REPORT OF THE MAFF AGRICULTURAL LAND CLASSIFICATION SURVEY (1988) - ABBOT'S SALFORD

Summary:

The land has been classified following the Agricultural Land Classification of England and Wales - revised guidelines and criteria of grading the quality of agricultural land (MAFF, 1988). Of the land surveyed 15% is classified as sub grade 3a and 35% as sub grade 3b. A further 49% is classified as grade 4 and the remaining 1% of the area is non agricultural land.

1. INTRODUCTION:

The survey work was carried out on several days during the period 12-22 February 1990. This followed a long period of wet weather, thus making parts of the site waterlogged and difficult to auger. A 100 m grid auger boring survey was completed and soil pits were dug as required.

2. CLIMATIC LIMITATIONS:

The main priorities used in the assessment of climatic limitations are average annual rainfall (AAR) as a measure of overall wetness and accumulated temperature (ATO) as a measure of the relative warmth of the locality. The figures of AAR and ATO indicate that there are no climatic limitations on this site.

3. SITE LIMITATIONS:

The assessment of site factors is primarily concerned at the way in which topography influences the use of agricultural machinery and hence the cropping potential of the land. There are no site limitations affecting the use of the land. Much of the site lies within the flood plain of the River Avon. No further information is available on frequency duration and extent of flooding from the water authority. Where flooding has been taken into account this will be referred to in section 7.

4. SOIL LIMITATIONS:

The main soil properties which effect the cropping potential and management requirements of land are texture, structure, depth, stoniness and chemical fertility. These may act as limitations separately, in combination or through interactions with climate or site factors. The physical limitations which result from interactions with climate or site are soil wetness, droughtiness and erosion. Soil wetness, which expresses the extent to which the excess water imposes restrictions on crop growth, is assessed in the field by identifying the depth to any slowly permeable soil horizon, defined in terms of soil - texture, structure and gleying and relating this to the texture of the top 25 cm.

Combining the soil wetness and the field capacity days (FCD) a land classification grade is arrived at. Reference will be made to this limitation in section 7.

To achieve full yield potential a crop requires an adequate supply of soil moisture throughout the growing season. In the Agricultural Land Classification (ALC) system the method used to assess droughtiness takes into account the crop adjusted available water capacity of the soil and the moisture deficit to give an estimate of the average soil moisture balance. Reference will be made in section 7 where droughtiness affects the grading of the land.

5. BACKGROUND INFORMATION:

The underlying geology is mapped as alluvium deposits with a small area of river terrace deposits at the western end of the site (sheet 200, Stratford-upon-Avon Geological Survey).

6. AGRICULTURAL LAND USE:

At the time of the survey, February 1990, the site was mainly under grass with some winter cereal.

7. AGRICULTURAL LAND QUALITY (APPENDIX 1):

Sub grade 3a: Typically this land has a topsoil with either a sandy loam or sany clay loam texture, overlying sandy clay loam or clay at depths of below 40 cm. Observations of gleying and the depth to the slowly permeable layer and a field capacity day figure of 136 indicate either a wetness class III or IV and a classification of sub grade 3a.

In some places, particularly at the northern boundary of the site, a stony layer at 30 cm prevented penetration with a hand held auger. Here the subsoil content restricts the amount of water available for crop growth and a droughtiness limitation results, thus restricting these areas to sub grade 3a.

Sub grade 3b: Typically the soil has either a medium clay loam, sandy clay loam, heavy clay loam overlying clay by 30 cm or clay extending to the surface. Observations of gleying and the depth to a slowly permeable layer combined with a topsoil texture and a field capacity day figure of 136 indicate wetness class IV and a classification of sub grade 3b, the main limitation to the agricultural use of this land being soil wetness.

Grade 4: This land typically has a clay texture to the surface with prominent gleying. At the time of the survey much of this land was wet beneath the surface and was lying wet after heavy rain and some river flooding.

Observations of the depth to the slowly permeable layer and gleying combined with a clay texture and a field capacity day figure of 136 indicate wetness class IV and sub grade 3b. However land lies within the flood plain of the River Avon.

From observations made at the time of the field work and the fact that the soils have a low permeability and the land is level it is considered that the land should be further downgraded to Grade 4 to take into account the limitations imposed on the agricultural use as a result of heavy textured soils lying within this flood plain situation.

Non Agricultural Land: includes a small area of water, some woodland and a disused railway line.

RESOURCE PLANNING GROUP
March 1990

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SOIL UNITS REPORT FOR LAND AT ABBOT'S SALFORD

Following the Agricultural Land Classification Survey, carried out on a 100 metre grid and augering where possible to a depth of 100cm, soils of a similar texture have been placed into soil units.These soil units reflect similar soil requirements in stripping, handling and storage. On the site two main soil units are identified; a third one covering the area of the disused railway lane is also recognised.

Soil pits were dug in the main units to examine physical characteristics such as structure.

Unit 1

This unit is found in the western and northern parts of the site. It consists of a topsoil typically with a sandy loam texture to 30cm. In places an upper subsoil occurs with a sandy clay loam texture to depths of between 30 and 60cm. Below these depths clay is present to at least 100cm. Occasionally stone prevented augering below 30cm. In the field (with the mound) there is pronounced ridge and furrow; the soil is generally deeper on the ridge.

A detailed pit description is given in Appendix I.

Unit 2

This unit covers much of the site and typically has a clay loam texture extending to 100cm. A detailed pit description is given in Appendix II.

Unit 3

Part of the disused railway line is included within this unit.

Resource Planning Group
Wolverhampton
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APPENDIX I

SOIL UNIT 1

Depth	Texture	Munsell colour	Structure	Porosity >0.5 μm	Mottles
0-40	SL	10YR 3/3	Weakly developed fine/sub angular blocky		-
40-80	SCL (occasional clay nodules present)	5YR 4/4	Weakly developed fine subangular to crumb	< 0.5%	-

Stone Content: Topsoil - 5% small rounded angular hard stones >2cm - < 6cm.

Subsoil - > 1cm 50% small rounded stones

Plant roots common to 40cm; fewer below this depth.

APPENDIX II

SOIL UNIT 2

Depth	Texture	Munsell colour	Structure	Porosity >0.5 μm	Mottles
0-15	C	10 YR 3/3	Fine subangular to crumb	<0.5	Abundant ochreous mottles throughout
15-40	C	10 YR 5/2	Weakly developed coarse prismadic	<0.5	

Pit waterlogged at 40cm (13.2.90)