AGRICULTURAL LAND CLASSIFICATION

LAND AT MUSHROOM FARM

SPIXWORTH NORFOLK

BROADLAND LOCAL PLAN

(INNER AREA)

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LAND AT MUSHROOM FARM, SPIXWORTH, NORFOLK

1. BACKGROUND

1.1 The site, an area of 22.3 hectares is part of the Broadland Local Plan (Inner Area). In October 1992, ADAS Resource Planning Team undertook a detailed Agricultural Land Classification (ALC) survey of the site at an auger boring density of approximately one boring per hectare. These borings were supplemented by two soil inspection pits to provide more detailed information on subsoil conditions. Furthermore riddling was carried out to assess topsoil stone contents.

1.2 On the published ALC Map, sheet 126 (Provisional scale 1:63,360 (MAFF 1972)) the whole site is mapped as Grade 3. This map is of a reconnaissance nature designed primarily for strategic planning.

1.3 A semi-detailed survey was carried out by this office in 1983 and revealed that the site is likely to comprise ALC subgrades 3a and 3b. The current survey was carried out to provide more detailed information on land quality for the site.

2. PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 Climate data was obtained from the published agricultural climatic dataset (Met Office, 1989). This indicates that for the survey area's average altitude of 20m AOD, the annual average rainfall is 645mm (25.4"). It also indicates that field capacity days are 125 and the moisture deficits for wheat and potatoes are 117mm and 112mm respectively. These climatic characteristics do not impose any climatic limitation on the ALC grade of the site.

Altitude and Relief

2.2 The site is gently undulating with a shallow valley feature running north/south just west of the centre of the site. The land surveyed rises in altitude from 15m to 25m AOD. Neither gradient nor altitude constitute limitations to the ALC grade.

Geology and Soils

2.3 The published 1:233,440 scale drift edition geology map (sheet 12, Geological Survey of Great Britain, 1971) shows that the majority of the site is covered by Pleistocene Pebbly Series deposits. At the eastern end of the site a small area of Pleistocene Glacial Drift outcrops, this includes Norwich Brickearth and contorted drift.

2.4 The Soil Survey of England and Wales have mapped the soils on two occasions. Firstly in 1973 at a scale of 1:100,000 (Soils of Norfolk) and more recently in 1983 at a reconnaissance scale of 1:250,000. These two maps broadly agree and the more recent indicates the presence of the Wick 2 Association (*1). During the survey work two soil types were identified.

2.4.1 The first soil type typically consists of well drained, medium sandy loam topsoils and upper subsoils to a depth of 55/70cm+, with the lower subsoil consisting of loamy medium sand. The upper horizons are very slightly to slightly stony (flints) whilst the lower subsoils usually contain negligible stones, or occasionally slightly to moderate stone content.

2.4.2 Along the northern boundary of the site a lighter textured, more droughty soil was identified. Again the topsoils typically consist of medium sandy loams to a depth of 35 cm. There are generally slightly stony although, in patches, especially associated with breaks of slope, the stone content was slightly higher. The subsoils consist entirely of loamy medium sand with very slightly to slightly stony upper horizons (35-50cms) and negligible stone content below this.

3. AGRICULTURAL LAND CLASSIFICATION

3.1 The definition of the ALC grades (MAFF, 1988) are included in Appendix 1.

(*1) Wick 2 Association - deep well drained coarse loamy soils, often stoneless. Some similar soils with slowly permeable subsoils and slight seasonal waterlogging.

3.2 The survey area comprises mainly subgrade 3a land with a smaller area of subgrade 3b along the northern edge of the site. The table below shows the breakdown of ALC grades in hectares and % terms for the survey area.

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	ha	%
Subgrade 3a	13.8	62
Subgrade 3b	8.5	38
TOTALS	22.3	100

Subgrade 3a

3.3 Approximately two thirds of the site has been mapped as subgrade 3a and is associated with the better bodied soils which are described in paragraph 2.4.1. Profile pit observations indicate that the soils are well drained (ie. Wetness Class I). The coarse loamy soil textures, relatively dry climate and profile stone content influence the soil available water for crop growth. Consequently these profiles hold moderate reserves of water, thus the land is limited by moderate droughtiness restrictions to subgrade 3a (good quality agricultural land).

Subgrade 3b

3.4 The 3b land (at the northern edge of the site) is associated with the sandier soils described in paragraph 2.4.2. Because the textures are sandier the soil available water for crop growth is less than the better bodied soils graded 3a. Consequently this land has been graded 3b.

November 1992

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REFERENCES

GEOLOGICAL SURVEY OF GREAT BRITAIN (ENGLAND & WALES) 1971. Sheet 12 Drift Edition 1:233,440.

MAFF 1972. Agricultural Land Classification Map (Provisional) Sheet 126 1:63,360 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. Data extracted from the published agroclimatic dataset.

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

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

SOIL SURVEY OF ENGLAND & WALES 1984. Soils and their use in Eastern England by C.A. 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.

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MAP 1: AGRICULTURAL LAND CLASSIFICATION