ASHFIELD DISTRICT LOCAL PLAN, HD4, HUCKNALL, NOTTS

Agricultural Land Classification
ALC Map and Report, Validation Survey
September 1997

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AGRICULTURAL LAND CLASSIFICATION REPORT
VALIDATION SURVEY

Ashfield District Local Plan, Hd4, Hucknall, Notts

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 13.1ha of land west of Hucknall, which forms part of the Ashfield District Local Plan. The survey was carried out during August 1997.

2. The survey was carried out by the Farming and Rural Conservation Agency (FRCA) for the Ministry of Agriculture, Fisheries and Food (MAFF), in connection with the Ashfield District Local Plan. The area was surveyed to confirm the consultant's (Land Research Associates [LRA]) ALC grading. This survey (includes the area not surveyed by LRA) confirmed that most of the site comprised subgrade 3b land. This current survey supersedes previous ALC information for this land.

3. The work was conducted by members of the Resource Planning Team in the Eastern Region of FRCA. 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 principal land use was grassland. Land mapped as 'other land' included areas of scrub, buildings or greenhouses.

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)	% surveyed area	% site area
3a	1.4	15	11
3b	8.3	85	63
Other land	3.4	-	26
Total surveyed area	9.7	100	-
Total site area	13.1	-	100

7. The fieldwork was conducted at an average density of more than one boring per hectare. A total of 14 borings and 1 soil pit was described.

8. The majority of the land has been assessed as Subgrade 3b (moderate quality agricultural land), with three small areas of land at the boundaries of the site assessed as Subgrade 3a (good quality agricultural land). The quality of the land in the 3a area is affected by moderate droughtiness or wetness/workability imperfections which preclude the land from a higher grade.

9. The subgrade 3b land is heavy at shallow depths and consequently significant wetness/workability imprefections exclude the land from a higher grade.

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

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	SK 521494
Altitude	m, AOD	105
Accumulated Temperature	day°C (Jan-June)	1331
Average Annual Rainfall	mm	717
Field Capacity Days	days	162
Moisture Deficit, Wheat	mm	95
Moisture Deficit, Potatoes	mm	83
Overall climatic grade	N/A	Grade 1

12. 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.

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 impose no overall limitation to land quality and hence the site has a climatic grade of 1.

Site

15. The site falls gently towards the brook at the north eastern edge of the site. Altitude ranges from approximately 99m to 115m AOD. Neither gradient nor altitude impose a limitation on the land quality of the site.

Geology and soils

16. The published 1:50 000 scale geology map, sheet 125, Derby (Geological Survey, 1972) shows the majority of the site to be mapped as red Marl deposits, with smaller outcrops of Bunter Sandstone (with Marl and Brecia) and Magnesian Limestone to the south and north respectively.

17. The 1:250 000 reconnaissance scale soil map sheet 3 of the area (Soil Survey, 1983) shows the site to comprise soils of the Aberford Association. These soils are briefly described as shallow, locally brashy, well drained calcareous fine loamy soils over limestone. Some deeper calcareous soils in colluvium. The current more detailed survey of the site identified that soils were typically derived from Marl deposits rather than Limestone. One main soil type was identified.

18. Most of the site typically comprises medium clay loam (or occasionally heavy clay loam) topsoils over slowly permeable clays. Profiles are very slightly or slightly stony, with pebbles or occasionally limestone fragments (at the northern edge). Occasionally, the following situations occurred:

(a) Limestone rock was encountered within sampling depth;
(b) profiles merged into clays at greater depths (than those described above);
or (c) subsoils were sandy (i.e loamy medium sand/medium sand).

AGRICULTURAL LAND CLASSIFICATION

19. 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.

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

Subgrade 3a

21. Three small areas have been graded 3a and coincide with the soils described in paragraph 18 (a), (b) and (c). The presence of Limestone rock (a) at moderate depths or sandy horizons in the subsoils (c) reduces the available water for crop growth. The resultant moderate droughtiness limitation precludes the land from a higher grade.

22. Where slowly permeable clays (b) were encountered at depth the wetness class was assessed as III. This Wetness Class combines with the fine topsoil textures (i.e.medium clay loams) to impose a moderate wetness/workability limitation which restricts the land to Subgrade 3a (good quality agricultural land).

Subgrade 3b

22. Most of the site has been graded 3b and corresponds with the main soils described in paragraph 18. Topsoils are fine loamy and typically directly overlie slowly permeable clay (occasionally heavy clay loam) horizons. Such profiles are poorly drained and have been assessed as Wetness Class IV. This wetness combines with the non calcareous, fine textured topsoils to impose a significant wetness/workability limitation on the ALC grade.

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SOURCES OF REFERENCE

Geological Survey of Great Britain (1972), *Sheet No.* 125, Derby.
1:50 ooo scale, 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, *Midland and Western England.*
SSEW: Harpenden.

APPENDIX I

DESCRIPTIONS 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 which 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 (e.g. 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 which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.