

BAGLEY ROAD, ROCKWELL GREEN, WELLINGTON

AGRICULTURAL LAND CLASSIFICATION

Report of Survey

1. INTRODUCTION

Ten hectares of land at Bagley Road were graded using the Agricultural Land Classification (ALC) System in April 1993. The survey was carried out for MAFF as part of its statutory role in connection with the preparation of the West Deane 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 this scale but any enlargement would be misleading. A total of 6 auger borings and 1 soil profile pit were examined.

The published Provisional 1" to the mile ALC map of this area (MAFF 1971) shows the site to be Grades 2 and urban. The recent survey supercedes 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).

The Agricultural Land Classification 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.

Table 1 Distribution of ALC grades: Bagley Road

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
1	2.9	30.2	69.0
2	1.3	13.5	<u>31.0</u>
Non Agric	0.4	4.2	100%
Urban	2.1	21.9	
Farm Bdgs	<u>2.9</u>	<u>30.2</u>	
TOTAL	9.6	100%	

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.

Estimates of climatic variables were obtained for the site by interpolation from the 5km grid Meteorological Office Database (Meteorological Office 1989) and are shown in Table 2.

The parameters used for assessing overall climatic limitation 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 2 reveal that there is no overall climatic limitation.

No locally limiting 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. These data are used in assessing the soil wetness and droughtiness limitations referred to in Section 5.

Table 2 Climatic Interpolations: Bagley Road

Grid Reference	ST 126 192
Height (m)	95
Accumulated Temperature (day deg)	1475
Average Annual Rainfall (mm)	927
Overall Climatic Grade	1
Field Capacity (Days)	191
Moisture Deficit, Wheat (mm)	92
Potatoes (mm)	81

3. RELIEF

The site has a gradual rise in altitude from 80m OAD in the north to 95m OAD in the south.

4. GEOLOGY AND SOILS

The published 1:50,000 scale solid and drift geology map, sheet 311 (Geological Survey of England and Wales 1976), shows the majority of the agricultural land on the site to be underlain by Keuper Marls whilst the areas to the NW and SE have drift deposits of Valley gravels.

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 be of two associations within the

survey area. In the NW the Whimble 1 soils are described as reddish fine loamy over clayey soils with slowly permeable subsoils. Whimble 3 soils cover the rest of the site and are similar to the Whimble 1.

Two different types of soil were identified in the area during the recent ALC survey. The soil profiles of these soils are basically the same except for the topsoil texture. This was found to be either medium sandy silt loam or medium clay loam.

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 1

The majority of the site has been classified as Grade 1. These soils are free draining and are Wetness Class I. Some of the profiles show some slight impedence to drainage at depth but this insufficient to put the soils into a lower Wetness Class. A soil pit showed that at depth the stone content of the soil increased from low percentages in the upper part of the profile to 15%. The topsoil texture of these soils is medium sandy silt loam. The textures sometimes have an increasing clay content down the profile.

During strong winds glass from the former glasshouses to the west were blown across this area. Small fragments of glass still remain on the land. It is felt that this is only a temporary limitation and that with cultivations over a period of time, the glass would become rounded and not present a restriction on the versatility of the land.

Grade 2

These soils are similar to those described above except that the topsoil texture is slightly heavier being a medium clay loam. Whilst the soils are Wetness Class I a workability limitation is said to exist caused by the slightly heavier topsoil texture slightly restricting the opportunities for cultivations during the time when the fields are at Field Capacity.

Non Agricultural

A small area in the north beside a house which comprises its garden/orchard has been classified as non agricultural.

Urban

The areas within the survey area which are housing and industrial units have been shown as urban. The derelict nursery in the south west of the site could not easily be returned to agricultural use since there is rubble remaining on the site.

Agricultural Buildings

The large area under glass houses has been designated as agricultural buildings.

REFERENCES

GEOLOGICAL SURVEY OF ENGLAND AND WALES (1976) Solid and Drift edition. Sheet 311 Wellington, 1:50,000 scale

MAFF (1971) Agricultural Land Classification Map Sheet 164 Provisional 1:63,360 scale

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

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

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.

SITE NAME		PROFILE NUMBER	SLOPE AND ASPECT		LAND USE	Av Rainfall :- 927			PARENT MATERIAL				
Bagley Road Rockwell Green		1	0		Ley	ATO :- 1475			Keuper Marl				
JOB NO		DATE	GRID REFERENCE		DESCRIBED BY	FC Days :- 191							
16/93		26/4/93	ST 125 195		GMS/GC	Climatic grade :- 1							
Horizon Number	Lowest Av Depth	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	22	75YR43	MCL	3% HR visual	None	-	Good	-	-	Abundant fine	None	None	Clear smooth
2	40	75YR54	MCL	1% HR visual	None	MCSAB	Good	Moderate	Friable	Fine many	None	None	Clear smooth
3	75+	75YR54, 64	MCL	15% HR sieved	COM and weathering colours near stones	MCSAB	Good	Moderate	Friable	Fine many	None	Common	
Profile Gleyed From:- 40cm				Available Water Wheat :- 141				Final ALC Grade :- 2					
Depth to Slowly Permeable Horizon:- None				Potatoes :- 119				Main Limiting Factor(s) :- Workability					
Wetness Class :- I				Moisture Deficit Wheat :- 92				Remarks :-					
				Potatoes :- 81				Adjacent boring had MSZL topsoil -> Grade 1					
Wetness Grade :- 2				Moisture Balance Wheat :- 49									
				Potatoes :- 27									
				Droughtiness Grade :- (1) to 120cm									