SHROPSHIRE STRUCTURE PLAN
BRIDGNORTH
LAND EAST OF CHURCH LANE

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
BRIDGNORTH, LAND EAST OF CHURCH LANE

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 27.1 ha of land east of Church Lane, to the north-west of Bridgnorth. The survey was carried out in July 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 wheat.

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	1.7	7	6
3a	6.8	29	25
3b	14.7	64	54
4	-	-	-
5	-	-	-
Agricultural land not surveyed	3.9	-	15
Other land	-	-	-
Total agricultural land area	23.2	100	-
Total survey area	27.1	-	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 23 borings and 3 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 main limitations to the agricultural use of this land are soil wetness and gradient.

9. Land of very good quality (Grade 2) occurs on the highest land in the south-west of the site. Soil wetness is the main limitation to the agricultural use of this land.

10. Land of good quality (Subgrade 3a) occurs on higher land in the south west of the site, and on land in the north east of the site near Hook Dingle. Soil wetness is the main limitation to the agricultural use of this land.

11. Land of moderate quality (Subgrade 3b) occurs across the north and east of the site. Soil wetness and gradient are the main limitations 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	Values	Values
Grid reference	N/A	SO698942	SO700945	SO704947
Altitude	m, AOD	120	100	70
Accumulated Temperature	day°C (Jan-June)	1356	1379	1413
Average Annual Rainfall	mm	724	708	688
Field Capacity Days	days	170	168	165
Moisture Deficit, Wheat	mm	91	95	99
Moisture Deficit, Potatoes	mm	79	83	89
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 means that there is no overall climatic limitation. The site is climatically Grade 1.

Site

17. The site lies at an altitude of 70-128m AOD. The land slopes north-eastward, with a noticeable increase in slopes towards Hook Dingle. The site is bounded by Church Lane to the south-west, and by agricultural land to the north-west. To the south-east the site is bounded by agricultural land and Brick Kiln Plantation. Hook Dingle, a small brook flows along the north-eastern boundary of the site. As access to the field in the south of the site was not obtained, and the land is mapped as 'Not Surveyed'.

Geology and soils

18. The solid geology underlying the site comprises olive and buff sandstones of the Carboniferous Upper Coal Measures (BGS, 1975). No drift geology is recorded at this site.

19. The most detailed published soils information (SSEW, 1983 & 1984) maps the 'cambic stagnogley soils' of the Bardsey association across the site.

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 2

21. Land of very good quality occupies 1.7 ha (6%) of the total survey area, and occurs on the highest land in the south-west of the site. The main limitation to the agricultural use of this land is soil wetness.

22. Within the Grade 2 mapping unit, soils comprise a stoneless or very slightly stony medium silty clay loam, overlying medium silty clay loam, and heavy silty clay loam subsoils. Depths to gleying in relation to the local climatic regime, place these soils into Wetness Class II, and Grade 2.

Subgrade 3a

23. Land of good quality occupies 6.8 ha (25%) of the total survey area, and occurs in the north-east of the site, and on higher land in the south-west of the site. The main limitation to the agricultural use of this land is soil wetness.

24. Within the Subgrade 3a mapping unit, soils comprise a stoneless or very slightly stony medium silty clay loam, overlying medium silty clay loam, heavy silty clay loam and heavy clay loam upper subsoils. Subsoils become increasingly fine with depth, with lower subsoils comprising heavy silty clay loam and silty clay textures. Depths to gleying and the slowly permeable layer in relation to the local climatic regime, place these soils into Wetness Class III and Subgrade 3a.

Subgrade 3b

25. Land of moderate quality occupies 14.7 ha (54%) of the total survey area, and occurs across the north and east of the site. The main limitations to the agricultural use of this land are soil wetness and gradient.

26. Within the Subgrade 3b mapping unit, soils generally comprise a very slightly stony medium clay loam or occasionally a medium silty clay loam topsoil. These overlie subsoils which generally become increasingly fine textured with depth, with medium clay loam and heavy clay loam upper subsoils overlying heavy clay loam, clay and silty clay lower subsoils. Occasionally a narrow sandy horizon (fine sandy loam) was found in the lower subsoil. Depths to gleying and the slowly permeable layer in relation to the local climatic regime, place these soils into Wetness Class IV and Subgrade 3b.

27. Where the land slopes towards Hook Dingle, slopes in places slopes exceed 8^{o} and impose a gradient limitation, consistent with land of Subgrade 3b quality. This occurs on a small area in the middle of the site's north-eastern boundary. Gradient has a significant effect on mechanical farm operations and the safe and efficient use of machinery.

William Fearnehough
Resource Planning Team
Northern Region
FRCA Wolverhampton

SOURCES OF REFERENCE

British Geological Survey (1975) *Sheet No. 167, Dudley, Solid and Drift Edition, 1:50000 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.

SITE B

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	WETNESS CLASS	WETNESS GRADE	WHEAT AP	WHEAT MB	POTS AP	POTS MB	M.REL DRT	EROSN FLOOD	FROST EXP	CHEM DIST	ALC LIMIT		COMMENTS
1	SO70109480	WHT	NE		035	035	4	3B	106	11	102	19	2				WE	3B	
1P	SO70109480	WHT	NE	01	055	055	3	3A	099	4	102	19	3A				WE	3A	
2	SO70209480	WHT	NE	06	028	028	4	3B	105	10	101	18	2				WE	3B	
2P	SO69809450	WHT	NE	02	022	080	2	2	111	16	099	16	2				WE	2	
3	SO70309480	WHT	NE	05	028	028	4	3B	097	2	100	17	3A				WE	3B	
3P	SO69759445	WHT	NE	01	028	028	4	3B	082	-13	082	-1	3A				WE	3B	
4	SO70109470	WHT	NW	01	027	035	4	3B	123	28	107	24	2				WE	3B	
5	SO70209470	WHT	NW	01	027	068	3	3A	138	43	112	29	1				WE	3A	H3 SPL
6	SO70309470	WHT	NE	09	000		1	1	036	-59	036	-47	4					1	SHALLOW
7	SO70409470	WHT	NE	05	029	029	4	3B	118	23	102	19	2				WE	3B	
8	SO69909460	WHT	NE		038	045	4	3B	097	2	103	20	3A				WE	3B	
9	SO70009460	WHT	NE	02	035	045	4	3B	093	-2	099	16	3A				WE	3B	
10	SO70109460	WHT	NW	01	027	035	4	3B	115	20	104	21	2				WE	3B	
11	SO70209460	WHT	NE	01	025	038	4	3B	120	25	111	28	2				WE	3B	
12	SO70309460	WHT	NE	01	027	027	4	3B	114	19	103	20	2				WE	3B	
13	SO70409460	WHT	NE	02	035	047	3	3A	124	29	113	30	2				WE	3A	
14	SO69809450	WHT	NE		000	020	4	3B	064	-31	064	-19	3B				WE	3B	
15	SO69909450	WHT	NE	02	000	035	4	3B	084	-11	084	1	3A				WE	3B	
16	SO70009450	WHT	W	01	027	037	4	3B	105	10	108	25	2				WE	3B	
17	SO70109450	WHT	NW	02	027	027	4	3B	124	29	101	18	2				WE	3B	
18	SO69709440	WHT	NE	02	033	055	3	3A	132	37	117	34	1				WE	3A	
20	SO69909440	WHT	NW	01	036	065	3	3A	138	43	124	41	1				WE	3A	
21	SO70009440	WHT	NW		028	040	4	3B	121	26	110	27	2				WE	3B	
22	SO69709430	WHT	NW	03	048	087	2	2	138	43	126	43	1				WE	2	
23	SO69809430	WHT	NW	02	038		2	2	152	57	127	44	1				WE	2	
29	SO69809440	WHT	NE	02	035	065	3	3A	116	21	122	39	2				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	0-28	mcl	75YR44 00						0	0	HR	3						
	28-35	mcl	05YR44 00						0	0		0		M				
	35-50	hcl	05YR44 00				00MN00 00	Y	0	0		0		P	Y		Y	
	50-90	hcl	25YR44 00					Y	0	0		0		P	Y		Y	
1P	0-35	mcl	10YR44 00						0	0	HR	5						
	35-55	mcl	10YR54 00				00MN00 00		0	0	HR	1	MDCPR FM	P				
	55-80	hcl	10YR63 00				00MN00 00	Y	0	0	HR	1	WKCAB FM	P	Y		Y	
2	0-28	mcl	10YR44 00						0	0		0						
	28-70	hcl	05YR44 00				00MN00 00	Y	0	0		0		P	Y		Y	
	70-90	c	05YR44 00					Y	0	0		0		P	Y		Y	
2P	0-22	mzcl	10YR54 00						0	0		0						
	22-49	hcl	25Y 62 00	10YR68 00	C			Y	0	0		0	MDCPR FM	P				
	49-80	hzcl	25Y 63 00	10YR68 00	C		00MN00 00	Y	0	0		0	WKCPR FM	P				
	80-110	hzcl	05Y 72 00	10YR68 00	C		00MN00 00	Y	0	0		0	MDCPL FM	P	Y		Y	
3	0-25	mcl	10YR44 00						0	0		0						
	25-28	mcl	10YR42 00	10YR56 00	F				0	0		0		M				
	28-80	hcl	25YR44 00				00MN00 00	Y	0	0		0		P	Y		Y	
3P	0-28	mzcl	10YR44 00						0	0		0						
	28-50	c	25Y 62 00	10YR56 00	A			Y	0	0	HR	1	MDCPR VF	P	Y		Y	
4	0-27	mzcl	10YR54 00						0	0		0						
	27-35	mzcl	10YR63 00	10YR68 00	C			Y	0	0		0		M				
	35-75	hcl	05YR44 00	05YR58 00	C			Y	0	0		0		P	Y		Y	
	75-83	fsl	10YR66 00				10YR62 00	Y	0	0		0		M			Y	
	83-100	zc	05Y 63 00	10YR58 00	C			Y	0	0		0		P	Y		Y	
5	0-27	mzcl	75YR54 00						0	0		0						
	27-46	hzcl	75YR53 00	10YR58 00	C			Y	0	0		0		M				
	46-68	hcl	05YR53 00	10YR58 00	C			Y	0	0		0		P	Y		Y	
	68-75	hcl	10YR66 00				10YR72 00	Y	0	0		0		P	Y		Y	
	75-100	c	05YR44 00					Y	0	0		0		P	Y		Y	
	100-110	fszl	10YR66 00				10YR72 00	Y	0	0		0		M			Y	

MCL M2CL
MCL
HCL (FSL)
HCL C ZC

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
6	0-20	mcl	10YR44 00	-					0	0		0						
	20-40	mcl	75YR44 00				00MN00 00		0	0		0		M				
7	0-29	mzcl	75YR54 00						0	0		0						
	29-90	hcl	05YR44 00				00MN00 00	Y	0	0	HR	5		P	Y		Y	
	90-110	mzcl	01G 71 00	10YR58 00	M			Y	0	0		0		P	Y		Y	
8	0-38	mzcl	10YR44 00						0	0		0						
	38-45	mcl	10YR53 00	10YR56 00	M			Y	0	0		0		M				
	45-60	c	10YR56 00					Y	0	0		0		P	Y		Y	
9	0-25	mzcl	10YR53 00	10YR58 00	F				0	0		0						
	25-35	mcl	10YR54 00	10YR58 00	F				0	0		0		M				
	35-45	hcl	25Y 61 00	10YR56 00	C			Y	0	0		0		M				
	45-60	c	25Y 61 00	10YR56 00	C			Y	0	0		0		P	Y		Y	
10	0-27	mcl	10YR41 42	10YR58 00	F				0	0		0						
	27-35	hzcl	10YR53 00	10YR68 00	C			Y	0	0		0		M				
	35-100	zc	10YR72 00	10YR66 00	M			Y	0	0		0		P	Y		Y	
11	0-25	mzcl	75YR54 00						0	0		0						
	25-38	hzcl	75YR53 00	75YR68 00	C			Y	0	0		0		M				
	38-100	c	05YR44 00	10YR68 00	C		00MN00 00	Y	0	0		0		P	Y		Y	
12	0-27	mzcl	75YR54 00						0	0		0						
	27-100	hcl	05YR44 00	10YR58 00	F		00MN00 00	Y	0	0		0		P	Y		Y	
13	0-35	mzcl	75YR54 00						0	0		0						
	35-47	hcl	75YR53 00	75YR58 00	C			Y	0	0		0		M				
	47-100	hcl	05YR44 00	75YR58 00	F		00MN00 00	Y	0	0		0		P	Y		Y	
14	0-20	hzcl	25Y 52 00	10YR56 00	C			Y	0	0		0						
	20-40	c	25Y 62 00	10YR56 00	M			Y	0	0		0		P	Y		Y	
15	0-25	mzcl	25Y 52 00	10YR56 00	C			Y	0	0		0						
	25-35	hzcl	25Y 62 00	10YR56 00	A			Y	0	0		0		M				
	35-50	c	25Y 61 00	10YR56 00	A			Y	0	0		0		P	Y		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
16	0-27	mzcl	10YR42 00						0	0		0						
	27-37	mzcl	10YR53 00	10YR68 00	C			Y	0	0		0		M				
	37-80	zc	10YR72 00	10YR78 00	C			Y	0	0		0		P	Y		Y	
17	0-27	mzcl	75YR43 00						0	0		0						
	27-100	hcl	25YR54 00	25YR56 00	C		00MN00 00	Y	0	0	HR	5		P	Y		Y	
	100-110	fsl	10YR66 71					Y	0	0		0		M			Y	
18	0-25	mzcl	25Y 54 00						0	0		0						
	25-33	mzcl	10YR54 00						0	0		0		M				
	33-40	mzcl	10YR53 00	10YR56 00	C		25Y 61 00	Y	0	0		0		M				
	40-55	hzcl	10YR52 00	10YR56 00	M		00MN00 00	Y	0	0		0		M				
	55-95	zc	10YR53 00					Y	0	0		0		P	Y		Y	
	95-110	mzcl	10YR52 00					Y	0	0		0		P	Y		Y	
20	0-36	mzcl	10YR42 00						0	0		0						
	36-47	hzcl	10YR43 00	10YR68 00	C			Y	0	0		0		M				
	47-65	hzcl	10YR53 00	10YR68 00	M		00MN00 00	Y	0	0		0		M				
	65-90	zc	10YR53 00	10YR68 00	M		00MN00 00	Y	0	0		0		P	Y		Y	
	90-100	hzcl	10YR53 00	10YR68 00	M		00MN00 00	Y	0	0		0		P	Y		Y	
	100-110	zc	10YR53 00	10YR68 00	A		00MN00 00	Y	0	0		0		P	Y		Y	
21	0-28	mzcl	10YR42 00						0	0		0						
	28-40	hzcl	10YR53 00	10YR68 00	M			Y	0	0		0		M				
	40-100	zc	10YR71 00	10YR78 00	M			Y	0	0		0		P	Y		Y	
22	0-35	mzcl	25Y 53 00						0	0		0						
	35-48	mzcl	25Y 54 00						0	0		0		M				
	48-67	mzcl	10YR53 00	10YR68 00	C			Y	0	0		0		M				
	67-87	hzcl	10YR53 00	10YR58 00	C		00MN00 00	Y	0	0		0		M				
	87-100	zc	25Y 62 00	10YR58 00	C		00MN00 00	Y	0	0		0		P	Y		Y	
23	0-38	mzcl	10YR42 00						0	0		0						
	38-55	mzcl	10YR53 00	10YR66 00	C			Y	0	0		0		M				
	55-65	hzcl	10YR53 00	10YR66 00	C			Y	0	0		0		M				
	65-70	mzcl	10YR63 00	10YR68 00	C		00MN00 00	Y	0	0		0		M				
	70-100	mzcl	05Y 63 00	25Y 68 00	C			Y	0	0		0		M				
	100-110	hzcl	05Y 63 00	25Y 68 00	C			Y	0	0	HR	10		M				

				MOTTLES			PED		STONES			STRUCT/	SUBS				
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL.	GLEY	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
19 29	0-25	mzcl	10YR44 00						0	0		0						
	25-35	mzcl	10YR54 00	10YR56 00	F				0	0		0		M				
	35-65	hzcl	10YR53 00	10YR56 00	M			Y	0	0		0		M				
	65-80	zc	25Y 61 00					Y	0	0		0		P	Y		Y	