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SHEPWAY LOCAL PLAN
SITE 49: SELLINDGE, KENT
AGRICULTURAL LAND CLASSIFICATION
ALC MAP & REPORT
SEPTEMBER 1993

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AGRICULTURAL LAND CLASSIFICATION REPORT**

1.0 Summary

1.1 In September, 1993, a detailed Agricultural Land Classification (ALC) was made on 0.2 hectares of land at Stone Hill, Sellindge in Kent.

1.2 The work was conducted under ADAS sub-contracting arrangements by Nick Duncan and Associates and was in response to a commission by MAFF's Land Use Planning Unit to provide information on the quality of agricultural land affected by the potential inclusion of this land in the Shepway District Local Plan.

1.3 The classification has been made using MAFF's revised guidelines and criteria for grading the quality of agricultural land. These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on its use for agriculture.

1.4 Two soil borings and one soil pit were examined.

1.5 All of the site (0.2 ha) has been classified as Subgrade 3B due to a significant droughtiness limitation. The very stony nature of the subsoils significantly restricts the amount of moisture available for extraction by crops and hence leads to significant drought stress and potentially depressed yields.

1.6 The ALC information is shown on the attached map. The information is presented at a scale of 1:5,000; it is accurate at this level but any enlargement would be misleading. This map supercedes any previous ALC information for this site.

1.7 A general description of the grades and sub-grades is provided as an appendix. The main classes are described in terms of the type of limitation that can occur, the typical cropping range and the expected level and consistency of yield.

2.0 Climate

2.1 The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

2.2 The main parameters used in the assessment of an overall climatic limitation are average annual rainfall, as a measure of overall wetness, and accumulated temperature (degree days Jan-June), as a measure of the relative warmth of a locality.

2.3 A detailed assessment of the prevailing climate was made by interpolation from a 5km gridpoint dataset (Met. Office 1989). The details are given in the table below and these show that there is no overall climatic limitation affecting the site. However climatic factors do interact with soil properties to influence soil wetness and droughtiness limitations.

2.4 No local climatic factors such as exposure or frost risk affect the site.

Climatic Interpolation

Grid Reference :	TR 092 390
Altitude (m) :	75
Accumulated Temperature (days) :	1420
Average Annual Rainfall (mm) :	770
Field Capacity (days) :	164
Moisture Deficit, Wheat (mm) :	112
Moisture Deficit, Potatoes (mm) :	105
Overall Climatic Grade :	1

3.0 Relief

3.1 The site lies at an altitude of 75m AOD and is relatively flat.

4.0 Geology and Soil

4.1 British Geological Survey (1978), sheet 305 and 306, Folkestone and Dover shows the site to be underlain by 4th River Terrace Deposits.

4.2 The soil type for this site is entirely the Malling Association as shown on the Soil Survey map of South East England (SSEW, 1983, 1:25,000). The soil is described as 'Well drained non-calcareous fine loamy soils over limestone at variable depths. Some deep well drained coarse loamy over clayey soils and similar fine loamy over clayey soils. Some fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging. Occasional shallower calcareous soils over limestone. Land slips and associated irregular terrain locally.' (SSEW). The current survey revealed soils that bear a closer relationship with the published geology map than the 1:250,000 soil map being fine loamy soils with very stony subsoils.

5.0 Agricultural Land Classification

5.1 The attached ALC map provides details of the area measurements and distribution of each grade.

5.2 The location of the soil observation points are shown on the attached sample point map.

5.3 Subgrade 3b

A typical soil profile on this site has a slightly flinty (8-10% total volume) medium clay loam topsoil over moderately gravelly (30-35% total volume) medium or heavy clay loam subsoil. Below approximately 50cm the subsoil became very flinty (65-70% total volume) clay with ochreous and manganese staining on the stones. The staining with the stones indicates some degree of waterlogging, although with the very high stone content this horizon cannot be slowly permeable. The soils have therefore been assessed as Wetness Class I/II. The major limitation associated with this site is droughtiness due to the relatively shallow stony soils. Moisture balance calculations reveal that these soils will be moderately droughty for potatoes and very droughty for wheat as the flint content reduces the amount of available water in the profile. The whole site has, therefore, been restricted to Grade 3b. The consequence of insufficient profile available water will be significant drought stress and the likelihood of poor crop growth and depressed yields.

ADAS REFERENCE : 2010/191/93
MAFF REFERENCE : EL 20/109

Resource Planning Team
Guildford Statutory Group
ADAS Reading

REFERENCES

- * British Geological Survey (1978), Sheet No.305 & 306, Folkestone and Dover A, 1:50,000
- * MAFF (1988), Agricultural Land Classification of England And Wales : revised guidelines and criteria for grading the quality of agricultural land.
- * Meteorological Office (1989), Climatological Data for Agricultural Land Classification.
- * Soil Survey of England and Wales (1983), Sheet No.6, Soils of South East England, 1:250,000. And accompanying legend.

APPENDIX I

DESCRIPTION OF THE GRADES AND SUBGRADES

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 or horticultural crops can usually be grown but on some land of this 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 land.

Grade 3 : Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the 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 the 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 severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

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: private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports. 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, eg. buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will be shown.

APPENDIX II

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 soil wetness classes are identified and are defined in the table below.

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 only wet within 40 cm depth for 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 present within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31-90 days in most years.
IV	The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth for more than 210 days in most years or, if there is no slowly permeable layer present 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.

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.

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

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