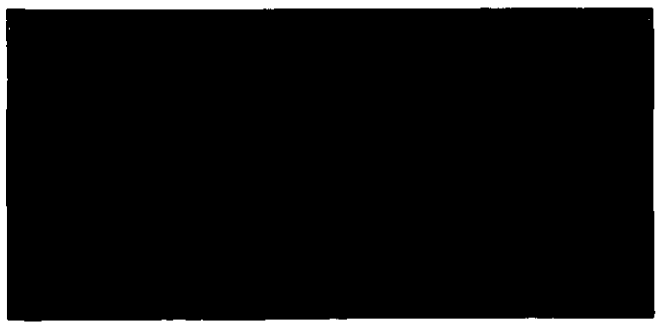

MAFF Ministry of Agriculture Fisheries and Food

NORTH WEST LEICESTERSHIRE LOCAL PLAN; LOWER PACKINGTON ROAD ASHBY-DE-LA-ZOUCH (Site No. 7125) Agricultural Land Classification JULY 1996

Resource Planning Team
Huntingdon Statutory Group
ADAS Cambridge

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AGRICULTURAL LAND CLASSIFICATION REPORT
NORTH-WEST LEICESTERSHIRE LOCAL PLAN
LOWER PACKINGTON ROAD
ASHBY-DE-LA-ZOUCH, LEICESTERSHIRE
(Site No. 7125)

Introduction

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 19.2 ha of land at Lower Packington Road, on the southern edge of Ashby-de-la-Zouch, Leicestershire.The survey was carried out during July 1996.

2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) Land Use Planning Unit, Cambridge in connection with the North West Leicestershire Local Plan. The work was conducted by members of the Resource Planning Team in the Huntingdon Statutory Group in ADAS. The published 1:63 360 scale provisional ALC map (MAFF, 1971) showed the site to be Grade 3.

3. At the time of survey the land use on the site was permanent pasture with a small area in the east given to a sports ground.

4. The land has been classified in accordance with MAFF's revised guidelines and criteria for the grading of agricultural land (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.

Summary

5. The land classification of the site was established by a total of 20 soil auger borings (ie. approximately 1 per hectare) to a depth of 120 cm or to impenetrable stony layers. Subsoil conditions were assessed from 2 inspection pits. The location of the pits and the auger borings is shown on the accompanying Sample Point Map.

6. The results of the ALC survey are summarised in Table 1 and the distribution of the grades and subgrades is shown on the accompanying ALC map. The map is accurate at its scale of 1:10 000 but any enlargement would be misleading.

Table 1: Areas of grades and other land

Grade/Other land	Area (hectares)	% surveyed
3a	9.7	50.5
3b	7.5	39.1
Other land	2.0	10.4
Total agricultural land	17.2	89.6
Total survey area	19.2	100.0

7. A little more than half of the site is good (Subgrade 3a) agricultural quality land having a moderate wetness and workability limitation (q.v. Appendix II) due to a combination of topsoil texture and slowly permeable subsoils. The remainder of the land is of moderate (Subgrade 3b) agricultural quality because of the presence of heavier slowly permeable clay soils with a moderately severe wetness and workability limitation. There is a small area of non-agricultural land in the east of the site.

Factors Influencing ALC Grade

Climate

8. Climate criteria are considered first when classifying land because severe climatic limitations will restrict land to low grades irrespective of favourable site or soil conditions. The overall climate itself may affect grading, or grading may be affected through climatic factors interacting with soil properties to influence soil wetness and droughtiness.

9. The main parameters used in the assessment of the overall climate limitation for ALC purposes are average annual rainfall as a measure of wetness and accumulated temperature as a measure of the relative warmth of an area. Estimates of these variables were obtained from the published 5 km grid datasets using the standard interpolation procedures (Met. Office, 1989).
The results of this analysis are given in Table 2 and show that the combination of rainfall and temperature at the site present no limitation for agricultural use.

Table 2: Climatic and altitude data

Parameter	Value
Grid reference	SK360157
Altitude (m, AOD)	120
Accumulated Temperature (day °C, Jan.–June)	1332
Average Annual Rainfall (mm)	670
Field Capacity Days	153
Moisture Deficit, Wheat (mm)	98
Moisture Deficit, Potatoes (mm)	87
Overall Climatic Grade	1

Site

10. The land slopes gently southwestwards from approximately 125m AOD, along Lower Packington Road to the centre of the site at approximately 115m AOD. The land rises towards Packington Nook Lane to a height of 120m AOD forming a shallow valley at the western end of the site. The eastern part of the site is flat throughout. Neither altitude nor relief impose any limitation on agricultural land quality.

Geology and Soils

11. The published 1:50 000 scale geology map (Geol. Survey, 1982) shows the western part of the site to comprise Carboniferous Lower Coal Measures which contain bands of sandstone with the remainder of the site comprising 1st River Terrace deposits. A band of Alluvium traces Gilwiskaw Brook.

12. There is no detailed published soils information for the site. The relevant reconnaissance soil map and legend (Soil Survey, 1983) shows the vast majority of the site to be covered with soils of the Bardsey association. Briefly, these are described as slowly permeable loamy over clayey soils overlying rock. Along the southwestern boundary a very small area is mapped as Wick 1 association. These soils are briefly described as well drained coarse loamy and sandy soils, locally over gravel.

13. The detailed survey carried out on the site identified two soil types. The first, which occurs in the central and northwest corner of the site, comprises a non-calcareous, very slightly stony dark greyish brown heavy (occasionally medium) clay loam topsoil which overlies a stoneless strongly mottled grey, pale brown or brown slowly permeable clay to depth. With the occurrence of the slowly permeable layer at 30/40cm these soils have been assessed as Wetness Class IV.

14. The second soil type occurs over the remainder of the site. Soil profiles typically comprise a very slightly stony, dark brown or dark greyish brown medium clay loam topsoil over a brown or greyish brown heavy clay loam (occasionally sandy clay loam), permeable upper subsoil. The lower subsoil comprises a stoneless, strongly mottled pale brown, brown or grey slowly permeable clay to depth. The soils are non-calcareous and with the occurrence of the slowly permeable layer typically at 45/50cm have been assessed as Wetness Class III. In the few profiles where the slowly permeable layer occured at a depth >55cm the soils were assessed as Wetness Class II.

Agricultural Land Classification

15. The Agricultural Land Classification of the land is shown on the attached ALC Map and the areas of each subgrade have been given in Table 1. Within any subgrade small areas of land of better or poorer quality may occur but cannot be delineated separately at the scale of survey.

Grades, Subgrades

Subgrade 3a

16. Land classified as Subgrade 3a corresponds to the moderately well drained soils (Wetness Class III) described in paragraph 14, and is limited to this subgrade due to a moderate wetness and workability restriction. With the clay loam topsoils and slowly permeable subsoils care and timeliness with cultivations are required to avoid damage to soil structures. A few better drained profiles (Wetness Class II, Grade 2) were encountered, but these are not in discrete mapable areas.

Subgrade 3b

17. Land classified as Subgrade 3b corresponds to the imperfectly drained soils (Wetness Class IV) described in paragraph 13. With heavy clay loam topsoils immediately over slowly permeable clay subsoils a more severe wetness and workability restriction will require considerable care and timeliness with cultivations to avoid damage to soil structures.

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SOURCES OF REFERENCE

British Geological Survey (1982) *Sheet No. 155, Coalville, Solid and Drift edition 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.*

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 1:50 000*. SSEW : Harpenden

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

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.