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ROTHER DISTRICT LOCAL PLAN
Land at Ivy House Lane
The Ridge, Hastings

Agricultural Land Classification
ALC Map and Report

August 1997

Resource Planning Team
Eastern Region
FRCA Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

ROTHER DISTRICT LOCAL PLAN
LAND AT IVYHOUSE LANE, HASTINGS

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of approximately 8 hectares of land to the northeast of Hastings between the cemetery and the railway tunnel. The survey was carried out during August 1997.

2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA) on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF), in connection with the Rother District Local Plan. This survey supersedes any previous ALC information for this land.

3. The work was conducted by members of the Resource Planning Team in the Eastern Region of the FRCA. 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 agricultural land was in rough 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 below.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
3b	6.6	100	81.5
Other land	1.5	N/A	18.5
Total survey area	6.6	100	N/A
Total site area	8.1	N/A	100

7. The fieldwork was conducted at an average density of 1 boring every hectare. A total of 9 borings and 1 soil pit were described.

8. The land at this site has been classified as Subgrade 3b (moderate quality agricultural land) on the basis of soil wetness and gradient.

9. The soils are variable in nature reflecting the complex underlying geological deposits. Typical profiles comprise fine and coarse silty soils (with occasional clayey horizons at depth)

which are underlain by fine sandstone and siltstone deposits at 55-100cm depth. On the whole, the fine silty and clayey horizons were found to restrict drainage, as evidenced by gleying at or near the surface. The nature of the underlying geological deposits further restricts the drainage of water, such that an additional problem of surface seepage occurs locally. Excessive soil wetness may adversely affect crop growth and restrict land utilisation.

10. Land running along the eastern boundary and towards the north western edge of the survey area is limited to Subgrade 3b on the basis of gradient. Here, slope measurements generally range between 7.5-10° which will affect the safe and effective use of farm machinery.

FACTORS INFLUENCING ALC GRADE

Climate

11. Climate affects the grading of the land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

12. 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

Factors	Units	Values	Values
Grid reference	N/A	TQ 832 125	TQ 830 123
Altitude	m.AOD	70	90
Accumulated Temperature	day°C	1444	1422
Average Annual Rainfall	mm	798	801
Field Capacity Days	days	166	167
Moisture Deficit, Wheat	mm	112	110
Moisture Deficit, Potatoes	mm	106	104
Overall Climatic Grade	N/A	Grade 1	Grade 1

13. 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.

14. 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.

15. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation. The site is climatically Grade 1. The site is believed not to be at risk from frost or exposure.

Site

16. The agricultural land at this site lies at an altitude of 65-95m AOD. The land falls towards the east. Land quality is limited to Subgrade 3b in places by steep gradients in excess

of 7°(between 7.5 and 10°). The remainder of the site is more gently sloping with gradients measuring between 2 and 6°.

Geology and soils

17. The published geological information (BGS, 1980) shows the majority of the site to be underlain by Clay in Ashdown Beds. A band of Ashdown Beds is also mapped which runs in an east-west direction through the centre of the site. These deposits are very inconsistent in character.

18. The most recently published soil information (SSEW, 1983) shows the survey area to be mapped as the Curtisden Association. These are described as 'Silty soils over siltstone with slowly permeable subsoils and slight seasonal waterlogging. Some similar well drained soils. Some well drained coarse loamy soils over sandstone. Slumping locally.' (SSEW, 1983).

19. Upon detailed field examination, soils broadly consistent with the above description were found in the survey area.

AGRICULTURAL LAND CLASSIFICATION

20. 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.

21. The location of the auger borings and pits is shown on the attached sample location map and the details of the soils data are presented in Appendix II.

Subgrade 3b

22. The entire area of survey has been mapped as Subgrade 3b (moderate quality agricultural land). The key limitations are soil wetness and gradient.

23. Soil profiles are very variable in nature due to the complex underlying lithology from which they are derived. Soil inspection pit 1 (Appendix II) is considered representative of the majority of soil types in the survey area. The overall quality of the land will vary depending on the amount of sand, silt, clay and hardrock in the profile as well as the depth to the soft, weathered sandstone and siltstone deposits.

24. On the whole, the profiles tend to comprise silt loam or medium silty clay loam topsoils which are very slightly stony (containing up to 5% total fine soft sandstone or flints and/or ironstone fragments). The subsoils vary from moderately structured silt loams and fine sandy silt loams to poorly structured, slowly permeable medium and heavy silty clay loams. From approximately 28cm to 45cm depth the profiles become slowly permeable. Drainage through the profile is therefore restricted causing a significant amount of seasonal waterlogging. At depths of between 55cm and 100cm, fine soft sandstone and siltstone deposits (with low porosity) occur which also act to restrict drainage across the site. Such deposits occur in approximately half of the borings and are usually impenetrable to the soil auger. In this climatic regime a combination of light textured topsoils over shallow slowly permeable horizons result in a moderate soil wetness limitation such that Wetness Class IV, Subgrade 3b is considered appropriate. As a result, crop germination and growth may be adversely affected. The timing

of cultivations may also be restricted as trafficking by agricultural machinery or grazing by livestock may lead to structural damage.

25. The nature of the underlying geological deposits further restricts the drainage of water which has led to an additional problem of surface seepage at the site. The predominance of hydrophilic vegetation such as rushes and sedges in localised areas is indicative of prolonged periods of waterlogging caused by the seepage of groundwater at the junction between the variable lithologies. Such land is unlikely to benefit from arterial drainage. As such it will present substantial difficulties in terms of cropping and cultivations such that these areas will be restricted to Subgrade 3b on the basis of soil wetness.

26. In a few discrete areas of the site, gradient is the principal limitation. Slopes were measured between 7.5 and 11 degrees using an optical reading clinometer. In these areas the safe and effective use of farm machinery for cultivations is restricted to the extent that land cannot be graded any higher than Subgrade 3b. Land of this quality could be expected to produce moderate yields of a narrow range of crops principally cereals and grass.

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SOURCES OF REFERENCE

British Geological Survey (1980) Sheet No. 320/321, Hastings and Dungeness 1:50,000 scale (Drift Edition). 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.* 1:250,000 scale. SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in South East England.* Bulletin 15. SSEW: Harpenden.

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	IMP	SPL	CALC	
1	0-28	ZL	10YR42						0	0	FSST	2							
	28-60	MZCL	25Y 72	10YR68	C			Y	0	0		0		P		Y			BORDER HZCL
	60-120	MZCL	25Y 72	10YR68	M			Y	0	0	FSST	10		P		Y			BORDER HZCL
2	0-33	ZL	10YR42						0	0		0							
	33-45	ZL	25Y 7282	10YR68	C			Y	0	0	FSST	5		M					
	45-60	MZCL	25Y 7282	10YR6858	M			Y	0	0	FSST	5		P		Y			BORDER HZCL
	60-75	HZCL	25Y 72	10YR68	M			Y	0	0		0		P		Y			DENSE, FIRM
	75-100	MZCL	25Y 7273	75YR68	M			Y	0	0		0		P		Y			IFSST Q HZCL
3	0-30	ZL	10YR42						0	0	HR	2							
	30-50	ZL	10YR64	10YR68	M			Y	0	0	HR	2		M					
	50-65	MZCL	10YR64	10YR68	M			Y	0	0	HR	2		M					FRIABLE
	65-100	MZCL	25Y 72	75YR58	M			Y	0	0	FSST	10		P		Y			IFSST Q HZCL
4	0-33	ZL	10YR42						0	0	FSST	2							
	33-50	MZCL	25Y 72	10YR68	C			Y	0	0	FSST	2		P		Y			BORDER HZCL
	50-55	MZCL	25Y 72	10YR5868	M			Y	0	0	FSST	10		P		Y			IMP FSST
5	0-30	MZCL	10YR42	10YR56	C			Y	0	0		0							
	30-55	FSZL	25Y6466	10YR58	M			Y	0	0	HR	5		M					POROUS, FRIABLE
	55-75	MZCL	25Y 72	10YR5856	M			Y	0	0	HR	5		P		Y			BORDER HZCL
	75-120	ZC	05Y 71	10YR58	M			Y	0	0		0		P		Y			PLASTIC
6	0-25	MZCL	10YR42						0	0		0							
	25-50	ZL	25Y 6272	10YR5868	C			Y	0	0		0		M					LOOSE, FRIABLE
	50-120	MZCL	25Y7172	10YR58	M			Y	0	0		0		P		Y			BORDER HZCL
7	0-28	MZCL	10YR42	10YR56	C			Y	0	0	HR	2							
	28-60	MZCL	25Y 7172	10YR5658	M			Y	0	0	FSST	10		P		Y			
	60-65	HZCL	25Y 72	10YR6558	M			Y	0	0	FSST	15		P		Y			IMP FSST/ZR
8	0-35	ZL	25Y 53	10YR68	C			Y	0	0	FSST	5							
	35-45	MZCL	25Y 6374	75YR68	C			Y	0	0	FSST	2		M					FRIABLE
	45-85	HZCL	25Y 82	75YR68	M			Y	0	0	FSST	2		P		Y			IFSST Q MZCL
9	0-25	ZL	10YR43	10YR68	C			Y	0	0	FSST	5							
	25-35	MZCL	05Y 62	10YR68	C			Y	0	0	FSST	10		M					FRIABLE
	35-85	HZCL	25Y 7263	10YR58	C			Y	0	0	FSST	10		P		Y			BORDER MZCL
	85-120	C	05Y 7172	75YR68	M			Y	0	0		0		P		Y			PLASTIC

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	
1P	0-28	ZL	10YR5253						0	0	FSST	2							
	28-44	MZCL	10YR74	10YR68	M			Y	0	0	FSST	5	MDCSAB	FM	M		Y		FRIABLE, POROUS
	44-70	HZCL	25Y 72	10YR5868	M			Y	0	0	FSST	2	MDVCPR	FM	P	Y	Y		QMZCL DUG TO 82

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	TQ83001250	RGR	E	6	28	28	4	3B	130	18	113	7					WE	3B	SEE PIT 1
2	TQ83101250	RGR	E	4	33	45	4	3B	137	25	131	25					WE	3B	SEE PIT 1
3	TQ83201250	RGR	E	5	30	65	3	3A	146	34	141	35					WE	3A	SEE PIT 1
4	TQ83001240	RGR	E	6	33	33	4	3B	106	-6	109	3					DR	3A	I55 SEE 1P
5	TQ83111239	RGR	NE	5	0	55	3	3A	155	43	131	25					WE	3B	SEEPAGE
6	TQ83201240	RGR	NE	4	25	50	3	3A	173	61	137	31					WE	3B	SEEPAGE
7	TQ83001230	RGR	E	6	28	28	4	3B	85	-27	93	-13					WE	3B	I65 SEE 1P
8	TQ83101230	RGR	E	3	35	45	4	3B	121	9	124	18					WE	3B	SEE PIT 1
9	TQ83111222	RGR	E	5	0	35	4	3B	127	15	105	-1					WE	3B	SEE PIT 1

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1P	TQ RGR	E	3	28	44	4	3B	108	-4	120	14					WE	3B	I82	FSST