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COTSWOLD DISTRICT LOCAL PLAN: CHIPPING CAMPDEN

AGRICULTURAL LAND CLASSIFICATION

Report of Survey

1.INTRODUCTION

Twenty five hectares of land around Chipping Campden were graded under the Agricultural Land Classification (ALC) System in September 1992. The survey was carried out for MAFF as part of its statutory input to the draft consultation on the Cotswold District Local Plan.

The fieldwork was carried out by ADAS's Resource Planning Team (Taunton Statutory Unit) at a scale of 1:10,000 (approximately one sample point every hectare). The information is correct at the scale shown but any enlargement would be misleading. This survey supercedes the previous survey of this area at 1" being at a more detailed level and carried out under the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1989). A total of 24 borings and 1 soil pit were examined.

The ALC provides 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 120cm of the soil profile. A description of the grades used in the ALC System can be found in the appendix.

The distribution of ALC grades identified in the survey area is detailed below and illustrated on the accompanying map.

Table 1 Distribution of ALC grades: Chipping Campden

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
2	6.2	24.7	35.2
3A	6.8	38.6	38.6
3B	4.6	18.3	26.2
Non Agri	4.9	19.5	100% (17.6 ha)
Urban	2.6	10.4	
TOTAL	25.1	100%	

As is evident from Table 1 the majority of agricultural land is Grade 2 and Subgrade 3A, with a relatively high proportion of land in non-agricultural and urban use.

2. 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 lower grades despite other favourable conditions.

To assess any overall climatic limitation, estimates of important climatic variables were obtained for the site by interpolation from the 5km grid Met Office/Maff Database (Met Office/MAFF/SSLRC 1989). The parameters used for assessing climate are accumulated temperature, (a measure of the relative warmth of a locality) and average annual rainfall, (a measure of overall wetness). The results shown in Table 2 reveal that there is no climatic limitation across the survey area.

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.

Table 2 Climatic Interpolations: Chipping Campden

Grid Reference	SP148398	SP171396
Height (m)	160	115
Accumulated Temperature (^{o} days)	1325	1376
Average Annual Rainfall (mm)	712	690
Overall Climatic Grade	1	1
Field Capacity (Days)	161	158
Moisture Deficit, Wheat (mm)	93	99
Potatoes (mm)	81	87

3. RELIEF

The survey area lies high in the valley of the River Cam, being predominantly flat with some gentle slopes. There wis some height differences within the survey area, the eastern area lying on the 115 m contour and the northern area on the 160 m contour. However, this height differnce is not significant with regard to climatic limitation.

4. GEOLOGY AND SOILS

The entire survey area is underlain by Middle Lias, as shown on BGS sheet 217. The soils across the survey area become heavier with depth. The predominant topsoil texture, heavy clay loams, give way to clay subsoils. The soils showed impeded drainage and water retention over almost the entire area, particularly on the gentle slopes, but were more free draining in the flat areas.

5. AGRICULTURAL LAND CLASSIFICATION

The distribution of ALC grades identified in the survey area is detailed in Section 1 and shown on the accompanying ALC map. The information is correct at the scale shown but any enlargement would be misleading.

Grade 2

Just over one-third of the agricultural land surveyed has been classed as Grade 2. The two areas of Grade 2 land to the east and west of the survey area had heavy clay loam topsoils which became heavier with depth. These soils are free draining and can be placed into Wetness Class I. However, due to the combination of relatively high Field Capacity value and topsoil texture these soils are classed as Grade 2, due to a workability limitation. Such a limitation imposes grazing and cultivation restrictions. The area of Grade 2 land in the centre of the survey area contains soils with a medium clay loam topsoil and heavier subsoils. Due to this lighter topsoil no workability limitation exists, but stone content was found to increase. restricting the available water to crops. This droughtiness limitation downgrades the land to Grade 2.

Subgrade 3A

Just over one-third of the agricultural land surveyed has been classified as Subgrade 3A. These areas of land represent soils where a wetness limitation exists. There are some differences between the Subgrade 3A areas in the east and that to the west of the survey area. In the east the topsoils are medium silty clay loams with heavy clay loam and clay subsoils. There was evidence of water retention (gleying) and a slowly permeable layer (SPL) in these soils from a depth of approximately 40 cm downwards. An SPL impedes both drainage and root penetration, and the presence of an SPL and gleying from 40 cm means these soils are placed into Wetness Class III. The combination of topsoil texture and Field Capacity value for this area places these soils into Subgrade 3A. The soils classed as Subgrade 3A to the west of the survey area differ in that they have a heavy clay loam topsoil and evidence of gleying and a SPL at greater depths, typically below 55 cm. Thus, these soils are placed into Wetness Class II, but due to the heavier topsoil textures are still classed as Subgrade 3A.

Subgrade 3B

The remaining area of agricultural land is graded as Subgrade 3B. Similarly, the majority of soils in this area are downgrade to Subgrade 3B due to a wetness limitation. These soils are similar to the Subgrade 3A soils but the wetness limitations are more severe. These soils typically

have heavy clay loam topsoils (clay in one area) with clay subsoils. There was evidence of a SPL and gleying in these soils, on average from 45 cm downwards. Thus, these soils are placed into Wetness Class III. Due to the heavy clay loam topsoil these soils are classed as Subgrade 3B. The parcel of Subgrade 3B land to the south of the survey area is downgraded due to a microrelief limitation. The land in this area can be described as having a ridge and furrow microrelief, thus restricting the range of agricultural machinery that can be safely used.

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 an 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.