

TUBNEY FARM  
FRILFORD HEATH  
OXON

## AGRICULTURAL AND CLASSIFICATION

### LAND AT TUBNEY FARM FRILFORD HEATH OXON

#### 1 SUMMARY

- 1 1 Land on this 64 95 ha site was inspected on 21 May 1992 in connection with proposals to change the use of the land to a Golf Course. An Agricultural Land Classification Survey was undertaken in accordance with the guidelines and criteria contained in the MAFF publication Agricultural Land Classification in England and Wales (MAFF 1988). These guidelines provide a framework for classifying land according to the degree to which its physical or chemical characteristics impose long term limitations on agricultural use.
- 1 2 The survey was carried out at a reconnaissance level of detail with 21 auger boring samples examined mainly on a grid basis with supplementary borings as necessary. Two soil inspection pits were also dug. At the time of survey the land was lying fallow.
- 1 3 The results of the survey are presented on the accompanying coloured plan at a scale of 1 10 000. It is accurate only at this scale as any enlargement would be misleading. The extent of the ALC grades mapped on the site are as follows:

Grade	Ha	% Agricultural Area
3b	53 90	100
Non-Agricultural*	11 05	
Total site area	<u>64 95</u>	

\*Woodland and scrub

- 1 4 Soils on the majority of the site typically comprise non-calcareous medium loamy sand or occasionally medium sandy loam topsoils over loamy sand or sand upper subsoils passing to sand at depth. Topsoils are usually stoneless to very slightly stony but subsoils may contain Corallian sandstone bands. These soils are limited to grade 3b due to droughtiness. Fringing the southern and south western boundary of the site are contrasting soils derived from alluvial deposits. These typically comprise organic heavy clay loams over slowly permeable clays within 40 cm. Peaty horizons may occur in the subsoil. These soils are limited to grade 3b by wetness. A general description of the grades used in the ALC system is attached.

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 Ref	SU429988	SU434979
Altitude (m)	75	65
Accumulated Temperature (day Jan-June)	1433	1445
Average Annual Rainfall (mm)	622	613
Field Capacity Days	131	129
Moisture Deficit - wheat (mm)	112	112
Moisture Deficit - potatoes (mm)	106	108

- 2 2 Climatic factors place no limitation on agricultural land quality but do affect the interaction of soil and climatic factors namely soil wetness and droughtiness

Geology and Soils

- 2 3 The published geological survey map for site (Abingdon Sheet 253) (IGS 1971) shows the land to be predominantly Corallian Sand Beds with a small strip of alluvium along the southern and south western boundary associated with a stream
- 2 4 A soil map covering the Wantage and Abingdon District at a scale of 1:63360 (SSEW 1973) maps most of the site as the Fyfield Series with the Kingston/Langworth Complex associated with the valley bottom along the southern/south western boundaries
- 2 5 Site survey indicates the majority of the site comprises non-calcareous loamy medium sand or occasionally medium sandy loam topsoils over loamy sand or sand upper subsoils passing to sand at depth. Isolated profiles have sandy loam horizons within the subsoil and some sand horizons contain thin clay lamellae. Sandstone bands were also encountered in some profiles. Soils of this type are well drained (Wetness Class I)
- 2 6 A narrow strip of contrasting soils occurs in the valley adjoining the brook along the south/south western boundaries of the site. Soils typically comprise organic heavy clay loams over slowly permeable clay or heavy clay loam within 40 cm. Peaty subsoil horizons were also encountered with occasional profiles wholly comprising deep peaty soils. These alluvial soils are poorly drained (Wetness Class IV) due to slow subsurface permeability. Watertables were also noted between 40 and 100 cm at the time of survey indicative of the additional influence of a high groundwater level

### 3 AGRICULTURAL LAND CLASSIFICATION

#### Grade 3b

- 3 1 Land of this quality is mapped over the whole agricultural area of the site and encompasses the two soil types described in paras 2 5 and 2 6 above. A few profiles of higher quality land were recorded but as these were random and isolated in extent they are included within the 3b mapping unit. The coarse loamy and sandy soils covering the majority of the area have a moderate to low available water capacity which in this relatively dry climatic regime causes the land to have a droughtiness limitation. Although the soils are easy working potential yields are likely to be restricted and lack consistency from year to year.

The heavy textured alluvial soil types are limited to this grade by slow permeability and heavy subsoil textures causing a moderately severe wetness limitation (Wetness Class IV) which will combine to restrict flexibility of cropping and cultivations.

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**SOURCES OF REFERENCE**

INSTITUTE GEOLOGICAL SCIENCES (1971) 1 63360 Scale Drift Edition Geological Map Sheet No 253 (Abingdon)

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 (1973) Soils of the Wantage and Abingdon District (Sheet 253) Map at 1 63360 and accompanying memoir

## 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