

**HINCKLEY AND BOSWORTH  
LOCAL PLAN  
Breach Lane, Earl Shilton  
417/1/1 and 885/1/2  
Agricultural Land Classification  
February 1997**

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# AGRICULTURAL LAND CLASSIFICATION REPORT

## HINCKLEY AND BOSWORTH LOCAL PLAN Breach Lane, Earl Shilton - 417/1/1 and 885/1/2

### INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 5.0 ha of land situated south of Breach Lane at Earl Shilton 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 survey the agricultural land at the site was supporting grassland and a winter cereal crop. In the east of the site Breach Farm House and its associated buildings and garden have been 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 site area
2	1.7	34
3a	2.6	52
<i>Other land</i>	0.7	14
Total surveyed area	5.0	100

7. The fieldwork was conducted at an average density of 1 auger boring per hectare. A total of 5 auger borings and 1 soil pit were described.

8. The agricultural land at the site has been graded 2 (very good quality agricultural land) due to minor wetness/workability or droughtiness and stoniness limitations. Land graded 3a (good quality agricultural land) is restricted due to moderate wetness and workability imperfections.

## 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	SP 467 968
Altitude	m, AOD	100
Accumulated Temperature	day°C (Jan-June)	1360
Average Annual Rainfall	mm	651
Field Capacity Days	days	149
Moisture Deficit, Wheat	mm	99
Moisture Deficit, Potatoes	mm	89

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 (AT0, 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 occupies land which falls gently in a southerly direction and ranges in altitude from 107 m AOD in the northwest to 99 m AOD in the southwest. 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 majority of the site as comprising glacial sand and gravel deposits. In the northwest and east of the site glacial boulder clay deposits are mapped, with glacial lake clay depicted in the southwest.

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 majority of the site is mapped as soils of the Whimple 3 Association. These soils are briefly described as reddish fine loamy or fine silty over clayey soils with slowly permeable subsoils and slight seasonal waterlogging. Some similar clayey soils on brows. Slowly permeable seasonally waterlogged fine loamy and fine silty over clayey soils on lower slopes. A small area in the northwest of the site is mapped as soils of the Wick 1 Association which are briefly described as deep well drained coarse loamy and sandy soils, locally over gravel. Some similar soils affected by groundwater.

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

18. In the northwest of the site profiles typically comprise medium sandy loam or sandy clay loam topsoils over similar textured upper subsoils. The majority of lower subsoils are typically slowly permeable sandy clays which become medium sandy loams at depth. In some profiles lower subsoils are loamy medium sand. These soils are typically very slightly or slightly stony and non-calcareous throughout.

19. In the southeast of the site topsoils typically comprise medium sandy loams or medium sandy silt loams. These overlie sandy clay or clay subsoils which may become medium sandy loam at depth. These soils are also typically very slightly or slightly stony and non-calcareous throughout.

## **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.

### *Grade 2*

22. Grade 2 land is located in the northwest of the site and the majority of this is associated with the soils described in paragraph 18. Where profiles have impeded drainage, caused by the presence of a slowly permeable layer at depth, they have been assessed as wetness class II or III (for definition of wetness classes see Appendix II). This factor combines with the sandy clay loam or medium sandy loam topsoil textures respectively to restrict the land to grade 2 due to minor wetness and workability limitations.

23. A smaller area of land is graded 2 where profiles of the soils described in paragraph 18 have no slowly permeable layers and are therefore free draining (wetness class I). In these soils the presence of light textures and stones combine to slightly reduce the water reserves

available for plant growth. Moisture balance calculations indicate that profiles typically suffer from minor droughtiness limitations and this restricts the land to grade 2. Typically these topsoils also have between 6% and 10% stones greater than 2 cm in diameter which act as an impediment to cultivation, harvesting and crop growth and therefore this also excludes the land from grade 1.

*Subgrade 3a*

24. Land at the southwest of the site has been graded 3a in conjunction with the coarse loamy over clay soils described in paragraph 20. These soils have impeded drainage directly below the topsoil and have been assessed as wetness class IV. This factor combines with the light textured topsoils to restrict the timing of cultivations. Therefore moderate wetness and workability imperfections limit the land to subgrade 3a.

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## 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 <sup>1</sup>
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years. <sup>2</sup>
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).

<sup>1</sup> The number of days is not necessarily a continuous period.

<sup>2</sup> 'In most years' is defined as more than 10 out of 20 years.