

**SHROPSHIRE STRUCTURE PLAN  
WEM  
LAND NORTHEAST OF LOWE HILL  
ROAD**

**Agricultural Land Classification  
ALC Map and Report**

**July 1999**

**Resource Planning Team  
Northern Region  
FRCA Wolverhampton**

**RPT Reference: 25/RPT/0954 & 069/98  
MAFF Reference: EL35/11859**

# AGRICULTURAL LAND CLASSIFICATION REPORT

## SHROPSHIRE STRUCTURE PLAN WEM, LAND NORTHEAST OF LOWE HILL ROAD

### INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 12.2 ha of land north-east of Lowe Hill Road, north-west of Wem. The survey was carried out in June 1999.
2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA)<sup>1</sup> 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 site was under grass. The area marked as 'Other Land' comprises a small pond.

### 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 area	% Total survey area
1	-	-	-
2	-	-	-
3a	9.4	78	77
3b	2.7	22	22
4	-	-	-
5	-	-	-
Agricultural land not surveyed	-	-	-
Other land	0.1	-	1
Total agricultural land area	12.1	100	-
Total survey area	12.2	-	100

<sup>1</sup> 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. In total 13 borings and 1 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 main limitations to the agricultural use of this land are soil wetness and droughtiness.
9. Land of good quality (Subgrade 3a) occurs across the site. Soil wetness and droughtiness are the main limitations to the agricultural use of this land.
10. Land of moderate quality (Subgrade 3b) occurs in three discrete areas in the north-east, west and south of the site. Soil wetness is the main limitation to the agricultural use of this land.

## 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	SJ512299
Altitude	m, AOD	85
Accumulated Temperature	day°C (Jan-June)	1386
Average Annual Rainfall	mm	704
Field Capacity Days	days	158
Moisture Deficit, Wheat	mm	96
Moisture Deficit, Potatoes	mm	86
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.

15. The combination of rainfall and temperature at this site means that there is no overall climatic limitation. The site is climatically Grade 1.

#### Site

16. The site lies at an altitude of approximately 85m AOD, and slopes southward. A drain flows south across the centre of the site. To the south the site is bounded by recent residential developments. To the west the site is bounded by Buona Vista (a farmhouse) and Lowe Hill Road. Elsewhere the site is bounded by agricultural land.

#### Geology and soils

17. In the north of the site the underlying solid geology comprises Jurassic Lower Lias (BGS 1967). This is overlain by drift comprising Boulder Clay (BGS 1967).
18. The most detailed published soils information (SSEW, 1983 & 1984) maps the 'typical stagnogley soils' of the Salop association across the site.
19. Upon detailed field examination, soil profiles closely matching the descriptions of the above association were found.

#### 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.

#### Grade 3a

21. Land of very good quality occupies 9.4 ha (77%) of the total survey area, and occurs across the site. The main limitation to the agricultural use of this land is soil wetness.
22. Within the Grade 3a mapping unit, soils comprise a slightly stony medium clay loam topsoil, overlying a medium clay loam, sandy clay loam or heavy clay loam upper subsoil. Within the lower subsoil layers textures are quite variable, with clay, sand or intermediate (medium sandy loam, sandy clay loam, medium clay loam) textures. Depths to gleying in relation to the local climatic regime, place these soils into Wetness Classes I, II and III. In several borings the main limitation to the agricultural use of the land is soil droughtiness due to the coarse texture of the lower subsoil layers. A number of Grade 2 borings were placed within the Subgrade 3a mapping unit, as they were scattered across the site and difficult to map as a discrete unit.

#### Subgrade 3b

23. Land of moderate quality occupies 2.7 ha (22%) of the total survey area, and occurs in three areas to the north-east, west and south of the site. The main limitation to the agricultural use of this land is soil wetness.

24. In the northern corner of the site, soils comprise a stoneless or very slightly stoneless medium clay loam topsoil, over a medium clay loam or clay upper subsoil and heavy clay loam or clay lower subsoil. Depths to gleying and the slowly permeable layer in relation to the local climatic regime place the land into Wetness Class IV and Subgrade 3b.

William Fearnough  
Resource Planning Team  
Northern Region  
FRCA Wolverhampton

## SOURCES OF REFERENCE

British Geological Survey (1967) *Sheet No. 138, Wem, Solid and Drift Edition, 1:63360 scale.*  
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 No. 3, Soils of Midland and Western England. 1:250 000 scale.*  
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.



69/98

program: ALC012

LIST OF BORINGS HEADERS 28/07/99 WEM SITE "C"

page 1

SAMPLE NO.	GRID REF	ASPECT USE	GRDNT	GLEYS	—WETNESS—		-WHEAT-		-POTS-		M.REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
					CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD					
1	SJ51002990	GRA	01	058 058	3	3A	121	24	115	29	2				WE	3A	
1P	SJ51002980	GRA	01	031 060	3	3A	122	25	113	27	2				WE	3A	
2	SJ51102990	GRA	01	028 035	4	3B	123	26	107	21	2				WE	3B	
3	SJ51202990	GRA	01	035 035	4	3B	119	22	102	16	2				WE	3B	
4	SJ51302990	GRA	01	093 093	1	1	122	25	094	8	2				DR	2	
5	SJ50802980	PGR	01	026 038	4	3B	110	13	103	17	2				WE	3B	
6	SJ50902980	PGR		020	2	2	118	21	094	8	2				WD	2	
7	SJ51002980	GRA	01	000 070	3	3A	121	24	113	27	2				WE	3A	SAT 70CM
8	SJ51102980	GRA	01	030	1	1	082	-15	070	-16	3A				DR	3A	
9	SJ51202980	GRA	01	036	2	2	122	25	108	22	2				WD	2	
10	SJ51302980	GRA	01	050 050	3	3A	108	11	106	20	2				WE	3A	
11	SJ50802970	GRA	01	040 083	2	2	134	37	110	24	1				WE	2	CHK SPL
12	SJ50902970	GRA		000 050	4	3B	100	3	110	24	3A				WE	3B	WET HOLLOW
13	SJ51002970	GRA	02	000 050	3	3A	107	10	112	26	2				WE	3A	

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED		-----STONES-----			STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT	COL.	GLEYS	>2	>6	LITH		TOT	STR	POR	IMP	SPL
1	0-46	mc1	10YR33 00						0	0	0						
	46-58	sc1	75YR44 00						0	0	0		M				
	58-80	hc1	75YR53 00	75YR56 00	F		00MN00 00	Y	0	0	0		P	Y		Y	
	80-85	ms1	25YR34 00					Y	0	0	0		M	Y		Y	
	85-90	c	75YR53 00					Y	0	0	0		P	Y		Y	
1P	0-31	mc1	75YR32 00						2	0	HR	5					
	31-46	mc1	10YR42 00	10YR56 00	C			Y	0	0	0	MDMSAB	FR	M			
	46-60	mc1	10YR53 00	10YR56 00	M			Y	0	0	0	WKMSAB	FM	M	Y		
	60-100	c	05YR44 00	10YR56 00	M			Y	0	0	0		P	Y		Y	
2	0-28	mc1	10YR32 00						0	0	0						
	28-35	mc1	10YR42 00	10YR56 00	C			Y	0	0	0		M				
	35-110	c	05YR44 00	75YR56 00	C			Y	0	0	0		P	Y		Y	
3	0-35	mc1	75YR44 00						0	0	HR	5					
	35-60	c	05YR44 00				00MN00 00	Y	0	0	HR	5		P	Y		Y
	60-110	hc1	05YR44 00				00MN00 00	Y	0	0	HR	5		P	Y		Y
4	0-32	mc1	75YR33 00						0	0	HR	5					
	32-42	sc1	75YR44 00						0	0	HR	5		M			
	42-50	sc1	75YR44 00						0	0	HR	5		M			
	50-76	lms	75YR56 00						0	0	HR	5		M			
	76-93	ms1	05YR46 00						0	0	HR	2		M			
	93-110	hc1	05YR44 00				00MN00 00	Y	0	0	HR	5		P	Y		Y
5	0-26	mc1	10YR42 00						0	0	0						
	26-38	mc1	75YR53 00	75YR58 00	C			Y	0	0	HR	10		M			
	38-95	hc1	05YR43 46					Y	0	0	0		P	Y		Y	
6	0-20	mc1	75YR43 00						0	0	0						
	20-35	sc1	75YR53 00	75YR58 00	C			Y	0	0	HR	10		M			
	35-70	ms1	75YR53 00	75YR58 00	C			Y	0	0	HR	30		M			
	70-80	sc1	75YR53 00	75YR58 00	C			Y	0	0	HR	10		M			
	80-110	mc1	75YR53 00	75YR58 00	C			Y	0	0	0		P				

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED COL.	-----STONES-----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLY	>2	>6		LITH	TOT	STR	POR	IMP	SPL
7	0-28	mc1	10YR42 00 10YR56 00 C					Y	0	0	0						
	28-70	sc1	10YR42 00				00MN00	Y	0	0	0	M					
	70-80	sc1	75YR52 00 75YR56 00 C					Y	0	0	0	P	Y			Y	
	80-90	sc1	05YR46 00					Y	0	0	0	P	Y			Y	
8	0-25	sc1	75YR32 00						0	0	HR	5					
	25-30	sc1	75YR44 00						0	0	HR	10	M				
	30-40	sc1	75YR53 00 10YR56 00 C					Y	0	0	HR	15	M				
	40-120	cs	75YR53 00					Y	0	0	HR	20	M				
9	0-27	mc1	75YR32 00						0	0	HR	5					
	27-36	sc1	75YR43 00						0	0	HR	5	M				
	36-54	sc1	75YR53 00 75YR56 00 C					Y	0	0	HR	5	M				
	54-85	sc1	25Y 63 00 10YR56 00 C					Y	0	0	HR	5	M				
	85-110	ms	75YR53 00					Y	0	0	HR	5	M				
10	0-27	mc1	75YR44 00						0	0	HR	5					
	27-50	hc1	75YR43 00						0	0	HR	5	M				
	50-90	c	05YR53 00				00MN00	Y	0	0	HR	5	P	Y			Y
11	0-26	mc1	75YR33 00						0	0		0					
	26-40	sc1	75YR44 00						0	0	HR	15	M				
	40-83	sc1	75YR53 00 75YR56 00 C					Y	0	0		0	M				
	83-105	c	05YR43 00				00MN00	Y	0	0		0	P	Y			Y
	105-110	ms1	25Y 64 00					Y	0	0		0	M				Y
12	0-28	mc1	10YR41 00 10YR58 00 C					Y	0	0		0					
	28-50	mc1	10YR52 00 10YR58 00 C					Y	0	0		0	M				
	50-65	hc1	10YR52 00 10YR58 00 C					Y	0	0		0	P	Y			Y
	65-70	c	10YR52 00 10YR58 00 M					Y	0	0		0	P	Y			Y
13	0-28	mc1	75YR42 00 75YR56 00 C					Y	0	0		0					
	28-50	mc1	10YR53 00 75YR56 00 C					Y	0	0		0	M				
	50-80	c	05YR46 00					Y	0	0		0	P	Y			Y