

**HINCKLEY AND BOSWORTH
LOCAL PLAN
South of Meadow Road, Barlestone
102/1/82
Agricultural Land Classification
February 1997**

**Resource Planning Team
Eastern Statutory Centre
ADAS Cambridge**

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AGRICULTURAL LAND CLASSIFICATION REPORT

HINCKLEY AND BOSWORTH LOCAL PLAN

South of Meadow Road, Barlestone - 102/1/82

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 6.3 ha of land south of Meadow Road, Barlestone in Leicestershire. The survey was carried out during January 1997.
2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) Land Use Planning Unit, Cambridge, in connection with Hinckley and Bosworth Local Plan. This survey supersedes previous ALC surveys on this land.
3. The work was conducted by members of the Resource Planning Team in the Eastern Statutory Centre in ADAS. 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 the survey, the land use of the site fell into 3 categories. The middle of the site adjacent to a stream comprised very wet land supporting wetland vegetation, scrub and mature trees, this was mapped as other land. To the west of this was an area of permanent pasture and to the east was a field of cereal stubble.

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 site area
3b	4.8	76
Other land	1.5	24
Total surveyed area	6.3	100

7. The fieldwork was conducted at an average density of 1 boring per hectare. A total of 6 borings and 2 soil pits were described.

8. All the agricultural land at the site has been graded 3a (good quality agricultural land) due to moderate wetness and workability or droughtiness limitations.

FACTORS INFLUENCING ALC GRADE

Climate

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

10. 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 the standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	SK 428 054
Altitude	m, AOD	120
Accumulated Temperature	day°C (Jan-June)	1335
Average Annual Rainfall	mm	688
Field Capacity Days	days	160
Moisture Deficit, Wheat	mm	95
Moisture Deficit, Potatoes	mm	83

11. 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.

12. 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.

13. The combination of rainfall and temperature at this site mean that it is relatively warm and dry. These climatic characteristics are such that in themselves they impose no limitation to land quality and therefore the climate grade for this site is 1.

Site

14. The site lies on gently undulating land in a small valley feature formed by a tributary stream of the River Sence. The land slopes downwards towards the stream in the centre of the site and ranges in height from 125 m AOD at the extreme east and west, to between 115 and 120 m AOD adjacent to the stream. Therefore neither gradient nor altitude impose limitations to land quality.

Geology and soils

15. The published 1:50 000 scale geology map, sheet 155, Coalville (Geological Survey of Great Britain, 1982) shows the site to comprise mainly glacial boulder clay deposits, with a band of glacial sand and gravel in the east. A thin strip of alluvium is also shown in the centre of the site adjacent to the stream.

16. On the 1:250 000 scale published soils map, sheet 3, Soils of Midland and Western England (Soil Survey of England and Wales, 1983) the whole site is mapped as the Beccles 1 Association. These soils are briefly described as slowly permeable seasonally waterlogged fine loamy over clayey soils, associated with similar clayey soils.

17. The present survey of the site identified two main soil types.

18. The first soil type occurs in the west of the site and in a narrow band running along the eastern boundary of the site. Profiles are typically very slightly or slightly stony throughout and comprise medium sandy loam or medium clay loam topsoils overlying medium clay loam upper subsoils which become slowly permeable clay at depth. Occasionally slowly permeable clay is encountered directly below the topsoil.

19. The second soil type occurs in the remainder of the eastern part of the site and typically comprises slightly stony medium sandy loam topsoils overlying moderately stony loamy medium sand or medium sandy loam upper subsoils. These tend to merge into moderately stony sandy clay loam or medium sand lower subsoils at depth.

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.

21. The location of the auger borings and pits is shown on the attached sample location map.

Subgrade 3a

22. All the agricultural land at the site has been graded 3a. In the west and eastern boundary of the site the land corresponds with the soils described in paragraph 18. The wetness class of these soils has been assessed as wetness class III or IV (for the definition of wetness classes see Appendix II). This factor in combination with the topsoil textures restricts the land to subgrade 3a due to moderate wetness and workability limitations.

23. In the remainder of the east of the site land graded 3a occurs in conjunction with the soils described in paragraph 19. These soils are generally well to moderately well drained and have been assessed as wetness class I or II. The presence of light textures and stones within the profiles combine to reduce the water reserves available for crop growth. Moisture balance calculations indicate that profiles suffer from moderate droughtiness limitations and this excludes the land from a higher grade.

24. Although individual profiles of better and/or poorer grades were occasionally noted within the above mapping unit, they occurred too randomly or inextensively to permit separate delineation at the scale shown.

Ruth Tarrant
Resource Planning Team
Eastern Statutory Centre
ADAS Cambridge

SOURCES OF REFERENCE

Geological Survey of Great Britain (England and Wales) (1982) *Sheet 155, Coalville*.
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 3, Soils of Midland and Western England*.
SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in Midland and Western England*.
SSEW: Harpenden

APPENDIX I

DESCRIPTION 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 that 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 (eg. 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 that restricts use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

APPENDIX II

SOIL WETNESS CLASSIFICATION

Definitions of Soil Wetness Classes

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile. Six soil wetness classes are identified and are defined in the table below.

Wetness Class	Duration of waterlogging ¹
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years. ²
II	The soil profile is wet within 70 cm depth for 31-90 days in most years or, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 90 days, but only wet within 40 cm depth for 30 days in most years.
III	The soil profile is wet within 70 cm depth for 91-180 days in most years or, if there is no slowly permeable layer present within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31-90 days in most years.
IV	The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth for more than 210 days in most years or, if there is no slowly permeable layer present within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years.
V	The soil profile is wet within 40 cm depth for 211-335 days in most years.
VI	The soil profile is wet within 40 cm depth for more than 335 days in most years.

Assessment of Wetness Class

Soils have been allocated to wetness classes by the interpretation of soil profile characteristics and climatic factors using the methodology described in *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988).

¹ The number of days is not necessarily a continuous period.

² 'In most years' is defined as more than 10 out of 20 years.