

RECONNAISSANCE SURVEY
AGRICULTURAL LAND CLASSIFICATION
FOLIEJOHN PARK, WINKFIELD, BERKSHIRE

AGRICULTURAL LAND CLASSIFICATION - RECONNAISSANCE SURVEY

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1. BACKGROUND

1.1 Land on this 211.4 ha site was inspected between 18 and 20 May 1992, in connection with proposals for a golf course and leisure complex development. The site was surveyed using 1.2 m Dutch soil augers, at a reconnaissance scale of 1 per 4 hectares on a grid basis across the site. Additional information was obtained from the inspection of 3 soil pits. At the time of the survey, the land was under a combination of winter cereals and oilseed rape.

2. PHYSICAL FACTORS AFFECTING LAND QUALITY

Relief

2.1 The site varies in altitude between approximately 40-70 m (A.O.D.). The landscape comprises small undulating hills and valleys. Localised areas were found to be limited in terms of land quality by gradients of between 7° and 10°.

Climate

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

Climatic Interpolation

Grid Reference	SU894748	SU892742	SU904736
Altitude (m AOD)	40	55	70
Accumulated Temperature (°days Jan-June)	1473	1456	1439
Average Annual Rainfall (mm)	658	663	671
Field Capacity Days	138	139	140
Moisture Deficit (wheat - mm)	115	114	111
Moisture Deficit (potatoes - mm)	110	108	105

2.3 Climatic factors alone place no limitation on agricultural land quality in this area, but do affect the interactive limitations between soil and climate, namely soil wetness and droughtiness.

Geology and Soils

2.4 The British Geological Survey (BGS), Sheet 269, Windsor (1:50000 Series, 1981), shows the site to be underlain by Tertiary London Clay, with areas of Quaternary Plateau Gravel occurring as a drift deposit on higher ground.

2.5 Soil Survey of England and Wales, Sheet 6 (1983) shows the site to comprise soils of the Wickham 4 Association. These soils are described as "seasonally waterlogged, with slowly permeable subsurface horizons" (SSEW 1984). Soil Survey of England and Wales (1979) Soils of Berkshire, maps both Wickham and Windsor Series, which form part of the Wickham 4 Association. The Wickham Series comprise "Typical stagnogley soils, fine loamy or fine silty over clayey subsoils" (SSEW 1979). The

Windsor Series is described as "Pelo stagnogley, clayey to the surface with grey and ochreous mottles" (SSEW 1979).

- 2.6 Detailed field examination indicates the presence of one soil type. Profiles typically comprise medium to heavy silty clay loam or clay loam topsoils, over heavy silty clay loam, heavy clay loam or clay. Upper subsoils were found to be slowly permeable and gleyed with 34 cm. Wetness Class IV was therefore assigned to such profiles.

Occasional profiles located on the higher facets of the landscape (ie. above 60 m A.O.D.) were found to be impenetrable (to soil auger) between 29 and 70 cm. This was largely due to stony layers in the upper subsoil which were held within a clay matrix. Profiles were gleyed within 36 cm and thus assigned to Wetness Class IV.

3. AGRICULTURAL LAND CLASSIFICATION (ALC)

- 3.1 The ALC grading of the site is primarily determined by interactions between soil and climatic factors. Soil wetness is the major limitation to land quality at this site. ALC grade 3b was exclusively mapped, and a breakdown of the area and extent is given below.

<u>Grade</u>	<u>Area (ha)</u>	<u>% of total agricultural land</u>
3b	175.1	100.0
Urban	2.0	
Woodland	15.7	
Agricultural Buildings	0.9	
Non Agricultural	17.7	
Total Agricultural Area	<u>175.1</u>	
Total Area of the Site	<u>211.4</u>	

- 3.2 Appendix 1 gives a generalised description of the grades and subgrades identified in this survey.

Grade 3b

- 3.3 Grade 3b occurs exclusively throughout the agricultural area of the site. Profiles are typical to those described in Section 2.6. Soils experience significant wetness limitations as a result of shallow slowly permeable layers and workability restrictions due to the heavy nature of the topsoil. Localised areas (ie. North of Chawridge Gorse and east of Windsor Hill) were found to be limited by gradients of between 7° and 10° which were measured using an optical reading clinometer. Land of this quality is capable of producing moderate yields of a narrow range of crops, principally cereals and grass.

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SOURCES OF REFERENCES

BRITISH GEOLOGICAL SURVEY, (1981), Windsor, Sheet 269 (1:50000 Series)

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, (1979), Soils of Berkshire, Bulletin No. 9.

SOIL SURVEY OF ENGLAND AND WALES, (1983), Sheet 6, Soils of South East England.

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

APPENDIX 1

DESCRIPTION OF THE GRADES AND SUBGRADES

The ALC grades and subgrades are described below in terms of the types of limitation which can occur, typical cropping range and the expected level and consistency of yield. In practice, the grades are defined by reference to physical characteristics and the grading guidance and cut-offs for limitation factors in Section 3 enable land to be ranked in accordance with these general descriptions. The most productive and flexible land falls into Grades 1 and 2 and Subgrade 3a and collectively comprises about one-third of the agricultural land in England and Wales. About half the land is of moderate quality in Subgrade 3b or poor quality in Grade 4. Although less significant on a national scale such land can be locally valuable to agriculture and the rural economy where poorer farmland predominates. The remainder is very poor quality land in Grade 5, which mostly occurs in the uplands.

Descriptions are also given of other land categories which may be used on ALC maps.

Grade 1 – excellent quality agricultural land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2 – very good quality agricultural land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.

Grade 3 – good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a – good quality agricultural land

Land capable of consistently producing moderate to high yields of a narrow range of arable 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 – moderate quality agricultural land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4 – poor quality agricultural land

Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (eg cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5 – very poor quality agricultural land

Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Descriptions of other land categories used on ALC maps

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

Agricultural buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg polythene tunnels erected for lambing) may be ignored.

Open water

Includes lakes, ponds and rivers as map scale permits.

Land not surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above land cover types, eg buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will usually be shown.