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

Agricultural Land Classification
ALC Map and Report

May 1999

Resource Planning Team
Northern Region
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AGRICULTURAL LAND CLASSIFICATION REPORT
SHROPSHIRE STRUCTURE PLAN
BICTON HEATH, SHREWSBURY - LAND WEST OF CALCOTT LANE

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 5.2ha of land at Bicton Heath, Shrewsbury. The site is situated to the west of Calcott Lane, east of the A5 bypass and to the 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. A wet area of scrub (in the place of a former pond) has been mapped as 'Other land'.

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	4.3	86	83
3b	0.7	14	13
4	-	-	-
5	-	-	-
Agricultural land not surveyed	-	N/A	-
Other land	0.2	N/A	4
Total surveyed area	5.0	100	-
Total site area	5.2	-	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 six borings and one soil pit were 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 soil wetness and soil droughtiness.

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

10. The area of moderate quality land is mapped around the wet area (and the ditch running from it) in the north of the site. The soils have a clay loam texture over heavy clay loam and clay. Occasionally there are lenses of peaty material in the subsoil surrounding the immediate edge of the wet area.

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 449 136
Altitude	m, AOD	80
Accumulated Temperature	day°C (Jan-June)	1399
Average Annual Rainfall	mm	692
Field Capacity Days	days	148
Moisture Deficit, Wheat	mm	103
Moisture Deficit, Potatoes	mm	94
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 (ATO,

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 78 to 83 metres AOD The highest land adjoins the A5/A458 roundabout in the south west of the site and the lowest land is in the north of the site around the wet area.

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, peat and sand and gravel - British Geological Survey (1952, 1974).

19. The soils that have developed on this geology are generally of clay loam texture or a sandy silt loam texture overlying clay or sand (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 4.3 hectares (83%) of the site area and is found across the majority of the site.

22. The main limitations to the agricultural use of this land include soil wetness and soil droughtiness.

23. In the south of the site the soils have a sandy silt loam topsoil texture over sandy silt loam, clay loam and sand to depth, with few stones within the soil profile. Occasionally the topsoils may have a clay loam texture. The moisture balance places these soils in Subgrade 3a.

24. In the north of the site the soils have a clay loam topsoil texture overlying clay loam and heavy clay loam to depth. The depths to gleying and the slowly permeable layer place these soils in Wetness Class III.

Subgrade 3b

25. Land of moderate quality occupies 0.7 hectares (13%) of the site area and is mapped around the wet area (and the ditch running from it) in the north of the site.

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

27. The soils have a clay loam topsoil texture over heavy clay loam and clay to depth. Occasionally there are lenses of peaty material in the subsoil surrounding immediate edge of the wet area and the ditch. 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	SJ44901380	CER	S	03	036	065	3	3A	132	29	115	21	2				WE	3A	
1P	SJ44881357	CER			025		1	1	112	9	096	2	2				DR	2	3AIFMSZL
2	SJ44801370	CER	S	01	038	038	4	3B	097	-6	103	9	3A				WE	3B	BRK DRAN
3	SJ44901370	CER	N		042		2	1	110	7	117	23	2				WE	2	
3A	SJ44871373	CER	S		045	045	3	2	169	66	158	64	1				WE	3B	G WATER
4	SJ44801360	CER	N	04	028		1	1	104	1	092	-2	3A				DR	3A	
5	SJ44901360	CER	N	02	000		1	1	090	-13	077	-17	3A				DR	3A	SLAKED

				----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	0-36	mszl	10YR43 00						3	0	HR	5						
	36-65	mcl	25 Y63 64	75YR56 00		C		Y	0	0	HR	5		M				
	65-110	hcl	25 Y63 64	75YR56 00		C		Y	0	0		0		P			Y	
1P	0-25	mszl	10YR43 44						2	0	HR	3						
	25-41	fszl	10YR53 54	10YR56 58		C		Y	0	0	HR	1	WKMPL	FR	M			
	41-120	ms	75YR56 00					Y	0	0		0	MDFPL	VF	M			
2	0-38	mcl	75YR32 00						2	0	HR	5						
	38-80	hzcl	10YR51 00	10YR56 00		C		Y	0	0	HR	2		P			Y	
3	0-42	mszl	10YR43 00						3	0	HR	5						
	42-68	mcl	25 Y63 64	10YR56 00		C	00MN00 00	Y	0	0	HR	5		M				
	68-80	ms	05YR44 00						0	0	HR	2		M				
3A	0-35	omcl	10YR32 00						3	0	HR	5						
	35-45	lp	75YR31 00						0	0		0		M				
	45-100	hcl	05 Y51 00	10YR56 00		C		Y	0	0		0		P			Y	
4	0-28	mcl	10YR43 33						3	0	HR	5						
	28-48	hcl	75YR53 44	75YR56 00		C		Y	0	0	HR	2		M				
	48-110	ms	05YR44 00					Y	0	0	HR	1		M				
5	0-30	mszl	10YR43 00						2	0	HR	5						
	30-110	ms	05YR44 00						0	0		0		M				

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PROFILE/
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