AGRICULTURAL LAND CLASSIFICATION

SEMI-DETAILED SURVEY

BEDMOND LANE

ST. ALBANS

HERTFORDSHIRE

SEMI DETAILED AGRICULTURAL LAND CLASSIFICATION SURVEY

BEDMOND LANE, ST ALBANS, HERTFORDSHIRE

1. BACKGROUND

1.1 The site, an area of 25.2 hectares is located to the southwest of St. Albans between housing and the M10. It is designated as green belt land, and is subject to the removal of this title to allow for development. ADAS surveyed the site in May 1992 to assess the agricultural land quality. The full crop cover of oil seed rape, at the time of survey, prevented the surveyors from carrying out a detailed survey. Future survey work may prove necessary if an extended area incoporates best and most versatile land (grades 1, 2 or 3a).

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 for the site's median altitude of 110m AOD, the average annual rainfall is 691 mm (27"). Soils are likely to be at field capacity for approximately 144 days and soil moisture deficits are estimated as 104 mm for wheat, and 95 mm for potatoes. These climatic characteristics do not impose any limitation on the Agricultural Land Classification (ALC) grading of the survey area.

2.2 Altitude and Relief

The highest part of the site is the plateau to the south west where the altitude is approximately 115 m AOD. This falls gently in a northerly and easterly direction to a lowest point of 96 m AOD in the eastern corner. Neither gradient nor altitude constitute limitations to the ALC grade.

Geology and Soils

2.3 The published 1:50,000 scale drift edition, sheet 239 (Geological Survey of Great Britain, Hertford, 1978) shows the geology to comprise Cretaceous Upper Chalk over the northern half, with smaller areas of Recent and Pleistocene glacial gravels on the upper slopes and plateau to the south.

2.4 The Soil Survey of England and Wales have mapped the soils at a reconnaissance scale of 1:250,000. This map shows the occurrence of Carstens Association (*1) over the entire area. During the current survey a more detailed inspection of the soils was carried out. Two
main soil types were identified.

2.4.1 Nearly half of the site comprises moderately stony (flints) medium (or occasionally heavy) clay loam topsoils over clay or occasionally heavy clay loam upper subsoils which have similar stone contents. These soils overlie the glacial gravels towards the south of the site.

2.4.2 Upslope in the northern half of the area the soils are similar in texture but less stony.

3. AGRICULTURAL LAND CLASSIFICATION

3.1 The definition of the ALC grades are included in Appendix 1.

3.2 The survey area compries relatively equal proportions of subgrades 3a and 3b. The table overleaf shows the breakdown of ALC grades in hectares and % terms for the survey area.

(*1) Carstens Association: Well drained fine silty over clayey, clayey and fine silty soils, often very flinty.

Agricultural Land Classification

Grade	ha	%
3a	14.3	57
3b	10.9	43
TOTAL	25.2	100

3.3 Subgrade 3a

This land occurs over most of the northern and eastern slopes of the site, and is associated with the less stony soils described in paragraph 2.4.2. Total topsoil stone varies between 10-20% by volume, of which stones greater than 2 cm account for 10-12% by volume. The main effects of stones in the topsoil are to act as an impediment to cultivation, harvesting and crop growth. A high stone content can increase production costs by causing extra wear and tear to implements and tyres. Crop quality may also be reduced in stony soils by causing, for example, the distortion of seeds during germination or bruising of root crops during harvesting. Stones can impair crop establishment by causing reduced plant populations in precision drilled crops, and their presence can reduce the nutrient capacity of the soil. In summary topsoil stone contents typically preclude the land from a higher grade*.

* In some instances wetness may also limit the land where a wetness class of II combines with the heavy clay loam topsoils.

3.4 Subgrade 3b

Land on the plateau and along the western edge of the site is associated with the stonier soils described in para 2.4.1. Total topsoil stone typically ranges from 20 to 30% by volume, of which 16% are greater than 2 cm in diameter. These higher topsoil stone contents impose a greater degree of limitation and restrict this area to subgrade 3b.

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References

GEOLOGICAL SURVEY OF GREAT BRITAIN 1978. Drift edition sheet 239 (Hertford)
1:50,000 scale.

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

METEOROLOGICAL OFFICE 1969. Climate data extracted from the published agricultural climatic dataset.

SOIL SURVEY OF ENGLAND AND WALES 1983. Soils of Eastern England Sheet 4
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 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 level of yields. It is mainly suited to grass with occasional arable crops (eg cereal and forage crops) the yields of which are variable. In moist 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