45/90

AGRICULTURAL LAND CLASSIFICATION

SOUTH EAST BOURNE

1.0 INTRODUCTION

Land on this 25 hectare site was inspected on the 10 and 11 October 1990. A total of 29 soil inspections were made at 100 metre intervals across the site, supplemented by information from three soil profile pits. At the time of survey the land was in arable use, with a small area of "set aside" in the north west corner of the site.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

2.1 Relief

From a maximum altitude of 7m AOD adjacent the A15 road the site slopes very gently eastwards to a minimum altitude of approximately 4 metres at the edge of the fen. Neither altitude nor relief are limiting factors to agricultural land quality.

2.2 Climate

Site specific climatalogical data has been interpolated from data contained in the 5 km grid agroclimatic dataset produced by the Meteorological Office (Met Office, 1989). This shows average annual rainfall to be 587 mm (23.5 inches) which is low by national standards. Field capacity days at 113 are also fairly low.

2.3 The accumulated temperature for this area is reported to be 1443°C. This parameter measures the cumulative build up of warmth available for crop growth and also influences the development of soil moisture deficits. Soil moisture deficits of 119 mm and 114 mm are recorded for wheat and potatoes respectively.

2.4 Geology & Soils

The geology of this area is mapped on the 1:63,360 scale solid and drift edition geology map sheet number 143. This shows the entire to site to comprise of Fen Gravels (Inst Geol Sci, 1967). Mineral Assessment Report No 130 indicates these gravels are comprised of first terrace river gravels and the Crowland Beds, with a smaller area of undifferentiated glacial drift to the west of the site. (Inst Geol Sci, 1983).

2.5 Detailed field survey observations support this description and indicate that the surface of the gravel is variable in composition, ranging from flinty red clay to limestone gravel which may be underlain on higher ground by loamy fine sand.

Soils identified on site fall into four main types:

2.5 On the raised ground flanking the A15 road profiles are relatively well drained (wetness class II, less frequently I) and comprise medium, occasionally heavy clay loam textures to 60/70 cm depth overlying

flinty clay, which may in turn overlie loamy find sand at depth.

2.7 Around the southern and western edges of the above area, soils shallow slightly and overlie fine flinty limestone gravel below 40/50 cm depth. Soil profile pit investigations in the area revealed that this gravel deposit may be thin and overlie deposits of fine sandy loam and loamy fine sand at depth.

2.8 Over the remaining lowlying parts and the site slightly heavier less well drained soils occur: In general terms profiles typically comprise of heavy clay loam or clay textures overlying clay at 50-70 cm depth. Soil drainage is assessed mainly as wetness class III with smaller areas of wetness class II soils occuring east of the Car Dyke.

2.9 A narrow ribbon of stony soils was noted immediately east of the Car Dyke. The stones mainly comprise of medium and large limestone flags and are thought to result from earlier dyke clearance exercises.

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The site is mainly graded 3b with smaller areas of 2 and 3a. A breakdown of ALC grades in hectares and percentage terms is provided below.

ALC	Ha	%
2	4.5	18.5
3a	6.4	26.3
3b	13.4	55.2
Total	24.3	100.0

Grade 2

3.2 This is located over the majority of the slightly raised land flanking the A15 road. Soils in this area are only very slightly stony and typically comprise deep well drained profiles of medium clay loam overlying clay at depth and are more fully described in paragraph 2.6. The land is limited by minor summer droughtiness and winter wetness imperfections.

Grade 3a

This occurs in two main situations:

3.3 To the west of the Car Dyke, 3a is mapped in areas of moderately deep clay loam soils overlying gravel (see paragraph 2.7) This land is limited by summer droughtiness constraints.

3.4 To the east of the Car Dyke a relatively narrow band of 3a land occurs representing a slightly better drained variant of the generally heavier soils present in this lower lying area. Profiles mainly comprise of heavy clay loam over clay are typically assessed as wetness class II

See paragraph 2.8). This land is limited by water wetness and workability constraints.

Grade 3b

This occurs in two main situations:

3.1 Firstly in a narrow strip immediately flanking the Car Dyke where earlier ditch clearance operations have given rise to a surface stoniness constraint.

3.6 Secondly over the remaining lowlying parts of the site where slightly heavier soils predominate (see paragraph 2.8). Wetness class is mainly assessed as III, and soils are limited by moderate winter wetness and workability constraints. It should be noted however that some evidence of improvement in drainage status was noted in random areas to the extreme east of the site, suggesting that land quality MAY improve to the east of this site boundary.

October 1990.

KATHERINE A JEWSON
Resource Planning Group
Cambridge RO