

**LAND AT STONEHOUSE ROAD,  
RACKHEATH, NORFOLK**

**Agricultural Land Classification  
ALC Map and Report**

**July 1997**

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Eastern Region  
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# **AGRICULTURAL LAND CLASSIFICATION REPORT**

## **LAND AT STONEHOUSE ROAD, RACKHEATH, NORFOLK**

### **INTRODUCTION**

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 8.8 ha of land south of Stonehouse Road, to the north of Rackheath in Norfolk. The survey was carried out during June 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 an application for industrial development. This survey supersedes previous ALC information for this land.
3. The work was conducted by members of the Resource Planning Team in the Eastern 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 growing a potato crop.

### *Irrigation*

5. The site is irrigated and is considered to have an adequate and reliable supply of water to enhance the productive capability and flexibility of the agricultural land. In accordance with Planning Policy Guidance Note 7 (PPG7, February 1997) the site has been graded without reference to the availability of irrigation. Annex B, paragraph B11 of PPG7 gives guidance on comparisons to be made in connection with irrigated and non-irrigated land. Attention is therefore drawn to the importance and increased agricultural significance that should be afforded to the Stonehouse Road site relative to comparable but non-irrigated land in the locality.

### **SUMMARY**

6. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10 000; it is accurate at this scale but any enlargement would be misleading.
7. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1 overleaf.
8. The fieldwork was conducted at an average density of 1 boring per hectare. A total of 11 borings and 2 soil pits was described.
9. The land at the site has been graded as 3a and 3b. In the northwest a small area of land has been graded 3a (good quality agricultural land) due to a moderate droughtiness limitation. The majority of the site has been graded 3b (moderate quality agricultural land) due to significant droughtiness imperfections.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area
3a	2.7	31
3b	6.1	69
Total surveyed area	8.8	100

## FACTORS INFLUENCING ALC GRADE

### Climate

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

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

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	TG 290149
Altitude	m, AOD	25
Accumulated Temperature	day°C (Jan-June)	1396
Average Annual Rainfall	mm	651
Field Capacity Days	days	126
Moisture Deficit, Wheat	mm	118
Moisture Deficit, Potatoes	mm	113
Overall climatic grade	N/A	Grade 1

12. 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.

13. 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.

14. The combination of rainfall and temperature at this site mean it is relatively warm and dry and consequently the climatic grade has been assessed as 1.

## **Site**

15. The site occupies very gently northward sloping land. The site ranges in altitude from 23 m AOD in the north, to 37 m AOD in the south. Therefore, neither gradient nor altitude constitute a limitation to the ALC grade.

## **Geology and soils**

16. The geology of the site has not been mapped in detail, however the 1:250 000 scale published solid geology map, sheet 52<sup>0</sup>N-00<sup>0</sup>W, East Anglia (British Geological Survey, 1985) shows the site to comprise Norwich and Red Crag over Upper Chalk, while the 1:253 440 scale drift geology map, sheet 12, (Geological Survey of Great Britain, 1912) shows these solid deposits to be overlain by glacial loam in the west of the site and glacial sands and gravels in the east.

17. On the 1:250,000 scale published soils map, sheet 4, Soils of Eastern England (Soil Survey of England and Wales, 1983) the site is shown as consisting entirely of soils of the Newport 4 Association. These soils are briefly described as deep well drained sandy soils. Some very acid soils with bleached subsurface horizons especially under heath or in woodland.

18. During this survey a more detailed inspection of the soils was carried out and one variable soil type was also identified which correlates with the underlying drift geology. Profiles typically comprise medium sandy loam or loamy medium sand topsoils, over medium sands, loamy medium sands, medium sandy loams, or occasionally sandy clay loams. At depth typically soil textures become medium sands, although occasionally clay is encountered in the lower subsoil. These soils are typically very slightly stony and free draining throughout.

## **AGRICULTURAL LAND CLASSIFICATION**

19. 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, page 1.

20. The location of the auger borings and pits is shown on the attached sample location map.

### **Subgrade 3a**

21. Land in the northwestern third of the site has been graded 3a. This land occurs in conjunction with the typically slightly heavier textured free draining or very occasionally moderately well drained (wetness class I or very occasionally II) soils described in paragraph 18. Profiles typically comprise medium sandy loam or loamy medium sand topsoils over deep, similar textured or occasionally heavier sandy clay loam textured upper subsoils. Lower subsoils are typically clay although medium sand is occasionally present. Profile textures result in the soils having moderate reserves of water available for plant growth and as a result there is a moderate droughtiness limitation to land quality and the land is graded 3a.

### **Subgrade 3b**

22. The majority of the site the land has been graded 3b and this corresponds with the sandier and therefore slightly more less retentive variants of the soils described in paragraph 18. These soils are typically free draining (wetness class I) and upper and lower subsoils are typically medium sands. The light profile textures reduce the water holding capacity of the soils and therefore significant droughtiness limitations restrict the land to subgrade 3b.

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## SOURCES OF REFERENCE

British Geological Survey (1985) *Sheet 52<sup>0</sup>N-00<sup>0</sup>W, East Anglia, 1:250,000 scale.*  
BGS: London.

Geological Survey of Great Britain (England and Wales) (1912) *Sheet No. 12, drift edition*  
*Scale 1:233 440.*  
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 (1983) *Sheet 4, Soils in Eastern England, Scale 1:250 000.*  
SSEW: Harpenden.

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