SHROPSHIRE STRUCTURE PLAN
BICTON HEATH, SHREWSBURY
LAND SOUTH OF WELSHPOOL ROAD

Agricultural Land Classification
ALC Map and Report

May 1999

Resource Planning Team
Northern Region
FRCA Wolverhampton

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AGRICULTURAL LAND CLASSIFICATION REPORT
SHROPSHIRE STRUCTURE PLAN
BICTON HEATH, SHREWSBURY - LAND SOUTH OF WELSHPOOL ROAD

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 18.6 ha of land at Bicton Heath, Shrewsbury. The site is situated to the east of the A5 bypass and to the south of the A458 Welshpool Road. The survey was carried out during March and April 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). The survey was carried out in connection with MAFF's statutory input to the Shropshire Structure plan environmental capacity study. 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. The areas mapped as 'Other land' include trackways, Bank Cottage and The Yews.

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	13.7	77	74
3b	3.7	21	20
4	0.3	2	1
5	-	-	-
Agricultural land not surveyed	-	N/A	-
Other land	0.9	N/A	5
Total surveyed area	17.7	100	-
Total site area	18.6	-	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. A total of 19 borings and 1 soil pit was described.

8. The agricultural land on this site has been classified as Subgrade 3a (good quality) and Subgrade 3b (moderate quality). The key limitations to the agricultural use of this land are gradient, microrelief and soil wetness.

9. The good quality land is located over the majority of the site. The soils have a clay loam topsoil texture overlying clay loam and clay to depth.

10. The area of moderate quality land is mapped to the south and north of Bank Cottage and in the north east of the site. The soils have a clay loam texture over clay. In the north east peat is present in the subsoil.

11. The area of poor quality land is found to the south of Bank Cottage alongside the A5 Bypass. The soils are found in a former quarry.

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	SJ 449 132
Altitude	m, AOD	1
Accumulated Temperature	day°C (Jan-June)	1394
Average Annual Rainfall	mm	698
Field Capacity Days	days	150
Moisture Deficit, Wheat	mm	102
Moisture Deficit, Potatoes	mm	92
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. The site is climatically Grade 1.

Site

16. The site is relatively level, ranging in altitude from 81 to 87 metres AOD, the highest land being in the vicinity of Bank Cottage in the north of the site.

17. The three site factors of gradient, microrelief and flooding are considered when classifying the land.

18. To the south of Bank Cottage there are strong slopes of approximately 10°. Here the gradient limits the agricultural use of the land to Subgrade 3b.

19. To the south of Bank Cottage (alongside the A5 Bypass) there are complex changes of slope angle and direction over short distances (microrelief) which severely limit the use of agricultural machinery.

20. The remaining factors do not impose any limitations on the agricultural use of this land.

Geology and soils

21. The solid geology of the area is comprised of Lower Mottled Sandstone. This is overlain with deposits of boulder clay - British Geological Survey (1952, 1974).

22. The soils that have developed on this geology are generally of clay loam texture (SSEW 1984).

AGRICULTURAL LAND CLASSIFICATION

23. 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

24. Land of good quality occupies 13.7 hectares (74%) of the site area and is found across the majority of the site.

25. The main limitation to the agricultural use of this land is soil wetness.

26. The soils have a medium clay loam topsoil texture which overlies medium clay loam, heavy clay loam and clay to depth. There are occasional lenses of sandy loam, sandy silt loam and sandy clay loam in the subsoil. The depths to gleying and the slowly permeable layer place these soils in Wetness Class III. In the south of the site there are isolated borings of Grade 2 which cannot be shown separately at this scale of mapping.

Subgrade 3b

27. Land of moderate quality occupies 3.7 hectares (20%) of the site area and is mapped to the south and north of Bank Cottage and in the north east of the site.

28. The main limitations to the agricultural use of this land include gradient and soil wetness.

29. The soils have a clay loam topsoil texture over heavy clay loam and clay to depth. In the north east peat is present in the subsoil. The depths to gleying and the slowly permeable layer place these soils in Wetness Class IV.

30. To the south of Bank Cottage there are strong slopes of approximately 10°. Here the gradient limits the agricultural use of the land to Subgrade 3b.

Grade 4

31. Land of poor quality occupies 0.3 hectares (1%) of the site area and is mapped to the south of Bank Cottage, alongside the A5 Bypass. The soils are found in a former quarry.

32. The main limitation to the agricultural use of this land is microrelief.

33. The soils have a clay loam topsoil texture over heavy clay loam and clay to depth. In places stone is encountered in the subsoil and topsoils are disturbed. To the south of Bank Cottage (alongside the A5 Bypass) there are complex changes of slope angle and direction over short distances which severely limit the use of agricultural machinery.

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SOURCES OF REFERENCE

British Geological Survey (1952) *Sheet No. 152*, Shrewsbury *Solid Edition, Scale 1: 63 360.* BGS: London.

British Geological Survey (1974) *Sheet No. 152*, Shrewsbury *Drift Edition, Scale 1: 63 360.* 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.

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	WETNESS CLASS	WETNESS GRADE	WHEAT AP	WHEAT MB	POTS AP	POTS MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SJ44801340	PGR			028	038	4	3A	132	30	109	17	2				WE	3A	
1P	SJ45001330	PGR			028	058	3	3A	135	33	111	19	1				WE	3A	
2	SJ44901340	MCL			028	044	3	3A	132	30	109	17	2				WE	3A	
3	SJ45001340	PGR			035	035	4	3B	170	68	147	55	1				WE	3B	BUILDERS RUBBISH?
4	SJ45101340	PGR			035	070	2	2	000	0	000	0					WE	2	Edge Habdn 075/98
5	SJ44801330	PGR	N	03	000	048	3	3A	125	23	107	15	2				WE	3A	QU SPL
6	SJ44901330	MCL			045	075	2	2	140	38	116	24	1				WE	2	See Pit One
7	SJ45001330	PGR	N	02	025	075	2	2	143	41	119	27	1				WE	2	See Pit One
8	SJ44801320	PGR	NW	01	029	037	4	3B	094	-8	106	14	3A				WE	3B	RED CLAY
8A	SJ44711320	PGR	NW	01	028	085	2	2	137	35	117	25	1				WE	2	
9	SJ44901320	PGR	E	10	030		2	2	143	41	116	24	1				GR	3B	
10	SJ45001320	PGR	SW	02	032	095	2	2	140	38	114	22	1				WE	2	See Pit One
11	SJ44901310	PGR	SE	02	035	048	3	3A	120	18	111	19	2				WE	3A	GOOD CLY
12	SJ45001310	PGR	SW	01	020		2	2	122	20	115	23	2				WE	2	See Pit One
13	SJ44901300	PGR	NE	01	032	070	2	2	133	31	117	25	1				WE	2	~~QU SPL~~ Border 3a, See Pit 1
14	SJ45001300	PGR		01	036	070	2	2	125	23	116	24	2				WE	2	~~QU SPL~~ See Pit One
15	SJ45101300	PGR	NE	03	035		2	2	145	43	116	24	1				WE	2	Undulations.
16	SJ44901290	PGR	SW	04	030		2	1	104	2	115	23	3A				DR	3A	DTA
17	SJ45001290	PGR	E	02	000		1	1	125	23	116	24	2				DR	2	DTA GRVL
18	SJ44901280	PGR			028	070	2	2	125	23	116	24	2				WE	2	V WET

~~Manage~~ Bor 6 mottles

Done 27/4/99

				MOTTLES			PED		STONES				STRUCT/	SUBS			
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL.	GLEY	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
1	0-28	msz1	75YR43 00						0	0	HR	1						
	28-38	ms1	75YR36 00	75YR56	00	C		Y	0	0	HR	1		M				
	38-120	c	75YR63 64	75YR56	00	C		Y	0	0	HR	1		P	Y		Y	
1P	0-28	mc1	10YR33 00						0	0	HR	2						
	28-42	mc1	10YR64 00	10YR68	56	C		Y	0	0	HR	1	MDCSAB FR	M				
	42-58	mc1	10YR62 00	10YR68	00	C		Y	0	0	HR	1	MDCSAB FM	M				
	58-120	hc1	10YR71 62	10YR68	00	M		Y	0	0	HR	1	MDCAB FM	P	Y		Y	
2	0-28	mc1	75YR43 00						0	0	HR	1						
	28-44	mc1	75YR53 64	75YR58	56	C		Y	0	0	HR	1		M				
	44-120	c	75YR63 56	75YR58	56	C		Y	0	0	HR	1		P	Y		Y	
3	0-28	omc1	75YR32 00						0	0	HR	1						
	28-35	1p	75YR25 01						0	0	HR	1		M				
	35-120	c	10YR25 01					Y	0	0	HR	1		P	Y		Y	
4	0-25	mc1	75YR33 00						0	0	HR	1						
	25-35	mc1	75YR44 00						0	0	HR	1		M				
	35-48	mc1	75YR44 00	75YR64	00	F		S	0	0	HR	5		M				
	48-70	mc1	75YR53 54	75YR64	56	C		Y	0	0	HR	5		M				
	70-120	mc1	05Y 46 00	75YR58	00	F		Y	0	0	HR	5		P	Y		Y	
5	0-29	mc1	10YR42 33	10YR56	46	C		Y	1	0	HR	2						
	29-48	mc1	10YR53 00	10YR56	00	C		Y	0	0	HR	2		M				
	48-110	hc1	75YR53 44	75YR51	56	C	00MN00 00	Y	0	0	HR	2		P			Y	
6	0-25	mc1	10YR44 00						0	0	HR	1						
	25-45	mc1	10YR54 53	75YR56	63	F			0	0	HR	1		M				
	45-75	mc1	10YR63 53	75YR56	63	F		Y	0	0	HR	1		M				
	75-120	c	75YR53 00					Y	0	0	HR	1		P	Y		Y	
7	0-25	mc1	75YR43 00						0	0	HR	1						
	25-42	mc1	75YR53 43	75YR56	00	C		Y	0	0	HR	1		M				
	42-75	msz1	10YR63 00	75YR56	00	M		Y	0	0	HR	1		M				
	75-120	hc1	10YR62 58	75YR56	00	M		Y	0	0	HR	1		P	Y		Y	

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
8	0-29	mcl	10YR43 00						1	0	HR	2						
	29-37	mcl	10YR42 53	10YR56 00	C			Y	0	0	HR	5		M				
	37-70	c	75YR51 44	75YR58 00	C			Y	0	0	HR	2		P			Y	
8A	0-28	mcl	10YR43 33						1	0	HR	2						
	28-85	mcl	25 Y51 53	10YR56 00	C			Y	0	0		0		M				
	85-110	hcl	05 Y62 71	10YR56 00	C			Y	0	0		0		P			Y	
9	0-30	mcl	10YR43 00						1	0	HR	2						
	30-110	mcl	10YR43 53	10YR56 00	C			Y	0	0	HR	2		M				
10	0-32	mcl	10YR43 00						1	0	HR	2						
	32-45	mcl	10YR43 42	10YR56 00	C			Y	0	0	HR	1		M				
	45-95	scl	25 Y63 53	10YR46 56	C			Y	0	0	HR	1		M				
	95-110	c	05YR44 00	75YR56 00	C			Y	0	0		0		P			Y	
11	0-35	mcl	10YR43 00						1	0	HR	2						
	35-48	mcl	10YR42 43	10YR46 56	C			Y	0	0	HR	1		M				
	48-100	c	25 Y51 53	10YR56 58	C			Y	0	0	HR	1		P			Y	
12	0-20	mcl	10YR43 00						1	0	HR	2						
	20-90	mcl	10YR53 43	10YR56 46	C		00MN00 00	Y	0	0	HR	1		M				
13	0-32	mcl	10YR43 33						1	0	HR	2						
	32-70	mcl	25 Y63 64	10YR56 58	C			Y	0	0	HR	1		M				
	70-110	hcl	05YR52 53	75YR56 00	C		00MN00 00	Y	0	0	HR	1		P			Y	
14	0-36	mcl	10YR43 33						2	0	HR	3						
	36-38	mszl	10YR42 53	10YR56 00	C			Y	0	0	HR	1		M				
	38-70	mcl	05 Y51 00	10YR56 00	C			Y	0	0	MSST	3		M				
	70-100	hcl	05 Y51 00	10YR56 46	M			Y	0	0	MSST	3		P			Y	
15	0-35	mcl	10YR43 33						1	0	HR	2						
	35-55	mcl	10YR42 43	10YR46 56	C			Y	0	0	HR	1		M				
	55-110	scl	05 Y51 62	10YR46 56	C			Y	0	0	MSST	1		M				

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
16	0-30	mszl	10YR43 33						2	0	HR	5						
	30-70	mcl	75YR53 43	10YR56 00	C		00MN00 00	Y	0	0	HR	5		M				
17	0-30	mcl	10YR43 00						1	0	HR	2						
	30-70	mcl	10YR54 00						0	0	HR	1		M				
	70-90	msl	10YR54 44						0	0	HR	5		M				
18	0-28	mcl	10YR43 00						1	0	HR	2						
	28-70	mcl	25 Y42 53	10YR56 00	C		00MN00 00	Y	0	0	HR	1		M				
	70-100	hcl	75YR53 44	75YR51 56	C			Y	0	0	HR	2		P			Y	

PROFILE/
HORIZ DATA

END OF VALIDATION REPORT