Cambs 109/93

AGRICULTURAL LAND CLASSIFICATION
LAND OFF TAMWORTH ROAD, MEASHAM, LEICESTERSHIRE

AGRICULTURAL LAND CLASSIFICATION
LAND AT TAMWORTH ROAD, MEASHAM, LEICESTERSHIRE

1.0 BACKGROUND

1.1 This 23.56 hectare site was surveyed in September 1993 in connection with a commercial development proposal. A total of 24 auger borings were made on site on a structured 100 m grid basis, and this information was supplemented by data collected from two soil profile pits. At the time of the survey, the land had recently been ploughed.

1.2 On the published Agricultural Land Classification Map Sheet 134 (MAFF, 1962) the site is shown as grade 2. The current survey was undertaken to provide more detailed, site specific information on land quality.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 Site specific climatic information was obtained by interpolating data contained in the agroclimatic dataset published by the Meteorological Office (Met Office 1989). This shows that the site has an annual average rainfall of 641 mm and an accumulated temperature (January to June) of 1363°C. Moisture deficits for wheat and potatoes are 102 mm and 92 mm respectively, and the site is at field capacity for 143 days. These figures do not impose any restrictions on land quality.

Altitude and Relief

2.2 The site occupies gently sloping land near the river Mease which falls from a maximum height of 100 m AOD in the south of the site, to 90 m AOD in the north. Gradients are typically 1-2° although slightly steeper slopes, measured at 3-4°, do occur in the south, to the north-east of Heath Lodge. These gradients do not impose any limitation to land quality.

Geology and Soils

2.3 The published geology map sheet 155 (GSEW 1953) shows the site to comprise entirely Triassic Keuper Sandstone with bands of Marl.

2.4 The Soil Survey of England and Wales have mapped the area at a reconnaissance scale of 1:250,000. This map, entitled "The Soils of Midland and Western England" shows the site to comprise almost solely the Hodnet Association (*1), with a small section of Bromsgrove Association (*2) soils near the north-eastern boundary. Detailed field survey broadly confirmed these findings, identifying two key soil types.

2.5 Firstly, over the majority of the site are soils derived from the Keuper Sandstone and Marl deposits. Profiles comprise medium clay loam, sandy clay loam, or sandy silt loam topsoils, which overlie similar or heavier (heavy clay loam or heavy silty clay loam) upper subsoils. In turn these overlie heavy clay loam, heavy silty clay loam or silty clay lower subsoils typically from depths of 40/55 cms, which locally have inclusions of fine sand, and are slowly permeable. Occasionally, these heavier textures occur directly below the topsoil. Profiles are very slightly stony and non-calcareous throughout.

2.6 Secondly, in the northern, central portion of the site, are soils which are derived from the Keuper Sandstone. Profiles comprise sandy silt loam topsoils (occasionally medium clay loam or sandy clay loam) which overlie sandy loam to depth. Occasionally, thin bands of marl clay occur at depth in the profile. Profiles are non calcareous and only very slightly stony.

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The site has been assessed as mixture of grade 2, subgrade 3a and subgrade 3b. A precise breakdown of the ALC grades in hectares and percentage terms is given overleaf:

---

*1 Hodnet Association. Reddish fine and coarse loamy soils with slowly permeable subsoils and slight seasonal waterlogging. Some similar well drained reddish fine loamy soils. Slight risk of water erosion.

*2 Bromgrove Association. Well drained reddish coarse loamy soils mainly over soft sandstone but deep in places. Associated fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging. Risk of water erosion.

AGRICULTURAL LAND CLASSIFICATION

Grade	hectares	%
2	10.09	42.8
3a	9.22	39.1
3b	4.25	18.1
TOTAL	23.56	100.0

3.2 The definition of ALC grades is given in Appendix 1.

Grade 2

3.3 Land graded 2 occurs in the central and northern section of the site, corresponding to the lighter textured sandy soils described in paragraph 2.6 together with the lighter textured, better drained variants of the clayey soils described in paragraph 2.5. Wetness class has been assessed II and III, although better drained profiles (wetness class I) did occur locally, which were too small to delineate separately. Minor winter wetness and summer droughtiness imperfections constitute the chief limitations to land quality.

Subgrade 3a

3.4 This land is mapped in two areas; the north-east and south-west of the site. Profiles correspond to the imperfectly drained (wetness class III) soils described in paragraph 2.5, which comprise medium clay loam or sandy clay loam topsoils and which become slowly permeable at depth. Locally, wetness class IV profiles were identified. Moderate winter wetness and workability restrict this land from a higher grade.

Subgrade 3b

3.5 Subgrade 3b land lies in the south of the site along the Tamworth Road boundary. It corresponds to the poorly drained (wetness class IV), heavy textured profiles described in paragraph 2.5 which comprise heavy clay loam or medium clay loam topsoils, and which become slowly permeable at depth. The land is thus restricted from a higher grade by more significant winter wetness and workability limitations.

October 1993

Rosie Davies
ADAS Resource Planning Team
Huntingdon Statutory Centre

REFERENCES

GEOLOGICAL SURVEY OF GREAT BRITAIN, 1953. Sheet 155 "Atherstone", Drift 1:63,360 scale.

MAFF, 1962. Agricultural Land Classification map sheet 121. Provisional, 1:63,360 scale.

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

METEOROLOGICAL OFFICE, 1989. Data extracted from the published agroclimatic dataset.

SOIL SURVEY OF ENGLAND AND WALES, 1980. Sheet 3 "Soils of Midland and Western England", 1:250,000 scale.

Appendix 1

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 crops. The level of yields 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 winter 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 levels of yields. It is mainly suited to grass with occasional arable crops (eg. cereals and forage crops) the yield of which are variable. In most 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.