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Frogcastle Farm, Sandhurst Lane
Gloucester

**AGRICULTURAL LAND CLASSIFICATION
REPORT OF SURVEY**

Resource Planning Team
Taunton Statutory Unit

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AGRICULTURAL LAND CLASSIFICATION

GLOUCESTER LOCAL PLAN, SITE OF FROGCASTLE FARM, SANDHURST LANE, GLOUCESTER

REPORT OF SURVEY

1.0 INTRODUCTION

- 1.1 The site, an area of 16.2 ha, is located to the north of Kingsholm at Gloucester. The survey work was completed on behalf of MAFF as part of its statutory role in response to the possible inclusion of this site in Gloucester local plan. The survey work was carried out in April 1993 by ADAS's Resource Planning Team (Taunton Statutory Unit) using the Agricultural Land Classification system. The field work was carried out at a scale of 1:10,000 (approximately one sample point every hectare of agricultural land). These borings were supplemented by a soil inspection pit in order to assess subsoil conditions. The information is correct at the scale shown but any enlargement would be misleading.
- 1.2 The published Provisional 1" to the mile ALC map of this area (MAFF 1974) shows much of the site to be Grade 4, with some Grade 1 in the northern part and urban in the eastern part. The current survey was undertaken to provide a detailed representation of the agricultural land quality using the Revised Guidelines and Criteria (MAFF 1988). These guidelines provide a framework for classifying 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 120 cm of the soil profile.
- 1.3 The proportion of ALC grades are shown in the table below and are illustrated on the accompanying map. A description of the grades used in the ALC system can be found in the Appendix.

Table 1 Distribution of ALC grades: Frogcastle Farm,
Sandhurst Lane, Gloucester

GRADE	AREA (ha)	% OF SURVEY AREA	% OF AGRICULTURAL LAND
2	6.2	38.3	45.0
4	7.7	47.5	55.0
Non-agricultural	1.6	10.0	
Urban	0.5	3.1	
Farm buildings	0.2	1.1	
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TOTAL	16.2	(100.0) (16.2 ha)	(100.0) (13.9 ha)

2.0 CLIMATE

- 2.1 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 lower grades despite other favourable conditions.
- 2.2 Climatic data for the site was interpolated from the published Agricultural Climate Dataset (Meteorological Office 1989). The parameters used for assessing climate are accumulated temperature (a measure of relative warmth of a locality) and average annual rainfall (a measure of overall wetness). The results shown in Table 2 indicate that there is no climatic limitation.

Table 2 Climatic interpolations: Frogcastle Farm,
Sandhurst Lane

Grid Reference	S0 831204	S0 832198
Height (m)	10	9
Accumulated Temperature (° days)	1511	1513
Average Annual Rainfall (mm)	633	640
Overall Climatic Grade	1	1
Field Capacity (days)	139	141
Moisture Deficit - Wheat (mm)	115	115
Potatoes (mm)	109	109

- 2.3 No local climatic factors such as exposure were noted in the survey area. Climatic data on Field Capacity Days (FCD) and Moisture Deficits for wheat (MDW) and potatoes (MDP) are also shown. This data is used in assessing the soil wetness and droughtiness limitations referred to in Section 5.

3.0 RELIEF

- 3.1 The site occupies very gently sloping land on the edge of the River Seven flood plain and lies at approximately 9-10 m AOD. Gradient does not constitute a limitation.
- 3.2 Due to the sites low lying position on the edge of the River Seven flood plain, part of this land is prone to regular winter flooding. Discussions with the NRA indicate that land in this area above approximately 10 m AOD is protected by flood defences at Gloucester Lock. NRA records indicate that land below 10 m AOD floods several times a decade. This information confirms observations made by the farmer on the extent of regular winter flooding. Due to the risk to agricultural crops from flooding, land below approximately 10 m AOD has been assessed as Grade 4.

4.0 GEOLOGY AND SOILS

- 4.1 The published 1:50,000 scale solid and drift geology map sheets 324 and 216 (Institute of Geological Sciences 1972 and British Geological Survey 1988 respectively) shows the entire site to be underlain by Pleistocene and recent drift deposits. The northern and eastern areas are underlain by fan gravel whilst the central and western parts of the site comprise river alluvium. A small lens of terrace gravel lies on the western side of the site.

- 4.2 The Soil Survey of England and Wales mapped the soils of the area in 1983, at a reconnaissance scale of 1:250,000. This map shows the soils to comprise the Badsey 1 Association* with a narrow band of Fladbury 1 Association** on the western edge of the site.
- 4.3 During the recent survey two soil types were found. Most of the agricultural land comprises deep sandy loams. Profiles typically consist of very slightly stony medium sandy loams over loamy medium sands and loamy coarse sands at approximately 70-90 cm depth.
- 4.4 A small area on the west of the site comprise clayey profiles. These typically consist of heavy clay loam and heavy silty clay loam topsoils over sandy clay loams and clay at variable depths.

5.0 AGRICULTURAL LAND CLASSIFICATION

- 5.1 The distribution of ALC grades identified in the survey area is detailed in section 1 and shown on the accompanying ALC map. This shows nearly half of the site to be best and most versatile land.

Grade 2

- 5.2 A total of 6.2 ha has been graded 2. This land relates to the well drained deep sandy loam profiles described in paragraph 4.3. This land is on slightly higher ground than the rest of the site and so suffers less from flooding. The relatively high moisture deficits in this area restrict the light textured soils to grade 2 with a slight droughtiness limitation.

Grade 4

- 5.3 The grade 4 land has limited agricultural value due to the frequent winter flooding (ie more than once in 3 years), during which the land is under water for more than 4 days at a time.

Non-agricultural Land

- 5.4 A total of 1.6 ha of non-agricultural land was found in the survey area. This comprises a woodland and small area of hospital grounds.
- 5.5 Sandhurst Lane is mapped as urban and Frogcastle Farm as Agricultural buildings, totalling 0.7 ha.

*Badsey 1 Association: Well drained calcareous and non-calcareous fine loamy soils over limestone gravel. Some deep fine loamy soils and fine loamy soils over gravel, and similar but shallower soils affected by groundwater.

**Fladbury 1 Association: Stoneless clayey soils in places calcareous. Soils variably affected by groundwater. Flat land risk of flooding.

APPENDIX

DESCRIPTION OF THE GRADES AND SUB-GRADES

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 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.

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.