

A1
Chichester District Local Plan
H10: Land at Townfield,
Kirdford.
Agricultural Land Classification
ALC Map and Report
January 1995

AGRICULTURAL LAND CLASSIFICATION REPORT

CHICHESTER DISTRICT LOCAL PLAN. H10: LAND AT TOWNFIELD, KIRDFORD.

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 district of Chichester in West Sussex. The work forms part of MAFF's statutory input to the preparation of the Chichester District Local Plan.
- 1.2 Site H10 comprises 1.1 hectares of land to the north-west of Townfield, in the village of Kirdford. An Agricultural Land Classification (ALC) survey was carried out in January 1995. The survey was undertaken at a detailed level of approximately two borings per hectare of agricultural land. A total 2 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 agricultural land on the site comprised unmanaged rough grassland.
- 1.4 The distribution of grades and subgrades is shown on the attached 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*.
- 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 on the site (1.1 ha.) has been classified as Subgrade 3b, moderate quality land, with soil wetness as the main limitation. Soil profiles typically comprise clay horizons throughout. Profiles are gleyed from the topsoil, and the clay subsoils are poorly structured and slowly permeable, with a resultant classification of Subgrade 3b due to this significant wetness limitation. Poorly drained wet soils restrict plant growth and development and may be more susceptible to structural damage through trafficking by agricultural machinery or poaching by grazing livestock.

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

Table 2 : Climatic Interpolation

Grid Reference	TQ 015 269
Altitude (m)	24
Accumulated Temperature (degree days, Jan-June)	1509
Average Annual Rainfall (mm)	792
Field Capacity (days)	167
Moisture Deficit, Wheat (mm)	113
Moisture Deficit, Potatoes (mm)	108
Overall Climatic Grade	1

3. Relief

- 3.1 The site is flat, lying at an altitude of approximately 24m AOD.

4. Geology and Soils

- 4.1 The relevant geological sheet (BGS, 1981) shows the site to be underlain by Weald Clay.
- 4.2 The published Soil Survey map (SSEW, 1983) shows the soils on the site to comprise those of the Wickham 5 association. These are described as 'slowly permeable seasonally waterlogged fine loamy over clayey, fine silty over clayey and clayey soils' (SSEW, 1983).
- 4.3 Detailed field examination found the soils on the site to be clayey with slowly permeable subsoils.

5. Agricultural Land Classification

5.1 The location of the soil observation points are shown on the attached sample point map.

Subgrade 3b

5.2 All of the agricultural land on the site has been classified as Subgrade 3b due to a significant soil wetness limitation. Soil profiles were found to comprise both clay topsoils and subsoils. Profiles show evidence of imperfect drainage in the form of gleying within the topsoils and subsoils. A subsequent soil inspection pit found the clay lower subsoil to be poorly structured with low porosity at 28cm, and therefore may be classified as a slowly permeable layer. The presence of gleying and the shallow depth to the slowly permeable layer means that these soils are assigned to Wetness Class IV, with a resultant classification of Subgrade 3b. Furthermore, imperfect soil drainage is evidenced by the presence of hydrophilic vegetation such as Juncus spp. in some areas of the site. Poorly drained wet soils can inhibit plant and root development, and may be more susceptible to structural damage through trafficking by agricultural machinery or poaching by grazing livestock.

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Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1981), Sheet No. 301, Haslemere, 1:50,000 Series (solid and 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 England and Wales (1983), Sheet 6, Soils of South East England, 1:250,000 and accompanying legend.

SOIL PIT DESCRIPTION

Site Name : CHICHESTER LP KIRDFORD Pit Number : 1P

Grid Reference: TQ01502690 Average Annual Rainfall : 792 mm
 Accumulated Temperature : 1509 degree days
 Field Capacity Level : 167 days
 Land Use : Rough Grazing
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	C	10YR5/2 00	0	0		C				
28- 42	C	10YR6/2 73	0	0		M	WKCAB	FM	P	
42- 65	C	10YR6/2 71	0	0		M	MASS	FM	P	

Wetness Grade : 3B Wetness Class : IV
 Gleying : 000 cm
 SPL : 028 cm

Drought Grade : APW : 000mm MBW : 0 mm
 APP : 000mm MBP : 0 mm

FINAL ALC GRADE : 3B
 MAIN LIMITATION : Wetness

SAMPLE NO.	GRID REF	ASPECT USE	GRDNT	GLEYSPL	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS
					CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT		
1	TQ01502690	RGR	000	025	4	3B	000	0	000	0					WE	3B	JUNCUS
1P	TQ01502690	RGR	000	028	4	3B	000	0	000	0					WE	3B	
2	TQ01452681	RGR	000	030	4	3B	000	0	000	0					WE	3B	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR	IMP	SPL	CALC
1	0-25	c	10YR52 00	10YR56	61	C			Y	0	0	0						
	25-60	c	10YR62 00	10YR68	71	M			Y	0	0	0		P				Y
1P	0-28	c	10YR52 00	10YR56	61	C			Y	0	0	0						
	28-42	c	10YR62 73	10YR68	71	M	00MN00	00	Y	0	0	0	WKCAB	FM	P	Y		Y
	42-65	c	10YR62 71	10YR68	00	M	00MN00	00	Y	0	0	0	MASS	FM	P	Y		Y
2	0-30	c	10YR52 42	10YR58	61	C			Y	0	0	0						
	30-65	c	10YR62 00	10YR68	72	M			Y	0	0	0		P				Y