HINCKLEY AND BOSWORTH
LOCAL PLAN
Leicester Road, Hinckley
102/1/81 and 893/1/5
Agricultural Land Classification
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AGRICULTURAL LAND CLASSIFICATION REPORT

HINCKLEY AND BOSWORTH LOCAL PLAN
Leicester Road, Hinckley - 102/1/81 and 893/1/5

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 8.3 ha of land adjacent to Hinckley Golf Club, Hinckley 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 all of the land at the site was in agricultural use, supporting winter cereal crops.

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
3a	3.1	37
3b	5.2	63
Total surveyed area	8.3	100

7. The fieldwork was conducted at an average density of 1 auger boring per hectare. A total of 8 auger borings and 2 soil pits were described.

8. The agricultural land at the site has been graded 3a (good quality agricultural land) and 3b (moderate quality agricultural land) in relation to varying wetness and workability

limitations. In addition a small area of land in the south of the site is graded 3b due to gradient 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	SP 440 948
Altitude	m, AOD	130
Accumulated Temperature	day°C (Jan-June)	1328
Average Annual Rainfall	mm	659
Field Capacity Days	days	151
Moisture Deficit, Wheat	mm	96
Moisture Deficit, Potatoes	mm	84

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 occupies an area of generally gently sloping land which ranges in altitude from 130 m AOD in the west of the site to 115 m AOD in the east. Towards the southeast boundary of the site gradient steepens significantly to 7.5° or 8°. Except in this isolated area neither gradient nor altitude impose limitations to land quality.

Geology and soils

15. The published 1:63 360 scale geology map, sheet 169, Coventry (Geological Survey of Great Britain, 1948) shows the majority of the site as comprising glacial sand and gravel deposits, with a small area of glacial boulder clay mapped in the southwest of the site.

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 site is mapped as consisting of soils of the Flint Association. These soils are briefly described as reddish fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging. Some similar fine loamy soils and some slowly permeable seasonally waterlogged fine loamy over clayey soils.

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

18. In the west and north of the site soils typically comprise very slightly stony or slightly stony medium clay loam, or very occasionally medium sandy loam, topsoils immediately over very slightly stony slowly permeable clay subsoils. Typically topsoils are non-calcareous, while subsoils are variably calcareous.

19. The second soil type occurs in the east of the site. These soils are variable and typically consist of very slightly stony or slightly stony medium clay loam topsoils over a very slightly stony heavy clay loam or sandy clay loam upper subsoil. Both of these horizons are non-calcareous. Lower subsoils are generally very slightly stony and typically comprise slowly permeable clays, or very occasionally medium sandy loams.

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. Subgrade 3a land occurs in the east of the site generally corresponding with the soils described in paragraph 19. These soils have typically been assessed as wetness class II or III (for definition of wetness classes see Appendix II) and this factor combines with the medium clay loam topsoils to restrict the timing of cultivations. Therefore moderate wetness and workability limitations preclude this land from a higher grade. Although individual profiles of better grades were noted occasionally within this mapping unit, they occurred too randomly or inextensively to permit separate delineation at the scale shown.

23. In the northern part of the area graded 3a the land is associated with the medium sandy loam topsoil textured variants of the poorly drained soils described in paragraph 18. These soils have been assessed as wetness class IV and this factor combines with the coarse loamy topsoils to restrict the timing of cultivations. Therefore moderate wetness and workability limitations preclude this land from a higher grade.

Subgrade 3b

24. The majority of the land at the site has been graded 3b and this is generally associated with the soils described in paragraph 18, which have medium clay loam topsoils over slowly permeable subsoils. These soils have impeded drainage directly below the topsoil and are assessed as wetness class IV. This factor combines with the topsoil textures to restrict land to subgrade 3b due to significant wetness and workability constraints.

25. A small area of land in the south of the site is graded 3b where the land slopes steeply with gradients in excess of 7° (see paragraph 14). These gradients affect the type of machinery which can be safely and efficiently operated in these areas and therefore the land is restricted to subgrade 3b due to significant gradient limitations.

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SOURCES OF REFERENCE

Geological Survey of Great Britain (England and Wales) (1948) *Sheet 169, Coventry.* 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.