

**TEESDALE D.L.P.  
(LAND AT GAINFORD)**

**Agricultural Land Classification Report**

**July 1996**

**Resource Planning Team  
Leeds Statutory Group  
ADAS Leeds**

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# TEESDALE DISTRICT LOCAL PLAN, LAND AT GAINFORD AGRICULTURAL LAND CLASSIFICATION REPORT

## Introduction

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 6.5 ha of land at Gainford, County Durham. 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, Northallerton in connection with Teesdale District Local Plan. This survey supersedes any previous ALC surveys on this land.
3. The work was conducted by members of the Resource Planning Team in the Leeds Statutory Group 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 most of the land on the site was under ley or permanent grass. In the south of the site lies some non-agricultural land consisting of shops and warehouses.

## Summary

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:5,000. 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	% Surveyed Area
Subgrade 3b	5.5	84.6	100.0
Other land	1.0	15.4	-
Total surveyed area	5.5	-	100
Total site area	6.5	100	-

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

8. Subgrade 3b, moderate quality agricultural land, covers all of the agricultural land on the site. The soils are generally poorly drained and consist of medium clay loam topsoils overlying, in most cases, gleyed but permeable medium clay loam upper subsoils and, at between 30cm and 50cm depth, gleyed and slowly permeable medium clay loam or heavy clay loam lower subsoils. Soil wetness is the factor which restricts this land to Subgrade 3b

Other land on this site occurs in the south and consists of warehouses and shops.

## 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	NZ 174 171
Altitude	m, AOD	83
Accumulated Temperature	day°C (Jan-June)	1290
Average Annual Rainfall	mm	673
Field Capacity Days	days	178
Moisture Deficit, Wheat	mm	94
Moisture Deficit, Potatoes	mm	80

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 means that there is a climatic limitation of Grade 2.

## Site

14. The land on this site is level to gently sloping (0-3°) with a generally southerly aspect. As all slopes are less than 7°, at no point does gradient limit ALC grade. Equally, neither micro-relief nor flood risk provide a limitation to ALC grade at any point.

## Geology and soils

15. The geology maps for the area (Sheet 32, Barnard Castle) show the site to be underlain by Millstone Grit over which lie deposits of till.

16. The Soils of England and Wales (Sheet 1, Northern England) shows the soils on the site as belonging to the Brickfield 3 association.

## Agricultural Land Classification

17. 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.

### *Subgrade 3b*

18. All of the agricultural land on this site falls in Subgrade 3b. The soils are generally poorly drained, falling in Wetness Class IV (see Appendix II). Typically medium clay loam topsoils overlie gleyed but permeable medium clay loam upper subsoils and gleyed and slowly permeable medium clay loam or heavy clay loam lower subsoils. These slowly permeable layers begin at between 30cm and 50 cm depth. The topsoils are generally very slightly to slightly stony, containing between 4% and 8% very small to medium sandstones, while the subsoils are very slightly to moderately stony, with between 3% and 16% very small to large sandstones. However, it is a moderate soil wetness limitation which restricts this land to Subgrade 3b.

This soil wetness limitation means that the land is capable of producing only moderate yields of a narrow range of crops of lower yields of a wider range of crops. In addition, there is reduced flexibility as a result of a significant reduction in the number of days in the year when the soil is in a suitable condition for agricultural operations or trafficking by machinery.

### 19. Other Land

This occurs in the south of the site and consist of warehouses and shops.

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## SOURCES OF REFERENCE

British Geological Survey (1969) *Sheet No. 32, (Solid and Drift) Barnard Castle*, 1:63,360 scale. 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 (1984) *Sheet 1, Soils of Northern England* 1:250,000 scale.  
SSEW: Harpenden.

Soil Survey of England and Wales (1983) *Soils and their Use in Northern 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.

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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.

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#### 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).

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<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.