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SHEPWAY LOCAL PLAN
SITE 8: ST MARY'S BAY, 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 1.0 hectare of land on the south-western edge of St Mary's Bay 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 Three soil borings and one soil pit were examined.

1.5 All of the site has been classified as Subgrade 3B due to a significant wetness and workability limitation. There is evidence of shallow seasonal waterlogging related to the presence of poorly structured subsoils. This degree of wetness significantly restricts the utilisation of the land for agriculture.

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. At this locality the Field Capacity Days are low and the Moisture Deficits correspondingly high thus increasing the likelihood of soil droughtiness.

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

Climatic Interpolation

Grid Reference :	TR 084 270
Altitude (m) :	5
Accumulated Temperature (days) :	1507
Average Annual Rainfall (mm) :	667
Field Capacity (days) :	138
Moisture Deficit, Wheat (mm) :	129
Moisture Deficit, Potatoes (mm) :	129
Overall Climatic Grade :	1

3.0 Relief

3.1 The site lies at an altitude of 5m AOD and is 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 Marine Alluvium Clay.

4.2 The soil type for this site is entirely Wallasea 2 Association as shown on the Soil Survey map of South East England (SSEW, 1983, 1:25,000). The soil is described as 'deep stoneless clayey soils, calcareous in places. Some deep calcareous silty soils. Flat land often low ridges giving a complex soil pattern. Groundwater controlled by ditches and pumps.' (SSEW).

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

The whole site has been mapped as moderate quality subgrade 3b principally due to a wetness and workability limitation despite the local climatic regime which is relatively warm and dry in regional terms. The site lies at low altitude over the Marine Alluvium so increasing the likelihood of poor drainage. The soil profile comprises a heavy silty clay loam topsoil over gleyed silty clay occurring within 40cm from the surface. The upper subsoil is also calcareous and slightly porous. Below approximately 60cm depth the silty clays become slowly permeable where they are poorly structured and more distinctly gleyed. Drainage is therefore impeded causing a wetness problem consistent with Wetness Class III. The heavy clay loam topsoils present in these profiles also impose a significant workability problem (Grade 3b) which limits the opportunities for trafficking, land work and grazing by livestock.

ADAS REFERENCE : 2010/179/93
MAFF REFERENCE : EL 20/109

Resource Planning Team
Guildford Statutory Group
ADAS Reading

REFERENCES

* British Geological Survey (1957), 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, religous buildings, cemetries. 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.

[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.