximately 35m AOD along the southern boundary of the site. Neither gradient nor relief impose any limitation to agricultural use.

4. Geology and Soil

4.1 British Geological Survey (1957 Sheet 317, Chichester shows the entire site as brickearth underlain by London Clay.

4.2 The published soil survey map (SSGB, 1967, 1:25,000) maps soils of the Titchfield complex. These soils are described as 'a range of poorly and imperfectly drained

surface-water gley soils developed in Eocene clay with a variable cover of non-calcareous, more or less flinty, loamy or clayey drift'. (SSGB, 1967).

4.3 Detailed field examination found poorly drained fine textured soils.

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 are shown on the attached sample point map.

Subgrade 3b

5.3 All of the agricultural land surveyed has been classed as moderate quality because of soil wetness and workability restrictions. Medium silty clay loam topsoils overlie similar textured or clay upper subsoils and clay, or occasionally silty clay, lower subsoils. Topsoils are moderately stony, containing 2-5% flints >2cm v/v and 15-20% total flints v/v. These soils are gleyed below the topsoil and are slowly permeable at approximately 28-38cm. This acts to significantly impair permeability, placing such profiles into Wetness Class IV. These soils are typified by Pit 1. Soil wetness adversely affects crop growth and yields and restricts cultivations, grazing by livestock and trafficking by machinery.

ADAS Ref: 4202/072/94
MAFF Ref: EL42/00460

Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1957), Sheet No. 317, Chichester, 1:63,360 (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), Climatological Data for Agricultural Land Classification.

Soil Survey of Great Britain (1967), Bulletin No. 3, Soils of the West Sussex Coastal Plain and accompanying maps.

SOIL PIT DESCRIPTION

Site Name : ARUN L.P. SITE 4 Pit Number : 1P

Grid Reference: SU07340552
Average Annual Rainfall : 798 mm
Accumulated Temperature : 1499 degree days
Field Capacity Level : 164 days
Land Use : Ley
Slope and Aspect : 01 degrees S

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 28	MZCL	10YR42 00	5	20	F	
28- 42	MZCL	10YR63 00	0	15	M	MDCAB
42- 66	C	10YR71 00	0	1	M	MDCAB

Wetness Grade : 3B
Wetness Class : IV
Gleying :028 cm
SPL :028 cm

Drought Grade :
APW : mm MBW : 0 mm
APP : mm MBP : 0 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Wetness

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	--WETNESS-- GLEY	SPL	CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT		ALC	COMMENTS
1	SU07340555	LEY	S	01	030	030	4	3B		0		0					WE		3B	
1P	SU07340552	LEY	S	01	028	028	4	3B		0		0					WE		3B	PIT DUG TO 66
2	SU07300550	LEY	SE	01	038	038	4	3B		0		0					WE		3B	
3	SU07300550	LEY	S	01	045	045	3	3A		0		0					WE		3A	
4	SU07400550	LEY	SE	01	0	030	4	3B		0		0					WE		3B	
5	SU07340552	LEY	S	01	028	028	4	3B		0		0					WE		3B	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
1	0-30	mzcl	10YR42 00	10YR56 00	F				5	0	HR	20						
	30-40	c	10YR52 00	75YR68 00	M			Y	0	0	HR	10		P			Y	
	40-60	c	10YR52 62	75YR68 00	M			Y	0	0	HR	3		P			Y	
1P	0-28	mzcl	10YR42 00	10YR68 00	F				5	0	HR	20						
	28-42	mzcl	10YR63 00	75YR58 61	M			Y	0	0	HR	15	MDCAB	FR M	Y		Y	
	42-66	c	10YR71 00	75YR68 00	M			Y	0	0	HR	1	MDCAB	FM P	Y		Y	
2	0-38	mzcl	10YR42 00	10YR58 00	F				2	0	HR	15						
	38-44	c	10YR64 00	75YR58 61	M			Y	0	0	HR	1		M			Y	
	44-60	c	10YR64 00	75YR58 61	M			Y	0	0	HR	1		P			Y	
3	0-32	mzcl	10YR42 00						4	0	HR	20						
	32-45	mzcl	10YR53 00						0	0	HR	30		M				
	45-68	mzcl	10YR52 00	10YR58 00	M			Y	0	0	HR	10		M			Y	Q SPL
	68-120	zc	10YR52 00	10YR58 00	M			Y	0	0	HR	10		P			Y	
4	0-30	mzcl	10YR42 00	10YR68 00	C			Y	2	0	HR	15						
	30-60	c	10YR64 00	75YR58 61	M			Y	0	0	HR	2		P			Y	
5	0-28	mzcl	10YR42 00						2	0	HR	15						
	28-48	mzcl	10YR53 00	10YR56 00	M			Y	0	0	HR	5		M			Y	
	48-70	c	10YR52 00	75YR68 00	M			Y	0	0	HR	1		P			Y	