

**SHROPSHIRE STRUCTURE PLAN  
WHITCHURCH  
LAND NORTH OF PEAR TREE LANE**

**Agricultural Land Classification  
ALC Map and Report**

**June 1999**

Resource Planning Team  
Northern Region  
FRCA Wolverhampton

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**AGRICULTURAL LAND CLASSIFICATION REPORT**  
**SHROPSHIRE STRUCTURE PLAN**  
**WHITCHURCH, LAND NORTH OF PEAR TREE LANE**

**INTRODUCTION**

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 13.3 ha of land north of Pear Tree Lane, to the north-west of Whitchurch. 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. Three areas of gardens in the south and east of the site, and a small wooded hollow are 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)	% Total agricultural land area	% Total survey area
1	-	-	-
2	5.4	42	41
3a	-	-	-
3b	7.6	58	57
4	-	-	-
5	-	-	-
Agricultural land not surveyed	-	-	-
Other land	0.3	-	2
Total agricultural land area	13.0	100	-
Total survey area	13.3	-	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 15 borings and 2 soil pits were described.
8. The agricultural land on this site has been classified as Grade 2 (very good quality), and Subgrade 3b (moderate quality). The main limitations to the agricultural use of this land are soil wetness, soil droughtiness, gradient and microrelief.
9. Land of very good quality (Grade 2) occurs on the higher land in the south-east, and over a small area in the west of the site. Soil droughtiness is the main limitation to the agricultural use of this land.
10. Land of moderate quality (Subgrade 3b) occurs on the lower land in the north-west of the site. Soil wetness, gradient 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	Values
Grid reference	N/A	SJ527425	SJ527421
Altitude	m, AOD	100	115
Accumulated Temperature	day°C (Jan-June)	1362	1345
Average Annual Rainfall	mm	740	743
Field Capacity Days	days	169	169
Moisture Deficit, Wheat	mm	91	90
Moisture Deficit, Potatoes	mm	78	76
Overall climatic grade	N/A	Grade 1	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 97-117m AOD, and slopes towards the north and west. The site is bounded to the south by Pear Tree Lane and associated dwellings, to the east by residential land and to the west by the Whitchurch by-pass. Along a portion of the site's western boundary, slopes in excess of 8° impose a limitation to the agricultural quality of the land. Near the centre of the site (SJ528423), a small area is affected by a microrelief limitation.

#### **Geology and soils**

17. Upper Keuper Saliferous Beds comprise the solid geology underlying this area (BGS, 1967a). The overlying drift comprises glacial and post-glacial sand and gravel in the south-east, and boulder clay in the north-west of the site (BGS, 1967b).
18. The most detailed published soils information (SSEW, 1983 & 1984) maps the 'typical brown earths' of the Wick 1 association in the south-east, and the 'typical stagnogleyic soils' of the Salop association in the north-west of the site.
19. Upon detailed field examination, soil profiles closely matching descriptions of the above associations 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 2**

21. Land of very good quality occupies 5.4 ha (41%) of the total survey area, and occurs across the south-east, and over a small area in the west of the site. The main limitation to the agricultural use of this land is soil droughtiness.
22. Within the Grade 2 mapping unit, soils comprise a very slightly stony medium sandy loam or sandy clay loam topsoil, overlying very slightly stony subsoils of loamy medium sand, medium sandy loam, sandy clay loam and medium sand textures. Occasionally a heavy clay loam or clay horizon is found towards the base of the profile. Depths to gleying and the slowly permeable layer in relation to the local climatic regime, place these soils into Wetness Classes I, II and III. Within the Grade 2 mapping unit occasional borings of Grade 1 were included.

## **Subgrade 3b**

23. Land of moderate quality occupies 7.6 ha (57%) of the total survey area, and occurs across the north-west of the site. The main limitations to the agricultural use of this land are soil wetness, gradient and microrelief.
24. Within the Subgrade 3b mapping unit, soils generally comprise a very slightly stony medium clay loam topsoil, which overlies very slightly stony medium clay loam, heavy clay loam and clay subsoils, and clay lower subsoils. In the north of the site, soil profiles examined were more complex. Medium clay loam topsoils and clay upper subsoils overlie organic medium clay loam, loamy medium sand, and medium sand lower subsoils. 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. Within this Subgrade 3b mapping unit occasional borings of Subgrade 3a were included.
25. Towards the centre of the site's western boundary, slopes between 8° and 11° impose a gradient limitation, consistent with land of Subgrade 3b quality. Gradient has a significant effect on mechanical farm operations and the safe and efficient use of machinery. Near the middle of the site (SJ528423), complex changes in slope angle and direction occur over short distances, imposing a microrelief limitation on a small area of land consistent with Grade 3b.

William Fearnough  
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## SOURCES OF REFERENCE

British Geological Survey (1967a) *Sheet No. 122, Nantwich, Solid Edition, 1:63360 scale.*  
BGS: London.

British Geological Survey (1967b) *Sheet No. 122, Nantwich, 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.