# LANCASTER LOCAL PLAN
## North Lancaster
## Agricultural Land Classification
## ALC Map and Report
## November 1997

M J W WOOD
Resource Planning Team
Northern Region
FRCA Wolverhampton

RPT Reference: 059/97 & 25/RPT/0681A
FRCA Reference: EL 21/10125
LURET Job Number: ME1AJ2M

# AGRICULTURAL LAND CLASSIFICATION REPORT
# LANCASTER LOCAL PLAN
## North Lancaster

## INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey on 111.7 hectares of land. The results of this survey supersede any previous ALC information for this land. The land is located to the north of Lancaster, between Torrisholme and Skerton. The survey was in connection with the Lancaster Local Plan.

2. The survey was undertaken on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF) in October 1997 by the Resource Planning Team of the Farming and Rural Conservation Agency (FRCA)- Northern region of FRCA.

3. The land has been graded in accordance with the publication "Agricultural Land Classification of England and Wales - Revised guidelines and criteria for grading the quality of agricultural land" (MAFF 1988) .

4. At the time of survey the agricultural land on this site was under grass.

## 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 with an average auger boring density of 1 per hectare. The ALC map is only accurate at this base map scale and 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 |
|---|---|---|---|
| 1 | - | - | - |
| 2 | - | - | - |
| 3a | 37.7 | 49 | 34 |
| 3b | 38.3 | 50 | 34 |
| 4 | 0.3 | 1 | 1 |
| 5 | - | - | - |
| Agricultural land not surveyed | 6.6 | N/A | 6 |
| Other land | 28.8 | N/A | 25 |
| Total surveyed area | 76.3 | 100 | - |
| Total site area | 111.7 | - | 100 |

7. The agricultural land on this site has been classified as Subgrade 3a (good quality), Subgrade 3b (moderate quality) and Grade 4 (poor quality). The key limitations to the agricultural use of this land include gradient, topsoil stone content and soil wetness.

8. The area of good quality land is located in three units across the site. The soils were of either a sandy silt loam or a clay loam topsoil texture overlying sandy silt loam and clay loam to depth.

9. The area of moderate quality land is mapped in three units across the site. The soils in this area comprise a clay loam topsoil texture overlying either a gleyed and slowly permeable clay subsoil or a moderately stony or strongly sloping sandy silt loam and clay loam to depth.

10. The area of poor quality land is mapped in the south west of the site and is found on moderately steeply sloping land.

## FACTORS INFLUENCING ALC GRADE

### Climate

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

12. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using standard interpolation procedures (Meteorological Office, 1989).

Table 2: Climatic and altitude data

| Factor | Units | Values | |
|---|---|---|---|
| Grid reference | N/A | SD 464 639 | SD 474 639 |
| Altitude | m, AOD | 10 | 42 |
| Accumulated Temperature | day°C (Jan-June) | 1413 | 1376 |
| Average Annual Rainfall | mm | 1003 | 1062 |
| Field Capacity Days | days | 235 | 244 |
| Moisture Deficit, Wheat | mm | 73 | 66 |
| Moisture Deficit, Potatoes | mm | 58 | 48 |
| Overall climatic grade | N/A | Grade 2 | Grade 2 |

13. 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.

14. 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.

15. The combination of rainfall and temperature at this site means that there is a climatic limitation. The site is climatically no better than Grade 2.

**Site**

16. The site lies at an altitude of 6 to 42 metres AOD. The undulating site rises from the west to the east of the site.

17. The three site factors of gradient, microrelief and flooding are considered when classifying the land.

18. To the east of the Lancaster Canal, near Beaumont Gate Farm and Hammerton Hall, there are places where the land has slopes of between 7° and 11°. Here the gradient limits the agricultural use of the land to Subgrade 3b.

19. In the south west of the site, near the Cricket Ground, there are slopes of between 11° and 18°. Here the gradient limits the agricultural use of the land to Grade 4.

20. The remaining factors do not impose any limitations to the agricultural use of this land.

**Geology and Soils**

21. The solid geology of the area is comprised of Carboniferous Sandstones and Shales. This is overlain with deposits of reddish till - Soil Survey of England and Wales (1984)

22. The soils that have developed on this geology are generally of either a sandy silt loam or a clay loam texture.

**Agricultural Land Classification**

23. The details of the classification of the site are shown on the enclosed ALC map and the area statistics of each grade are given in Table 1, page 1.

*Subgrade 3a*

24. Land of good quality occupies 37.7 hectares (34%) of the site area and is found in three units across the site.

25. The soil has either a sandy silt loam or a clay loam texture over sandy silt loam and clay loam to depth, with few to many stones within the profile. The combination of topsoil texture and the fact that the field capacity days for this area is in excess of 225, means that these soils are limited to Subgrade 3a. In places the volume of topsoil stones greater than 2 cm in size (10%-15%) limits these soils to Subgrade 3a. There are isolated borings of Grade 2 quality, within this unit, but they cannot be mapped separately at this scale.

26. The main limitations to the agricultural use of this land include topsoil stone content and soil wetness.

*Subgrade 3b*

27. Land of moderate quality occupies 38.3 hectares (34%) of the site area and is found in three units across the site.

28. The soils in this Subgrade are of two types. Firstly, there are the soils which have either a clay loam or a silty clay loam topsoil over sandy silt loam, clay loam and clay to depth and are gleyed throughout. These soils are placed in either Wetness Class III or IV, which combined with a field capacity days figure in excess of 225 are classified as Subgrade 3b.

29. Secondly, there are the soils which have either a sandy silt loam or a clay loam topsoil over sandy silt loam and clay loam to depth. In places, the volume of topsoil stones greater than 2 cm in size (15% to 25%) places these soils in Subgrade 3b.

30. In places these soils occur on slopes of between 7° and 11°. Here gradient limits the agricultural use of the land to Subgrade 3b.

31. The main limitations to the agricultural use of this land include gradient, topsoil stone content and soil wetness.

*Grade 4*

32. Land of poor quality occupies 0.3 hectares (1%) of the site area and is found in the south west corner of the site near the Cricket Ground.

33. The soils are similar to those elsewhere on the site but they are located on slopes of between 11° and 18°.

34. The main limitation to the agricultural use of this land is gradient.

*Land Not Surveyed*

35. The land which has not been surveyed amounts to 6.6 hectares (6%) of the site. The RPT did not enter upon this land as access had been denied.

*Other Land*

36. Other land occupies 28.8 hectares (25%) of the site area and includes amenity land, a canal, a crematorium, farms and roads.

Resource Planning Team
Northern Region
FRCA Wolverhampton

## SOURCES OF REFERENCE

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.

Meteorological Office (1989) Climatological Data for Agricultural Land Classification.
Meteorological Office: Bracknell.

Soil Survey of England and Wales (1984) Bulletin No 12. Soils and their use in Midland and Western England, J M Ragg et al.
Harpenden