Cambs 68/89

AGRICULTURAL LAND CLASSIFICATION

LAND AT WAINFLEET ROAD, SKEGNESS, LINCOLNSHIRE

1.0 INTRODUCTION

1.1 An Agricultural Land Classification survey was carried out over approximately 45 ha of land at Wainfleet Road, Skegness on the 10th and 13th November 1989.

1.2 A total of 45 inspections were made using a dutch auger to a depth of 1.2 m. In addition a soil pit was dug to assess subsoil conditions in more detail.

1.3 The whole area is under arable cropping, namely winter wheat, with the exception of a small area of hard standing (approx 0.15 ha) at the north of the site. In addition a new access road to the neighbouring industrial estate is currently under construction at the north eastern side of the site.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 Climatic information for the site has been interpolated from the 5km grid datasets produced by the Meteorological Office (Met. Office, 1989). The average annual rainfall for the site is 620 mm which is low by national standards. The number of day at which the site is likely to be at field capacity is 124.

2.2 The accumulated temperature for this area is approximately 1416 degrees Celsius and the soil moisture deficits that are likely to occur in this site for wheat and potatoes are 115 and 110mm respectively. Consequently soil will require a moderately high available water capacity to prevent the crops suffering from drought stress.

2.3 It is unlikely that the site is particularly exposed or frost-prone and hence in overall terms, climatic factors place no limitation on the agricultural land quality of the site.

Relief

2.4 The site is relatively flat and level, with well maintained ditches along three sides of the site. In addition a further ditch exists toward the eastern side of the site running north south and then joining the perimeter ditch, half way down the eastern boundary.

2.5 The altitude of the site is approximately 4m AOD.

Geology and Soils

2.6 The site is located on the marine alluvium associated with the Wash.

2.7 The area is mapped as the Wisbech Association on the 1:250 000 scale soil map for Eastern England (Soil Survey of England & Wales 1984). The soils found in this survey correlate with the heavier textured soils contained within this mapping unit.

2.8 The site comprised two soil types with the majority of the area having soils with a brown heavy silty clay loam topsoil approximately 35-40 cm depth, which is generally slightly calcareous. Beneath the topsoil is a greyish brown heavy silty clay loam upper subsoil which has faint and occasionally distinct ochreous mottling and is calcareous. Below approximately 75-80 cm the texture becomes a silt loam or fine sandy silt loam with common ochreous mottling and is strongly calcareous. The soils are stoneless throughout.

2.9 A small area of slightly lighter textured soils occur in an east west direction across the middle of the site, possibly representing an old infilled channel. These soils have a brown, medium silty clay loam topsoil approximately 35-40 cm depth which is generally slightly calcareous. Beneath the topsoil is a brown or greyish brown silt loam subsoil which has faint ochreous mottling and is strongly calcareous. Occasionally the subsoil became fine sandy silt loam at depth. As with the larger area the soils are stoneless throughout.

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The site has been classified using the guidelines contained in the Agricultural Land Classification of England and Wales (MAFF 1988). A breakdown of the grades found is given below:

Grade	Area	%
1	6.9	15.3
2	38.1	84.7
Total	45.0	100

Grade 1

3.2 The lighter textured soils described above have been classified as Grade 1. Due to the silty nature of these soils, they have a high available water capacity and hence will not be susceptible to drought. Although these soils display ochreous mottling, this is considered to be relict and not representing current drainage conditions. The subsoils contain many coarse pores and with the good system of arterial drainage in the area will prevent water ponding in the soils and hence the soils have been assessed as Wetness Class I. The medium silty clay loam topsoils mean that the workability of the soils is good, which was evident at the time of survey with the winter wheat emerging from a fine seedbed. The only

minor limitation associated with such soils is surface slaking, but this is not sufficient to warrant any downgrading.

Grade 2

3.3 The majority of the site has been included within this grade. This area represents the heavier textured soils described above, which are slightly less versatile than the grade 1 area. Despite the higher clay content, the subsoils were still found to contain a large number of macropores and as such are not slowly permeable and are therefore Wetness Class I. However the heavier textured topsoil means that during the wetter parts of the year, they will have slight workability limitations and if worked whilst too wet compaction could result. This limitation was evident during the survey in that the winter wheat was emerging through a cloddy seed bed and the seeding establishment was not as good as on the grade 1 area. In addition the soil pit revealed a slightly compacted layer in the lower topsoil between 28 and 40 cm depth.

3.4 Due to the higher clay content in the upper subsoil, these soils will suffer slightly from droughtiness in this low rainfall area. Calculations of the moisture balance indicated that the soils may be slightly droughty for potatoes although the deeper rooting cereals are unlikely to suffer such stress.

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References

MAFF (1988) Agricultural Land Classification of England and Wales.

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

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