4106/061/92

AGRICULTURAL LAND CLASSIFICATION
NORTH BEXHILL STRATEGIC FRAMEWORK
PROPOSED BUSINESS PARK
(BUCKHOLT LAND AREA)

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1. SUMMARY

1.1. In August and November 1992, an Agricultural Land Classification (ALC) survey was carried out on 31.22 ha of land adjoining Buckholt Lane, 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 detailed level of approximately 1 boring per hectare. A total of 29 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 with the exception of one arable (maize) field to the west which was surveyed in November after harvesting had taken place.

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. A small part of 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	4.95	18
3a	12.12	43
3b	10.98	39
Non-Ag	1.54	100
Agricultural Buildings	0.18	
Woodland/scrub	1.45	
Total Area of site	31.22	

1.4. Land on this site has been graded 2, 3a and 3b. Land graded 2 represents deep, well or moderately well drained soils developed over fine sandstones of the Tunbridge Wells Sand and Ashdown Beds which have minor droughtiness and wetness limitations. Grade 3a areas comprise silty and loamy soils some with slowly permeable subsoils, which may overlie sandstone, giving both wetness and droughtiness limitations. Wetness limitations are the main factor influencing grading in the areas mapped as 3b, due to the occurrence of poorly drained heavy textured clayey soils. The more undulating nature of the land east of Buckholt Lane also gives rise to localised areas having a gradient limitation which also limited them to grade 3b (ie. >7°).

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 a representative location in the survey area.

Climatic Interpolation

Grid Reference	TQ 745 096
Altitude (m. A.O.D.)	15
Accumulated Temperature (°days, Jan-June)	1510
Average Annual Rainfall (mm)	778
Field Capacity Days	162
Moisture Deficit (wheat) (mm)	121
Moisture Deficit (potatoes) (mm)	118

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 survey area has an overall north easterly aspect dissected by a number of small valleys. The highest land occurs along the southern boundary at 25-30 m A.O.D. falling to around 10 m A.O.D. to the north. Gradients are generally gentle but the sides of some of the small incised valleys lying east of Buckholt Lane have localised areas with gradients of 7°-10° which limits these areas to a maximum of grade 3b.

Geology and Soils

2.4 The published geological map sheet covering the site (Sheet 320/321 Hastings and Dungeness; Geol. Survey G.B. 1980) maps Cretaceous Tunbridge Wells Sand over the majority of the survey area with Wadhurst Clay in the vicinity of the woodland east of Buckholt Lane, Ashdown Beds to the east with a small strip of recent alluvial deposits along Coombe Haven to the northwest.

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

2.6 Detailed inspection of soils within the survey area indicates that the majority of soils comprise medium silty clay loam or medium clay loam topsoils. These may become increasingly clayey with depth or pass to fine grained soft sandstone. Clayey subsoil horizons are frequently gleyed and slowly permeable. The sandstone horizons may be dense and difficult to auger. Both wetness and droughtiness limitations operate, either singly or in combination. An area of poorly drained

heavy clay soils is associated with areas of Wadhurst Clay and alluvium. These have heavy clay loam or clay topsoils over gleyed and slowly permeable clay or silty clay subsoils.

3. AGRICULTURAL LAND CLASSIFICATION

3.1 Land within the survey area is graded 2, 3a and 3b, with grade 3a being most extensive. Other land in non-agricultural use, mainly woodland, was also identified. A small area mapped as agricultural buildings represents a stable block and associated yard.

Grade 2

3.2 Land graded 2 occurs in 3 separate blocks within the survey area. Soils in these areas are derived from Tunbridge Wells sands or Ashdown Beds and are of two main types. Firstly, are deep soils resting over fine grained soft, but relatively dense, sandstones from 85-100 cm. These typically comprise medium silty clay loam or medium clay loam topsoils and upper subsoils, passing to fine sandy loam, fine sandy silt loam or fine sand with depth as the sandstone is approached. Although some soil variants exhibit gley characteristics they are permeable and well or moderately well drained (wetness class I or II). These soils are included in grade 2 due to slight droughtiness and/or wetness limitations.

3.3 The second group of soils comprises deep medium to heavy textured soils. These have medium clay loam or medium silty clay loam topsoils over permeable heavy clay loam or heavy silty clay loam upper subsoils. These pass to gleyed and slowly permeable clays below about 60 cm, occasionally resting over sandstone layers towards the base of the soil profile. These soils are assigned to wetness class II and are principally limited by minor wetness limitations.

Grade 3a

3.4 Land graded 3a is associated with similar soils to those described for grade 2 but where droughtiness and/or wetness limitations are slightly more severe. Firstly, are shallower soils developed over dense fine grained sandstone. These comprise well drained (wetness class I) profiles having medium clay loam topsoils over similar or slightly coarser fine sandy loam upper subsoils which rest over fine sandy loam, sandy loam, or loamy fine sand. These pass to dense, but rootable, fine grained sandstones from about 60 cm - 70 cm. Droughtiness, exacerbated by the relatively high moisture deficits of this coastal location, is the main agricultural limitation of such land.

3.5 Due to the 'banded' nature of the geological deposits some profiles contain clayey horizons giving rise to gleyed slowly permeable clay layers below about 45 cm. Typical profiles comprise medium clay loam topsoils over heavy clay loam upper subsoils. These pass to gleyed and slowly permeable clays as described above. Such profiles are assigned to wetness class III and graded 3a on the basis of imperfect drainage. In some of these profiles either sandstone or lighter textured horizons are encountered at depth.

Grade 3b

3.6 Land of this quality is associated with lower lying alluvial soils adjoining Coombe Haven, and also occurs on higher ground towards the east of the site on soils derived from Wadhurst Clay. In both cases, soils typically comprise heavy clay loam or heavy silty clay loam topsoils (occasionally medium clay loam/silty clay loam or clay) overlying gleyed and slowly permeable clay or silty clay subsoils. The majority of such soils are wetness class IV due to slow permeability. Coupled with the generally heavy texture of the topsoil which gives rise to workability restrictions this land is appropriately placed in grade 3b.

3.7 Some small areas of land can be graded no higher than 3b due to gradient limitations. These are associated with some slope facets within small incised valley features east of Buckholt Lane where gradients of 7-10° were measured.

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Sources of Reference

GEOLOGICAL SURVEY OF GREAT BRITAIN (1980) (1:50,000) 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) Climamtological 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).

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