Cambs 27/89

AGRICULTURAL LAND CLASSIFICATION
LAND AT FLOODS FERRY ROAD, MARCH, CAMBRIDGESHIRE

1.0 Introduction

1.1 An Agricultural Land Classification survey was carried out over approximately 28ha (65 ac) of land at Floods Ferry Road, March, in connection with an application for an equestrian and leisure centre.

1.2 The site is located to the south of Floods Ferry Road and comprises two fields, divided by a deep ditch running east west. Both fields are bounded to the east and west by well maintained ditches, which run into the main central ditch.

1.3 A total of 26 inspections were made using a dutch auger, to a depth of 1.2m. In addition a pit was dug to assess the subsoil conditions. Furthermore a number of topsoil samples were taken for analysis to determine the organic matter content of the topsoil.

1.4 At the time of survey, the northern field was under cereals, whilst the southern area had been newly sown to sugar beet.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 Climatic information for the site has been interpolated from the 5km grid data set provided by the Meteorological Office (Met Office, 1989). The average annual rainfall for the site is 551mm making this one of the driest parts of the country. The number of days at which the site is likely to be at field capacity is also low at 94.

3.2 The accumulated temperature for this area is approximately 1453 degrees celsius and the soil moisture deficits for wheat and potatoes are 120 and 116 respectively.

3.3 There is therefore no overall climatic limitation to agricultural use on this land.

Relief

3.4 The site lies at an altitude of approximately 1m AOD and is relatively flat although there are some minor undulations (rodhams) in the larger field to the south.

Geology and Soils

3.5 The site lies just to the south of the published 1:50000 geology map (Geol. Surv. 1984) and by extrapolating from this map the geology is assumed to be marine alluvium. The area is mapped as Downholland 1 by the Soil Survey on their 1:250,000 map (Soil Surv. 1984).

3.6 The soils found during the survey equated well with those described above, with the majority of the inspections being relatively uniform. A typical soil profile had an organic clay topsoil extending to approximately 35cm depth which was generally slightly calcareous, overlying a strongly mottled calcareous silty clay subsoil. The subsoil structure was coarse angular blocky becoming very coarse prismatic with depth but was very porous throughout having many macropores the result of the former reed vegetation.

3.7 In a few instances, in hollows, more organic soils were found with a loamy peat layer beneath the organic clay topsoil. In these instances there was evidence of gypsum crystals and yellow streaks of jarosite and on measurement the pH was found to be approximately 5.

3.8 On the slightly higher land of the rodhams the textures were lighter at depth, being silty clay loam or silt loam.

3.9 The organic matter contents were analysed at six points over the site, two in the northern field and four in the southern. The values for the northern field were 9.2 and 10.4% whilst in the southern field three samples were approximately 17% and one was 22% in a peatier hollow. Consequently the northern field results were borderline between mineral and organic mineral, whilst to the south they were definitely organic.

4.0 AGRICULTURAL LAND CLASSIFICATION

4.1 The site has been classified using the guidelines contained in the Agricultural Land Classification of England and Wales (MAFF 1988) and has been graded 2. The area is also shown as grade 2 on the published ALC map sheet 135 (MAFF 1971).

4.2 Droughtiness and wetness/workability are the major limitations to this site. Over much of the site topsoil depths were 35cm or less, in which case the moisture balance figures calculated indicated a slight droughtiness and hence a grade 2 potential. In the northern field if the topsoil is considered to be non organic then the moisture balance figures would indicate the lower end of Grade 2 or even 3a in the case of shallow topsoils. However due to the organic matter levels present it is considered that the overall quality of this area is Grade 2.

4.3 With regard to wetness and workability, the presence of the abundant porosity in the subsoil means that there is, despite the gleying present, no slowly permeable horizon, and as such the land is wetness class I. However at the time of survey the subsoils were very moist and plastic which would cast doubt on such a classification and would tend to indicate a wetness class II. In addition the seedbed in the southern field consisted of hard dry clods indicating a limitation as to its workability during the wetter periods of the year. Consequently the land has been assessed as grade 2.

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Cambridge

11th May 1989

References

MAFF (1971) 1:63,360 scale ALC Map Sheet No 135 (Provisional)

MAFF (1988) Agricultural Land Classification in England and Wales. Revised guidelines and criteria for grading the quality of agricultural land.

Meteorological Office (1989) Climatological data for Agricultural Land Classification.

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