3301-012-92

CHERWELL LOCAL PLAN

MANOR FARM TWYFORD

OXFORDSHIRE

CHERWELL LOCAL PLAN

MANOR FARM, TWYFORD, OXFORDSHIRE

1 INTRODUCTION

1 1 In May 1992 an Agricultural Land Classification (ALC) was carried out on 64 hectares of land at Manor Farm Twyford The farmland is situated to the south east of Banbury in Oxfordshire ADAS was commissioned by MAFF to determine the land quality affected by the proposal to include this site as part of the Cherwell Local Plan

1 2 The work was carried out by members of the Resource Planning Team within the Guildford Statutory Group at a detailed scale of approximately 1 boring per hectare A total of 61 borings and 3 soil pits were described using MAFF s revised guidelines and criteria for grading the quality of agricultural land These guidelines provide a framework for classifying land according to the extent to which its physical or chemical limitations impose long term limitations on its agricultural use

1 3 The distribution of the grades and subgrades is shown on the attached ALC map and the area of each grade and subgrade is given in the table below The map has been drawn at a scale of 1 10 000 the information is accurate at that scale and any enlargement would be misleading

Distribution of Grades and Subgrades

Grade	Area (ha)	% of total agricultural area
2	56 80	88
3a	7 40	12
Total Agricultural Area	64 20	100
Urban	0 47	
Total Area	64 67	

1 4 The land is of high quality grade 2 and subgrade 3a has been mapped at this locality The land is limited by minor droughtiness limitations as a result of variable stone contents within the upper and lower subsoil

2 PHYSICAL FACTORS AFFECTING LAND QUALITY

Relief

2 1 The site is at an altitude of 105-110 m A O D and is generally flat or very gently sloping south Nowhere on the site does gradient or altitude represent a significant limitation to agricultural land quality

Climate

2 2 Estimates of climatic variables were obtained for a representative location in the survey area by interpolation from grid point datasets (Met Office 1989) Figures are adjusted for altitude

Climatic Interpolation

Grid Reference	SP478361	SP478365
Altitude (m A O D)	105	110
Accumulated Temperature (days Jan June)	1381	1375
Average Annual Rainfall (mm)	683	685
Field Capacity Days	153	153
Moisture Deficit wheat (mm)	102	101
Moisture Deficit potatoes (mm)	92	91

2 3 There is no overall climatic limitation at this locality although it should be noted that soil moisture deficits are relatively low These will affect the interactions between soil and climatic factors in terms of soil droughtiness Climatic factors also affect the interactive limitation of soil wetness

Geology and Soils

2 4 Soil Survey of England and Wales Sheet 6 (1983) indicates the presence of one soil mapping unit at this site Soils of the Banbury Association are described as stony well drained fine and coarse loamy ferritic brown earths resting over shattered ironstone at moderate depths (SSEW 1984)

2 5 Detailed field examination identifies soil similar to those described in section 2 4

3 AGRICULTURAL LAND CLASSIFICATION

3 1 Grade 2

Land of this quality occurs across much of the site Topsoils typically comprise non-calcareous medium clay loam and are variably stony containing between 1 and 5% total marlstone and/or ironstone Subsoils are of a similar texture throughout Stone contents increase with depth from about 5% to 48% ironstone becoming impenetrable (to soil auger) due to shattered ironstone between 70 and 94 cm

Occasional profiles although similar to those described above were found to comprise a virtually stoneless profile becoming slightly stony from about 70 cm (ie 7-10% ironstone) over shattered ironstone at about 90 cm These profiles were found to be less droughty and almost qualified for grade 1

The principal limitation to land of this quality is that of a minor droughtiness limitation All profiles are stony to varying degrees this having the effect of slightly reducing soil moisture reserves available for plant growth

3 2 Grade 3a

A small area of grade 3a land has been mapped across the southern part of the site

Profiles are similar in texture to those described in section 3 1 but are generally more stony resting over shattered ironstone at shallower depths The overriding limitation is that of soil droughtiness which is caused by moderate profile stoniness in the range of 15-50% ironstone Profiles typically become impenetrable (to soil auger) due to shattered ironstone between 40-90 cm

July 1992
3301/012/92

Resource Planning Team
ADAS
Guildford Statutory Centre

SOURCES OF REFERENCE

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