

AGRICULTURAL LAND CLASSIFICATION

BROADLAND LOCAL PLAN COMPRISING LAND AT ACLE AND LINGWOOD, NORFOLK

1. BACKGROUND

1.1 This survey comprises 3 sites, 1 at Lingwood and 2 at Acle (1 north and 1 south of Mill Lane). These sites cover an area of 27.8 hectares in total and are part of the Broadland's District Council Local Plan. This survey was undertaken by MAFF in December 1991 (at an auger boring density of 1 boring per hectare) in order to assess the agricultural land quality. Soil inspection pits were also dug in order to assess subsoil conditions.

1.2 On the published Agricultural Land Classification Map sheet 126 (provisional, scale 1:63,360 (MAFF, 1972)) the three sites are shown as grade 1. The current survey was undertaken to provide a more detailed Agricultural Land Classification of these sites.

2. PHYSICAL FACTORS AFFECTING LAND QUALITY

2.1 Climate

The climate data for the two locations was obtained from the published agricultural climatic dataset (Met. Office, 1989). These results are outlined in the table below.

	<u>Land at</u> <u>Acle</u>	<u>Land at</u> <u>Lingwood</u>
AAR (mm)	593	620
MD wheat (mm)	122	119
MD Potatoes (mm)	119	115
Field capacity days	114	118

AAR = Annual Average Rainfall

MD = Moisture deficit

These climatic characteristics do not impose any climatic limitation on the ALC grading of the survey sites although the dry climate requires the soils to have high moisture holding capacities for crops to avoid a risk of drought stress.

Altitude and Relief

- 2.2 The northern site at Acle and the Lingwood site are on gently sloping land with modal altitudes of 10m AOD and 20m AOD respectively. The southern Acle site slopes to the west and south from a plateau area and includes a small dry valley feature on the southern boundary. This southern Acle site has a modal altitude of 10m AOD.
- 2.3 Gradient and altitude do not constitute limitations to the ALC grade.

Geology and Soils

- 2.4 The published $\frac{1}{4}$ " to 1 mile scale drift edition geology map, sheet 12 (1953) shows the sites at Acle to entirely comprise glacial drift in the form of medium textured glacial loam. The Lingwood site is shown as glacial drift mainly in the form of boulder clay but with some loam along the southern boundary.
- 2.5 The Soil Survey of England and Wales have mapped the soils at the three sites on two previous occasions. Firstly, in 1973, at a scale of 1:100,000 and secondly, in 1983, at a reconnaissance scale of 1:250,000. These two maps broadly agree and the latter map shows the sites to comprise Wick 2 Association (*1). In addition the Acle sites were mapped, in more detail, in 1977, at a scale of 1:25,000. This

(*1) WICK 2 ASSOCIATION. Deep well drained coarse loamy soils, often stoneless. Some similar soils with slowly permeable subsoils and slight seasonal waterlogging.

map broadly confirms the smaller scale maps. The soils observed during the current large scale MAFF survey were generally consistent with the published maps. Two soil types were identified at all 3 sites.

2.5.1 The first soil type covers the majority of the 2 Acle sites and the northern half of the Lingwood site. Profiles typically comprise very slightly stony, sandy loam topsoils which overlie similar upper subsoils. Profiles may become loamy medium sand or clay loams at depth. These profiles are freely draining and have been assessed as wetness class I.

2.5.2 The second soil type comprises heavier textured subsoils than those described in section 2.5.1. These soils cover the southern half of the Lingwood site and the eastern edge of the southern Acle site. Profiles typically comprise very slightly stony medium sandy loam or occasionally sandy clay loam topsoils. These overlie fine loamy or occasionally clayey subsoils which may include lighter textured horizons at depth. These profiles are typically freely draining and have therefore been assessed as Wetness Class I.

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The definitions of the Agricultural Land Classification grades are included in Appendix 1.

3.2 The three sites have been graded 2. The table below shows the site areas for these sites.

Agricultural Land Classification

<u>Site</u>	<u>Grade</u>	<u>ha</u>
Acle (Northern)	2	9.9
Acle (Southern)	2	7.7
	Farm Bldgs	0.2
Lingwood	2	10.0

Grade 2

The agricultural land on all three sites has been graded 2 and is associated with the soils described in section 2.5.1 and 2.5.2. At each location the soils are well drained but as a result of the dry climate combining with the relatively light soil textures the land suffers from a slight droughtiness risk. Droughtiness prevents the land from being a higher grade and is therefore the overriding limitation on all 3 sites.

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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 includes 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 root crops. The level of yield 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 will affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. When more demanding crops and 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 a wider 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 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.

References

GEOLOGICAL SURVEY OF ENGLAND AND WALES (1953). Solid and Drift geology, sheet no 12, $\frac{1}{4}$ inch to 1 mile scale.

MAFF (1972). Agricultural Land Classification sheet 126. (Provisional) 1:63,360 scale .

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

METEOROLOGICAL OFFICE (1989). Climate data extracted from the Agricultural Climatic Dataset.

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

SOIL SURVEY OF ENGLAND AND WALES (1977). Soil Survey Record No 41, Sheet TG31 1:25,000 scale.