AGRICULTURAL LAND CLASSIFICATION

BAULKING QUARRY, BAULKING

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1. INTRODUCTION

1.1 In June 1992 an Agricultural Land Classification was carried out on 6.45 hectares of land at Baulking Quarry, north west of Wantage, Oxfordshire. The survey was carried out in connection with proposals to extend the working quarry adjacent to the site.

1.2 The site was surveyed using 1.2 m Dutch soil augers with samples being taken at approximately 100 m intervals on a grid basis across the site. In addition soil inspection pits were examined in order to obtain more detailed soil information.

Land-Use

1.3 At the time of survey the land was under wheat and ley grass.

2. PHYSICAL FACTORS AFFECTING LAND QUALITY

Relief

2.1 The site lies at approximately 78-80 m A.O.D. falling very gently south west. Nowhere on the site does gradient or altitude represent a significant limitation to land quality.

Climate

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

Climatic Interpolation

Grid Reference	SU 325 910
Altitude (m, AOD)	78
Accumulated Temperature (°days, Jan-June)	1435
Average Annual Rainfall (mm)	662
Field Capacity Days	142
Moisture Deficit, wheat (mm)	107
Moisture Deficit, potatoes (mm)	99

2.3 Climatic factors place no limitation on agricultural land quality at this locality. They do, however, influence the interaction between soil and climatic factors which affect the interactive limitation of soil wetness and droughtiness.

Geology and Soils

2.4 British Geological Survey (1971), Sheet 253, Abingdon show the site to be underlain by Lower Greensand, except for a small area towards the southern edge of the site which is underlain by Gault Clay.

2.5 Soil Survey of England and Wales, Sheet 6, (1983) shows the site to comprise one mapping unit. Soils of the Kingston Association are described as "Typical stagnogley soils with grey and ochreous mottled fine loamy upper layers with a large fine sand fraction, over clayey subsoils" (SSEW 1984).

2.6 Detailed soil examination maps soils similar to those described by the Soil Survey of England and Wales.

3. AGRICULTURAL LAND CLASSIFICATION

3.1 The ALC grading of the site is primarily determined by interactions between soil and climatic factors. Soil wetness is the main limitation at this site. ALC grade 3b has been mapped, a breakdown of the grade is given below.

Grade	Area (ha)	% of total agricultural area
3b	6.45	100
Total Area	6.45	

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

3.3 Grade 3b

Land of this quality is mapped exclusively across the site and profiles typically comprise deep, poorly drained soils that are limited by wetness. Medium clay loam, sandy clay loam, and heavy clay loam topsoils typically rest over gleyed and slowly permeable sandy clay loam, sandy clay or clay subsoils. Profiles are poorly drained and therefore assigned to wetness class IV.

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SOURCES OF REFERENCE

BRITISH GEOLOGICAL SURVEY, (1971), Sheet 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 datasets for Agricultural Land Classification.

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.