Cambs 26/91

AGRICULTURAL LAND CLASSIFICATION

LAND SOUTH OF BURY, CAMBRIDGESHIRE

1. BACKGROUND

1.1 The site, an area of 43.6 hectares, is the subject of an application, by Heron Homes Ltd, for residential development south and west of Bury village, Cambridgeshire. MAFF surveyed the site in June 1991 to assess the agricultural land quality.

2. PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 Climate data for the site was obtained from the published agricultural climatic dataset (Met Office, 1989). This indicates that for the survey area the annual average rainfall is 570 mm (22.4"). This data also indicates that field capacity days are 95 and moisture deficits are 122 mm for wheat and 118 mm for potatoes. These climatic characteristics do not impose any climatic limitations on the ALC grading of the survey area.

Altitude and Relief

2.2 The land surveyed falls steeply westwards from 15 m AOD, adjacent to Bury village, to 5 m AOD adjacent to the brook. West of the brook the land rises gently to an altitude of 20 m AOD adjacent to RAF Upwood. The slopes of the grass field to the east range in steepness from 8 to 10° (measured using a suunto clinometer). Consequently the majority of this field is restricted to subgrade 3b by significant gradient limitations. Over the remainder of the site gradient and altitude do not constitute limitations to the ALC grade.

Geology and Soils

2.3 The published ¼" to 1 mile scale drift edition geology map sheet 16 (Geological Survey of England and Wales, 1931) shows the majority of the survey area to comprise boulder clay with a small area of Oxford

Clay and Kellaway Beds deposits to the south of the site.

2.4 The Soil Survey of England and Wales have mapped the soils in the Bury area at a reconnaissance scale of 1:250,000. This map, entitled "The Soils of Eastern England", shows the occurrence of the Cannamore Association (*1) to the west and the Evesham 3 Association (*2) to the east. During the current survey a more detailed inspection of the soils was carried out.

Three main soil types occur over the site.

2.4.1 To the eastern and western edges of the site profiles are calcareous throughout and typically comprise clay topsoils over clay subsoils which contain chalk fragments at variable depth.

2.4.2 The central tract of land running south of Cheveril Lane comprises clayey soils which are decalcified in the upper horizons. Soils typically consist of heavy clay loam or clay topsoils over clay subsoils which variably become calcareous at depth.

2.4.3 Adjacent to the brook heavy alluvial soils predominate. These soils are non calcareous throughout and typically comprise clay topsoils over clay subsoils. Occasionally shell fragments are present within the subsoil horizons.

(*1) Cannamore Association: Deep calcareous and non-calcareous fine loamy and clayey soils with slowly permeable subsoils and slight seasonal waterlogging. Some slowly permeable seasonally waterlogged fine loamy over clayey and clayey soils.

(*2) Evesham 3 Association: Slowly permeable calcareous clayey and fine loamy over clayey soils. Some slowly permeable seasonally waterlogged non-calcareous clayey soils.

3. AGRICULTURAL LAND CLASSIFICATION

3.1 The definition of the agricultural land classification grades are included in Appendix 1.

3.2 The table below shows the ALC grades for the survey area.

	AGRICULTURAL LAND CLASSIFICATION	
Grade	ha	%
3a	30.9	71
3b	12.7	29
TOTAL	43.6	100

3.3 Subgrade 3a

The majority of the survey area has been graded 3a. Two situations occur.

3.3.1 To the west and east of the site the 3a land is associated with the calcareous clayey soils described in paragraph 2.4.1. Soil profile pit observations indicate that these soils have slowly permeable horizons directly below the topsoil (wetness class III) or occasionally at depth in the subsoil 45/55 cm+ (ie. wetness class II). In the former example moderate wetness, workability and droughtiness imperfections combine to constitute the chief limitation whilst in the latter example droughtiness alone restricts the land to subgrade 3a (good quality agricultural land).

3.3.2 South of Cheveril Lane the 3a land is associated with the decalcified soils described in paragraph 2.4.2. These soils are slowly permeable at depth, heavy textured throughout and decalcified to depth. The combination of heavy decalcified topsoil textures, impeded drainage at depth and moderate reserves of profile water restricts this land to subgrade 3a.

3.4 Subgrade 3b

Two main situations occur.

3.4.1 The majority of the 3b land is associated with the low lying alluvial land adjacent to the brook (described in paragraph 2.4.3). Detailed inspection of these soils indicates that the subsoils are slowly permeable 35 cm+ (ie. wetness class III), decalcified and heavy textured throughout. Consequently these factors combine to impose a significant limitation on the agricultural potential of this land. Thus the land is restricted to subgrade 3b (moderate quality agricultural land).

3.4.2 To the east a second area of land has been graded 3b where slopes range from 8 to 10 degrees. In this instance significant gradient limitations exclude the land from a higher grade.

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Resource Planning Group
Cambridge RO

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 includes 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 with affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. When more demanding crops and 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.

REFERENCES

GEOLOGICAL SURVEY OF ENGLAND AND WALES, 1931. Drift Edition Geology map sheet 16; scale ¼" to 1 mile.

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

METEOROLOGICAL OFFICE, 1989. Climatic Data extracted from the published Agricultural Climatic Dataset.

SOIL SURVEY OF ENGLAND AND WALES, 1983. 'The Soils of Eastern England' Sheet 4, 1:250,000 scale.