

**SHROPSHIRE STRUCTURE PLAN  
BROSELEY, SOUTH OF 'THE DOWN WELL'**

**Agricultural Land Classification  
ALC Map and Report**

**June 1999**

**Resource Planning Team  
Northern Region  
FRCA Wolverhampton**

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MAFF Reference: EL 35/11859**

**AGRICULTURAL LAND CLASSIFICATION REPORT  
SHROPSHIRE STRUCTURE PLAN  
BROSELEY, SOUTH OF 'THE DOWN WELL'**

**INTRODUCTION**

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 7.1 ha of land at Broseley. The site is situated to the north east of Broseley and south of the disused "The Down Well". The eastern side of the site adjoins the Ironbridge Road. The survey was carried out during April 1999.
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). The 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 land on the site was under grass. Land mapped as 'Other Land' includes a house along Church Street, a pond, scrub and a trackway.

**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
1	-	-	-
2	-	-	-
3a	-	-	-
3b	2.6	40	37
4	3.9	60	55
5	-	-	-
Agricultural land not surveyed	-	N/A	-
Other land	0.6	N/A	8
<b>Total surveyed area</b>	<b>6.5</b>	<b>100</b>	<b>-</b>
<b>Total site area</b>	<b>7.1</b>	<b>-</b>	<b>100</b>

<sup>1</sup> 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 one soil pit and ten borings were described on the site.
8. The agricultural land on this site has been classified as Subgrade 3b (moderate quality) and Grade 4 (poor quality). The key limitations to the agricultural use of this land are gradient, microrelief and soil wetness.
9. The moderate quality land is located on the lower land in the east of the site which adjoins the Ironbridge Road cemetery. The soils have a clay loam topsoil texture overlying clay loam and clay to depth, with few stones within the soil profile.
10. The area of poor quality land is mapped on the moderately steep slopes and where there are complex changes of slope angle and direction over short distances. The soils have a clay loam texture over heavy clay loam and clay. Often these soil profiles are disturbed.

## 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
Grid reference	N/A	SJ 679 017
Altitude	m, AOD	125
Accumulated Temperature	day°C (Jan-June)	1348
Average Annual Rainfall	Mm	748
Field Capacity Days	Days	178
Moisture Deficit, Wheat	Mm	87
Moisture Deficit, Potatoes	Mm	73
Overall climatic grade	N/A	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. The site is climatically Grade 1.

## **Site**

15. The site ranges in altitude from 115 to 140 metres AOD. The highest land adjoins Broseley church in the south of the site.
16. The three site factors of gradient, microrelief and flooding are considered when classifying the land.
17. Across the site strongly, moderately steep and steep slopes of between 8° and 16° are found. Here gradient limits the agricultural use of the land to Subgrade 3b and Grade 4.
18. Across the site there are many complex changes in slope angle and direction over short distances. In such places the microrelief can severely limit the use of agricultural machinery.
19. Flooding does not impose any limitations on the agricultural use of this land.

## **Geology and soils**

20. The solid geology of the area is comprised of Coalport Formation mudstones and Lower Coal Measures. This is overlain with deposits of boulder clay and sand and gravel - British Geological Survey (1978).
21. The soils that have developed on this geology are generally of clay loam texture overlying clay (SSEW 1984).

## **AGRICULTURAL LAND CLASSIFICATION**

22. 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 3b**

23. Land of moderate quality occupies 2.6 hectares (37%) of the site area and is found in the east of the site adjoining the Ironbridge Road cemetery.
24. The main limitations to the agricultural use of this land include gradient and soil wetness.
25. The soils have a clay loam topsoil texture over clay loam and clay to depth, with few stones within the soil profile. Occasionally the topsoils may have a silty clay loam texture and some soil profiles have been disturbed with cinder, coal and stone being present. The depths to gleying and the slowly permeable layer place these soils in Wetness Class IV.
26. Across this unit there are places where the land is strongly sloping (between 7° and 11°). Here gradient limits the agricultural use of the land to Subgrade 3b.

#### **Grade 4**

27. Land of poor quality occupies 3.9 hectares (55%) of the site area and is mapped in the west of the site.
28. The main limitations to the agricultural use of this land are gradient and microrelief.
29. The soils have a clay loam topsoil texture over heavy clay loam and clay to depth. Occasionally, profiles may have a sandy loam topsoil texture. These soils are either found on slopes of between 11° and 17° or in areas where there are many complex changes in slope angle and direction over short distances. Throughout this grade of land there are areas which have been disturbed, with cinder, coal and stone present within the soil profile. In the west, the site is traversed by a pipeline running to the sewage works.

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## SOURCES OF REFERENCE

British Geological Survey (1978) *Sheet No. SJ 60, 61, 70, 71 Telford Solid and Drift Edition Scale 1: 25 000.*

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 (1984) *Sheet 3, Map of Midland and Western England.*

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.

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LIST OF BORINGS HEADERS 14/05/99 BROSELEY 'B'

page 1

SAMPLE NO.	GRID REF	ASPECT		—WETNESS—				-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS
		USE	GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT		
1	SJ68100190	PGR	NE	03	035	035	4	3B	112	24	103	29	2			WE	3B	CINDER
1P	SJ67980160	PGR	N	04	018	046	4	3B	101	13	106	32	2			WE	3B	CINDER TEMP GRIDREF
2	SJ68000180	PGR	NE	04	000		1	1	095	7	105	31	2			DR	2	3A DIST
3	SJ68100180	PGR	N	07	000		1	1	058	-30	058	-16	3B			DR	3B	DISTURB
4A	SJ67730170	PGR	N	08	020	045	4	3B	115	28	127	54	2			WE	3B	MR 4
5	SJ67800170	PGR		03	000		1	1	032	-55	032	-41	4			MR	4	4 DROUGH
6	SJ67900170	PGR	N	09	000	055	3	3A	099	11	102	28	2			GR	3B	3A
7	SJ68000170	PGR	N	05	035	035	4	3B	110	22	100	26	2			WE	3B	
8	SJ67710161	PGR	N	05	000		1	1	065	-22	065	-8	3B			DR	3B	DTA STN
9	SJ67900160	PGR	N	16	000		1	1	128	40	106	32	1			GR	4	
10	SJ68000160	PGR	NW	04	035	035	4	3B	112	24	103	29	2			WE	3B	

SAMPLE	DEPTH	TEXTURE	COLOUR	—MOTTLES—			PED COL.	—STONES—			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR	POR	IMP	SPL
1	0-20	mc1	10YR32 00					2	0	HR	3						
	20-35	hc1	10YR32 33					0	0	HR	5		M				
	35-45	c	10YR53 54 75YR58 00 M					Y	0	0	HR	2		P			Y
	45-100	c	25 Y53 51 10YR56 00 C					Y	0	0		0		P			Y
1P	0-18	mzc1	10YR32 00 10YR56 46 C					2	0	HR	5						
	18-30	mc1	10YR61 62 75YR58 00 M					Y	0	0	HR	5	WKMSB	FR	G		
	30-46	hc1	25 Y63 00 75YR58 00 M					Y	0	0	HR	2	MDCPR	FM	P		
	46-80	c	25 Y61 62 75YR58 00 M					Y	0	0	HR	1	MASSIV	VM	P		Y
2	0-20	msz1	10YR32 00					3	0	HR	5						
	20-70	mc1	10YR32 42					0	0	HR	15		M				
3	0-20	mc1	10YR21 00					5	0	HR	10						
	20-40	sc1	10YR33 00					0	0	HR	15		M				
4A	0-20	mc1	75YR25 01					2	0	HR	5						
	20-45	omc1	75YR25 01 75YR56 51 C					Y	0	0	HR	10		M			
	45-70	hzc1	05PB31 00 10YR56 00 C					Y	0	0	HR	2		P			Y
5	0-20	ms1	10YR21 00					2	0	HR	5						
6	0-25	ms1	75YR33 00					2	0	HR	4						
	25-55	sc1	75YR44 00					0	0	HR	5		M				
	55-80	hc1	25YR44 00					0	0		0		P				Y
7	0-25	mc1	10YR32 00					2	0	HR	5						
	25-35	mc1	10YR42 32 10YR56 00 F					0	0	HR	5		M				
	35-55	hc1	10YR53 64 75YR51 58 M					Y	0	0	HR	5		P			Y
	55-100	c	25 Y53 00 10YR58 51 M					Y	0	0	HR	1		P			Y
8	0-38	mc1	75YR25 01					2	0	HR	5						
9	0-30	ms1	75YR33 00					3	0	HR	5						
	30-70	sc1	75YR34 44					0	0	HR	5		M				
	70-100	ms1	05YR44 00					0	0	HR	5		M				

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED COL.	-----STONES-----			STRUCT/ CONSIST	SUBS						
				COL	ABUN	CONT		GLY	>2	>6		LITH	TOT	STR	POR	IMP	SPL	CALC
10	0-25	mc1	10YR32 00						2	0	HR	3						
	25-35	mc1	10YR32 42	10YR56	00	F			0	0	HR	2		M				
	35-45	hc1	10YR53 54	75YR58	00	C			Y	0	0	HR	2		P			Y
	45-100	c	10YR53 54	75YR58	00	C	00MN00	00	Y	0	0	HR	1		P			Y

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ALC VALIDATION REPORT - BROSELEY 'B'

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