SHROPSHIRE STRUCTURE PLAN
BROSELEY
LAND SOUTH OF ROUGH LANE

Agricultural Land Classification
ALC Map and Report

June 1999

Resource Planning Team
Northern Region
FRCA Wolverhampton

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AGRICULTURAL LAND CLASSIFICATION REPORT

SHROPSHIRE STRUCTURE PLAN
BROSELEY, LAND SOUTH OF ROUGH LANE

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 11.4 ha of land south of Rough Lane, to the east of Broseley. The survey was carried out in May 1999.

2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA)[1] on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF). This survey was carried out in connection with MAFF's statutory input to the Shropshire Structure 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 Northern 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 under grass and cereals. The area mapped as 'Other Land' comprises a small wooded hummock, possibly a disused bellpit.

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)	% Total agricultural land area	% Total survey area
1	-	-	-
2	-	-	-
3a	4.8	42	42
3b	3.1	27	27
4	3.5	31	31
5	-	-	-
Agricultural land not surveyed	-	-	-
Other land	0.04	-	less than 1%
Total agricultural land area	11.4	100	-
Total survey area	11.44	-	100

[1] FRCA is an executive agency of MAFF and the Welsh Office

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

8. The agricultural land on this site has been classified as Subgrade 3a (good quality), Subgrade 3b (moderate quality), and Grade 4 (poor quality). The main limitations to the agricultural use of this land is soil wetness.

9. Land of good quality (Subgrade 3a) occurs in the centre of the site. Soil wetness is the main limitation to the agricultural use of this land.

10. Land of moderate quality (Subgrade 3b) occurs in the west and east of the site. Soil wetness and gradient are the main limitations to the agricultural use of this land.

11. Land of poor quality (Grade 4) occurs in the west of the site. Microrelief is the main limitation to the agricultural use of this land.

FACTORS INFLUENCING ALC GRADE

Climate

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

13. 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
Grid reference	N/A	SJ685011
Altitude	m, AOD	145
Accumulated Temperature	day°C (Jan-June)	1325
Average Annual Rainfall	mm	742
Field Capacity Days	days	176
Moisture Deficit, Wheat	mm	85
Moisture Deficit, Potatoes	mm	70
Overall climatic grade	N/A	Grade 1

14. 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.

15. 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.

16. The combination of rainfall and temperature at this site means that there is no overall climatic limitation. The site is climatically Grade 1.

Site

17. The site lies at an altitude of 137-155m AOD, and slopes gently towards the north-east. Near the middle of the site, slopes in excess of 8°, along the edge of a bank of raised land impose a limitation to the agricultural use of the land. To the west of the site there is much evidence of disturbance, possibly through historical opencast mining.

Geology and soils

18. The underlying solid geology for this area comprises Carboniferous mudstones and siltstones of the Coalport Formation (BGS 1978).

19. The most detailed published soils information for this area (SSEW, 1983) shows the majority of the site to comprise the 'typical stagnogley' soils of the Clifton association. (SSEW 1984). To the west of the site, soils are described as being 'Disturbed soils' related to opencast coal workings.

20. Upon detailed field examination, soil profiles closely matching the description of soils belonging to the Clifton association (Pinder series) were found.

AGRICULTURAL LAND CLASSIFICATION

21. 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.

Subgrade 3a

22. Land of good quality occupies 4.8 ha (42%) of the total survey area, and occurs across the centre of the site. The main limitation to the agricultural use of this land is soil wetness.

23. Within the Subgrade 3a mapping unit, soils are comprised of a slightly stony medium clay loam topsoil, overlying medium and heavy clay loam upper subsoils. Generally clay content increases with depth, with heavy clay loam and clay textures dominant in the lower subsoils. Depths to the gleying and the slowly permeable layer in relation to the local climatic regime, place these soils into Wetness Class III and Subgrade 3a.

Subgrade 3b

24. Land of moderate quality occupies 3.1 ha (27%) of the total survey area. Three areas of Subgrade 3b land are mapped: along the eastern boundary, in the southwest and in the centre of the site. The main limitations to the agricultural use of this land are soil wetness and gradient.

25. Within the Subgrade 3b mapping unit, soils are comprised of slightly stony medium clay loam topsoils, which overlie medium and heavy clay loam upper subsoils. Clay content increases with depth, with heavy clay loam and clay textures dominant in the lower subsoils. Although these profiles are similar to those described for Subgrade 3a, shallower depths to gleying and slowly permeable layers in relation to the local climatic regime, places these soils into Wetness Class IV and Subgrade 3b.

Grade 4

26. Land of poor quality occupies 3.5 ha (31%) of the total survey area, and occurs in the west of the site. The main limitation to the agricultural quality of the land is microrelief.

27. Across the Grade 4 mapping unit, complex changes in slope angle and direction over short distances, impose a microrelief limitation consistent with Grade 4. The land shows evidence of being disturbed, with numerous wet patches and surface debris present in addition to the complex microrelief.

William Fearnehough
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SOURCES OF REFERENCE

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BGS: London.

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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 3, Soils of Midland and Western England. (1:250 000).*
SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their use in Midland and Western 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.

Site E.

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
1P	SJ99999999	CER	NE	02	030	041	4	3B	098	13	103	33	2				WE	3B	
5	SJ68500120	CER	N	02	025	060	3	3A	105	20	108	38	2				WE	3A	SPL
6	SJ68600120	CER	N	01	036	050	3	3A	130	45	115	45	1				WE	3A	BORDER3B
7	SJ68400110	PGR	NE	04	000	030	4	3B	084	-1	090	20	3A			Y	MR	4	CHANGETS
7A	SJ68450110	CER			028	028	4	3B	090	5	102	32	3A				WE	3B	
8	SJ68500110	CER	N	02	035	070	3	3A	116	31	115	45	1				WE	3A	
9	SJ68600110	CER	N	01	035	045	4	3B	091	6	099	29	2				WE	3B	
10A	SJ99999999	PGR	NE	02	028	039	4	3B	095	10	107	37	2				WE	3B	
11	SJ68400100	CER	N	01	031	052	3	3A	105	20	110	40	2				WE	3A	
12	SJ68500100	CER	N	01	036		3	3A	139	54	110	40	1				WE	3A	HCL SPL

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	PED GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
1P	0-30	mcl	10YR31 00						0	0	HR	5						
	30-41	mcl	10YR52 00	10YR56 00	C			Y	0	0	HR	10	MDCSAB FR	M				
	41-50	hcl	25Y 52 00	10YR56 00	C			Y	0	0	HR	10	MASS FM	P	Y		Y	
	50-80	c	10YR52 00	10YR56 00	C			Y	0	0		0	MASS FM	P	Y		Y	
5	0-25	mcl	10YR32 00						1	0	HR	5						
	25-45	mcl	10YR53 00	10YR58 00	C			Y	0	0	HR	3		M				
	45-50	hcl	10YR53 00	10YR58 00	M			Y	0	0	HR	3		M				
	50-60	scl	10YR53 00	10YR58 00	C			Y	0	0	HR	2		M				
	60-80	hcl	75YR53 00	75YR58 00	M			Y	0	0	HR	2		P			Y	
6	0-28	mcl	10YR42 00						0	0	HR	5						
	28-36	mcl	25Y 53 00						0	0		0		M				
	36-50	mcl	10YR53 00	10YR58 00	C			Y	0	0		0		M				
	50-85	hcl	75YR52 00	10YR58 00	M			Y	0	0		0		M	Y		Y	
	85-100	c	75YR52 00	10YR58 00	M			Y	0	0		0		M	Y		Y	
7	0-20	hcl	10YR41 32	10YR56 00	C			Y	0	0	HR	3						
	20-30	hcl	10YR53 44	10YR56 00	C			Y	0	0		0		M				
	30-60	c	75YR53 44	75YR58 00	C		00MN00 00	Y	0	0		0		P	Y		Y	
7A	0-28	mcl	10YR33 00						3	0	HR	5						
	28-70	c	10B 41 00	10YR56 00	C			Y	0	0	HR	2		P			Y	
8	0-35	mcl	10YR33 00						2	0	HR	8						
	35-70	mcl	10YR53 00	10YR58 00	M		00MN00 00	Y	0	0	HR	3		M			N	
	70-80	hcl	75YR53 00	10YR58 00	M			Y	0	0	HR	8		P			Y	
9	0-26	mcl	10YR42 00						0	0	HR	10						
	26-35	mcl	25Y 53 00						0	0	HR	10		M				
	35-45	mcl	10YR63 00	10YR58 00	C			Y	0	0	HR	10		M				
	45-65	hcl	10YR63 00	10YR58 00	M		00MN00 00	Y	0	0	HR	10		M	Y		Y	
10A	0-28	mcl	10YR41 32	10YR46 00	F				0	0	HR	2						
	28-39	hcl	10YR53 64	10YR56 68	C			Y	0	0	HR	1		M				
	39-70	c	25Y 61 62	75YR58 00	M			Y	0	0		0		P	Y		Y	

				——MOTTLES——			PED		----STONES----				STRUCT/	SUBS			
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL.	GLEY	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
11	0-31	mcl	10YR33 00						2	0	HR	3						
	31-52	mcl	25 Y53 00	25 Y56 00		C		Y	0	0	HR	3		M				
	52-80	c	25 Y53 00	10YR58 00		M		Y	0	0	HR	1		P			Y	
12	0-36	mcl	10YR42 00						0	0	HR	10						
	36-55	mcl	10YR53 00	10YR56 00		C		Y	0	0	HR	10		M				
	55-80	hcl	10YR53 00	10YR56 00		M		Y	0	0		0		M				
	80-110	mcl	75YR43 00	75YR46 00		M		Y	0	0		0		M				