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AGRICULTURAL LAND CLASSIFICATION
BASINGSTOKE LOCAL PLAN
LAND AT HODD'S FARM, OLD BASING

November 1992

ADAS Ref: 1501/92/92
MAFF Ref: EL 6398

Resource Planning Team
ADAS Statutory Group
Reading

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1. SUMMARY

1.1 In October 1992, an Agricultural Land Classification (ALC) survey was carried out on 27.88 ha of land at Hodd's Farm, Old Basing. ADAS was commissioned by MAFF to determine land quality on this objectors site in connection with the Basingstoke Local Plan. The land was previously surveyed by MAFF in January 1988 and this new survey was undertaken to update the earlier work which was carried out prior to the revision of the ALC system in 1989.

1.2 The survey work was carried out by members of the Resource Planning Team within the ADAS Statutory Group at a detailed level of approximately 1 boring per hectare. A total of 25 auger borings were made together with 2 soil inspection pits 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 uses.

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.

Distribution of Grades and Subgrades

Grade	Area (ha)	% total agricultural area
2	10.37	38
3a	9.58	35
3b	7.38	27
Urban	0.15	
Non-agricultural	0.40	
Total Area of Site	27.88	

1.4 Land on this site has been graded 2, 3a and 3b with small areas of urban (residential dwelling) and non-agricultural land (scrub associated with old canal cutting/banks). Grade 2 land is associated with deep sandy loams or sandy clay loams over either clay or sand. Drainage varies from well to imperfectly drained and wetness and/or droughtiness limitations form the main limitations to agricultural land quality. A variety of soil types are included in the 3a mapping unit, from imperfectly drained calcareous marl soils at the extreme south of the site to droughty coarse textured soils on the higher land. Intermediate soils having alternating sandy and clayey horizons are also found. Drainage status is variable depending upon the depth to and occurrence of slowly permeable clay layers. Land graded 3b is associated with poorly drained clayey soils having heavy clay loam or sandy clay loam topsoils over gleyed slowly permeable clay subsoils.

2. PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 Climate data for the site was obtained by interpolation from a 5 km grid dataset (Met. Office, 1989) for a representative location in the survey area as follows:

Climate Interpolation

Grid Reference	SU 676528
Altitude (m)	75
Accumulated Temperature (day °C)	1447
Average Annual Rainfall (mm)	745
Moisture Deficit - wheat (mm)	105
- potatoes (mm)	97
Field Capacity Days	160

2.2 The above data indicates that there is no climatic limitation per se affecting land quality on this site. However, the interaction between soil and climatic factors (soil wetness and droughtiness) are important factors in the grading of this site).

Relief

2.3 The highest on the site occurs along the northern boundary at altitudes in excess of 80 m A.O.D. The land has overall falls in a southerly and southeasterly direction to altitudes just less than 75 m A.O.D. Nowhere on the site do gradients limit agricultural land quality.

Geology and Soils

2.4 The published geological survey map sheet covering the site (Sheet 284, BGS, 1978) shows the area to be Reading Beds on the higher ground with Upper Chalk mapped on the lower land. Corresponding to the geological deposits mapped, the published 1:250,000 scale soil map of South East England, shows the loamy over clayey Wickham IV association on the higher ground with the Andover 1 association (silty soils over chalk) in the lower areas (SSEW, 1983). Detailed inspection of land on the site indicates the occurrence of a range of soil types from well drained deep coarse loamy to poorly drained clayey soils (see paragraph 1.4).

3. AGRICULTURAL LAND CLASSIFICATION

3.1 A breakdown of the area and extent of grades is given in paragraph 1.3. The majority of the site is graded 2 (38%) and 3a (35%) with a smaller area of grade 3b (27%).

Grade 2

3.2 Land graded 2 is associated with higher elevations on the site and includes soils derived from the Reading Beds formation. These typically comprise medium sandy loam topsoils over similar or coarser (loamy medium sand or sand), upper subsoils, which typically pass to gleyed and slowly permeable clays from 60-90 cm+. Occasional horizons of sandy clay loam also occur. In some profiles clay horizons are

absent within 120 cm. Drainage status varies from wetness class I where clay is absent with 80 cm to wetness class III where slowly permeable clay occurs below about 60-65 cm^{+} and the upper profile is gleyed. In addition to minor wetness limitations, the majority of soil profiles are also limited to grade 2 due to droughtiness caused, in part, by the coarse textured upper soil horizons.

Grade 3a

3.3 The grade 3a mapping unit is rather mixed in soil type composition. At the extreme southern end of the site imperfectly drained (Wetness class III) calcareous soils with medium silty clay loam topsoils and upper subsoils, pass to highly calcareous gleyed slowly permeable heavy, silty clay loam horizons from about 45 cm^{+}. Elsewhere within the unit are contrasting soils with medium sandy loam or sandy clay loam (occasionally heavy clay loam) topsoils overlying either sandy clay loams, sandy clays, heavy clay loams or clays, which then pass to coarser texture (loamy sands and/or sands) from 50 cm^{+}. Alternatively there are similar soils to those described for grade 2 with coarse textured upper subsoils (loamy sand and/or sand) which pass to slowly permeable clayey horizons at depth. The land graded 3a therefore has a variable drainage status from wetness class I to III depending upon the depth to gleying and slowly permeable horizons. Consequently profiles are either limited by moderate wetness or droughtiness limitations, or a combination of both.

Grade 3b

3.4 Land of this quality is associated with clayey soils in the lower lying parts of the sites. Soils typically comprise non-calcareous or calcareous heavy clay loam topsoils (occasionally sandy clay loam, or silty clay loam, overlying clay, which may be calcareous. These soils are commonly gleyed below the topsoil and slowly permeable within 40-55 cm, being allocated either to wetness class III or IV. Wetness and workability limitations are the main factors causing the land to be so graded.

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Sources of Reference

BRITISH GEOLOGICAL SURVEY (BGS) (1978) 1:50,000 Scale Solid and Drift Edition Geological Map Sheet No. 284 (Basingstoke).

MAFF (1988) Agricultural Land Classification in 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 Soil Map of South East England and accompanying legend.