57/92
Summary Report

AGRICULTURAL LAND CLASSIFICATION
NORTH BEXHILL STRATEGIC FRAMEWORK

AUGUST 1992

RESOURCE PLANNING TEAM
ADAS STATUTORY GROUP
READING

AGRICULTURAL LAND CLASSIFICATION
NORTH BEXHILL STRATEGIC FRAMEWORK
PROPOSED GOLF COURSE (WORSHAM/PEBSHAM AREA)

1. SUMMARY

1.1. In August 1992, an Agricultural Land Classification (ALC) survey was carried out on 42.35 ha of land in the Worsham/Pebsham area, Bexhill. ADAS was commissioned by MAFF to determine land quality affected by the proposal to include this site for development as part of the North Bexhill Strategic Framework.

1.2. The survey work was carried out by members of the Resource Planning Team within the Guildford Statutory Group at a semi-detailed level of approximately 2 borings per hectare in the agricultural area. A total of 18 auger borings/pits were made and the site was graded using 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 and chemical limitations impose long term limitations on its agricultural use. At the time of survey the site was in grass and arable (wheat, linseed, stubble) use.

1.3. The distribution of the grades is shown on the attached ALC map and the area and extent is given in the table below. The map has been drawn at a scale of 1:10,000; any enlargement of this would be misleading. The area was previously surveyed by MAFF in 1982. This more recent survey supersedes the earlier work.

Distribution of Grades and Subgrades

Grade	Area (ha)	% total agricultural area
2	1.57	5
3a	4.24	12
3b	25.37	75
4	2.85	8
Non-Ag*	8.32	100
*Woodland and part of waste tip.		
Total Area of site	42.35	

1.4. The majority of land on this site has been graded 3b with smaller areas of grades 2, 3a and 4. An area of land to the southeast of the site is shown as non-agricultural being part of a waste tip. Land graded 3b comprises poorly drained clayey soils mainly developed from Wadhurst Clays. Other areas on the site are also included in grade 3b due to gradients between 7° and 11°. Grade 2 is confined to a small area of deep moderately well drained loamy soils having slight wetness and droughtiness restrictions. Land graded 3a comprises silty and loamy soils typically with dense slowly permeable subsoils which create both wetness and droughtiness limitations. Small areas of grade 4 land represent steep slopes (11-18°) (to the north of the site) or an area of very wet soils adjoining the waste tip.

August 1992
ADAS Ref: 4106/57/92
MAFF Ref:

Resource Planning Team
ADAS Statutory Group
Reading

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Full Report

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PROPOSED GOLF COURSE (WORSHAM/PEBSHAM AREA)

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1.2. The survey work was carried out by members of the Resource Planning Team within the Guildford Statutory Group at a semi-detailed level of approximately 1 boring per 2 hectares in the agricultural area. A total of 18 auger borings/pits were made and the site was graded using 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 and chemical limitations impose long term limitations on its agricultural use.
At the time of survey the site was in grass and arable (wheat, linseed, stubble) use.

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*Woodland and part of waste tip.

1.4. The majority of land on this site has been graded 3b with smaller areas of grades 2, 3a and 4. An area of land to the southeast of the site is shown as non-agricultural being part of a waste tip. Land graded 3b comprises poorly drained clayey soils mainly developed from Wadhurst Clays. Other areas on the site are also included in grade 3b due to gradients between 7° and 11°. Grade 2 is confined to a small area of deep moderately well drained loamy soils having slight wetness and droughtiness restrictions. Land graded 3a comprises silty and loamy soils typically with dense slowly permeable subsoils which create both wetness and droughtiness limitations.

Small areas of grade 4 land represent steep slopes (11-18°) (to the north of the site) or an area of very wet soils adjoining the waste tip.

2. PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1. Estimates of climatic variables were obtained by interpolation from a 5 km grid database (Met. Office, 1989) for representative locations in the survey area.

Climatic Interpolation

Grid Reference	TQ763096	TQ768094	TQ764100
Altitude (m. A.O.D.)	35	20	5
Accumulated Temperature (°days, Jan-June)	1487	1504	1521
Average Annual Rainfall (mm)	780	773	776
Field Capacity Days	162	161	162
Moisture Deficit (wheat) (mm)	119	121	122
Moisture Deficit (potatoes) (mm)	115	118	120

2.2. There is no overall climatic limitation but climatic factors will interact with soil factors to influence soil wetness and droughtiness limitations. In particular, the moisture deficits are comparatively high due to the proximity of the site to the coast. This will increase the risk of soil droughtiness.

Relief

2.3. The site comprises a rather broken topography with the higher flatter ground (lying above 25-30 m) being found towards the centre and north western areas of the site. From these higher areas the land falls towards Combe Haven and its tributary valleys. Gradients are variable with some areas of moderately and strongly sloping land with gradients in excess of 7-11°. These are associated with steep sided valleys towards the north of the site. Land quality is limited to a maximum of 3b or 4 in these areas.

Geology and Soils

2.4. The published geological map sheet covering the site (Sheet 320/321, Hastings and Dungeness; Geological Survey G.B., 1980) maps Wadhurst Clay over the majority of the site with exposures of Ashdown Beds, particularly to the north of the area. Alluvium is mapped in the valley bottom east of Pebsham Farm.

2.5. The published Soil Survey map at 1:250,000 scale (SSEW, 1983) shows the site as the Curtisden Association. Such soils are described in the accompanying legend as "silty soils over siltstone with slowly permeable subsoils with slight seasonal waterlogging. Some similar well drained coarse loamy soils over sandstone".

2.6. Inspection of soils within the survey area identifies three main soil types. Firstly, and most extensively, are heavy, poorly drained clayey soils derived from Wadhurst Clay. These occur in the southern half of the site. Contrasting soils are associated with

higher land towards the north of the area. These comprise medium and coarse textured soils overlying dense and massive fine grained sandstone and siltstones. The drainage status of these soils is variable but all are limited by droughtiness. Intermediate soils with loamy upper horizons passing to clay from 40-75 cm occur sporadically in the northern part of the survey area.

3. AGRICULTURAL LAND CLASSIFICATION

3.1. The majority of land on this site is graded 3b with smaller areas of 2, 3a and 4. An area of land to the southeast of the survey area is mapped as non-agricultural, being part of a waste disposal site.

Grade 2

3.2. Grade 2 land is not extensive on the site occurring as a small block of higher land towards the north of the area. Associated soils comprise medium clay loam topsoils over similar textured upper subsoils, perhaps with a slightly higher silt content, which become finer textured (heavy clay loam or sandy clay loam) below about 55-60 cm, and may pass to gleyed and slowly permeable clay with depth. Gleying is apparent within 50-55 cm of the surface. Such soils are allocated to grade 2 due to slight wetness (wetness class II) and/or droughtiness restrictions.

Grade 3a

3.3. Land of this quality is primarily associated with shallower soils over dense and massively structured fine grained sandstones/siltstones, although at one location the soils are similar to, but less well drained than those described for grade 2 (above). Typical profiles comprise medium silty clay loam or medium clay loam topsoils overlying a similar textured upper subsoil which may be gleyed. This passes to a massively structured fine sandy silt loam, fine sandy loam, loamy fine sand or soft fine grained sandstone, where less weathered, below about 50 cm. Drainage status is variable from wetness class I to III depending upon the signs of wetness (gleying) apparent in the profiles and depth to massively structured layers. The majority of profiles are limited to grade 3a due to the risk of drought, with some also exhibiting wetness limitations which are sufficient to place them within the definition of grade 3a.

Grade 3b

3.4. Land graded 3b occurs extensively within the survey area and is mainly associated with poorly drained heavy clayey soils derived from Wadhurst Clay. These typically comprise heavy clay loam or clay topsoils overlying gleyed and slowly permeable clay subsoils. Such soils are assigned to wetness class IV, and due to the heavy nature of the topsoil are appropriately graded 3b due to wetness and workability limitations.

3.5. At some locations, particularly towards the north and northeast of the survey area land is also graded 3b where gradients are in the range 7-11°. These are associated with small steep sided indentations or valley features subsidiary to the main valley feature of Combe Haven. Here gradients will limit the safety and efficiency of mechanised farming operations.

Grade 4

3.6. Grade 4 land represents two situations. Firstly are areas of strongly sloping land (11-18°), again associated with small incised valley features towards the northeast of the survey area. In these areas mechanised farming operations will be severely limited.

3.7. Secondly, it is associated with an area of very poorly drained alluvial soils at the southern end of the site. This area is waterlogged for much of the year and limited to seasonal grazing use.

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Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

GEOLOGICAL SURVEY OF GREAT BRITAIN (1980) 1:50,000 scale. Solid and Drift Edition Geological Map Sheet No. 320/321 (Hastings and Dungeness).

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.

SOIL SURVEY OF ENGLAND AND WALES (1983) 1:250,000 scale soil map of England and Wales: Sheet 6 (S.E. England).

SOIL SURVEY OF ENGLAND AND WALES (1984) Bulletin 15 - Soils and their use in South-East England.