

**AGRICULTURAL LAND CLASSIFICATION****LAND AT DRUMMOND ROAD, SKEGNESS**

## 1.0 Introduction

1.1 An agricultural land classification survey was carried out over 53.7 ha (132.7 acres) of land at Drummond Road, Skegness, in connection with a planning application for residential development.

1.2 The site lies to the southwest of Skegness, bounded on the east by residential development and to the north by a caravan park. The southern and western boundaries abut open farmland.

1.3 A total of 54 auger borings were made over the site to a depth of 1.2m and these were augmented by 3 profile pits. The information gained has been used to assess the physical characteristics of the soils and the land has been graded using the criteria contained within the revised guidelines of the Agricultural Land Classification System (MAFF 1988).

1.4 At the time of survey the site had been ploughed.

## 2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 Climatic information for the site has been interpolated from the 5km grid dataset provided by the Meteorological Office (Met Office 1988). The average annual rainfall has been calculated as 613 mm and the calculated crop-adjusted moisture deficits are 115 mm and 110 mm for wheat and potatoes respectively. The number of field capacity days for this site is 121. Although the site may be susceptible to cold easterly winds from the north sea, the growing season in the area is long at 251 days (MAFF 1984). Climate is therefore not considered to be a limiting factor.

Relief

2.2 The site lies at approximately 3m AOD and is relatively flat. There are a number of ditches on the site, with two deep, well maintained ditches running generally east west, effectively dividing the site into three distinct areas. The remaining ditches appeared to be less well maintained.

Geology and Soils

2.3 The soils are developed on the marine alluvium which is widespread around the Wash and Lincolnshire coast. The southern end of the site shows evidence of blown sand within the soils from the neighbouring sand dunes (SSEW, 1984).

- 2.4 Four distinct soil types were found during the survey.
- 2.5 At the northern end of the site clayey soils were encountered which had a silty clay topsoil overlying a distinctly mottled, grey, silty clay subsoil, which at depth became silty clay loam. The soils were stoneless throughout and the topsoils were generally non calcareous or very slightly calcareous.
- 2.6 The middle section of the site was largely composed of fine silty soils, having a heavy silty clay loam topsoil overlying a distinctly mottled heavy silty clay loam subsoil. The soils were stoneless throughout and the topsoils were generally slightly calcareous. Below approximately 70cm depth the texture became a medium silty clay loam and the mottling was generally less distinct.
- 2.7 At the southern end of the site was a small area of sandy soils. These soils had a loamy sand topsoil overlying a brown medium sand upper subsoil often containing shell fragments. Beneath this was a band of clay loam overlying medium and coarse sand to depth. The lower sand was waterlogged at depth and a nearby pit revealed the water to be slightly saline.
- 2.8 The fourth soil type was composed of predominantly fine loamy soils, with coarse loamy, fine silty and sandy horizons at depth. These soils formed an intergrade between the sandy soils at the southern end and the fine silty soils in the middle of the site. The soils generally had a sandy clay loam or heavy clay loam topsoil overlying a sandy clay loam, clay loam or silty clay loam subsoil, with occasional bands of coarse sand. The subsoil became more strongly mottled at depth and a pit revealed slightly saline groundwater at 80cm depth. In general the soils at the southern or eastern edges of this area were more sandy.

### 3.0 AGRICULTURAL LAND CLASSIFICATION

- 3.1 The site has been graded using the revised guidelines of the ALC system (MAFF 1988) as 2 and 3a. A breakdown of the grades in hectares and % terms is given below.

| ALC grade | Hectares    | %          |
|-----------|-------------|------------|
| 2         | 38.8        | 72.3       |
| 3a        | 14.9        | 27.7       |
|           | <u>53.7</u> | <u>100</u> |

#### Grade 2

- 3.2 Both the fine silty soils and the intergrade soils referred to above have been mapped as grade 2. In neither case was there evidence of a slowly permeable horizon within 80cm depth. The soils showed signs of gleying within the subsoil and this varied in depth with some profiles showing gleying above 40cm whilst in others it was below. Consequently the soils varied between wetness classes I and II. Within the fine silty soils, the topsoil was invariably calcareous whilst in the intergrade soils, it was variable, however many of the intergrade soils had a sandy clay loam texture. These soils have therefore been classified as grade 2 with respect to their wetness and workability. In addition the droughtiness characteristics of the soils have been assessed and in the case of the fine silty soils, they have high available water values and consequently their moisture

balance is sufficient to qualify for grade 1. On the intergrade soils the available water figures are lower and hence the moisture balance figures indicate a grade 2 potential. Both soils are therefore very versatile and capable of growing a wide range of arable crops, although limitations may occur on the heavier soils during the wetter periods thus restricting the timing of field work. In addition on the lighter soils slight droughtiness may occur in the drier periods.

### Grade 3a

- 3.3 Two areas of 3a have been mapped, one at the north and the other at the southern end. In the case of the latter, the limiting factor was droughtiness. Moisture balance figures calculated for these soils revealed that the maximum grade achievable was 3a.
- 3.4 At the northern end of the site the clayey soils have been assigned to subgrade 3a. Those soils, despite their heavy texture, do not have a slowly permeable horizon within 80cm depth, as the structure was moderately developed very coarse subangular blocky. However the soils do display gleying within a depth of 40cm and are therefore assigned to wetness class II. The silty clay topsoils were generally non calcareous or very slightly calcareous and thus the soils are classified as 3a. At the time of survey, it was evident that these topsoils were less friable than the fine silty soils to the south. Consequently the major limitation associated with this area is that it is less easily worked and hence the choice of crops and the timing and type of cultivations is more restricted .

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## References

Meteorological Office (1988). Unpublished meteorological data.

MAFF (1984) Reference Book 435. The Agricultural Climate of England and Wales.

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

Soil Survey of England and Wales (1994) Soils and their use in Eastern England. Bulletin 13.