



Ministry of
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and Food

**TYNEDALE DISTRICT WIDE
LOCAL PLAN. LAND NORTH OF
CORBRIDGE**

**Agricultural Land Classification
November 1996**

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

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AGRICULTURAL LAND CLASSIFICATION REPORT

TYNEDALE DISTRICT WIDE LOCAL PLAN. LAND NORTH OF CORBRIDGE BETWEEN A69, MILKWELL LANE AND DEADRIDGE LANE

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 22.5 hectares of land north of Corbridge between the A69, Milkwell Lane and DeadrIDGE Lane. The survey was carried out in November 1996.
2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) Land Use Planning Unit in Northallerton in connection with the Tynedale District Wide 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 the land use on the site was in a mixture of arable and permanent grass uses. Arable land was found mostly in the west and centre of the site and typically comprised cereals. Land in the west of the site associated with the Corbridge Old Pottery Kilns was classed as other non agricultural land.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:5000. 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
2	1.2	5.3	5.5
3a	8.9	39.6	41.0
3b	10.5	46.6	48.4
5	1.1	4.9	5.1
Other Land	0.8	3.6	N/A
Total survey area	21.7	-	100
Total site area	22.5	100	-

7. The fieldwork was conducted at an average density of one boring per hectare of land surveyed. A total of 24 borings and 4 soil pits were described.

8. Grade 2 land was found in two separate, small areas of the site. Topsoils and upper subsoils were typically medium sandy loam occasionally over a clayey slowly permeable lower subsoil below about 55 cm depth. Overall climate and slight droughtiness or soil wetness and workability problems limit the ALC grade of this land.

9. Subgrade 3a land is similar to that graded 2. Topsoils and subsoils are generally more stony and subsoils lighter textured than on the Grade 2 land. This increases the droughtiness of the land to Subgrade 3a. In some places topsoils are slightly heavier, often a sandy clay loam, and slowly permeable subsoils occur at shallower depths. This increase the soil wetness limitation of this land to Subgrade 3a.

10. Land in the south of the site was limited to 3b by a either slopes of over 7° or significant soil wetness and workability problems. Remaining Subgrade 3b land in the centre and north of the site has been adversely affected by the tipping of wastes such as cinders, rubble and glass in the topsoil. Small scale clay extraction for the adjacent pottery has also resulted in the disturbance of topsoils and mixing of topsoils and subsoils. These factors limit the land to Subgrade 3b.

11. Remaining agricultural land is Grade 5. This small area in the north east of the site associated with former quarry workings contains complex hummocky relief on slopes often over 18° which severely limit the safe use of agricultural machinery.

12. Other non agricultural land comprises land and buildings associated with the Old Pottery Kilns in the west of the site.

FACTORS INFLUENCING ALC GRADE

Climate

13. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

14. 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	NY 995662
Altitude	m, AOD	75
Accumulated Temperature	day°C	1281
Average Annual Rainfall	mm	649
Field Capacity Days	days	172
Moisture Deficit, Wheat	mm	90
Moisture Deficit, Potatoes	mm	75

15. 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.

16. 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.

17. The combination of rainfall and temperature at this site mean there is an overall climatic limitation of Grade 2 on the site.

Site

18. Generally the site has a south to south westerly aspect with moderate to gentle slopes. In a few places towards the south of the site slopes of over 7° limit ALC grade to Subgrade 3b. Uneven, hummocky and complex relief in the extreme north east of the site associated with a former quarry, severely limit the safe use of agricultural machinery. Altitude ranges from 100m A.O.D. in the north east to 55m A.O.D. in the south.

Geology and Soils

19. Solid deposits of Upper Carboniferous (Corbridge) Limestone and sandstone underlie the site. These are covered with a layer of stony medium to light textured drift material which is shallower towards the north of the site (BGS Sheet 20, Newcastle, 1992).

20. Soils reflect their parent material and are generally light to medium textured and occasionally stony. Topsoils are typically a very slightly to moderately stony medium sandy loam or sandy clay loam over similar textured subsoils again very slightly to moderately stony. Subsoils are occasionally clayey and slowly permeable (Wetness Class III or IV) although most profiles are Wetness Class I or II (see Appendix II). Soils on the site are mapped as and conform with the Nercwys association as described by the Soil Survey and Land Research Centre (1984).

AGRICULTURAL LAND CLASSIFICATION

21. 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.

Grade 2

22. Grade 2 land was found in two separate, small areas in the east and west of the site. Topsoils and upper subsoils were typically medium sandy loam occasionally over a clayey slowly permeable lower subsoil below about 55 cm depth. Soil horizons were very slightly stony typically with 3% or 4% limestones and sandstones. Profiles were generally Soil Wetness Class II or III. Overall climate and slight droughtiness or soil wetness and workability problems limit the ALC grade of this land.

Subgrade 3a

23. Subgrade 3a land is similar to that graded 2. Topsoils and subsoils are generally more stony typically containing up to 10% limestones and sandstones. Subsoils are often lighter textured than on the Grade 2 land, loamy medium sand was a common texture. These factors reduce the available water capacity of the soil and increase the droughtiness limitation of the land to Subgrade 3a. In some places topsoils are slightly heavier, often a sandy clay loam, and slowly permeable subsoils occur at shallower depths placing profiles in Wetness Class III. This increases the soil wetness and workability limitation of this land to Subgrade 3a.

Subgrade 3b

24. Land in the south of the site was limited to Subgrade 3b by either slopes of over 7° or significant soil wetness and workability problems where slowly permeable subsoils occur within 40 cm depth (Wetness Class IV). Remaining Subgrade 3b land in the centre and north of the site has been adversely affected by the tipping of wastes such as cinders, rubble and glass in the topsoil. Small scale clay extraction for the adjacent pottery has also resulted in the disturbance of topsoils with stones and brick and mixing of clayey textured subsoils with the topsoils. These factors limit the land to 3b because of difficulties that will occur in working the stony and clayey topsoil that often contains tipped waste.

Grade 5

25. Remaining agricultural land is Grade 5. This small area in the north east of the site associated with former quarry workings contains a complex hummocky relief on slopes often over 18° which severely limit the safe use of agricultural machinery.

Other Land

26. Other non agricultural land comprises land and buildings associated with the Old Pottery Kilns in the west of the site.

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Sources of Reference

British Geological Survey (1992) *Sheet No. 20, Newcastle Solid and Drift 1:50 000 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 (1986) *Soils Of England and Wales Sheet 1, Northern England.* 1:250 000 scale SSEW: Harpenden.

Soil Survey of England and Wales (1986) *Soils and their Use in Northern 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 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 very 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.