York Northern Gateway

Agricultural Land Classification
ALC Map and Report

May 1997

Resource Planning Team
Northern Region
FRCA Leeds

RPT Job Number: 24/97
MAFF Reference: EL 11256
LURET Job Number: ME2 AXN8

AGRICULTURAL LAND CLASSIFICATION REPORT

YORK NORTHERN GATEWAY

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 23.5 ha of land at Rawcliffe on the northern outskirts of York. The survey was carried out during May 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 a proposed Country Park and Park and Ride Scheme.

3. The work was conducted by members of the Resource Planning Team in the Northern 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 all in either arable or set aside use.

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)	% surveyed area	% site area
1			
2			
3a	14.8	63	63
3b	8.7	27	27
4			
5			
Agricultural land not surveyed		N/A	
Other land		N/A	
Total surveyed area	23.5	100	-
Total site area	23.5	-	100

7. The fieldwork was conducted at an average density of one boring per hectare. A total of 23 borings and two soil pits were described.

8. Subgrade 3a was mapped in the southern part of the site. Here topsoils are medium silty clay loam over similar or light textured upper subsoils which are often gleyed. At about 50 cm to 60 cm depth a gleyed, slowly permeable, clayey lower subsoil is usually encountered. These profiles are Soil Wetness Class III. Soil wetness and workability problems limit the ALC grade of this land. Remaining land is Subgrade 3b. Topsoils are generally heavy silty clay loam over similar textured gleyed, upper subsoils. Silty clay lower subsoils occur at between 35 and 45 cm depth. These are gleyed and slowly permeable placing these profiles into either Wetness Class III or occasionally IV. Heavy textured topsoils combined with Soil Wetness Class III or IV impose a significant soil wetness and workability problem on this land.

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

Factors	Units	Value
Grid reference	N/A	SE 576 545
Altitude	m, AOD	12
Accumulated Temperature	day°C (Jan-June)	1389
Average Annual Rainfall	mm	626
Field Capacity Days	days	141
Moisture Deficit, Wheat	mm	107
Moisture Deficit, Potatoes	mm	98
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 at this site mean there is no overall climatic limitation to ALC.

Site

14. The site is located above Rawcliffe Ings and the flood plain of the River Ouse. For this reason flood risk is believed to be low. Site altitude is between 10 and 12 m A.O.D. and the land is mostly level.

Geology and soils

15. Thick deposits of Lacustrine Clay and Warp overlie Triassic Bunter and Keuper sandstones. BGS Sheet 63, York, Solid and Drift, 1:50,000, 1983.

16. Topsoils are medium silty clay loam across most of the site but heavy silty clay loam in the northern third of the site towards the sewage works. Upper subsoils are typically similar textured to the topsoil or occasionally north of Blue Bridge lighter - medium sandy loam. They are often gleyed. Lower subsoils which occur at between 35 and 60 cm depth are mostly a gleyed, slowly permeable, silty clay. Where this silty clay occurs within about 40 cm depth profiles are Soil Wetness Class IV. Otherwise where the layer is deeper profiles meet the criteria for Wetness Class III.

Agricultural Land Classification

Subgrade 3a

Subgrade 3a was mapped in the southern part of the site. Here topsoils are medium silty clay loam over similar or light textured upper subsoils which are often gleyed. At about 50 cm to 60 cm depth a gleyed, slowly permeable, clayey lower subsoil is usually encountered. These profiles are Soil Wetness Class III. Soil wetness and workability problems limit the ALC grade of this land.

Subgrade 3b

Remaining land is Subgrade 3b. Topsoils are generally heavy silty clay loam over similar textured gleyed, upper subsoils. Silty clay lower subsoils occur at between 35 and 45 cm depth. These are gleyed and slowly permeable placing these profiles into either Wetness Class III or occasionally IV. Heavy textured topsoils combined with Soil Wetness Class III or IV impose a significant soil wetness and workability problem on this land.

Resource Planning Team
Northern Region
FRCA Leeds
File: RPT 20182

SOURCES OF REFERENCE

British Geological Survey (1983) *Sheet No.63, York, Solid and Drift.*.
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.

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.