

**AGRICULTURAL LAND CLASSIFICATION
GARDNERS FARM, EPPING, ESSEX
SEMI-DETAILED SURVEY**

1.0 BACKGROUND

1.1 An Agricultural Land Classification (ALC) survey of the 22.75 ha site was undertaken on behalf of MAFF in December 1994 and January 1995 using the Agricultural Land Classification system (MAFF 1988 - Revised Guidelines and Criteria for Grading the Quality of Agricultural Land).

1.2 Nearby fieldwork on similar soils identified land of 3b quality in the vicinity of Gardners Farm, consequently a semi detailed survey was undertaken to confirm the predominance of lower quality (i.e. 3b) land on site. This was carried out using a hand held dutch auger and soils were sampled on the basis of 1 per 2 ha to at least 120 cms depth. This information was supplemented by data collected from a soil inspection pit on site, and two other pits dug on adjacent land.

1.3 On the provisional 1:63,360 scale ALC map, sheet No. 161, the site has been mapped as grade 3. The map is of a provisional nature and the current survey was undertaken to provide more detailed site specific information.

1.4 During the survey the major part of the site was under winter cereals, with an area of set-aside to the north of the stream.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 Climate data for the site was extrapolated from data published in the Agricultural Climatic Dataset (Meteorological Office, 1989). This indicates

that for an average site altitude of 65 m AOD, the annual average rainfall is 628 mm (24.7"), the field capacity days are 119 and the moisture deficits for wheat and potatoes are 118 mm and 110 mm respectively. These climatic characteristics do not impose any limitations on the ALC grade for the site.

Altitude and Relief

- 2.2 From the south eastern boundary at a height of 75 m AOD, the land falls in a westerly direction to meet the railway line at 60 m AOD, and in a north westerly direction to the stream (which runs southwest/northeast) at 55 m AOD. From the stream the land rises gently northwards to 60 m AOD at Brook Road which constitutes the northern site boundary. In a small area in the southern part of the site where slopes measured 10°, land is restricted to subgrade 3b due to significant gradient restrictions. Elsewhere neither gradient nor altitude impose a limitation on the ALC grade.

Geology and Soils

- 2.3 The published geology map (Geol. Survey 1981, 1:50,000 scale) for the area shows that the site comprises London Clay, superimposed, in parts, with Head deposits.
- 2.4 No detailed map exists for the area, but the reconnaissance 1:250,000 scale map "Soils of England and Wales" (Soil Survey 1983) shows the site to comprise soils of the Windsor Association (*1). The current more detailed site survey confirms the predominance of clayey soils, these are described below.

(*1) Windsor Association - slowly permeable seasonally waterlogged clayey soils mostly with brown subsoils. Some fine loamy over clayey and fine silty over clayey soils and, locally on slopes, clayey soils with only slight seasonal waterlogging.

- 2.5 The soils encountered on site typically comprise very slightly stony (1-5%), non calcareous, heavy clay loam or clay topsoils over stoneless (<1%) non calcareous clay. Gleying invariably occurs within 30/35 cm and is evident to depth, giving rise to wetness class III.

3.0 AGRICULTURAL LAND CLASSIFICATION

- 3.1 The distribution of Agricultural Land Classification (ALC) grades is given below in hectares and percentage terms.

Grade	ha	%
3b	22.75	100
TOTAL	22.75	100

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

Subgrade 3b

- 3.2 The whole site is mapped as subgrade 3b, and comprises poorly drained (i.e. wetness class III) fine loamy/clayey over clayey soils (as described in paragraph 2.5). The heavy textured, non calcareous topsoils combine with the poor drainage status to impose a significant wetness and workability restriction. Therefore restricting the land to subgrade 3b (moderate quality agricultural land).

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REFERENCES

GEOLOGICAL SURVEY OF ENGLAND & WALES. Sheet 240. 1981. Scale 1:50,000.

MAFF, 1971. Agricultural Land Classification Map Sheet 161. Provisional. Scale 1:63,360.

MAFF, 1988. Agricultural Land Classification of England & 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 & 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 (e.g. 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.