

AGRICULTURAL LAND CLASSIFICATION

SEMI-DETAILED SURVEY

MATTISHALL ROAD

EAST DEREHAM

NORFOLK

AGRICULTURAL LAND CLASSIFICATION

SEMI-DETAILED SURVEY

MATTISHALL ROAD, EAST DEREHAM, NORFOLK

1. BACKGROUND

- 1.1 The site, an area of 41.1 hectares is the subject of an application for the development of a golf course near East Dereham, Norfolk. In May 1992 the ADAS Resource Planning Team surveyed the site at a semi-detailed level to assess the agricultural land quality. Grade boundaries may be subject to revision if a detailed resurvey was carried out.

2. PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

- 2.1 Climate data for the site was obtained from the published agricultural climatic dataset (Met Office, 1989). This indicates that for the survey area the annual average rainfall is 644 mm (25.4"). Field capacity days are 129 and moisture deficits are 113 mm for wheat and 106 for potatoes. These climatic characteristics do not impose any climatic limitation on the Agricultural Land Classification (ALC) of the site.

Altitude and Relief

- 2.2 The land surveyed lies between an altitude of 45 and 55m AOD. Most of the site falls gently towards the east, and a shallow valley feature occurs in the centre of the site south west of Moorfield House. Neither gradient nor altitude constitute limitations to the ALC grade.

Geology and Soils

- 2.3 The published 1:50,000 scale drift edition geology sheet of Norwich (Sheet 161, Geological Survey of Great Britain 1975) shows that the

majority of the site is covered by boulder clay deposits. A small area of first terrace river gravels occurs within the shallow valley feature at the southern edge of the site.

2.4 The Soil Survey of England and Wales have mapped the soils on two occasions. On the 1:100,000 scale Soils of Norfolk Survey (1973) the site is divided relatively equally between stagnogleyic argillic brown earths to the west and typically stagnogley soils to the east. These soil classifications correspond with the Soils of Eastern England, reconnaissance 1:250,000 scale soil map (Sheet 4, 1983), which shows Burlingham 1 Association (*1) to the west and Beccles 1 Association (*2) to the east. During the current survey a more detailed soil inspection confirmed the presence of two main soil types.

2.4.1 Over the majority of the site the topsoils consist mainly of sandy clay loam or medium clay loams, with occasional medium sandy loams. Most are slightly stony (flints) with total stone content ranging from 6-10% by volume. Subsoil textures typically comprise well bodied sandy clay loams or occasionally (sandy) heavy clay loams which generally continue to depths of 50/70 cm. These horizons are also slightly stony (6-10% flints), non calcareous and show no signs of drainage impedence. Moderately stony clay occurs at the base of some profiles at a depth below 100 cm.

2.4.2 The remainder of the site (south of Moorfield House and eastwards) consists of heavier textured, slightly stony topsoils, commonly heavy (or occasionally medium) clay loams. Upper subsoils are typically non calcareous*, slightly or very slightly stony heavy clay loam or clays. At depth subsoils become increasingly calcareous as the abundance of chalk fragments increases. Mottling is distinct within the upper subsoils and pale or gley colours become increasingly abundant within the chalky clay.

(*1) Burlingham 1 Association: Deep coarse and fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging. Some deep well drained coarse loamy and sandy soils.

(*2) Beccles 1 Association: Slowly permeable seasonally waterlogged fine loamy over clayey soils, associated with similar clayey soils.

* Occasionally profiles are calcareous throughout.

3. AGRICULTURAL LAND CLASSIFICATION

3.1 The definition of the ALC grades are included in Appendix 1.

3.2 The area comprises mainly grade 2 land, with a smaller area of 3a along the south eastern edge. The table below shows the breakdown of ALC grades in hectares and % terms for the survey area.

AGRICULTURAL LAND CLASSIFICATION

Grade	ha	%
2	28.3	69.0
3a	11.7	28.4
Non Agricultural/Urban	<u>1.1</u>	<u>2.6</u>
TOTAL	41.1	100.0

3.3 Grade 2

Grade 2 land occurs over a large proportion of the site and is associated with the soil type described in para 2.4.1. Profile pit observations indicate that the soils are well drained and have a wetness class of I or occasionally II. The soil profiles hold moderately good reserves of available water for crop growth, consequently slight droughtiness limitations precludes the land from grade 1.

3.4 Subgrade 3a

This land is associated with the soils described in para 2.4.2. Profile pit observations indicate that the lower subsoil is slowly permeable, as a result the wetness class has been assessed as II, or occasionally III. The fine textures combine with profile wetness to limit the agricultural potential of these areas, consequently the land is limited to subgrade 3a.

3.5 Non Agricultural/Urban

Several small ponds, and Moorfield House have been mapped as Non Agricultural and Urban respectively.

May 1992

S ESCOTT & A DERBYSHIRE
Resource Planning Team
ADAS Statutory Unit
Cambridge

References

GEOLOGICAL SURVEY OF GREAT BRITAIN, 1975. Drift edition sheet 161, Norwich
1:50,000 scale.

MAFF, 1988. Agricultural Land Classification of England and Wales (Revised
Guidelines and Criteria for grading the quality of Agricultural Land)
Alnwick.

METEOROLOGICAL OFFICE, 1989. Climate data extracted from the published
agricultural climatic dataset.

SOIL SURVEY OF ENGLAND AND WALES, 1973. Soils of Norfolk 1:100,000 scale.

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

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 level of yields. It is mainly suited to grass with occasional arable crops (eg cereal and forage crops) the yields of which are variable. In moist 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.

MATTISHALL ROAD

EAST DEREHAM

NORFOLK

Map 1: Agricultural Land Classification