LAND AT GREENHOUSE FARM, GREASBY

Agricultural Land Classification
ALC Map and Report
June 1998

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RPT Reference: 015/98 & 25/RPT/0936
FRCA Reference: EL 25/11833
LURET Job Number: ME2J1RY

AGRICULTURAL LAND CLASSIFICATION REPORT
LAND AT GREENHOUSE FARM, GREASBY

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey on 8.2 ha of land located to the south east of Greasby at Greenhouse Farm The survey was carried out during June 1998.

2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) in connection with proposed cricket pitches, club house and access road. The results of this survey supersede any previous ALC information for this land.

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).

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

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. 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 below.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	3.8	49	46
3a	3.9	51	48
Other Land	0.5	-	6
Total surveyed area	7.7	100	-
Total site area	8.2	-	100

7. The fieldwork was conducted at an average density of 1 boring per hectare. A total of 7 borings and two soil pits were described.

8. The agricultural land on this site has been classified as Grade 2 (very good quality) and Subgrade 3a (good quality) the key limitations being soil wetness and soil droughtiness.

9. The area of very good quality land is found on the slightly higher land in the western part of the site. The underlying sandstone influences the soils which have a medium clay texture overlying sandy silt loam and in places loamy sand. Soil wetness limits the agricultural use of this land by affecting plant growth and by imposing restrictions on cultivations or grazing by livestock. In the local climate the topsoil texture of medium clay loam imposes limitations on the agricultural use and the land is classified as Grade 2 Occasionally sandstone is present above 100cm giving rise to a soil droughtiness limitation.

10. Land of good quality is mapped over the eastern part of the site. The soils commonly comprise a medium clay loam topsoil overlying a sandy clay loam upper subsoil and a slowly permeable clay subsoil. Soil wetness limits agricultural land use by affecting plant growth and by imposing restrictions on cultivations or grazing by livestock. In the local climate the depths to gleying and the slowly permeable layer and the topsoil texture place these soils in Subgrade 3a.

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 below and were obtained from the published 5km grid datasets using standard interpolation procedures (Met. Office, 1989).

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.

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	SJ 262 868
Altitude	m, AOD	40
Accumulated Temperature	day°C	1418
Average Annual Rainfall	mm	745
Field Capacity Days	days	177
Moisture Deficit, Wheat	mm	95
Moisture Deficit, Potatoes	mm	83

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 mean that there is no overall climatic limitation. Local climatic factors, such as exposure and frost risk, are not believed to significantly affect the site. The site is climatically Grade 1.

Site

16. The site lies at altitudes in the range 30 to 45 m AOD and rises gently from the northern boundary of Arrowe Road and Arrowe Brook Lane on the eastern boundary.

Geology and soils

17. The published geological information (BGS sheet 96, Liverpool), shows Keuper Waterstones underlying the site. This is overlain by drift deposits of Boulder Clay in the eastern part of the site. The soils found reflect the underlying geology with clay subsoils present in the eastern part of the site.

18. The most detailed published soils information for the site (SSEW 1984) shows the site to comprise of Bridgnorth and Clifton soils. These are described below (source: J M Ragg *et al.* (1984))

- Clifton soils are described as stagnogley soils developed in reddish fine loamy till and related glaciofluvial deposits. With drainage Clifton soils are in Wetness Class III
- Bridgnorth soils are well drained reddish sandy and coarse loamy soils developed in sandstone. These soils are usually found in Wetness Class I.

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.

Grade 2

20. Land of very good quality occurs in the western part of the site. The principal limitation in this area is soil wetness .

21. Soils in this area comprise a medium clay loam topsoil over sandy silt loam and sandy clay loam subsoils. No slowly permeable horizon was present within the profile and these soils are placed in Wetness Class I. Soils with a medium clay loam topsoil and a Field Capacity day figure of 177 cannot be graded higher than Grade 2.

22. Within the land mapped as Grade 2 occasionally in the south western corner of the site sandstone is found within the profile. Where present at 55 cms the profile is limited by soil droughtiness to Subgrade 3a. These areas are too small to be mapped separately and are included within the main grade.

S*ubgrade 3a*

23. Land of good quality has been mapped across the remainder of the site. The principal limitation is soil wetness.

24. Soils in this area commonly comprise a medium clay loam topsoil , overlying a sandy clay loam upper subsoil, overlying a gleyed and slowly permeable clay subsoil. The depths to the gleying and the slowly permeable horizon place these soils in Wetness Class II or III and Subgrade 3a.

Other land

25. Other land includes access to the land and srcubby land associated with Arrowe Brook.

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SOURCES OF REFERENCE

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