ASHFIELD DISTRICT LOCAL PLAN
Hd3, HUCKNALL, NOTTS.

Agricultural Land Classification
ALC Map and Report

September, 1997.

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Eastern Region
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RPT Job Number: 31/97
MAFFReference:EL32/01122A
LURETJob No:ME1AN24

AGRICULTURAL LAND CLASSIFICATION REPORT

Ashfield District Local Plan
Hd3, Hucknall, Notts.

INTRODUCTION

1. This report presents the findings of a detailed, Agricultural Land Classification (ALC) survey of 33.0 ha of land southeast of Papplewick Lane, Hucknall, Notts. The survey was carried out during September 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. This 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 land use on the site was sugar beet, potatoes, standing cereals, cereal stubble and a small area of grassland.

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; and 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.

Grade	Area (hectares)	% site area
3a	21.7	65.8
3b	11.3	34.2
Total site area	33.0	100

7. The fieldwork was conducted at an average density of 1 boring per hectare. A total of 32 borings and 3 soil pits was described.

8. Land mapped as subgrade 3a (good quality agricultural land) occurs in the north, south, and along the western boundary, and is restricted to this subgrade by a moderate droughtiness limitation or a moderate wetness and workability limitation. Land mapped as subgrade 3b (moderate quality agricultural land) occurs centrally and in the east. It is restricted to this subgrade by a significant droughtiness limitation apart from the south eastern boundary where a significant wetness and workability limitation occurs.

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 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 545 496
Altitude	m, AOD	65
Accumulated Temperature	day°C (Jan-June)	1375
Average Annual Rainfall	mm	702
Field Capacity Days	days	158
Moisture Deficit, Wheat	mm	99
Moisture Deficit, Potatoes	mm	89
Overall climatic grade	N/A	Grade 1

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

Site

14. The site is bounded in the east by open farmland, north and west by private houses and a mixture of housing and and a golf course in the south. The land slopes gently in an easterly direction from a height of 70m AOD to approximately 60m AOD in the bottom of the valley near to the River Leen. The angle of slope does not impose any limitation to the ALC grading of the land.

Geology and soils

15. The published 1:50 000 scale geology map (Geol. Survey 1972) shows the site to mainly comprise Lower Magnesian Limestone (also known as Permian Magnesian Limestone). A small area of Middle Permian Marl occurs in the south whilst in the east a small area of Permo-Triassic Lower Mottled Sandstone is mapped.

16. The 1:250 000 scale reconnaissance soil map of the area (SSEW, 1983) shows the site to comprise soils of the Aberford Association. These are briefly described as shallow, locally brashy, well drained calcareous fine loamy soils over limestone with some deeper calcareous soils in colluvium.

17. During the current survey two main soil types were encountered, though not always occurring in discrete areas.

18. In the southern third and the extreme north profiles typically comprise very slightly stony, non-calcareous medium clay loam (occasionally heavy clay loam) topsoils over slightly stony, non-calcareous heavy clay loam or clay upper subsoil. Lower subsoil comprises stoneless, non-calcareous slowly permeable red clay. A very occasional sandy variant was observed on the southern boundary.

19. On the remainder profiles typically comprise slightly stony, non-calcareous medium clay loam topsoils, over slightly stony non-calcareous heavy clay loam (occasionally sandy clay loam) upper subsoil. At depths ranging from 35cm/80cm very large limestone slabs were encountered with rooting down minor fissures to no more than 10cm below the rock surface.

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. Land mapped as subgrade 3a occurs in the north, along the western boundary, and in the south with a small tongue extending north eastwards into the centre of the site. It corresponds to the soils described in paragraph 18 where the slowly permeable layer occurs below 45cm (Wetness Class III), and is restricted to this subgrade due to a moderate wetness and workability limitation. It also corresponds to the soils described in paragraph 19 where the slabby limestone occurs at or below 50cm and is restricted to this subgrade due to a moderate droughtiness limitation.

Subgrade 3b

23. Land mapped as subgrade 3b occurs over the remainder of the site. It corresponds to the soils described in paragraph 18 where the slowly permeable layer occurs above 45cm

(Wetness Class IV), and is restricted to this subgrade due to a significant wetness and workability limitation. It also corresponds to the soils described in paragraph 19 where the limestone occurs at depths <45cm and is restricted to this subgrade due to a significant droughtiness limitation.

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SOURCES OF REFERENCE

British Geological Survey (1972) *Sheet No. 125, Derby, Solid and Drift. Scale 1:50 000* 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,Midland and Western England Scale 1:250 000.* SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in 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.