

**SHROPSHIRE STRUCTURE PLAN
CRAVEN ARMS
LAND WEST OF WATLING STREET**

**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
CRAVEN ARMS, LAND WEST OF WATLING STREET

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 23.5 ha of land west of Watling Street, to the west of Craven Arms, Shropshire. The survey was carried out in March 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). This survey was carried out in connection with MAFF's statutory input to the Shropshire Structure Plan and 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 predominant agricultural land use on the site was grass, used for grazing and making silage. The areas mapped as 'Other land' include Oakfield, Oak Holding, New Holding, and associated outbuildings and silage clamps.

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)	% Total agricultural land use	% Total survey area
1	-	-	-
2	13.5	60	57
3a	8.1	36	35
3b	-	-	-
4	0.8	4	3
5	-	-	-
Agricultural land not surveyed	-	-	-
Other land	1.1	-	5
Total agricultural land area	22.4	100	-
Total survey area	23.5	-	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 23 borings and 3 soil pits was described.
8. The agricultural land on this site has been classified as Grade 2 (very good quality), Subgrade 3a (good quality) and Grade 4 (poor quality). The principal limitations to the agricultural use of this land are soil wetness, soil droughtiness and microrelief.
9. Land of very good quality (Grade 2) is found across the site. Generally this land is found on the slightly higher ground in the west of the site. Soils generally comprise medium clay loam and medium silty clay loam topsoils, overlying medium clay loam, sandy clay loam and medium silty clay loam subsoils. Soil wetness and droughtiness are the principal limitations to the agricultural use of this land.
10. Land of good quality (Subgrade 3a) is found across the site. Generally land of this quality is found on the slightly lower ground to the east of the site. Soils comprise medium clay loam and medium silty clay loam topsoils, overlying medium clay loam, medium silty clay loam and heavy clay loam subsoils. Soil wetness and soil droughtiness are the principal limitations to the agricultural use of this land.
11. A small area of land of poor quality (Grade 4) is found across the centre of the site, following the course of a stream. Microrelief and restricted drainage are the principal limitation to the agricultural use of this land.

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		
		SO425832	SO428837	SO422827
Grid reference	N/A	130	125	140
Altitude	m, AOD	1357	1362	1345
Accumulated Temperature	day°C (Jan-June)	769	768	774
Average Annual Rainfall	mm	185	186	186
Field Capacity Days	days	90	91	89
Moisture Deficit, Wheat	mm	76	77	75
Moisture Deficit, Potatoes	mm			
Overall climatic grade	N/A	Grade 1	Grade 1	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.
16. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation. The site is climatically Grade 1.

Site

17. The site lies at an altitude of 125-140m AOD. The site is bordered to the east by Watling Street, and to the south by Clun Road, to the north by an unnamed road, and west by agricultural land.
18. The land falls to the east, and is dissected by a small stream, to the south of Oakfield.
19. Immediately adjacent to the stream, uneven microrelief constitutes a limitation to the agricultural use of this land.

Geology and soils

20. The most detailed published solid geological information for this area (BGS, 1974) maps the site as being underlain by Wenlock Shales. Drift geological information for this area (BGS, 1967) indicates that the south of the site is underlain by boulder clay, and the north undifferentiated river terraces and an alluvial fan.
21. The most recent published soils information (SSEW, 1983) maps the soils as belonging to the Rowton association. Soils of this association are described as being 'yellowish brown silty soils', found on 'gently undulating glaciofluvial terraces and till in the Welsh borderland' (SSEW 1984).
22. Upon detailed field examination, soil profiles broadly consistent with the above description were found across the site.

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.

Grade 2

24. Land of very good quality occupies 13.5 ha (57%) of the total survey area, and is mostly found on the slightly higher land in the west of the site. The principal limitations to the agricultural use of this land are soil wetness and droughtiness.

25. Within the Grade 2 mapping unit, topsoils consist of very slightly stony medium clay loam and medium silty clay loam topsoils. In the subsoils, medium clay loam, medium silty clay loam and sandy clay loam textures are predominant. These subsoils can be very stony, often overlying gravelly soil. A number of the profiles observed in this mapping unit show evidence of gleying in their subsoils. However, in the absence of a slowly permeable layer, these soils are assigned to Wetness Class I and Grade 2. The moisture balance, which take into account the soil characteristics in relation to the local climatic regime, indicates a Grade 2 limitation, in profiles where stony subsoils are encountered.

Subgrade 3a

26. Good quality land occupies 8.1 ha (35%) of the total survey area, and is mostly found on the slightly lower elevations to the east of the site. The principal limitations to the agricultural use of this land are soil wetness and droughtiness.
27. Within the Subgrade 3a mapping unit, soils consist of stoneless or very slightly stony medium clay loams and medium silty clay loam topsoils. These overlie medium clay loam, medium silty clay loam and heavy clay loam subsoils. Stoniness increases in the subsoil, with moderately and very stony subsoils observed. These often overlie a gravelly soil. The depth to gleying and slowly permeable layers, in relation to the local climatic regime, places these soils into Wetness Classes II and III, and Subgrade 3a. The moisture balance which take into account the soil characteristics in relation to the local climatic regime, indicates a Subgrade 3a limitation where stony subsoils are encountered.

Grade 4

28. Land of poor quality occupies 0.8 ha (3%) of the total survey area, and is adjacent to the small stream, south of Oakland. The principal limitations to the agricultural use of this land are microrelief and soil wetness.
29. Microrelief imposes a limitation, where complex changes of slope angle and direction occur. In addition much of the land was affected by restricted natural drainage, as evidenced by extremely wet ground conditions and surface water. These restrictions were considered sufficiently severe to be consistent with land of Grade 4 quality.

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SOURCES OF REFERENCE

British Geological Survey (1974) *Sheet No. 166, Church Stretton. (1:50 000)*.
BGS: London.

British Geological Survey (1967) *Sheet No. 166, Church Stretton. (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 (1983) *Sheet 3, Soils of Midland and Western England. (1:250 000)*
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.

053/98

SAMPLE NO.	GRID REF	ASPECT USE	—WETNESS—				-WHEAT-		-POTS-		M. REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
			GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT					
1	S042608360	PGR E	01	000		1	2	113	23	122	52	2			WD	2	
1P	S042208280	GRA	01	000		1	2	111	21	105	35	2			WE	2	CHECK
2	S042708360	FAL E	01	055		1	2	156	66	123	53	1			WE	2	TS MCL
2P	S042708360	FAL	01	000		1	2	112	22	124	54	2			WE	2	
3	S042808360	FAL E	01	050		1	2	138	48	122	52	1			WE	2	
3P	S042408300	GRA	01	048	048	3	3A	114	24	117	47	2			WE	3A	
4	S042608350	PGR E	01	000		1	2	107	17	112	42	2			WD	2	
5	S042708350	PGR E	01	000		1	2	138	48	132	62	1			WE	2	
6	S042608340	PGR NE	01	033		2	3A	101	11	106	36	2			WE	3A	
7	S042708340	PGR NE	01	000		1	2	094	4	101	31	3A			DR	3A	GUESSED
8	S042608330	GRA NE	01	030		2	3A	111	21	120	50	2			WE	3A	
9	S042408320	MZL NE	03	000		1	2	077	-13	077	7	3A			DR	3A	
10	S042508320	GRA NE		000		1	2	125	35	139	69	1			WE	2	
11	S042408310	GRA NE	02	000		1	2	103	13	103	33	2			WD	2	
12	S042508310	PGR NE	03	038	070	3	3A	126	36	130	60	1			WE	3A	
13	S042308300	GRA NE	02	030	040	4	3B	116	26	126	56	2			WE	3B	CHK SPL
14	S042408300	GRA NE	01	030		2	3A	090	0	090	20	3A			WD	3A	
15	S042508300	PGR NE		067		1	2	163	73	151	81	1			WE	2	
15A	S042458300	PGR NE		020	030	4	3B	140	50	117	47	1			WE	3B	MAYBE 4
16	S042208290	PGR N	01	060		1	2	160	70	126	56	1			WE	2	
17	S042308290	GRA N	02	000		1	2	125	35	134	64	1			WE	2	
18	S042408290	PGR NE	01	066	090	1	2	152	62	127	57	1			WE	2	
19	S042208280	PGR S	01	000		1	2	081	-9	081	11	3A			DR	3A	MAYBE 2
20	S042308280	GRA S	02	000		1	2	125	35	134	64	1			WE	2	
21	S042408280	GRA S	01	000		1	2	128	38	135	65	1			WE	2	
22	S042308270	GRA S	01	035	000	2	3A		0	000	0				WE	3A	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES			PED		STONES			STRUCT/		SUBS	
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT	CONSIST	STR	POR
1	0-24	mzc1	10YR33 00						0	0	0				
	24-50	mzc1	10YR43 00						0	0	0	WKMSAB	FR	G	
	50-70	mzc1	10YR43 00						0	0	HR	50	WKMSAB	FR	G
1P	0-26	z1	10YR43 00						3	1	HR	9			
	26-90	hc1	10YR53 00						0	0	HR	30	WKMSAB	F	M
2	0-23	mzc1	10YR33 00						2	0	HR	3			
	23-45	mzc1	10YR44 00						0	0	HR	10		G	
	45-55	sc1	10YR56 00						0	0	HR	3		G	
	55-85	sc1	10YR53 00	10YR56 00	C			Y	0	0	HR	10		M	
	85-120	sc1	10YR53 00	10YR56 00	C			Y	0	0	HR	20		M	
2P	0-23	mc1	10YR33 00						2	0	HR	3			
	23-53	msz1	10YR43 00						0	0	HR	3	WDMAB	FR	G
	53-70	msz1	10YR54 00						0	0	HR	2	MDVCP	FM	M
3	0-38	mzc1	10YR43 00						0	0	HR	3			
	38-50	mzc1	10YR44 00						0	0	HR	10		G	
	50-100	mc1	10YR53 00	10YR56 00	C			Y	0	0	HR	10		M	
3P	0-30	z1	10YR42 00						2	0	HR	5			
	30-48	mc1	10YR53 00						0	0	HR	5	WKMSAB	FR	M
	48-80	hc1	10YR53 00	10YR56 00	M	10YR71 00	Y	0	0	HR	12	MA	FM	P	Y
4	0-24	z1	10YR33 00						2	0	HR	3			
	24-40	mzc1	10YR43 00						0	0	HR	3		G	
	40-60	mc1	10YR43 00						0	0	HR	20		M	
5	0-28	mzc1	10YR33 00						0	0	HR	3			
	28-50	mzc1	10YR44 00						0	0		0		G	
	50-90	mzc1	10YR54 00						0	0		0		M	
6	0-23	mzc1	10YR33 00						0	0		0			
	23-33	mzc1	10YR42 00						0	0		0		G	
	33-53	mc1	10YR42 00	10YR66 00	C	10YR62 00	Y	0	0		0		M		
	53-60	mc1	10YR53 00	10YR66 00	C	10YR62 00	Y	0	0	HR	20		M		

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES---			PED COL.	---STONES---			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLEY	>2	>6		LITH	TOT	STR	POR	IMP	SPL
X 7	0-30	mzc1	10YR43 00					0	0	0							
	30-40	mzc1	10YR54 00					0	0	HR 20		G					
	40-70	mzc1	10YR54 00					0	0	HR 50		M					
X 8	0-30	mzc1	10YR43 00					0	0	0							
	30-60	mzc1	10YR53 00	10YR56 00	C			Y	0	0	0		G				
C 9	0-17	z1	10YR33 00					0	0	HR 3							
	17-40	mzc1	10YR43 00					0	0	HR 20		G					
e 10	0-40	mzc1	10YR33 00					0	0	0							
	40-70	mc1	10YR54 00					0	0	0		G					
o 11	0-40	z1	10YR43 00					0	0	0							
	40-45	mc1	10YR43 00					0	0	0		G					
X 12	0-26	z1	10YR52 00					0	0	HR 5							
	26-38	mzc1	10YR53 00					0	0	HR 10		G					
	38-56	mzc1	10YR53 00	10YR56 00	C			Y	0	0	HR 5		M				
	56-70	mzc1	10YR53 00	75YR58 00	M			Y	0	0	HR 10		M				
	70-85	hc1	25Y 72 00	05YR46 00	C			Y	0	0	HR 25		P	Y			Y
X 13	0-30	z1	10YR44 00					0	0	0							
	30-40	mzc1	10YR53 00	10YR56 00	C			Y	0	0	0		G				
	40-70	hc1	10YR53 00	10YR56 00	C			Y	0	0	0		P	Y			Y
X 14	0-30	z1	10YR43 00					0	0	0							
	30-40	mc1	10YR53 00	10YR56 00	C			Y	0	0	0		G				
15	0-25	z1	10YR42 00					0	0	0							
	25-67	mzc1	10YR53 00					0	0	0		G					
	67-90	mzc1	10YR53 00	10YR46 00	C			Y	0	0	0		M				
	90-100	hzc1	10YR53 00	10YR46 00	C			Y	0	0	0		M				
15A	0-20	z1	10YR41 00					0	0	0							
	20-30	mzc1	10YR41 00	10YR56 00	C			Y	0	0	0		G				
	30-48	hc1	10YR41 00	10YR56 00	C			Y	0	0	0		P	Y			Y
	48-120	c	10YR41 00	10YR56 00	C			Y	0	0	0		P	Y			Y

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES---			PED COL.	---STONES---			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLEY	>2	>6		LITH	TOT	STR	POR	IMP	SPL
U	16	0-30	mzc1	10YR42 00				0	0	HR	8						
		30-60	mzc1	10YR43 00				0	0	HR	10		G				
		60-75	mzc1	10YR53 00	10YR56 00 F			Y	0	0	HR	5		M			
		75-100	mzc1	10YR53 00	10YR56 00 M			Y	0	0	HR	5		M			
		100-115	z1	10YR52 00	10YR56 00 M			Y	0	0	HR	5		M			
o	17	0-40	z1	10YR43 00				0	0		0						
		40-60	mzc1	10YR43 00				0	0		0		G				
/	18	0-25	mzc1	10YR42 00				0	0	HR	2						
		25-50	mzc1	10YR53 00				0	0	HR	10		G				
		50-66	mzc1	10YR44 00				0	0		0		M				
		66-75	mzc1	25Y 63 00	25Y 76 00 C			Y	0	0	HR	25		M			
		75-90	mzc1	10YR62 00	10YR66 00 M			Y	0	0		0		M			
		90-110	hzc1	10YR62 00	10YR66 00 M			Y	0	0		0		M	Y		Y
U	19	0-25	z1	10YR42 00				0	0	HR	5						
		25-32	mzc1	10YR53 00	10YR68 00 F			0	0	HR	10		G				
		32-42	mzc1	10YR53 00	10YR68 00 F			0	0	HR	25		M				
o	20	0-28	z1	10YR43 00				0	0	HR	10						
		28-57	mzc1	75YR43 00				0	0		0		G				
		57-75	mzc1	25Y 54 00				0	0	HR	35		M				
U	21	0-30	z1	10YR34 00				0	0		0						
		30-65	mzc1	10YR44 00				0	0	HR	20		G				
		65-78	mzc1	75YR32 00				0	0	HR	20		M				
X	22	0-20	z1	10YR42 00				0	0		0						
		20-35	mzc1	25Y 53 00				Y	0	0		0		G			