

AGRICULTURAL LAND CLASSIFICATION

LAND ADJACENT TO THE A16, LOUTH, LINCOLNSHIRE

1.0 INTRODUCTION

1.1 This 21.8 hectare site is the subject of proposals for industrial development. In October 1993, ADAS Resource Planning Team undertook an Agricultural Land Classification (ALC) survey of the site, carrying out a total of 21 auger borings using a hand held Dutch soil auger. In addition, two soil inspection pits were dug to assess subsoil conditions.

1.2 At the time of the survey all the land was under arable cultivation.

1.3 On the published ALC map, sheet 105 (MAFF 1972) the whole area is shown as grade 3.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 Climate data was obtained by interpolating information contained in the published agricultural climatic dataset (Met Office; 1989). This indicates that for an average site altitude of 45m AOD, the average annual rainfall is 702mm. This data also indicates that the field capacity days are 158 and moisture deficits for wheat and potatoes are 99mm and 89mm respectively. These climatic characteristics do not impose any climatic limitation on the site.

Altitude and Relief

2.2 Altitude ranges from 36m AOD in the east to 54m AOD in the west. From the eastern side, bounded by the A16 and an industrial area, the site rises gently westwards with a regular slope of 3-5°. The land beyond the site to the west continues to rise to a ridge some 300m away.

Geology and Soils

- 2.3 The published 1:50,000 scale drift edition geology map, sheet 103, Louth (Geological Survey of Great Britain, 1980) shows the whole site to be covered by Recent and Pleistocene boulder clay underlain by Cretaceous Chalk.
- 2.4 No detailed soil map of the area exists but the reconnaissance 1:250,000 scale soil map "Soils of Eastern England" published by the Soil Survey of England and Wales in 1983, shows the presence of one soil association only. The whole site is mapped as Holderness Association (*1).
- 2.5 During the detailed ADAS field survey 2 main soil types were identified.
- 2.6 Over the majority of the site profiles typically comprise medium clay loam topsoils over clay subsoils. Profiles are commonly calcareous throughout, slightly stony, and are slowly permeable from a depth of 29-35 cm, i.e. immediately below the topsoil.
- 2.7 The second main soil type occurs sporadically and much less frequently throughout the site. Profiles are typically slightly stony and are commonly calcareous throughout, comprising medium clay loam topsoils overlying heavy or medium clay loam upper subsoils to depths ranging from 35 to 95cm. Lower subsoils comprise clay or heavy clay loam. A slowly permeable layer is typically encountered at a depth of 60-80cm.

3.0 AGRICULTURAL LAND CLASSIFICATION

- 3.1 The definitions of the Agricultural Land Classification (ALC) grades are included in Appendix 1.
- 3.2 The whole site, comprising 21.8 hectares, is graded 3b.
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(*1) Holderness Association: Slowly permeable seasonally waterlogged fine loamy soils and similar soils with only slight waterlogging. Narrow strips of clayey alluvial soils.

3.3 Subgrade 3b

It is the predominance of the soils described in paragraph 2.6 which results in the land being graded as 3b. Profiles are poorly drained (wetness class IV), and this combined with the moderately heavy topsoil textures excludes the land from a *higher grade on wetness and workability grounds*. The soils described in paragraph 2.7 occur only sporadically throughout the site and do not form a discreet soil unit that could be mapped and graded separately.

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REFERENCES

GEOLOGICAL SURVEY OF GREAT BRITAIN (ENGLAND AND WALES) 1980.
Drift Edition, sheet 103, Louth, 1:50,000.

MAFF 1972. Agricultural Land Classification Map, Sheet 105, Provisional, 1:63,360.

MAFF 1988. Agricultural Land Classification of England and Wales (Revised Guidelines and Criteria for Grading the Quality of Agricultural Land) Alnwick.

METEOROLOGICAL OFFICE 1989. Published climatic data extracted from the agroclimatic dataset compiled by the Meteorological Office.

SOIL SURVEY OF ENGLAND AND WALES, 1983. Sheet 4, Soils of Eastern England, 1:250,000 scale.

SOIL SURVEY OF ENGLAND AND WALES, 1984. Soils and their use in Eastern England by C.A.H. Hodge, R.G.O. Burton, W.M. Corbett, R. Evans and R.S. Seale, Harpenden.

APPENDIX 1

Grade 1 - excellent quality agricultural land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly include top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2 - very good quality agricultural land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable crops. The level of yields is generally high but may be lower or more variable than Grade 1.

Grade 3 - good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a - good quality agricultural land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b - moderate quality agricultural land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of winter range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4 - poor quality agricultural land

Land with severe limitations which significantly restrict the range of crops and/or levels of yields. It is mainly suited to grass with occasional arable crops (eg. cereals and forage crops) the yield of which are variable. In most climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5 - very poor quality agricultural land

Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.