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**ROTHER DISTRICT LOCAL PLAN  
Site 3, Little Common, Bexhill, East Sussex**

**Agricultural Land Classification  
ALC Map and Report**

**September 1997**

**Resource Planning Team  
Eastern Region  
FRCA Reading**

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# AGRICULTURAL LAND CLASSIFICATION REPORT

## ROTHER DISTRICT LOCAL PLAN SITE 3, LITTLE COMMON, BEXHILL, EAST SUSSEX

### INTRODUCTION

1. This summary report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 9.8 ha of land at Little Common, Bexhill in East Sussex. The survey was carried out during October 1997.
2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA)<sup>1</sup> 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 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 site was all under permanent grassland and grazed by dairy cattle. The areas mapped as 'Other land' include an area of private gardens and a 'hard core' trackway, both located in the extreme north of the survey area.

### 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.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
3b	9.0	100.0	91.8
Other land	0.8	N/A	8.2
Total surveyed area	9.0	100	91.8
Total site area	9.8	-	100

7. The fieldwork was conducted at an average density of 1 borings per hectare of agricultural land. A total of 9 borings and 1 soil pit was described.

<sup>1</sup> FRCA is an executive agency of MAFF and the Welsh Office

8. The entire site suffers from a moderate soil wetness limitation and is mapped as Subgrade 3b (moderate quality agricultural land).

9. Soil profiles are characteristically deep, virtually stoneless and non-calcareous. Topsoils comprise medium silty clay loam or silt loam textures. These overlie similarly textured upper subsoils with poor structural conditions. The effect of this structure is to impede soil drainage, and it is the depth to this slowly permeable layer which determines the overall ALC grade and restricts the land on this site to no higher than Subgrade 3b quality.

10. The agricultural impact of a moderate soil wetness limitation is felt in an adverse effect upon seed germination, partly by a reduction in soil temperature and partly because of anaerobism. This also inhibits the development of a good root system and can affect crop growth. In addition, the light topsoils are prone to structural damage and this restricts the number of days when the soil is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock.

## FACTORS INFLUENCING ALC GRADE

### Climate

11. Climate affects the grading of 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

Factor	Units	Values	
		TQ 709 077	TQ 708 074
Grid reference	N/A		
Altitude	m, AOD	15	5
Accumulated Temperature	day°C (Jan-June)	1512	1524
Average Annual Rainfall	mm	749	740
Field Capacity Days	days	157	156
Moisture Deficit, Wheat	mm	122	123
Moisture Deficit, Potatoes	mm	119	121
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. Local climatic factors such as frost risk do not affect land quality at this location, however, unpublished Met. Office information suggests that the general locality is in area described as 'rather exposed'. Site investigation showed that, given the lie of the land and protection from adjacent woodland, exposure is not believed to be significant. At this locality the climate is relatively warm and moist, in regional terms. The likelihood of soil wetness problems may therefore be enhanced. The site is climatically Grade 1.

#### **Site**

16. The site lies at altitudes in the range 5-20 m AOD. The highest land occurs in the north of the site and this falls gently to the south. The land is not affected by any site restrictions (i.e., steep gradient, uneven micro-relief or flooding)

#### **Geology and soils**

17. The most detailed published geological information for the site (BGS, 1980) shows all of it to be underlain by Tunbridge Wells Sand.

18. The most detailed published soils information covering the survey area (SSEW, 1983 & 1984) shows it to comprise entirely soils of the Curtisden association. These soils 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.' Soils consistent with this description were observed across the site; fine silty over similar, slowly permeable subsoils passing to siltstone.

#### **AGRICULTURAL LAND CLASSIFICATION**

19. 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, page 1.

20. 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**

21. Land of moderate quality has been mapped over the entire site. Soil wetness is the principal soil limitation.

22. All of the land classified as Subgrade 3b is affected by a significant soil wetness restriction. Soils comprise non-calcareous medium silty clay loam topsoils with up to 1 % flints by volume. Topsoils overlie a similar but poorly structured upper and lower subsoil. Pit 1 (see Appendix II) was typical of these soils and confirmed the existence of these slowly permeable horizons. It is the depth to these slowly permeable medium silty clay loams which determines the overall ALC grade. These soils are assigned to Wetness Class IV and this, in combination with the shallow poorly structured subsoils (from 35 cm), the topsoil texture and local climatic factors, restricts land quality to Subgrade 3b.

23. The effect of a significant soil wetness limitation such as this is to impede drainage, which adversely affects seed germination and survival, partly by a reduction in soil temperature and partly through the creation of anaerobic conditions. This also inhibits the development of a good root system and can affect crop growth. In addition, the heavy topsoils restrict the number of days when the soil is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock.

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## SOURCES OF REFERENCE

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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.  
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 DATA**

**Contents:**

**Sample location map**

**Soil abbreviations - explanatory note**

**Soil boring descriptions (boring and horizon levels)**



## SOIL PROFILE DESCRIPTIONS: EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a computer database. This uses notations and abbreviations as set out below.

### Boring Header Information

1. **GRID REF:** national 100 km grid square and 8 figure grid reference.

2. **USE:** Land use at the time of survey. The following abbreviations are used:

<b>ARA:</b>	Arable	<b>WHT:</b>	Wheat	<b>BAR:</b>	Barley
<b>CER:</b>	Cereals	<b>OAT:</b>	Oats	<b>MZE:</b>	Maize
<b>OSR:</b>	Oilseed rape	<b>BEN:</b>	Field beans	<b>BRA:</b>	Brassicae
<b>POT:</b>	Potatoes	<b>SBT:</b>	Sugar beet	<b>FCD:</b>	Fodder crops
<b>LIN:</b>	Linseed	<b>FRT:</b>	Soft and top fruit	<b>FLW:</b>	Fallow
<b>PGR:</b>	Permanent pasture	<b>LEY:</b>	Ley grass	<b>RGR:</b>	Rough grazing
<b>SCR:</b>	Scrub	<b>CFW:</b>	Coniferous woodland	<b>OTH:</b>	Other
<b>DCW:</b>	Deciduous woodland	<b>BOG:</b>	Bog or marsh	<b>SAS:</b>	Set-Aside
<b>HTH:</b>	Heathland	<b>HRT:</b>	Horticultural crops	<b>PLO:</b>	Ploughed

3. **GRDNT:** Gradient as estimated or measured by a hand-held optical clinometer.

4. **GLEYSPL:** Depth in centimetres (cm) to gleying and/or slowly permeable layers.

5. **AP (WHEAT/POTS):** Crop-adjusted available water capacity.

6. **MB (WHEAT/POTS):** Moisture Balance. (Crop adjusted AP - crop adjusted MD)

7. **DRT:** Best grade according to soil droughtiness.

8. If any of the following factors are considered significant, 'Y' will be entered in the relevant column:

<b>MREL:</b>	Microrelief limitation	<b>FLOOD:</b>	Flood risk	<b>EROSN:</b>	Soil erosion risk
<b>EXP:</b>	Exposure limitation	<b>FROST:</b>	Frost prone	<b>DIST:</b>	Disturbed land
<b>CHEM:</b>	Chemical limitation				

9. **LIMIT:** The main limitation to land quality. The following abbreviations are used:

<b>OC:</b>	Overall Climate	<b>AE:</b>	Aspect	<b>ST:</b>	Topsoil Stoniness
<b>FR:</b>	Frost Risk	<b>GR:</b>	Gradient	<b>MR:</b>	Microrelief
<b>FL:</b>	Flood Risk	<b>TX:</b>	Topsoil Texture	<b>DP:</b>	Soil Depth
<b>CH:</b>	Chemical	<b>WE:</b>	Wetness	<b>WK:</b>	Workability
<b>DR:</b>	Drought	<b>ER:</b>	Erosion Risk	<b>WD:</b>	Soil Wetness/Droughtiness
<b>EX:</b>	Exposure				

## Soil Pits and Auger Borings

1. **TEXTURE:** soil texture classes are denoted by the following abbreviations:

<b>S:</b>	Sand	<b>LS:</b>	Loamy Sand	<b>SL:</b>	Sandy Loam
<b>SZL:</b>	Sandy Silt Loam	<b>CL:</b>	Clay Loam	<b>ZCL:</b>	Silty Clay Loam
<b>ZL:</b>	Silt Loam	<b>SCL:</b>	Sandy Clay Loam	<b>C:</b>	Clay
<b>SC:</b>	Sandy Clay	<b>ZC:</b>	Silty Clay	<b>OL:</b>	Organic Loam
<b>P:</b>	Peat	<b>SP:</b>	Sandy Peat	<b>LP:</b>	Loamy Peat
<b>PL:</b>	Peaty Loam	<b>PS:</b>	Peaty Sand	<b>MZ:</b>	Marine Light Silts

For the sand, loamy sand, sandy loam and sandy silt loam classes, the predominant size of sand fraction will be indicated by the use of the following prefixes:

<b>F:</b>	Fine (more than 66% of the sand less than 0.2mm)
<b>M:</b>	Medium (less than 66% fine sand and less than 33% coarse sand)
<b>C:</b>	Coarse (more than 33% of the sand larger than 0.6mm)

The clay loam and silty clay loam classes will be sub-divided according to the clay content: **M:** Medium (<27% clay) **H:** Heavy (27-35% clay)

2. **MOTTLE COL:** Mottle colour using Munsell notation.
3. **MOTTLE ABUN:** Mottle abundance, expressed as a percentage of the matrix or surface described:  
**F:** few <2% **C:** common 2-20% **M:** many 20-40% **VM:** very many 40% +
4. **MOTTLE CONT:** Mottle contrast:  
**F:** faint - indistinct mottles, evident only on close inspection  
**D:** distinct - mottles are readily seen  
**P:** prominent - mottling is conspicuous and one of the outstanding features of the horizon
5. **PED. COL:** Ped face colour using Munsell notation.
6. **GLEYS:** If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.
7. **STONE LITH:** Stone Lithology - one of the following is used:

<b>HR:</b>	all hard rocks and stones	<b>FSST:</b>	soft, fine grained sandstone
<b>ZR:</b>	soft, argillaceous, or silty rocks	<b>CH:</b>	chalk
<b>MSST:</b>	soft, medium grained sandstone	<b>GS:</b>	gravel with porous (soft) stones
<b>SI:</b>	soft weathered igneous/metamorphic rock	<b>GH:</b>	gravel with non-porous (hard) stones

Stone contents (>2cm, >6cm and total) are given in percentages (by volume).

8. **STRUCT**: the degree of development, size and shape of soil peds are described using the following notation:

Degree of development	<b>WK</b> : weakly developed	<b>MD</b> : moderately developed
	<b>ST</b> : strongly developed	
Ped size	<b>F</b> : fine	<b>M</b> : medium
	<b>C</b> : coarse	
Ped shape	<b>S</b> : single grain	<b>M</b> : massive
	<b>GR</b> : granular	<b>AB</b> : angular blocky
	<b>SAB</b> : sub-angular blocky	<b>PR</b> : prismatic
	<b>PL</b> : platy	

9. **CONSIST**: Soil consistence is described using the following notation:

<b>L</b> : loose	<b>FM</b> : firm	<b>EH</b> : extremely hard
<b>VF</b> : very friable	<b>VM</b> : very firm	
<b>FR</b> : friable	<b>EM</b> : extremely firm	

10. **SUBS STR**: Subsoil structural condition recorded for the purpose of calculating profile droughtiness: **G**: good **M**: moderate **P**: poor
11. **POR**: Soil porosity. If a soil horizon has less than 0.5% biopores >0.5 mm, a 'Y' will appear in this column.
12. **IMP**: If the profile is impenetrable to rooting a 'Y' will appear in this column at the appropriate horizon.
13. **SPL**: Slowly permeable layer. If the soil horizon is slowly permeable a 'Y' will appear in this column.
14. **CALC**: If the soil horizon is calcareous, a 'Y' will appear in this column.
15. Other notations:
- |              |  |
|--------------|--|
| <b>APW</b> : | available water capacity (in mm) adjusted for wheat    |
| <b>APP</b> : | available water capacity (in mm) adjusted for potatoes |
| <b>MBW</b> : | moisture balance, wheat                                |
| <b>MBP</b> : | moisture balance, potatoes                             |

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	---WETNESS---				-WHEAT-		-POTS-		M.REL DRT	EROSN FLOOD	FROST EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
					GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB							
1	TQ70900770	PGR	S	1	0	30	4	3B	159	36	124	3					WE	3B	SEE 1P SPL
1P	TQ71000750	PGR			25	25	4	3B	102	-21	110	-11					WE	3B	SPL 25CM
2	TQ71000770	PGR			35	35	4	3B	176	53	125	4					WE	3B	SEE 1P SPL
3	TQ70900760	PGR			21	21	4	3B	158	35	122	1					WE	3B	SEE 1P SPL
4	TQ71000760	PGR			26		1	1	95	-28	98	-23					DR	3A	IMP 57CM
5	TQ71100760	PGR			35	35	4	3B	155	32	125	4					WE	3B	SEE 1P SPL
6	TQ70900750	PGR	S	1	0	32	4	3B	160	37	124	3					WE	3B	SEE 1P SPL
7	TQ71000750	PGR			30	30	4	3B	159	36	124	3					WE	3B	SEE 1P SPL
8	TQ70800740	PGR	S	1	0	20	4	3B	142	19	122	1					WE	3B	SEE 1P SPL
9	TQ70940733	PGR			25	35	4	3B	112	-11	106	-15					WE	3B	SEE 1P SPL

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED COL.	----STONES----			STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR	POR	IMP
1	0-30	MZCL	10YR53	10YR56	C		Y	0	0	HR	1					
	30-56	MZCL	25Y 73	10YR46	C		Y	0	0	HR	1		P	Y		Y
	56-120	MZCL	25Y 71	25Y 66	M		Y	0	0	HR	1		P	Y		Y
1P	0-25	ZL	10YR42					0	0	HR	1					
	25-55	MZCL	25Y 71	10YR68	M		Y	0	0	HR	1	WKVCPR	VM	P	Y	Y
	55-75	MZCL	25Y 71	10YR68	M		Y	0	0	HR	1	WKVCPR	VM	P	Y	Y
2	0-35	MZCL	10YR32					0	0	HR	1					
	35-80	MZCL	25Y 82	25Y 78	M		Y	0	0	HR	1		P	Y		Y
	80-120	ZL	25Y 82	25Y 78	M		Y	0	0	HR	1		P	Y		Y
3	0-21	MZCL	10YR42					0	0	HR	1					
	21-52	MZCL	25Y 72	10YR56	C		Y	0	0	HR	1		P	Y		Y
	52-72	MZCL	25Y 71	10YR56	M		Y	0	0	HR	1		P	Y		Y
	72-120	MZCL	25Y 71	10YR56	C		Y	0	0	HR	1		P	Y		Y
4	0-26	MZCL	10YR42					0	0	HR	1					
	26-42	MSZL	10YR71	25Y 78	C		Y	0	0	HR	1		M			
	42-50	FSL	10YR72	10YR56	M		Y	0	0	HR	1		M			
	50-57	FSL	10YR56	25Y 71	C		Y	0	0	HR	1		M			
5	0-35	MZCL	10YR42					0	0	HR	1					
	35-80	MZCL	25Y 82	25Y 78	M		Y	0	0	HR	1		P	Y		Y
	80-120	MZCL	25Y 32	25Y 82	M		Y	0	0	HR	15		P	Y		Y
6	0-32	MZCL	10YR43	10YR46	C		Y	0	0	HR	1					
	32-55	MZCL	25Y 72	25Y 68	C		Y	0	0	HR	1		P	Y		Y
	55-120	MZCL	10YR64	10YR72	C		Y	0	0	HR	1		P	Y		Y
7	0-30	MZCL	10YR42					0	0	HR	1					
	30-52	MZCL	25Y 72	25Y 68	C		Y	0	0	HR	1		P	Y		Y
	52-70	MZCL	25Y 72	25Y 68	M		Y	0	0	HR	1		P	Y		Y
	70-120	MZCL	10YR58	25Y 81	C		Y	0	0	HR	1		P	Y		Y
8	0-20	MZCL	10YR43	10YR46	C		Y	0	0	HR	1					
	20-46	MZCL	10YR62	10YR56	C		Y	0	0	HR	1		P	Y		Y
	46-80	MZCL	25Y 72	25Y 68	M		Y	0	0	HR	1		P	Y		Y
	80-120	LFS	25Y 71	25Y 66	C		Y	0	0	HR	1		P	Y		Y
9	0-25	MZCL	10YR43					0	0	HR	1					
	25-35	MZCL	10YR63	10YR58	C		Y	0	0		0		P	Y		Y
	35-100	MZCL	25Y 72	10YR56	M		Y	0	0		0		P	Y		Y