

Broadland District Local Plan (Inner Area)
Norfolk
AGRICULTURAL LAND CLASSIFICATION

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BROADLAND DISTRICT LOCAL PLAN (INNER AREA)

1. BACKGROUND

1.1 Broadland District Council have requested Agricultural Land Classification information for three small sites to the north of Norwich (in total 28.5 hectares). Two sites lie adjacent to the A1151 road near Sprowston and the third site lies adjacent to the hospital at Hellesdon. ADAS surveyed the sites in July 1992 to assess the agricultural land quality. Auger boring samples were taken at 100m intervals and the information supplemented by three soil pits.

1.2 On the published Agricultural Land Classification map sheet 126 (Provisional, scale 1:63360, MAFF 1972) the Sprowston areas are shown as grade 3 with a narrow band of urban adjacent to the A1151 road. The Hellesdon area is shown as land primarily in non agricultural use because of its vicinity to the hospital. Since this map is of a reconnaissance nature designed primarily for strategic planning purposes, the current survey was undertaken to provide more detailed information on land quality for the survey area.

1.3 The site lying west of the A1151 road was graded in detail in 1982 and the current work confirms the ALC grading using the MAFF's revised ALC system which was introduced in 1988.

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 the annual average rainfall is 626 mm (24.6"). This data also indicates that field capacity days are 121 and moisture deficits are 119 mm for wheat and 114 mm for potatoes. The climatic characteristics do not impose a limitation on ALC grade.

Altitude and Relief

- 2.2 The land slopes gently on all three sites and overall the altitude ranges from 10 to 25m AOD, with the lower lying land occurring at Hellesdon. Neither gradient nor altitude constitute limitations to the ALC grade.

Geology and soils

- 2.3 The published 1:50,000 solid and drift edition geology map 161 (Geological Survey 1975) shows the Sprowston sites to comprise a mix of Norwich Brickearth and sand and gravel deposits, and the Hellesdon site to consist of sand and gravel deposits.
- 2.4 The Soil Survey of England and Wales have mapped the soils in the Sprowston area at a small scale of 1:100,000 in 1973. The map shows the occurrence of coarse loamy over sandy or loamy soils which have developed from cover loam over glaciofluvial drift.
- 2.5 The Hellesdon site is shown in more detail on the 1:25,000 scale soils in Norfolk V (Attlebridge) map (Sheet TG11, Soil Survey 1980). This area comprises lighter textured soils of the Freckenham and Attlebridge series. The current detailed survey identified three main soil types.

Hellesdon

- 2.6 The soils are significantly droughty and typically comprise light medium sandy loam topsoils over loamy medium sand subsoils which may overlie sand at depth. Adjacent to the eastern edge droughtier profiles comprising stony loamy medium sands to depth predominate.

Sprowston - east of A1151 road

- 2.7 The whole area comprises better bodied, slightly droughty soils derived from the brickearth deposits. Profiles typically comprise medium sandy loam or sandy silt loams which become slightly stony in the subsoil.

Sprowston - west of A1151 road

2.8 In the upper horizons profiles are similar in texture to those in the east. At depth the soils become lighter in texture, variably loamy medium sand, and throughout are only non or very slightly stony. A small area of lighter textured soils (as described in para 2.6) have been mapped adjacent to the road.

3. AGRICULTURAL LAND CLASSIFICATION

3.1 Together over the three sites the majority of the survey area comprises grade 2 land with smaller areas of grades 3a, 3b and 4. The Hellesdon site contains the poorest land comprising predominately ALC grade 3b with a smaller area of 4 adjacent to the hospital. A precise breakdown of ALC grades in hectares and % terms is provided below for the three sites.

AGRICULTURAL LAND CLASSIFICATION

SPROWSTON - EAST OF A1151 ROAD

Grade	ha	%
2	12.6	95
Agricultural Buildings	<u>0.6</u>	<u>5</u>
TOTAL	<u>13.2</u>	<u>100</u>

SPROWSTON - WEST OF A1151 ROAD

Grade	ha	%
2	1.9	38
3a	2.5	50
3b	<u>0.6</u>	<u>12</u>
TOTAL	<u>5.0</u>	<u>100</u>

HELLESDON

Grade	ha	%
3b	7.7	75
4	1.2	12
Non Agricultural	1.2	11
Urban	<u>0.2</u>	<u>2</u>
TOTAL	<u>10.3</u>	<u>100</u>

TOTAL SURVEY AREA

Grade	ha	%
2	14.5	51
3a	2.5	9
3b	8.3	29
4	1.2	4
Non Agricultural/ Urban/Agricultural Buildings	<u>2.0</u>	<u>7</u>
TOTAL	<u>28.5</u>	<u>100</u>

3.2 The definitions of the ALC grades are included in Appendix 1.

Sprowston - east of A1151 road

3.3 The whole area has been graded 2 and lies in association with the soils described in para 2.7. Slightly coarse loamy textures and the presence of a small number of flints in the subsoil causes a slight reduction in the moisture reserves available for crop growth. Consequently the land is slightly droughty and restricted to grade 2 (very good quality agricultural land).

Sprowston - west of A1151 road

3.4 This site comprises a mosaic of three grades 2, 3a and 3b, with the majority of land comprising the better quality land. The soils present are described in para 2.8.

3.5 The presence of loamy sand textures in the lower subsoils has a limiting affect on the available water for crop growth. Where the land has been graded 2 the loamy sand is encountered at a deeper depth than the land graded 3a. Consequently the grade 2 land is slightly droughty and the grade 3a land moderately droughty.

3.6 A smaller area of land graded 3b outcrops adjacent to the road, the soils are sandy and hence hold relatively low quantities of water for crop growth. Significant profile droughtiness constitutes the chief limitation to the ALC grade.

Hellesdon

The majority of this site comprises 3b land with a smaller area of 4 adjacent to the hospital. The soils have been described in para 2.6.

- 3.7 Coarse textured soils predominate, these soils hold small reserves of available water for crop growth. Significant droughtiness imperfections restrict this land to subgrade 3b (moderate quality agricultural land).
- 3.8 Adjacent to the hospital sandier and stonier soils outcrop. The presence of sandy textures and a significant number of profile stones imposes a severe droughtiness limitation on the agricultural potential of the land. Consequently the land is restricted to ALC grade 4 (poor quality agricultural land).

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REFERENCES

GEOLOGICAL SURVEY OF GREAT BRITAIN 1975, Solid and drift edition geology sheet 161 (Norwich) 1:50,000 scale.

MAFF, 1972. Agricultural Land Classification Map 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, Alnwick).

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

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

SOIL SURVEY OF ENGLAND AND WALES 1980. Soils in Norfolk V. Sheet TG11 Soil Survey Record No. 64, 1:25,000 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 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 which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. When 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 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.

AGRICULTURAL LAND CLASSIFICATION MAPS

A : Sprowston – East of A1151 road

B : Hellesdon

C : Sprowston – West of A1151 road