SHROPSHIRE STRUCTURE PLAN
BICTON HEATH, SHREWSBURY
LAND WEST OF HOLYHEAD 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 WEST OF HOLYHEAD ROAD

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 28.2 ha of land at Bicton Heath, Shrewsbury. The site is situated to the west of the Holyhead Road, north of Oxon Park and Ride and west of Shepherd's Lane. The survey was carried out during 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. The areas mapped as 'Other land' include roads, ponds and landscaping associated with the Park and Ride. A small area of agricultural land in the east of the site was not surveyed.

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	0.1	<1	<1
3a	15.1	60	53
3b	9.7	39	34
4	-	-	-
5	-	-	-
Agricultural land not surveyed	1.3	N/A	5
Other land	2.0	N/A	7
Total surveyed area	24.9	100	-
Total site area	28.2	-	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 28 borings and 2 soil pits were described.

8. The agricultural land on this site has been classified as Grade 2 (very good quality), Subgrade 3a (good quality) and Subgrade 3b (moderate quality). The key limitations to the agricultural use of this land are gradient, soil wetness and soil droughtiness.

9. The very good quality land is located on the very margin of the site. The soils have a medium sandy silt loam topsoil texture overlying loamy sand, sandy loam and sandy clay loam to depth.

10. The good quality land is located over the majority of the site to the west of the lane leading to the Shropshire and Mid Wales Hospice. The soils have a clay loam texture overlying clay loam, sandy clay loam, heavy clay loam and clay to depth.

11. The area of moderate quality land is mapped mainly to the east of the lane leading to the Shropshire and Mid Wales Hospice. The soils have a clay loam texture over heavy clay loam and clay.

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 459 136
Altitude	m, AOD	85
Accumulated Temperature	day°C (Jan-June)	1393
Average Annual Rainfall	mm	694
Field Capacity Days	days	147
Moisture Deficit, Wheat	mm	103
Moisture Deficit, Potatoes	mm	93
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 80 to 91 metres AOD The highest land adjoins the Holyhead Road in the east of the site and the lowest land is in the west of the site.

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

18. On the southern edge of the site, near the lane leading to the Shropshire and Mid Wales Hospice there are strong slopes of approximately 8°. Here gradient limits the agricultural use of the land to Subgrade 3b.

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

Geology and soils

20. 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).

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.

Grade 2

23. Land of very good quality occupies 0.1 hectares (<1%) of the site area and is mapped on the north west periphery of the site.

24. The main limitation to the agricultural use of this land is soil droughtiness.

25. The soils have a medium sandy silt loam topsoil texture overlying loamy sand, sandy loam and sandy clay loam to depth, with few stones within the soil profile. The moisture balance places these soils in Grade 2.

Subgrade 3a

26. Land of good quality occupies 15.1 hectares (53%) of the site area and is found across the majority of the site to the west of the lane leading to the Shropshire and Mid Wales Hospice.

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

28. The soils have a clay loam topsoil texture overlying clay loam, sandy 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. To the north west of Oxon Park and Ride there are isolated profiles with a sandy clay loam topsoil texture over sandy clay loam, loamy sand and sand. Within this unit there are isolated borings of Grade 2 quality which cannot be shown separately at this scale of mapping.

Subgrade 3b

29. Land of moderate quality occupies 9.7 hectares (34%) of the site area and is mapped mainly to the east of the lane leading to the Shropshire and Mid Wales Hospice.

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

31. 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.

Martin Wood
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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	SJ46101390	CER	S	02	000	035	4	3B	113	10	105	12	2				WE	3B	
1P	SJ46101380	CER	W		028	038	4	3B	111	8	102	9	2				WE	3B	
2	SJ45901380	PGR	SW	03	030	065	3	3A	123	20	113	20	2				WE	3A	
2P	SJ45881365	PGR	W	02	039	058	3	3A	125	22	100	7	2				WE	3A	
3	SJ46001380	PGR	S	02	023	055	3	3A	119	16	110	17	2				WE	3A	
4	SJ46101380	CER	S	01	035	035	4	3B	114	11	105	12	2				WE	3B	POORCROP
5	SJ46201380	CER	S	02	029	029	4	3B	103	0	099	6	3A				WE	3B	POORCROP
6	SJ46301380	CER	NW	01	000	028	4	3B	096	-7	099	6	3A				WE	3B	
7	SJ45401370	PGR			000	065	3	3A	124	21	114	21	2				WE	3A	
8	SJ45501370	PGR	W	02	030	075	2	2	127	24	116	23	2				WE	2	
9	SJ45801370	PGR	N	01	050	058	2	2	097	-6	106	13	3A				DR	3A	ODD ONE
10	SJ45901370	PGR	NW	03	025	075	2	2	134	31	116	23	1				WE	2	DAMP TOP
11	SJ46001370	LEY	SW	07	029	040	4	3B	115	12	106	13	2				WE	3B	BDR 3A
12	SJ46101370	LEY	S	02	032	055	3	3A	121	18	110	17	2				WE	3A	
13	SJ46201370	LEY		02	025	036	4	3B	114	11	105	12	2				WE	3B	
13A	SJ46201362	LEY		02	028	038	4	3B	114	11	106	13	2				WE	3B	
14	SJ46301370	LEY	NW	02	025	055	3	3A	000	0	000	0					WE	3A	
15A	SJ46351370	LEY	NW	02	025	059	3	2	122	19	112	19	2				WE	2	
16	SJ45501360	PGR	SW	01	035		2	2	134	31	113	20	1				WE	2	
17	SJ45601360	PGR	W	02	027		1	1	097	-6	086	-7	3A				DR	3A	CLY LENS
18	SJ45701360	PGR	N	02	035	055	3	3A	125	22	107	14	2				WE	3A	CHK SPL
19	SJ45801360	PGR	W	02	025	095	2	2	179	76	133	40	1				WE	2	
20	SJ45901360	PGR	S	05	025	085	2	2	134	31	114	21	1				WE	2	CHK SPL
21	SJ46001360	PGR	S	06	025	063	3	3A	121	18	111	18	2				WE	3A	CHK SLPE
22	SJ46101360	LEY	S	03	025	035	4	3B	113	10	104	11	2				WE	3B	
24	SJ45701350	PGR	S	01	030		2	2	131	28	111	18	2				WE	2	
25	SJ45801350	PGR	W	03	030	073	2	2	150	47	133	40	1				WE	2	
26	SJ45901350	PGR	S	06	075		1	1	135	32	106	13	1					1	
27	SJ45901340	PGR	S	06	028	058	3	3A	000	0	000	0					WE	3A	

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	0-27	mcl	75YR42 00	10YR46 56	C			Y	2	0	HR	4						
	27-35	hcl	75YR52 42	10YR58 61	M			Y	0	0	HR	1		M				
	35-100	c	05YR53 44	75YR58 61	M			Y	0	0	HR	1		P			Y	
1P	0-28	mcl	10YR42 00						2	0	HR	4						
	28-38	hcl	75YR42 53	75YR51 58	M			Y	0	0	HR	1	WKCPR FM	P				
	38-100	c	05YR44 00	75YR58 62	M		00MN00 00	Y	0	0	HR	1	WKCAB VM	P			Y	
2	0-30	mcl	10YR42 00						2	0	HR	4						
	30-45	mcl	10YR42 53	10YR56 00	C			Y	0	0	HR	2		M				
	45-65	mcl	10YR53 54	10YR56 00	C			Y	0	0	HR	1		M				
	65-100	hcl	10YR62 54	10YR58 00	M			Y	0	0		0		P			Y	
2P	0-27	mcl	10YR42 00						2	0	HR	5						
	27-39	mcl	10YR42 43	10YR56 46	F				0	0	HR	5	MDCMSB FR	M				
	39-58	scl	10YR53 54	75YR58 61	M		00MN00 00	Y	0	0	HR	15	WKCSB FM	P				
	58-120	hcl	05YR53 44	75YR58 51	M		00MN00 00	Y	0	0	HR	3	WKCAB VM	P			Y	
3	0-23	mcl	10YR42 00						0	0	HR	2						
	23-55	mcl	10YR53 54	10YR56 51	M			Y	0	0	HR	2		M				
	55-100	c	75YR53 00	10YR58 61	M			Y	0	0	HR	1		P			Y	
4	0-35	mcl	75YR42 52						2	0	HR	4						
	35-38	hcl	75YR42 53	75YR56 51	M			Y	0	0	HR	1		P			Y	
	38-100	c	05YR53 44	75YR61 58	M			Y	0	0	HR	1		P			Y	
5	0-29	mcl	75YR42 00						2	0	HR	3						
	29-90	hcl	75YR53 44	75YR51 58	M		00MN00 00	Y	0	0	HR	2		P			Y	
6	0-28	mcl	75YR42 00	10YR56 00	C			Y	1	0	HR	3						
	28-80	hcl	75YR53 44	75YR58 61	M		00MN00 00	Y	0	0	HR	1		P			Y	
7	0-25	mcl	10YR42 00	10YR56 00	C			Y	1	0	HR	2						
	25-39	mcl	10YR42 00	10YR56 00	C			Y	0	0		0		M				
	39-65	mcl	10YR42 53	10YR56 58	C			Y	0	0		0		M				
	65-100	hcl	10YR53 54	10YR56 00	C			Y	0	0		0		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
8	0-30	mcl	10YR42 00						2	0	HR	3						
	30-48	mcl	10YR42 00	10YR56 00	C			Y	0	0	HR	1		M				
	48-75	mcl	10YR42 32	10YR56 00	C			Y	0	0		0		M				
	75-100	c	25 Y51 00	10YR56 00	C			Y	0	0		0		P			Y	
9	0-30	mcl	10YR42 00						1	0	HR	3						
	30-50	mcl	10YR42 43						0	0	HR	2		M				
	50-58	mcl	10YR42 43	10YR58 00	M			Y	0	0	HR	2		M				
	58-65	scl	05 Y51 00	10YR56 00	C			Y	0	0		0		P			Y	
10	0-25	mcl	10YR42 33						1	0	HR	2						
	25-35	hcl	10YR41 53	10YR56 00	C			Y	0	0	HR	1		M				
	35-55	mcl	10YR42 53	10YR56 00	C			Y	0	0		0		M				
	55-75	mcl	10YR53 54	10YR58 51	M			Y	0	0		0		M				
	75-110	c	10YR53 42	10YR56 00	C			Y	0	0		0		P			Y	
11	0-29	mcl	10YR42 00						2	0	HR	4						
	29-40	hcl	75YR42 53	75YR56 00	C			Y	0	0	HR	1		M				
	40-100	c	05YR44 53	75YR56 51	C			Y	0	0	HR	2		P			Y	
12	0-32	mcl	10YR42 00						1	0	HR	3						
	32-55	mcl	10YR42 00	10YR56 00	C			Y	0	0	HR	1		M				
	55-100	hcl	10YR52 53	10YR56 00	C			Y	0	0		0		P			Y	
13	0-25	mcl	75YR42 00						0	0	HR	2						
	25-36	hcl	75YR42 00	10YR46 56	C			Y	0	0	HR	2		M				
	36-55	c	75YR42 00	10YR56 00	C			Y	0	0	HR	1		P			Y	
	55-100	c	05YR53 44	75YR51 58	M			Y	0	0	HR	3		P			Y	
13A	0-28	mcl	75YR42 00						2	0	HR	3						
	28-38	hcl	75YR42 00	75YR46 00	C			Y	0	0	HR	2		M				
	38-100	c	05YR53 44	75YR61 58	C		00MN00 00	Y	0	0	HR	2		P			Y	
14	0-25	mcl	10YR32 33						2	0	HR	3						
	25-55	mcl	75YR33 42	10YR56 00	C			Y	0	0	HR	5		M				
	55-100	c	05YR53 44	75YR51 58	C		00MN00 00	Y	0	0	HR	1		P			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
15A	0-25	mszl	10YR32 33						2	0	HR	4						
	25-59	mcl	75YR43 42	10YR46 00	C			Y	0	0	HR	2		M				
	59-100	hcl	75YR42 53	75YR56 00	C		00MN00 00	Y	0	0	HR	1		P			Y	
16	0-35	mcl	10YR42 43						1	0	HR	2						
	35-70	scl	10YR53 43	10YR56 00	C			Y	0	0	HR	2		M				
	70-100	scl	75YR53 44	75YR56 00	C			Y	0	0		0		M				
17	0-27	mcl	10YR43 00						2	0	HR	5						
	27-40	scl	75YR42 43	10YR56 00	C			Y	0	0	HR	5		M				
	40-70	lms	75YR44 00					Y	0	0	HR	5		M				
	70-110	ms	75YR44 56					Y	0	0	HR	3		M				
18	0-35	mcl	10YR42 00						1	0	HR	2						
	35-55	scl	10YR42 41	10YR56 00	C			Y	0	0	HR	3		M				
	55-65	hcl	10YR51 00	10YR61 58	M			Y	0	0	HR	15		P			Y	
	65-110	hcl	75YR53 44	75YR56 00	C			Y	0	0	HR	2		P			Y	
19	0-25	mcl	10YR42 32						1	0	HR	3						
	25-55	mcl	10YR42 43	10YR46 56	M			Y	0	0	HR	1		M				
	55-95	omcl	10YR31 42	10YR56 00	C			Y	0	0		0		M				
	95-110	zc	10YR51 52	10YR56 00	C			Y	0	0		0		P			Y	
20	0-25	mcl	10YR42 00						2	0	HR	4						
	25-70	mcl	10YR42 53	10YR56 00	C			Y	0	0	HR	2		M				
	70-85	scl	10YR42 53	10YR56 58	M			Y	0	0	HR	2		M				
	85-110	c	75YR53 44	75YR51 58	M			Y	0	0	HR	1		P			Y	
21	0-25	mcl	10YR42 00						1	0	HR	3						
	25-38	mcl	10YR42 53	10YR56 00	C			Y	0	0	HR	5		M				
	38-63	mcl	10YR53 00	10YR56 00	C			Y	0	0	HR	2		M				
	63-100	hcl	10YR53 44	10YR56 00	C			Y	0	0		0		P			Y	
22	0-25	mcl	10YR42 00	10YR56 00	C				2	0	HR	4						
	25-35	mcl	10YR42 53	10YR56 00	C			Y	0	0	HR	2		M				
	35-45	hcl	10YR42 00	10YR56 00	C			Y	0	0		0		P			Y	
	45-100	c	10YR52 53	10YR56 00	C		00MN00 00	Y	0	0		0		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
24	0-30	mcl	10YR43 00						1	0	HR	3						
	30-100	scl	10YR53 54	10YR56 00	C			Y	0	0	HR	2		M				
25	0-30	mcl	10YR42 00						1	0	HR	3						
	30-55	mcl	10YR42 33	10YR56 00	C			Y	0	0	HR	2		M				
	55-73	omcl	10YR31 42	10YR46 56	C			Y	0	0	HR	2		M				
	73-110	zc	10YR42 52	10YR56 00	C			Y	0	0		0		P			Y	
26	0-28	mcl	10YR42 00						2	0	HR	5						
	28-75	scl	75YR33 44						0	0	HR	8		M				
	75-110	scl	10YR53 42	10YR56 00	C			Y	0	0	HR	5		M				
27	0-28	mcl	10YR42 33	10					2	0	HR	4						
	28-58	scl	75YR42 43	10YR56 00	C			Y	0	0	HR	3		M				
	58-110	hcl	10YR42 53	10YR56 00	C			Y	0	0	HR	1		P			Y	

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PROFILE/
HORIZ DATA

END OF VALIDATION REPORT