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# AGRICULTURAL LAND CLASSIFICATION

## LAND TO SOUTH WEST OF ASHFORD ROAD, NEW ROMNEY, KENT


Ministry of Agriculture Fisheries and Food

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## 1. BACKGROUND

1.1 Land on this 1.55 ha site was inspected on 2 August 1989 in connection with residential development proposals. Seven auger boring tests were made on a 50 m sampling grid over the site together with two soil inspection pits. At the time of survey the land was in grass and being grazed by sheep.

## 2. PHYSICAL FACTORS AFFECTING LAND QUALITY

### Relief

2.1 The site lies at an altitude of approximately 3-5 m AOD immediately adjoining the urban area of New Romney. The land is almost flat with only minor surface irregularities resulting in very slightly higher elevations to the north of the site. Neither gradient or micro relief places any limitation in terms of the agricultural land quality of the site.

### Climate

2.2 Interpolated climatic variables have been obtained for the site (Met. Office, 1989). These indicate an average annual rainfall of 667 mm which is low by national standards. The accumulated temperature*, a measure of the relative warmth of a locality is 1500 day degrees, a value which is relatively high in a national context. The land has around 137 field capacity days, an indication of climatic wetness, and crop adjusted moisture deficits' of 130 mm and 129 mm for wheat and potatoes respectively, have been obtained. These values are particularly high and largely reflect the combination of warmth, dryness and the effects of exposure (ie high evapotranspiration). Romney Marsh is exposed to strong winds predominantly from the south west, but northerly and north easterly winds also cause damage to crops and may retard their growth. Climatic factors per se place no limitation in terms of the land quality of the site, however, interactions between climate and soils, namely soil wetness and droughtiness are important at this location.

### Geology and Soils

2.3 The published geological map sheet for the area (Sheet 305/306) (British Geological Survey, 1978) indicates that the site lies at the boundary of an area of blown sand to the south and clayey marine alluvium to the north. It is believed that the site lies within an area of more "recently" reclaimed marshland possibly originally associated with a former course of the River Rother (Green, 1968).

2.4 Detailed survey of the site indicates the presence of two broad soil types reflecting the geological differences described above. To the northern half of the site they comprise calcareous soils having medium silty clay loam or clay loam topsoils resting over heavy clay loam upper subsoils which pass into clay below about 50-55 cm. With increasing depth the content of fine sand is progressively higher and the soil moister.

* Median accumulated temperature above 0°C, January to June.

Gleying is apparent, usually below 45-60 cm, however examination of the soil structure indicates that the soil are likely to relatively freely draining (Wetness Classes I and II) due to the presence of vertical channels (biopores). The second soil type occurs toward the southern half of the site and comprises coarser textured types. There is some variation in this group but typical profiles comprise, fine sandy loam, sandy loam or loamy fine sand topsoils overlying a similar textured upper subsoil. At some locations the clay content increases to give sandy clay loam textures which may be succeeded by loamy sands and sands. At other locations clayey textures are absent. Gleying is typically confined to depths below 70-90 cm and the soils are appropriately placed in wetness Class I.

2.5 The soils were generally very slightly flinty, however, at a number of sampling locations small brick and rubble fragments were encountered in the subsoil at depths of around 30-50 cm indicating that the land may have been subject to some past disturbance.

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The land has been mapped as subgrade 3a. The overriding limitation is one of moderate soil droughtiness which particularly reflects the relationship between the soil properties described above and the high crop adjusted moisture defecits found at this location (see paragraph 2.2). A minor wetness limitation also exists at some locations on the site but this is of secondary importance.

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Sources of Reference

BRITISH GEOLOGICAL SURVEY (1978) 1:50,000 scale
Solid and Drift Edition Geology Map Sheet
No. 305/306 (Folkestone and Dover)

GREEN, R D (1968) Soils of Romney Marsh.
Soil Survey of Great Britain. Bulletin No. 4.

MAFF (1988) Agricultural Land Classification of England and Wales.
Revised guidelines and criteria for grading the quality of agricultural land.

METEOROLOGICAL OFFICE (1989) Climatological Datasets for Agricultural
Land Classification

# DESCRIPTION OF THE GRADES AND SUBGRADES

The ALC grades and subgrades are described below in terms of the types of limitation which can occur, typical cropping range and the expected level and consistency of yield. In practice, the grades are defined by reference to physical characteristics and the grading guidance and cut-offs for limitation factors in Section 3 enable land to be ranked in accordance with these general descriptions. The most productive and flexible land falls into Grades 1 and 2 and Subgrade 3a and collectively comprises about one-third of the agricultural land in England and Wales. About half the land is of moderate quality in Subgrade 3b or poor quality in Grade 4. Although less significant on a national scale such land can be locally valuable to agriculture and the rural economy where poorer farmland predominates. The remainder is very poor quality land in Grade 5, which mostly occurs in the uplands.

Descriptions are also given of other land categories which may be used on ALC maps.

### 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. 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 level of yields. It is mainly suited to grass with occasional arable crops (eg cereals 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.

## Descriptions of other land categories used on ALC maps

### Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

### Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: golf courses, private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

### Woodland

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

### Agricultural buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg polythene tunnels erected for lambing) may be ignored.

### Open water

Includes lakes, ponds and rivers as map scale permits.

### Land not surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above land cover types, eg buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will usually be shown.

# APPENDIX

# FIELD ASSESSMENT OF SOIL WETNESS CLASS

## SOIL WETNESS CLASSIFICATION

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile. Six revised soil wetness classes (Hodgson, in preparation) are identified and are defined in Table 11.

**Table 11 Definition of Soil Wetness Classes**

| Wetness Class | Duration of Waterlogging[1] |
|---|---|
| I | The soil profile is not wet within 70 cm depth for more than 30 days in most years[2]. |
| II | The soil profile is wet within 70 cm depth for 31-90 days in most years *or*, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 90 days, but not wet within 40 cm depth for more than 30 days in most years. |
| III | The soil profile is wet within 70 cm depth for 91-180 days in most years *or*, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 180 days,but only wet within 40 cm depth for between 31 and 90 days in most years. |
| IV | The soil profile is wet within 70 cm depth for more than 180 days but not within 40 cm depth for more than 210 days in most years *or*, if there is no slowly permeable layer within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years. |
| V | The soil profile is wet within 40 cm depth for 211-335 days in most years. |
| VI | The soil profile is wet within 40 cm depth for more than 335 days in most years. |

[1] The number of days specified is not necessarily a continuous period.

[2] 'In most years' is defined as more than 10 out of 20 years.

Soils can be allocated to a wetness class on the basis of quantitative data recorded over a period of many years or by the interpretation of soil profile characteristics, site and climatic factors. Adequate quantitative data will rarely be available for ALC surveys and therefore the interpretative method of field assessment is used to identify soil wetness class in the field. The method adopted here is common to ADAS and the SSLRC.