SHROPSHIRE STRUCTURE PLAN
BICTON HEATH, SHREWSBURY
LAND EAST OF CALCOTT LANE

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 EAST OF CALCOTT LANE

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 13.6 ha of land at Bicton Heath, Shrewsbury. The site is situated to the east of Calcott Lane, west of Shepherd's Lane and north 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 cereals and grass.

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	10.3	76	76
3b	3.3	24	24
4	-	-	-
5	-	-	-
Agricultural land not surveyed	-	N/A	-
Other land	-	N/A	-
Total surveyed area	13.6	100	-
Total site area	13.6	-	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 17 borings and 2 soil pits were described.

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

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

10. The area of moderate quality land is mapped in the west of the site and in the south east. The soils have a clay loam texture over heavy clay loam and clay. Occasionally in the hollows there are lenses of peaty material in the subsoil.

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 450 138
Altitude	m, AOD	80
Accumulated Temperature	day°C (Jan-June)	1399
Average Annual Rainfall	mm	689
Field Capacity Days	days	146
Moisture Deficit, Wheat	mm	104
Moisture Deficit, Potatoes	mm	95
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 is relatively level, ranging in altitude from 79 to 86 metres AOD The highest land adjoins the A458 in the south west of the site and the lowest land is in the north west of the site.

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

17. These factors do not impose any limitations on the agricultural use of this land.

Geology and soils

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

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

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, page 1.

Subgrade 3a

21. Land of good quality occupies 10.3 hectares (76%) of the site area and is found across the majority of the site.

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

23. The soils have a clay loam topsoil texture overlying clay loam, heavy clay loam and clay to depth, with few stones within the soil profile. The depths to gleying and the slowly permeable layer place these soils in Wetness Class III. In the centre west of the site there are isolated profiles with a sandy silt loam topsoil texture over loamy sand and gravel.

Subgrade 3b

24. Land of moderate quality occupies 3.3 hectares (24%) of the site area and is mapped in the west of the site and in the south east.

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

26. The soils have a clay loam topsoil texture over heavy clay loam and clay to depth. The depths to gleying and the slowly permeable layer place these soils in Wetness Class IV. Occasionally in the hollows there are lenses of peaty material in the subsoil.

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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	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SJ45001380	BAR			025	025	4	3B	125	21	102	7	2				WE	3B	
1P	SJ45311358	CER		01	025	028	4	3B	095	-9	099	4	3A				WE	3B	
2	SJ45101380	BAR			030	038	4	3B	132	28	108	13	2				WE	3B	
2P	SJ45251374	CER			028	049	3	3A	117	13	109	14	2				WE	3A	
3	SJ45201380	BAR			028	045	3	3A	127	23	102	7	2				WE	3A	
4	SJ45301380	BAR			042	042	3	3A	134	30	105	10	1				WE	3A	
5	SJ45001370	CER	W	01	029		2	2	124	20	117	22	2				WE	2	
6	SJ45101370	CER	W	02	045	045	3	2	086	-18	089	-6	3A				DR	3A	DTA GVL
7	SJ45201370	BAR			045	070	2	2	138	34	114	19	1				WE	2	
8	SJ45301370	BAR			032	032	4	3B	133	29	110	15	2				WE	3B	
9	SJ45101360	PGR			040	062	3	3A	137	33	115	20	1				WE	3A	
10	SJ45201360	CER		01	035	045	3	3A	116	12	107	12	2				WE	3A	RED
11	SJ45301360	CER		01	039	065	3	3A	122	18	113	18	2				WE	3A	
12	SJ45201350	PGR			045	068	2	2	139	35	116	21	1				WE	2	
12A	SJ45131348	PGR		01	000		1	1	074	-30	074	-21	3B				DR	3B	DTA GRVL
13	SJ45301350	CER	NW		038		2	2	232	128	156	61	1				WE	3A	PTY HOLO
14	SJ45401350	CER	NW	01	027	058	3	3A	116	12	105	10	2				WE	3A	
15	SJ45301340	CER	NW	03	032	048	3	3A	102	-2	105	10	3A				WE	3A	SND LENS
16	SJ45401340	CER	NW		000		2	2	109	5	109	14	3A				DR	3A	BORDER

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
1	0-25	mcl	10YR33 00						0	0	HR	8						
	25-38	hcl	10YR53 64	75YR56 00	M			Y	0	0	HR	5		M		Y		Y
	38-65	c	10YR53 64	75YR56 00	M			Y	0	0	HR	2		P		Y		Y
	65-120	c	75YR53 62	75YR58 00	M			Y	0	0	HR	1		P		Y		Y
1P	0-25	mcl	10YR31 32						3	0	HR	5						
	25-28	hcl	10YR42 61	10YR56 00	C			Y	0	0	HR	3	WKCPL FM	P				
	28-39	c	05 Y61 00	75YR58 00	M		75YR53 54	Y	0	0	HR	3	WKCAB VM	P				Y
	39-80	c	05 Y61 00	75YR58 00	M		75YR53 54	Y	0	0	HR	3	WKCAB VM	P				Y
2	0-30	mcl	10YR33 00						0	0	HR	8						
	30-38	mcl	10YR52 53	75YR56 00	M			Y	0	0	HR	5		M				
	38-60	hcl	10YR52 53	75YR56 00	M			Y	0	0	HR	2		M		Y		Y
	60-120	hcl	75YR46 00	75YR66 00	C			Y	0	0	HR	2		P		Y		Y
2P	0-28	mcl	10YR42 32						3	0	HR	4						
	28-49	mcl	25 Y63 00	10YR51 58	M			Y	0	0	HR	2	MDCSB FR	M				
	49-100	c	05YR44 00	10YR61 58	M			Y	0	0	HR	1	MDCPR VM	P				Y
3	0-28	mcl	10YR33 00						0	0	HR	8						
	28-45	mcl	10YR53 63	75YR58 00	C			Y	0	0	HR	5		M				
	45-120	hcl	10YR53 63	75YR58 00	C			Y	0	0	HR	1		P		Y		Y
4	0-42	mcl	10YR33 00						0	0	HR	8						
	42-50	hcl	75YR53 44	75YR52 58	C			Y	0	0	HR	8		M		Y		Y
	50-75	hcl	10YR53 63	75YR52 58	C			Y	0	0	HR	2		P		Y		Y
	75-120	sc	75YR46 00					Y	0	0	HR	2		P		Y		Y
5	0-29	mszl	10YR43 33						2	0	HR	5						
	29-70	mcl	25 Y63 64	10YR56 58	C		00MN00 00	Y	0	0	HR	2		M				
	70-110	lms	05YR44 00						0	0	HR	1		M				
6	0-26	mszl	10YR33 00						3	0	HR	6						
	26-45	lms	05YR44 00						0	0	HR	3		M				
	45-80	hcl	05YR44 53	10YR56 58	M		00MN00 00	Y	0	0	HR	3		P				Y

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
7	0-45	mcl	10YR33 00						0	0	HR	8						
	45-60	mcl	10YR62 00	75YR56	63	C		Y	0	0	HR	1		M				
	60-70	msl	10YR53 62	75YR56	63	C		Y	0	0	HR	1		M				
	70-120	c	10YR56 62	75YR56	63	C		Y	0	0	HR	1		P	Y		Y	
8	0-32	mcl	10YR32 00						0	0	HR	8						
	32-55	hcl	10YR62 63	75YR52	58	M		Y	0	0	HR	1		M			Y	
	55-60	mzcl	10YR62 63	75YR52	58	M		Y	0	0	HR	1		M	Y		Y	
	60-120	zc	10YR62 63	75YR52	58	M		Y	0	0	HR	1		P	Y		Y	
9	0-30	mcl	75YR33 00						0	0	HR	1						
	30-40	mcl	75YR44 00						0	0	HR	1		M				
	40-62	mcl	75YR53 00	75YR56	00	C		Y	0	0	HR	1		M				
	62-120	c	75YR62 53	75YR56	00	C		Y	0	0	HR	1		P	Y		Y	
10	0-29	mcl	10YR33 00						3	0	HR	5						
	29-35	mcl	10YR33 00						0	0	HR	2		M				
	35-45	hcl	25 Y62 00	10YR56	00	C		Y	0	0	HR	2		M				
	45-100	c	25 Y51 00	75YR56	58	M		Y	0	0		0		P			Y	
11	0-39	mcl	10YR32 33						3	0	HR	5						
	39-65	mcl	10YR42 33	10YR56	00	C		Y	0	0	HR	3		M				
	65-100	hcl	25 Y62 63	75YR51	58	M	00MN00	00 Y	0	0	HR	3		P			Y	
12	0-30	mcl	10YR33 00						0	0	HR	1						
	30-45	mcl	10YR43 00						0	0	HR	1		M				
	45-68	mcl	10YR53 62	75YR56	58	C		Y	0	0	HR	1		M				
	68-85	hcl	10YR53 62	75YR56	58	C		Y	0	0	HR	1		P	Y		Y	
	85-120	c	10YR62 63	75YR56	58	M		Y	0	0	HR	1		P	Y		Y	
12A	0-35	msl	10YR33 43						2	0	HR	5						
	35-43	mszl	10YR44 00						0	0	HR	15		M				
	43-55	ms	10YR44 46						0	0	HR	15		M				
13	0-38	mcl	10YR32 00						2	0	HR	3						
	38-70	omcl	10YR53 42	10YR56	00	C		Y	0	0		0		M				
	70-90	lp	75YR31 00					Y	0	0		0		M				
	90-110	ohzcl	10YR41 00					Y	0	0		0		M				

				MOTTLES			PED		STONES				STRUCT/	SUBS			
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL.	GLEY	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
14	0-27	mcl	10YR32 43						4	0	HR	7						
	27-58	msl	10YR53 54	10YR56 00		C		Y	0	0	HR	5		M				
	58-100	c	05YR44 00	75YR56 51		C	00MN00 00	Y	0	0	HR	2		P			Y	
15	0-32	mcl	10YR42 43						2	0	HR	4						
	32-48	scl	10YR53 54	10YR56 00		C		Y	0	0	HR	2		M				
	48-80	hcl	05YR44 53	75YR56 51		C		Y	0	0	HR	1		P			Y	
16	0-27	mcl	25 Y41 42	10YR56 00		C		Y	2	0	HR	5						
	27-80	scl	10YR53 00	10YR56 46		M		Y	0	0	HR	3		M				

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