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Lake View Country Club, Lanviet

AGRICULTURAL LAND CLASSIFICATION
REPORT OF SURVEY

Resource Planning Team
Taunton Statutory Unit

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ADAS

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Report of Survey

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1. SUMMARY

Twenty four hectares of land at the Lake View Country Club, Lanivet were surveyed using the Agricultural Land Classification Survey (ALC) System in April 1994. The survey was carried out on behalf of MAFF as part of its statutory role in response to an ad hoc planning application made to North Cornwall District Council.

The fieldwork was carried out by ADAS (Resource Planning Team, Taunton Statutory Unit) at a scale of 1:10,000. The information is correct at this scale but any enlargement would be misleading. The distribution of grades identified in the survey area is detailed below and illustrated on the accompanying ALC map.

Distribution of ALC grades : Lake View Country Club, Lanivet

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
3a	24.7	24.7	100%
TOTAL	24.7	100%	

All of the agricultural land surveyed was found to be Subgrade 3a, limited by moderate workability. These soils are well drained and become increasingly stony with depth. There is slight exposure at the site.

2. INTRODUCTION

Twenty four hectares of land at the Lake View Country Club, Lanivet were surveyed using the Agricultural Land Classification Survey (ALC) System in April 1994. The survey was carried out on behalf of MAFF as part of its statutory role in response to an ad hoc planning application made to North Cornwall District Council.

The fieldwork was carried out by ADAS (Resource Planning Team, Taunton Statutory Unit) at a scale of 1:10,000 (approximately one auger boring per hectare). The information is correct at this scale but any enlargement could be misleading. A total of 24 auger borings and one soil profile pit were examined.

The published provisional one inch to the mile ALC map of this area (MAFF 1961) shows the whole site to be Grade 3. The scale of this map is considered inadequate for the current purposes. The recent survey supersedes this map having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of Agricultural Land (MAFF 1988).

These Guidelines provide a framework for classifying the land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The grading takes account of the top 120cm of the soil profile. A description of the grades used in the ALC System can be found in Appendix 2.

3. CLIMATE

The grade of the land is determined by the most limiting factor present. The overall climate is considered first because it can have an overriding influence on restricting land to a lower grade despite other favourable conditions.

Estimates of climatic variables were obtained for the site by interpolation from the Agricultural Climate Dataset (Meteorological Office 1989). The data are shown in Table 1.

The parameters used for assessing overall climatic conditions are accumulated temperature, (a measure of the relative warmth of a locality) and average annual rainfall, (a measure of overall wetness). The values shown in Table 1 reveal that there is an overall climatic limitation which limits the site to Grade 2 at best.

Climatic data on Field Capacity Days (FCD) and Moisture Deficits for wheat (MDW) and potatoes (MDP) are also shown. These data are used in assessing the soil wetness and droughtiness limitations referred to in later sections. A description of the Wetness Classes used in quantifying the degree of wetness can be found in Appendix 3.

There is evidence at the site of exposure in the form of wind pruned trees.

Table 1 Climatic Interpolations: Lake View Country Club

Grid Reference	SX 071 636
Altitude (m)	130
Accumulated Temperature (day deg)	1485
Average Annual Rainfall (mm)	1233
Overall Climatic Grade	2
Field Capacity Days	239
Moisture Deficit, Wheat (mm)	74
Moisture Deficit, Potatoes (mm)	58

4. RELIEF AND LANDCOVER

The survey area is part of a gently sloping hill side rising from a height of 115m AOD to 145m AOD.

At the time of survey the western fields were in grass leys. Part of the southern field was being developed as a golf driving range at the time of survey and had been seeded with grass. The remaining eastern fields were also in grass connected with the driving range.

5. GEOLOGY AND SOILS

The geology of the site is shown on the published 1:50,000 scale drift geology map, sheet 347 (Geological Survey of England and Wales 1982). Most of the site is shown to be underlain by Meadfoot Beds which are calcareous slates, grits and limestone. The south eastern edge of the site is shown as having alluvial deposits.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. The majority of the site is mapped as the Denbigh 2 Association. These soils are described as well drained fine loamy soils over slate or slate rubble. There is a small area of peat soils from the Crowdy 2 Association mapped on the southern edge of the site. These are described as thick very acid amorphous raw peat soils.

All the soils found in the recent survey are typical of the Denbigh 2 Association. The soils are well drained and have variable stone contents. The topsoil texture of the soil is a medium clay loam and the clay content increases in the subsoil.

6. AGRICULTURAL LAND CLASSIFICATION

The distribution of ALC grades identified in the survey area is detailed in Table 2 and shown on the accompanying ALC map. The information is correct at the scale shown but any enlargement would be misleading.

Table 2 Distribution of ALC grades: Lake View Country Club

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
3a	24.7	24.7	100%
TOTAL	24.7	100%	

Subgrade 3a

All of the site has been mapped as Subgrade 3a. These soils are well drained and are Wetness Class I. The soils experience a moderate workability limitation imposed by the interaction of the topsoil texture of medium clay loam and the number of days that the soil is at field capacity. This limitation means that the versatility of the land is reduced because the number of days when the land can be accessed without damaging the soil structure is reduced.

The soils are stony. The stone content of the soil varies around the site and in the profile. The subsoils tend to be stonier than the topsoil. The topsoil stone content was measured at a soil profile pit and was 9% by volume. In places the subsoils had high percentages of soft slate. Despite the stone content of the soil droughtiness is not an important limitation because of the low soil moisture deficits.

There is evidence of a slight exposure risk at the site. Trees are windpruned but the limitation to agricultural use is considered to be no greater than other limitations.

The small area in the south which was being developed as a golf driving range was not surveyed but is mapped as Subgrade 3a on the basis of the surrounding land.

APPENDIX 1

REFERENCES

GEOLOGICAL SURVEY OF ENGLAND AND WALES (1982) Drift edition. Sheet 347, Bodmin, 1:50,000 scale

MAFF (1961) Agricultural Land Classification Map sheet 185 Provisional 1:63,360 scale

METEOROLOGICAL OFFICE (1989) Published climatic data extracted from the agroclimatic dataset, compiled by the Meteorological Office

SOIL SURVEY OF ENGLAND AND WALES (1983) Sheet 5 Soils of South West England 1:250,000 scale

APPENDIX 2

DESCRIPTION OF THE GRADES AND SUBGRADES

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 include 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 most 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 park land, 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.

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.

Source: MAFF (1988) Agricultural Land Classification of England and Wales (Revised guidelines and criteria for grading the quality of agricultural land) Alnwick.

APPENDIX 3

DEFINITION OF SOIL WETNESS CLASSES

Wetness Class I

The soil profile is not wet within 70cm depth for more than 30 days in most years.

Wetness Class II

The soil profile is wet within 70cm depth for 31-90 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 90 days, but not wet within 40cm depth for more than 30 days in most years.

Wetness Class III

The soil profile is wet within 70cm depth for 91-180 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 180 days, but only wet within 40cm depth for between 31 and 90 days in most years.

Wetness Class IV

The soil profile is wet within 70cm depth for more than 180 days but not within 40cm depth for more than 210 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 40cm depth for 91-210 days in most years.

Wetness Class V

The soil profile is wet within 40cm depth for 211-335 days in most years.

Wetness Class VI

The soil profile is wet within 40cm depth for more than 335 days in most years.

Notes: The number of days specified is not necessarily a continuous period. 'In most years' is defined as more than 10 out of 20 years.

Source: Hodgson, J M (in preparation) Soil Survey Field Handbook (revised edition).

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Lake View Country Club	Pit 1	3° SW	Ley	Av Rainfall: 1233 mm ATO: 1485°C FC Days: 239 Climatic Grade: 2	Meadfoot Beds
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY		TOPSOIL SAMPLE REFERENCE
31/94	7/4/94	ASP 11 SX 016 636	G M Shaw		RPT/GMS 379

Horizon Number	Lowest Av Depth (cm)	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots: Abundance, Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and form
1	40	10YR43	MCL	9% <2cm HR + ZR Sieved and displaced	None	MCSAB	Good	-	Friable	Common fine + v fine		None	Smooth gradual
2	65	10YR54	HCL	10% ZR Visual	None	MCSAB	Good	Moderate	Friable	Common v fine		None	Smooth clear
3	80+	2.5Y64	HCL	10% ZR Visual	None	MCAB	Low	Moderate	Friable	Few v fine		None	

Profile Gleyed From: Not gleyed

Depth to Slowly Permeable Horizon: No SPL

Wetness Class: I

Wetness Grade: 3a

Available Water Wheat: 112 mm

Potatoes: 114 mm

Moisture Deficit Wheat: 74 mm

Potatoes: 58 mm

Moisture Balance Wheat: 38 mm

Potatoes: 56 mm

Droughtiness Grade: 1 (Calculated to 80 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): Workability

Remarks:

Some borings went into weathered slate.
Slight exposure.

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