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Swale Borough Local Plan
Site C, Sittingbourne
Agricultural Land Classification
ALC Map and Report
April 1994

AGRICULTURAL LAND CLASSIFICATION REPORT

SWALE BOROUGH LOCAL PLAN
SITE C, SITTINGBOURNE

1. Summary

1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality for a number of sites around Sittingbourne and on the Isle of Sheppey in Kent. The work forms part of MAFF's statutory input to the preparation of the Swale Borough Local Plan.

1.2 Approximately 12 hectares of land to the east of Sittingbourne was surveyed in March 1994 The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 14 soil auger borings, and two soil inspection pits were assessed in accordance with MAFF's revised guidelines and criteria for grading the quality of agricultural land (MAFF, 1988). 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.

1.3 The survey work was carried out by members of the Resource Planning Team in the Eastern Statutory Centre of ADAS.

1.4 At the time of the survey, the land use on the site was that of arable cropping.

1.5 The distribution of grades and subgrades is shown on the attached ALC map and the areas are given in the table below. The map has been drawn at a scale of 1:5,000. It is accurate at this scale, but any enlargement would be misleading. This map supersedes any previous ALC information for this site.

Table 1 : Distribution of Grades and Subgrades

Grade	Area (ha)	% of Agricultural Area
2	9.3	32.8
3a	2.1	18.4
Non-Agricultural	0.7	100% (11.4 ha)
Total area of site	12.1 ha	

1.6 Appendix 1 gives a general description of the grades, subgrades and land use categories identified in the survey. 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.

1.7 Land on this site has been assigned to Grade 2 and Subgrade 3a on the basis of soil droughtiness and/or topsoil stoniness limitations. Soils are broadly similar across the site, comprising silty loam or silty clay loam profiles which become heavier and very gravely in the subsoil. The site has been worked for brickearth in the past and, as a result, profiles differ in the depth to underlying gravely horizons.

The grading of the site reflects the relative soil depths and the consequent soil droughtiness restriction. In addition, topsoil stone content varies across the site but, in places, it is sufficient to slightly restrict the use of the land.

2. 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, 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.

2.4 No local climatic factors such as exposure or frost risk affect the site. However, climatic and soil factors interact to influence soil wetness and droughtiness limitations. At this locality the climate is relatively warm and dry in national terms, with associated high moisture deficits and low field capacity days.

Table 2 :Climatic Interpolations

Grid Reference	TQ926642	TQ926638
Altitude, (m, AOD)	7	14
Accumulated Temperature (§days, Jan.-June)	1491	1484
Average Annual Rainfall (mm)	611	620
Field Capacity Days	121	122
Moisture deficit, wheat (mm)	122	120
Moisture deficit, potatoes (mm)	118	116
Overall Climatic Grade	1	1

3. Relief

3.1 The site lies at altitudes between approximately 7m and 14m AOD. Overall it is relatively level as the altitude difference is largely made up of Èsteps Ì created by previous brickearth extraction. The lowest area is towards the north east, with slightly higher land occurring towards the south. The highest area is the unworked land in the north-west corner of the site. Nowhere on the site does relief impose a limitation on the agricultural land quality as the steep area between the deepest workings in the east and the unworked land to the west is not in agricultural use.

4. Geology and Soils

4.1 The published geological information (BGS, 1977), shows the majority of the site to be underlain by Thanet Beds, with recent head brickearth shown as a drift deposit over the north east quadrant.

4.2 The published soils information (SSEW,1983) map, shows the site to comprise soils from the Hamble 1 association. These are described as, "Deep well drained, often stoneless fine silty soils. Some similar soils affected by groundwater and some fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging." Soils of this broad nature were found across the site.

5. Agricultural Land Classification

5.1 Table 1 provides the details of the area measurements for each grade and the distribution of each grade is shown on the attached ALC map.

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

Grade 2

5.3 Land of very good quality has been mapped in two discrete units, which together cover the majority of the surveyed area. They are located in the south east and north west. The principal limitation is soil droughtiness, due to stones restricting available water in the profile, although on occasion topsoil stone is also significant. Typically profiles comprise very slightly to slightly stony (max. 10% v/v small and medium flints), calcareous and non-calcareous fine and medium sandy silt loam, silt loam, occasionally medium silty clay loam topsoils, over very slightly to moderately stony (max. 18% v/v flints) medium, occasionally heavy, silty clay loam or silt loam upper subsoils. Commonly, this passes to a similar though commonly more stony (max. 18% v/v flints) medium or heavy silty clay loam horizon, overlying a lower subsoil commonly consisting of a moderately to very stony (max. c.40% gravel) medium to heavy silty clay loam or medium to heavy clay loam to depth where penetrable. Stone contents within the profile lead to slightly reduced available water capacities in otherwise moisture retentive soils such that Grade 2 is appropriate. In the areas where topsoil stone contents are highest, they are of sufficient quantity to cause a slight increase in wear and tear and consequent increased cultivation cost in terms of machinery and yield loss, such that again Grade 2 is appropriate.

Subgrade 3a

5.4 Land of good quality covers a small area of the site in a single unit. Principal limitations include soil droughtiness and topsoil stone content. The embankment shown as Non-agricultural bisects this area and soil profiles are different on either side. To the east of the embankment, profiles typically comprise a slightly calcareous slightly stony (c.10% v/v flints) fine sandy silt loam topsoil over a moderately stony (c.25% v/v flints) medium silty clay loam upper subsoil, which

becomes impenetrable to the soil auger around 45 cm, creating a moderate risk of drought stress to plants. To the west of the embankment soils have been disturbed, and the land has been graded up towards higher areas further west. Soils typically comprise a slightly stony (max. 12% v/v flints, up to 10% v/v > 6 cm flints) medium clay loam or fine sandy silt loam topsoil passing to a slightly stony (max. 15% v/v flints) silt loam or clay upper subsoil. This overlies moderately stony (max. 15% v/v flints) occasionally calcareous medium clay loam to depth; or clay becoming heavy silty clay loam to depth. Due to the disturbed nature of the land and topsoil stone affecting production costs, this area has been assigned to Subgrade 3a.

5.5 A narrow band of Non-agricultural land has been mapped which corresponds to the embankment between the worked and the unworked areas of the site. At the northern end of this bank is an area filled with hardcore. To the extreme north of the site the area of Non-agricultural land adjacent to East Hall is a small hollow, currently being filled with straw and dung from nearby stables.

SOURCES OF REFERENCE

British Geological Survey (1971), Geology of the Country around Chatham (Explanation of Sheet 272)

British Geological Survey (1977), Sheet No. 272, Chatham, 1:50,000, Drift Edition.

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

Meteorological Office (1989), Climatic datasets for Agricultural Land Classification.

Soil Survey of England and Wales (1980), Soils of Kent, Bulletin No.9.

Soil Survey of England and Wales (1983), Sheet No. 6, Soils of South-East England, 1:250,000, and Accompanying Legend.

Soil Survey of England and Wales (1984), Soils and their use in South-East England. Bulletin No.15.