35/94

AGRICULTURAL LAND CLASSIFICATION

TOLLESBURY CREEK, TOLLESBURY, ESSEX

1.0 INTRODUCTION

1.1 The site, an area of 19 ha, is the subject of consultation prior to the submission of a detailed environmental assessment for an English Nature/ITE trial of full scale managed retreat and saltmash creation. A detailed survey was carried out in May 1994 by the ADAS Statutory Group to assess the agricultural land quality of the proposed site. Assessment was made following the guidelines in MAFF publication "Revised Guidelines and Criteria for Grading the Quality of Agricultural Land".

1.2 Information was collected from auger borings made at a density of one per hectare. Subsoil structural development was assessed from two inspection sites.

1.3 At the time of the survey land to the north of the main drain, which runs approximately east-west, was clover dominated set-aside with land to the south being cultivated and sown with cereal.

1.4 The provisional 1:63 360 scale ALC map, Sheet No. 162 (MAFF 1965) maps the whole site as ALC grade 3. This map is of a reconnaisance nature, designed primarily for strategic planning purposes, therefore the survey was undertaken to provide more detailed information on land quality within the survey area.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

2.1 Climate

2.1.1 Climate data for the site was extrapolated from data contained in the published agricultural climatic dataset (MET. Office 1989). This indicated that for an average site altitude of 3 m AOD the average annual rainfall is 545 mm. Field capacity days were calculated to be 93 with moisture deficits for wheat and potatoes being 130 and 129 mm respectively. These climatic characteristics do not impose any limitation on the ALC grade for the site.

2.2 Altitude and Relief

2.2.1 The site is low lying, sloping very gently to the south. Elevation varies across the site from 2 to 5 m. Slopes have been estimated at 1° or less and therefore do not impose any restrictions on ALC grade for the site.

2.3 Geology and Soils

2.3.1 The published 1:50 000 solid and drift edition geology map sheet No. 241 (Geological Survey of England and Wales 1969) shows the site to be underlain by Estuarine Alluvium over London Clay.

2.3.2 The Soil Survey of England and Wales have mapped the soil in the Tollesbury area at a reconnaisance scale of 1:250 000 (Soil Survey, Sheet 4, 1983). The whole of the site is mapped as Windsor Association (*1).

2.3.3 The current more detailed survey also identified a single soil type across the site with a typical profile comprising stoneless clay topsoil 25-35 cm deep over stoneless clay subsoils. The upper subsoil horizon was strongly gleyed clay over a lower clay or silty clay subsoil which was also strongly gleyed. The soils were therefore poorly drained and slowly permeable below the topsoil horizon (assessed as wetness class III). Small gravels were occasionally encountered at depth. The topsoil was very slightly calcareous with evidence of recent liming.

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The distribution of Agricultural Land Classification (ALC) grades is shown overleaf:

(*1) Windsor Association - slowly permeable seasonally waterlogged clayey soils developed in Tertiary clays. Some fine loamy over clayey and fine silty over clayey soils.

AGRICULTURAL LAND CLASSIFICATION

Grade	Area (ha)	% of total area
3b	19	100.0
Total	19	100.0

The definitions of the ALC grades are shown in Appendix 1.

3.2 Grade 3b

3.2.1 Land of this grade occurs over the whole of the site and comprises imperfectly drained (wetness Class III) clay over clay or silty clay subsoils as described in paragraph 2.3.3. These soils are poorly drained with heavy textured topsoils and are therefore subject to moderately severe wetness and workability restrictions, limiting this land to subgrade 3b.

May 1994

Resource Planning Team
ADAS Cambridge

REFERENCES

GEOLOGICAL SURVEY OF GREAT BRITAIN (1969). Solid and Drift edition, Sheet 241 Chelmsford. Scale 1:50 000.

MAFF (1965) Agricultural Land Classification Map, Sheet 162. Provisional. Scale 1:63 360.

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

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

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

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 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. 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 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 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.