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Vale of the White Horse District Local Plan
Site H23: Land Off Park Road, Faringdon
Agricultural Land Classification
Report
October 1994

AGRICULTURAL LAND CLASSIFICATION REPORT

VALE OF THE WHITE HORSE DISTRICT LOCAL PLAN SITE H23 : LAND OFF PARK ROAD, FARINGDON

1. Summary

- 1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality on a number of sites in the Vale of the White Horse District of Oxfordshire. The work forms part of MAFF's statutory input to the preparation of the Vale of the White Horse District Local Plan.
- 1.2 Site H23 comprises 8.5 hectares of land to the east of Faringdon in Oxfordshire. An Agricultural Land Classification, (ALC), survey was carried out during October 1994. The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 10 borings and two soil inspection pits were described 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 a long term limitation on its use for agriculture.
- 1.3 The work was carried out by members of the Resource Planning Team in the Leeds Statutory Centre of ADAS.
- 1.4 At the time of survey the site had just been ploughed having grown linseed as the previous crop.
- 1.5 The distribution of grades and subgrades is shown on the attached ALC map and the areas and extent are given in the table below. The map has been drawn at a scale of 1:10,000. It is accurate at this scale, but any enlargement would be misleading.

Table 1 : Distribution of Grades and Subgrades

Grade	Area (ha)	% of Agricultural Land
3a	4.1	48.2
3b	<u>4.4</u>	<u>51.8</u>
Total area of site	8.5 ha	100%

- 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 The site comprises freely drained droughty soils to the south, heavy textured poorly drained soils to the north west and some shallow freely drained stony soils to the north east.

The freely drained and stony soils are limited by droughtiness to either Subgrade 3a or 3b and the poorly drained soils limited by soil wetness to Subgrade 3b.

2. Climate

- 2.1 Estimates of climatic variables relevant to the assessment of agricultural land quality were obtained by interpolation from a 5km grid dataset (Met. Office, 1989) for a representative location in the survey area.

Table 2: Climatic Interpolation

Grid Reference	SU 290947
Altitude (m)	110
Accumulated Temperature (degree days, Jan-June)	1398
Average Annual Rainfall (mm)	687
Field Capacity (days)	142
Moisture Deficit, Wheat (mm)	105
Moisture Deficit, Potatoes (mm)	96
Overall Climatic Grade	1

- 2.2 Climatic factors are considered first when classifying land since climate can be overriding in the sense that adverse climatic conditions may restrict land quality irrespective of favourable site and soil conditions. The details in the table above show that there is no overall climatic limitation affecting this site. In addition, no local climatic factors such as exposure or frost risk are believed to affect the land quality.
- 2.3 However, climatic factors do interact with soil factors to influence soil wetness and droughtiness limitations. At this locality, the climate is relatively cool and dry in a regional context. As a result the likelihood of soil droughtiness problems will be enhanced whilst soil wetness limitations may be reduced.

3. Relief

- 3.1 The site lies at an altitude of between 105m and 125m AOD. Gradients are generally gentle or moderate the land falling towards the north-east.. Slope and microrelief do not affect agricultural land quality.

4. Geology and Soil

- 4.1 The British Geological Survey (1971) published map, sheet 253, Abingdon, shows the south of the site to be underlain with Cretaceous Faringdon Sponge Gravels. Elsewhere Corallian Beds, mostly clay and limestone outcrop.
- 4.2 Soil Survey of England and Wales (1971) sheet 253 shows the site to comprise the Wicklesham Series in the south and the Shippon and Kingston Holwell Series else

where. The Wicklesham Series typically contains stony loamy sand or sand soils. The Shippon Series contains well drained clays over limestone. The Kingston Holwell Series is a transition zone soil generally loamy over clayey.

- 4.3 Detailed field examination on the site revealed drainage imperfections in the clayey soils to the north (Wetness Class III to IV). Elsewhere soils were well drained (Wetness Class I).

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 soil observation points are shown on the attached sample point.

Subgrade 3a

- 5.3 Good quality land has been mapped in the southern half of the site. Droughtiness was the principal limiting factor. Topsoils were usually sandy clay loam or medium sandy loam over similar textured subsoils which tended to become sandier with depth passing to loamy sand or sand lower subsoils. Topsoils were slightly stony, (5-10% flints) subsoils moderately stony (10-50% flints). Soils are well drained falling into Wetness Class I, Soil Pit 1 being typical of these profiles. The combination of sandy textures and subsoil stone contents cause these freely draining soils to have limited reserves of profile available water, given the prevailing climatic regime. The ALC grade of this land is therefore limited by droughtiness which may limit crop yields on this land. Subgrade 3a land may be expected to consistently produce moderate to high yields of a narrow range of 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

- 5.4 Moderate quality land has been mapped to the north of the site. Most of this land is limited by soil wetness and workability restrictions. Topsoils are medium or heavy clay loams over a heavy clay loam or clay slowly permeable subsoil. These profiles are poorly drained (Wetness Class IV or occasionally Wetness Class III), with a slowly permeable layer occurring between 20 and 60 cm depth. Soil Pit 2 is typical of these profiles. Soil wetness adversely affects both crop development and soil workability. Subgrade 3b land is capable of producing moderate yield of a narrow range of crops such as cereals and grass, or a lower yield of a wider range of crops, or high yields of grass which can be grazed or harvested over most of the year.

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SOURCES OF REFERENCE

British Geological Survey (1971) Sheet No. 253, Abingdon.

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 (1971), Sheet 253, Abingdon.