STAFFORDSHIRE AND STOKE-ON-TRENT STRUCTURE PLAN
Site 15: Bonehill

Agricultural Land Classification
ALC Map and Report
September 1998

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RPT Reference: **011/98 & 25/RPT/0110A**
FRCA Reference: **EL 37/11747**
LURET Job Number: **ME2JJJ7**

AGRICULTURAL LAND CLASSIFICATION REPORT
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INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey on 55.9 hectares of land. The results of this survey supersede any previous ALC information for this land. The land is located at Bonehill to the south west of Tamworth. The site is bordered to the east by the Birmingham and Fazeley Canal, to the north by the A5, to the west by the B5404 and to the south by Lichfield Street. The survey was in connection with the Staffordshire and Stoke-on-Trent Structure Plan.

2. The survey was undertaken on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF) in July and August 1998 by the Resource Planning Team of the Farming and Rural Conservation Agency (FRCA)- Northern region of FRCA.

3. The land has been graded in accordance with the publication "Agricultural Land Classification of England and Wales - Revised guidelines and criteria for grading the quality of agricultural land" (MAFF 1988) .

4. At the time of survey the agricultural land on this site was under cereals, oil seed rape and grass.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10000 with an average auger boring density of 1 per hectare. The ALC map is only accurate at this base map scale and 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)	% surveyed area	% site area
1	-	-	-
2	-	-	-
3a	19.1	61	34
3b	12.0	39	22
4	-	-	-
5	-	-	-
Agricultural land not surveyed	-	N/A	-
Other land	24.8	N/A	44
Total surveyed area	31.1	100	-
Total site area	55.9	-	100

7. The agricultural land on this site has been classified as Subgrade 3a (good quality) and Subgrade 3b (moderate quality). The key limitations to the agricultural use of this land are soil droughtiness and soil wetness, topsoil stoniness and gradient.

8. The areas of good quality land are mapped in the south west of the site and from the northern boundary extending to the centre of the site at Bonehill and east of the village. The soils typically comprise either a medium sandy loam, medium sandy clay loam or medium clay loam topsoil, overlying either a medium sandy clay loam or medium sandy loam upper subsoil, passing to a medium sandy clay loam subsoil, onto sand at depth. In the area extending from the northern boundary to the centre of the site, the limiting factor is soil droughtiness and in areas in the south west of the site, the limiting factor is topsoil stoniness.

9. Areas of moderate quality land are mapped in the north west of the site and in the east extending to the south east of the site from Bonehill Bridge and north east of Bonehill. Three different profiles are found in these areas. First, in the north west and south east of the site, the soils typically comprise either a medium sandy loam or loamy medium sand topsoil overlying a loamy medium sand upper subsoil, passing to sand at depth. In the northern area of the site, the limiting factor is topsoil stoniness. In the area extending south east along the canal, the limiting factor is soil droughtiness and east of Bonehill along the drain, the limiting factor is gradient where there are slopes of between 7° and 11°. In the second profile, located near Bonehill Bridge the soils commonly comprise a medium sandy loam topsoil, passing to a medium clay loam subsoil. This land is affected by the presence of high groundwater levels for much of the year, indicated by the presence of a gleyed topsoil and subsoil and wetness at depth. The limiting factor is soil wetness. In the third profile, located north east of Bonehill village, the soils commonly comprise a medium sandy loam topsoil, passing to loamy medium sand subsoil, passing to clay at depth. The limiting factor is soil droughtiness.

FACTORS INFLUENCING ALC GRADE

Climate

10. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

11. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using standard interpolation procedures (Meteorological Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	SK 195 026
Altitude	m, AOD	70
Accumulated Temperature	day°C (Jan-June)	1398
Average Annual Rainfall	mm	647
Field Capacity Days	days	146
Moisture Deficit, Wheat	mm	103
Moisture Deficit, Potatoes	mm	93
Overall climatic grade	N/A	Grade 1

12. 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.

13. 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 (ATO, January to June), as a measure of the relative warmth of a locality.

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

Site

15. The site lies at an altitude of 65 to 75 metres AOD. The topography of the site is generally flat in nature with undulating land extending south east along the canal. The land falls from a drain towards the canal and gently rises to the southern boundary of the site.

16. The three site factors of gradient, microrelief and flooding are considered when classifying the land.

17. Gradient is limiting in one area of the site, east of Bonehill along the drain, where there are slopes of between 7° and 11°.

18. Microrelief and flooding do not impose any limitations on the agricultural use of this land.

Geology and Soils

19. The solid geology of the area is comprised of Triassic Keuper Red Marls with Sandy Bands. The overlying drift geology for the site comprises of Glacial Boulder Clay - British Geological Survey (1954).

20. The soils that have developed over this geology typically comprise of either a medium clay loam or medium sandy clay loam topsoil texture, overlying either a medium sandy loam or medium sandy clay loam subsoil, often with a stony layer within the topsoil and subsoil.

Agricultural Land Classification

21. The details of the classification of the site are shown on the enclosed ALC map and the area statistics of each grade are given in Table 1, page 1.

Subgrade 3a

22. Land of good quality occupies 19.1 hectares (34 %) of the site area and is found in the south west of the site and from the northern boundary extending to the centre of the site at Bonehill and east of the village.

23. The soil profiles commonly comprise either a medium sandy loam, medium sandy clay loam or medium clay loam topsoil, overlying either a medium sandy clay loam or medium sandy loam upper subsoil, passing to a medium sandy clay loam lower subsoil, onto sand at depth. Observations of the depths to gleying and the absence of a slowly permeable layer place these soils in Wetness Class I or II. In the area extending from the northern boundary to the centre of the site, the limiting factor is soil droughtiness and in area in the south west of the site, the limiting factor is topsoil stoniness.

24. The main limitations to the agricultural use of this land are soil droughtiness and topsoil stoniness.

Subgrade 3b

25. Land of moderate quality occupies 12.0 hectares (22 %) of the site area and is found in the north west of the site and in the east extending to the south east of the site from Bonehill Bridge. Three different profiles are found in these areas.

26. In the first profile, located in the south east of the site, the soils comprise either a medium sandy loam or loamy medium sand topsoil overlying a loamy medium sand upper subsoil, passing to sand at depth. Observations of the depths to gleying and the absence of a slowly permeable layer place these soils in Wetness Class I or II. The moisture balance indicates that soil droughtiness is the main limitation to the agricultural use of this land.

27. In the north west of the site the main limitation is topsoil stoniness and in the area east of Bonehill along the drain, the limiting factor is gradient where there are slopes of between 7° and 11°.

28. In the second profile, located near Bonehill Bridge, the soils commonly comprise a medium sandy loam topsoil, over a medium clay loam subsoil. This land is affected by the presence of high groundwater levels for much of the year, indicated by the presence of a

gleyed topsoil and subsoil and wetness at depth, such that Wetness Class IV is appropriate. Soil wetness is the main limitation to the agricultural use of the land.

29. In the third profile, located north east of Bonehill village, the soils commonly comprise a medium sandy loam topsoil, passing to loamy medium sand subsoil, passing to clay at depth. The moisture balance indicates that soil droughtiness is the main limitation to the agricultural use of this land.

30. The main limitations to the agricultural use of this land are topsoil stone content, gradient, soil droughtiness and soil wetness.

Other Land

31. Other land occupies 24.8 hectares (44 %) of the site area and is found as the village of Bonehill, tree lined wet areas with ponds, woodland and strips of land along drains and the A5.

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SOURCES OF REFERENCE

British Geological Survey (1954) Sheet 154, Lichfield Solid and Drift Edition.
1:63 360 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.

Meteorological Office (1989) Climatological Data for Agricultural Land Classification.
Meteorological Office: Bracknell.