SHROPSHIRE STRUCTURE PLAN
WEM
LAND WEST OF LOWE HILL ROAD

Agricultural Land Classification
ALC Map and Report

July 1999

Resource Planning Team
Northern Region
FRCA Wolverhampton

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AGRICULTURAL LAND CLASSIFICATION REPORT

SHROPSHIRE STRUCTURE PLAN
WEM, LAND WEST OF LOWE HILL ROAD

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 16.1 ha of land west 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)[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 site was under grass. Areas mapped as 'Other Land' comprise two small ponds in the middle of the site.

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	13.5	84	84
3b	2.5	16	15
4	-	-	-
5	-	-	-
Agricultural land not surveyed	-	-	-
Other land	0.1	-	1
Total agricultural land area	16.0	100	-
Total survey area	16.1	-	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. In total 14 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 microrelief.

9. Land of good quality (Subgrade 3a) occurs across the site. Soil wetness is the main limitation to the agricultural use of this land.

10. Land of moderate quality (Subgrade 3b) occurs in the middle of the site and in the northern corner of the site. Soil wetness and microrelief are the main limitations 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	SJ507296
Altitude	m, AOD	85
Accumulated Temperature	day°C (Jan-June)	1386
Average Annual Rainfall	mm	703
Field Capacity Days	days	158
Moisture Deficit, Wheat	mm	97
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 79-88m AOD, and slopes southward. Slightly lower ground occurs in a band across the middle of the site. The site is bounded by Lowe Hill Road to the east, by the Old Rectory and Ellesmere Road to the south, and by agricultural land to the west.

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 13.5 ha (84%) 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 stoneless or very slightly stony medium clay loam topsoil, overlying medium clay loam, sandy clay loam and heavy clay loam upper subsoils. In the north of the site, a clay textured lower subsoil is found to the base of the soil. In the south of the site, the lower subsoils are sandier and stonier, with sandy clay loam, loamy medium sand and sand textures. Depths to gleying in relation to the local climatic regime, place these soils into Wetness Class III, and Subgrade 3a. Occasional borings of Grade 2 quality are included in this mapping unit.

Subgrade 3b

23. Land of moderate quality occupies 2.5 ha (15%) of the total survey area, and occurs on the slightly lower ground in the middle of the site, and in the northern corner of the site. The main limitations to the agricultural use of this land are soil wetness and microrelief.

24. In the northern corner of the site, soils comprise a stoneless medium clay loam topsoil, over a sandy clay loam upper subsoil and a 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. In the middle of the site, soils are variable, with medium clay loam and sandy clay loam topsoils and upper subsoils overlying either heavy clay loam and clay or medium sandy loam and sand lower subsoils. Complex changes in slope angle and direction over short distances, impose a microrelief limitation consistent with Subgrade 3b, over much of this area. Much of the lower lying ground within this area showed signs of seasonal waterlogging, and was assigned to Wetness Class IV and Subgrade 3b.

William Fearnehough
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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.

67/98

Program: ALC012 LIST OF BORINGS HEADERS 28/07/99 WEM SITE "A"

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	SJ50702970	GRA			027	042	4	3B	110	13	108	21	2				WE	3B	
1P	SJ50502940	GRA		01	029	060	3	3A	118	21	106	19	2				WE	3A	
2	SJ50702960	GRA	SE	01	035	055	3	3A	112	15	103	16	2				WE	3A	
3	SJ50602950	GRA		02	026	095	2	2	114	17	101	14	2				WE	2	
4	SJ50702950	GRA		02	040	052	3	3A	117	20	101	14	2				WE	3A	SPL 52
5	SJ50402940	GRA			000	047	3	3A	119	22	110	23	2				WE	3A	
6	SJ50502940	GRA		01	026	090	2	2	130	33	113	26	1				WE	2	
7	SJ50602940	GRA			000	070	4	3B	133	36	117	30	1				WE	3A	
8	SJ50702940	MCL			035	080	2	2	130	33	116	29	1				WE	2	
9	SJ50402930	PGR			037	068	3	3A	129	32	116	30	1				WE	3A	
10	SJ50502930	PGR			023	045	3	3A	095	-2	107	21	2				WE	3A	BORDER3B
11	SJ50602930	GRA			000		2	2	112	15	112	25	2				WE	2	
12	SJ50702930	SCL		02	000		4	3B	124	27	112	25	2				WE	3B	
13	SJ50502920	PGR		01	000		3	3A	044	-53	044	-42	2				WE	3A	TO STONY TO AUGER
14	SJ50502910	PGR			027		3	3A	076	-21	076	-10	2				WE	3A	TO STONY TO AUGER

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
1	0-27	mcl	75YR43 00						0	0		0						
	27-42	scl	75YR53 00	75YR58 00	C			Y	0	0		0		M				
	42-90	c	05YR44 00	10YR58 00	C			Y	0	0		0		P	Y		Y	
1P	0-29	mcl	10YR33 00						0	0	HR	5						
	29-60	scl	75YR53 52	75YR56 00	C			Y	0	0	HR	5	MDCSAB FR	M				
	60-85	scl	05YR46 00	75YR56 00	C			Y	0	0	HR	5	WDCPR FM	P	Y		Y	
	85-100	c	05YR44 00	75YR56 00	M			Y	0	0	HR	5	MASS FM	P	Y		Y	
2	0-29	mcl	75YR43 00						0	0	HR	5						
	29-35	mcl	75YR44 00						0	0	HR	3		M				
	35-55	hcl	10YR53 00	10YR68 00	C			Y	0	0		0		P	Y		Y	
	55-100	c	05YR44 00	10YR68 00	C			Y	0	0		0		P	Y		Y	
3	0-26	mcl	10YR33 00						0	0		0						
	26-60	hcl	75YR53 00	10YR56 00	C			Y	0	0		0		P	Y		Y	
	60-72	scl	10YR53 54	10YR56 00	M			Y	0	0		0		P	Y		Y	
	72-95	scl	75YR53 00					Y	0	0		0		P	Y		Y	
	95-100	c	75YR44 00					Y	0	0		0		P	Y		Y	
4	0-26	mcl	75YR32 00						0	0	HR	5						
	26-40	scl	05YR44 00	10YR56 00	F				0	0	HR	10		M				
	40-52	scl	05YR53 00	10YR56 00	C			Y	0	0	HR	10		P	Y		Y	
	52-110	c	05YR44 00					Y	0	0		0		P	Y		Y	
5	0-25	mcl	75YR42 00	10YR56 00	C			Y	0	0		0						
	25-47	mcl	10YR53 00	10YR56 00	M			Y	0	0		0		M				
	47-100	c	05YR56 00					Y	0	0		0		P	Y		Y	
6	0-26	mcl	10YR43 00						0	0		0						
	26-55	scl	75YR53 00	10YR56 00	C			Y	0	0		0		M				
	55-90	scl	10YR52 00	10YR56 00	M			Y	0	0		0		M				
	90-100	c	05YR44 00					Y	0	0		0		P	Y		Y	
7	0-26	mcl	10YR41 00	10YR58 00	C			Y	0	0		0						
	26-70	mcl	75YR53 00	10YR58 00	M			Y	0	0		0		M				
	70-105	hcl	10YR53 00	10YR58 00	M			Y	0	0		0		P	Y		Y	
	105-110	c	10YR53 00	10YR58 00	M			Y	0	0		0		P	Y		Y	

				----MOTTLES----			PED		----STONES----				STRUCT/	SUBS			
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL.	GLEY	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
8	0-35	mcl	10YR33 00						0	0		0						
	35-75	scl	10YR52 00	10YR56 00	C			Y	0	0		0		M				
	75-80	msl	10YR53 00	10YR56 00	C			Y	0	0		0		M				
	80-100	c	05YR44 00					Y	0	0		0		P	Y		Y	
9	0-37	mcl	10YR33 42						0	0		0						
	37-68	scl	75YR52 53	10YR56 00	C			Y	0	0		0		M				
	68-80	c	05YR44 00					Y	0	0		0		P	Y		Y	
	80-100	sc	05YR44 00					Y	0	0		0		P	Y		Y	
10	0-23	mcl	10YR42 43						0	0	HR	2						
	23-45	mcl	75YR52 53	10YR56 00	C			Y	0	0	HR	2		M				
	45-70	c	05YR52 44	75YR58 00	C			Y	0	0	HR	1		P	Y		Y	
11	0-35	scl	75YR31 00	10YR56 00	C			Y	0	0		0						
	35-80	scl	75YR53 00	10YR56 00	C			Y	0	0		0		M				
12	0-35	scl	10YR31 00						0	0		0						
	35-80	scl	75YR41 00						0	0		0		M				
	80-85	msl	25 Y52 00						0	0		0		M				
	85-100	ms	25 Y62 00						0	0		0		M				
13	0-25	mcl	10YR33 00						0	0	HR	2						
	25-40	mcl	10YR33 44						0	0	HR	10		M				
14	0-27	mcl	10YR33 00						5	0	HR	5						
	27-50	scl	10YR53 54	10YR56 00	C			Y	0	0	HR	15		M				