STAFFORDSHIRE AND STOKE-ON-TRENT STRUCTURE PLAN
Site 10 - Whateley

Agricultural Land Classification
ALC Map and Report
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AGRICULTURAL LAND CLASSIFICATION REPORT
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INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey on 269.2 hectares of land. The results of this survey supersede any previous ALC information for this land. The land is located at Whateley, south of Tamworth. The majority of the site is located in Warwickshire, except for the north west of the site which lies in Staffordshire. The site is bordered to the south and east by the M42 motorway, to the west by a clay pit, and to the north by housing. 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 August and September 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 oilseed rape, potato and cereal crops 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	32.1	17.6	11.9
2	91.8	50.5	34.1
3a	42.5	23.4	15.8
3b	14.8	8.1	5.5
4	0.7	0.4	0.3
Agricultural land not surveyed	1.0	N/A	0.4
Other land	86.3	N/A	32.0
Total surveyed area	181.9	100.0	-
Total site area	269.2	-	100.0

7. The agricultural land on this site has been classified as Grade 1 (excellent quality), Grade 2 (very good quality), Subgrade 3a (good quality), Subgrade 3b (moderate quality) and Grade 4 (poor quality).The key limitations to the agricultural use of this land are soil droughtiness, soil wetness, topsoil stone content and gradient.

8. Land of excellent quality is found mainly in the centre of the site. The soils comprise either a sandy clay loam or medium sandy loam topsoil, overlying a medium sandy loam upper subsoil, onto a medium sandy loam or loamy medium sand lower subsoil, with few to common stones within the profile, increasing with depth.

9. Land of very good quality occurs throughout the site. The soils typically comprise a medium sandy loam topsoil, over a medium sandy loam or loamy medium sand subsoil with common to abundant stones.

10. Land of good quality occurs throughout of the site. Two different profiles are found within the area mapped as good quality. In the first, found around Holt Hall Farm Cottage and in a small area just south of Whateley, the profile consists of a medium clay loam topsoil, over a heavy clay loam upper subsoil, onto a slowly permeable silty clay lower subsoil. In the second found over the rest of the good quality land, the soils commonly comprise a medium sandy loam topsoil, onto a loamy medium sand and sand subsoil, with many to abundant stones in the subsoil. Occasionally the topsoils are also limited by soil stoniness.

11. Land of moderate quality is found in scattered areas throughout the site. Two different profiles are found within the areas of moderate quality land. In the first, the soils typically comprise either a medium clay loam topsoil, overlying a heavy clay loam upper subsoil, on to a clay lower subsoil, with few stones in the profile. In the second, the soils commonly comprise a medium sandy loam topsoil onto loamy medium sand and sand subsoils, with abundant stones in the subsoil. Gradient is also a limiting factor where the land is limited by slopes of between 7° and 11°.

12. Land of poor quality occurs in the north of the site. These areas are limited by gradients of between 11° and 18°.

FACTORS INFLUENCING ALC GRADE

Climate

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

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

Table 2: Climatic and altitude data

Factor	Units	Values	Values
Grid reference	N/A	SP 235 997	SP 225 990
Altitude	m, AOD	105	107
Accumulated Temperature	day°C (Jan-June)	1359	1357
Average Annual Rainfall	mm	666	673
Field Capacity Days	days	148	150
Moisture Deficit, Wheat	mm	99	98
Moisture Deficit, Potatoes	mm	88	86
Overall climatic grade	N/A	Grade 1	Grade 1

15. 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.

16. 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.

17. The combination of rainfall and temperature at this site means that there is no overall climatic limitation.

Site

18. The site lies at an altitude of 80 to 120 metres AOD, although the majority of the site falls in the range 100-115 metres AOD. The land generally rises from the edges of the site to a highest point at the village of Whateley, just south of Whateley Hall Farm. In the west the land begins to fall sharply to the clay pit.

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

20. Gradient is limiting in parts of the north and west of the site where there are slopes of between 7° and 18°.

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

Geology and Soils

22. The solid geology of the area is comprised of Carboniferous Upper Coal Measures. Brown Sandstone is found in the east of the site, which passes to Grey Marls with Fireclays in the centre of the site and then on to Red and Mottled Marls of the Etruria Marl Group in the west. On the western fringe the solid geology is composed of Grey Shales and Fireclays

with thin Sandstones of the Middle Coal Measures. There is no overlying drift geology shown for the site - British Geological Survey (1954).

23. The soils that have developed over this geology have either a medium sandy loam or sandy clay loam topsoil texture, overlying medium sandy loam and loamy medium sand subsoils.

Agricultural Land Classification

24. 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.

Grade 1

25. Land of excellent quality occupies 32.1 ha (11.9 %) of the site and is found mainly in the centre of the site.

26. The profiles commonly comprise a sandy clay loam or medium sandy loam topsoil, overlying a medium sandy loam upper subsoil, onto a medium sandy loam or loamy medium sand lower subsoil. There are few to common stones within the profile, increasing with depth.

27. There are no or only very minor limitations to the agricultural use of this land.

Grade 2

28. Land of very good quality occupies 91.8 ha (34.1 %) of the site and is found throughout the site.

29. The soils typically comprise a medium sandy loam topsoil, overlying a medium sandy loam or loamy medium sand subsoil with common to abundant stones.

30. The main limitation to the agricultural use of this land is soil droughtiness.

Subgrade 3a

31. Land of good quality occupies 42.5 hectares (15.8 %) of the site area and is found throughout the site. Two different profiles are found within the areas of good quality land.

32. In the south of the site some profiles (notably near Holt Hall Farm Cottage and just south of Whateley) comprise a medium clay loam topsoil over a heavy clay loam upper subsoil, onto a slowly permeable silty clay lower subsoil. Soil wetness is the main limitation to the agricultural use of this land.

33. Over the rest of the area of good quality land the profile consists of a medium sandy loam topsoil onto loamy medium sand and sand subsoils, with many to abundant stones in the subsoil. Soil droughtiness is the main limitation to the agricultural use of this land.

34. In a few small areas in the south of the site the topsoil stone content is limiting. These occur within the areas mapped as Subgrade 3a, notably over a small area just north of Holt Hall Farm Cottage.

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

Subgrade 3b

36. Land of moderate quality occupies 14.8 hectares (5.5 %) of the site area and is found in scattered areas throughout the site. Two different profiles are found within the areas of moderate quality.

37. In the north of the site alongside Gorsey Bank Road, and in the south east south of Whateley Lane, the soils commonly comprise a medium clay loam topsoil, passing to a heavy clay loam upper subsoil, over a clay lower subsoil. There are few stones within the profile. Observations of the depths to gleying and the slowly permeable layer place these soils in Wetness Class IV. Soil wetness is the main limitation to the agricultural use of this land.

38. North east of Whateley are two areas where the soils commonly comprise a medium sandy loam topsoil over a loamy medium sand and medium sand subsoil, with abundant stones within the subsoil. Soil droughtiness is the main limitation to the agricultural use of this land.

39. In the north and on the western fringe of the site, gradients of between 7° and 11° occur in three broadly distinct areas.

40. The main limitations to the agricultural use of this land are soil wetness, soil droughtiness and gradient.

Grade 4

41. Land of poor quality occupies 0.7 hectares (0.3 %) of the site area and is found in the north of the site.

42. Gradients of between 11° and 18° occur in these areas.

43. Gradient is the main limitation to the agricultural use of this land.

Agricultural Land Not Surveyed

44. This land occupies 1.0 ha (0.4 %) of the site and is found on the northern fringe. It consists of buildings and small paddocks, and includes some very steeply sloping land.

Other Land

45. Other land occupies 86.3 hectares (32.0 %) of the site area and consists mainly of the clay pit and associated workings and buildings along the western edge of the site. Other land is also found throughout the site as farm buildings, farm tracks, ponds and woodland.

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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.

WILNECOTE QUARRY

GEOLOGY: described as Grey shales and Fireclays with thin sandstones of the Middle coal measures. No drift geology shown for the site.

SOILS: three auger borings in area of interest:

profiles 1) medium sandy loam to 58 cm over loamy medium sand to 70 cm with sandstone at this depth. Gradient limits parts to 3b (although 3a on droughtiness)

2) sandy clay loam over medium sandy loam to 100 cm (one boring only to 50 cm sandstone.) Limitations droughitness where shallow and wetness Grades 2 and 3a.

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