Cambs 70/93

AGRICULTURAL LAND CLASSIFICATION

MID-SUFFOLK LOCAL PLAN - BEACON HILL, CREETING ST MARY

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1.0 BACKGROUND

1.1 The site, an area of 72.6 hectares, is subject to a planning application as part of the Mid-Suffolk Local Plan. ADAS Resource Planning Team surveyed the site in June and July 1993 to assess the agricultural land quality at an auger boring density of approximately one boring per hectare. These borings were supplemented by 3 soil inspection pits in order to assess subsoil conditions.

1.2 At the time of the survey cereals and oilseed rape were growing on the site, with the field south of Bridge Place Farm and an area to the west of it being left as set-aside.

1.3 On the published Provisional 1:63 360 scale Agricultural Land Classification Maps, sheet numbers 149 and 150 (MAFF 1972) the site is mapped as predominantly grade 3, with smaller areas of grade 2 land in the north and centre of the site. Since these maps are of a reconnaissance nature designed primarily for strategic planning purposes, the current survey was undertaken to provide more detailed information on land quality.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 Climate data for the site was extrapolated from data contained in the published Agricultural Climatic Dataset (Meteorological Office 1989). This indicates that the average annual rainfall for the site is 597 mm (23.9"). This data also indicates that the field capacity days are 109, and moisture deficits are 118 mm

for wheat and 114 mm for potatoes. These characteristics do not impose any climatic limitation on the ALC grade of the survey site.

Altitude and Relief

2.2 The survey area comprises a gentle southeast facing slope with a maximum altitude of 52 m AOD in the northwest of the site and a minimum altitude of 18 m AOD in the valley bottom of the stream in the southeast of the site, southwest of Bridge Place Farm.

Geology and Soils

2.3 The published 1:50 000 scale, solid and drift edition geology map, sheet 207 (British Geological Survey, 1990) shows the site to comprise a complex geology. The whole site is underlain with Cretaceous Upper Chalk and this is exposed on the mid slope areas in the centre and southwest. This is covered by glacial sand and gravel deposits in the north of the site, which are in turn overlain by boulder clay drift on the highest ground. On lower slopes in the south of the site the underlying chalk is covered by undifferentiated river terrace deposits (sand and gravel) with a small area of alluvium adjacent to the north of the stream.

2.4 No detailed soil map exists for this area. However, the Soil Survey of England and Wales have mapped this area at a reconnaissance scale of 1:250 000 (SSEW, 1983) and this map indicates the occurrence of soils of the Swaffham Prior Association (*1) covering the majority of the site, with a smaller area in the north of Hanslope Association (*2) soils. The current more detailed survey identified two main soil types.

(*1) Swaffham Prior Association - well drained calcareous coarse and fine loamy soils over chalk rubble. Some similar shallow soils. Deep non-calcareous loamy soils in places. Striped and polygonal soil patterns locally. Slight risk of water erosion.

(*2) Hanslope Association - slowly permeable calcareous clayey soils. Some slowly permeable non-calcareous clayey soils. Slight risk of water erosion.

2.5 Firstly over the majority of the site light textured free draining soils occur corresponding to those of the Swaffham Prior Association. These typically comprise medium sandy loam or occasionally loamy medium sand topsoils over medium sandy loam, loamy medium sand or occasionally sandy clay loam upper subsoils. Lower subsoils are variable and are generally either loamy medium sand or heavier textured sandy clay loam or occasionally clay. In the centre of the site gravel may be encountered in the lower subsoils while, particularly in the southeast, chalk rock occurs at depths of below 50/80 cm. Topsoils are typically slightly stony (6-15%) although locally stonier areas are present particularly in the southeast. Profile stone contents below the topsoils are variable, typically being slight (10-15%) although moderately stony bands of material (20-35%) may be present.

2.6 The second, heavier soil type is found in the north of the site and corresponds to those mapped as Hanslope Association overlying the boulder clay deposits. Profiles typically comprise very slightly stony (3-4%) sandy clay loam or less frequently heavy clay loam topsoils overlying slightly stony (6-10%) clay which has imperfect drainage in the lower subsoil (wetness class II or III). In the northwest of the site profiles may have been disturbed and topsoil stone contents are higher being approximately 20% flints with more than 15% flints >2 cm in diameter.

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The distribution of Agricultural Land Classification (ALC) grades is shown in the table overleaf. The definitions of the ALC grades are included in Appendix 1.

AGRICULTURAL LAND CLASSIFICATION

Grade	hectares	%
3a	62.45	86.0
3b	8.45	11.5
Urban	0.40	0.5
Non-Agricultural	1.35	2.0
TOTAL	72.65	100.0

Subgrade 3a

3.2 The majority of the site is graded 3a and mainly corresponds to the deep light textured soils described in paragraph 2.5. These light textured profiles combined with profile stone contents impose a moderate limitation on the water reserves available for crop growth and this land is restricted to subgrade 3a (good quality agricultural land) due to moderate droughtiness imperfections.

3.3 Land graded 3a in the north of the site corresponds to the heavier textured boulder clay soils described in paragraph 2.6. Moderate wetness limitations (wetness classes II or III) combined with topsoil textures impose workability restrictions on the land precluding it from a higher grade.

Subgrade 3b

3.4 In the northwest of the site land mapped 3b is associated with the clayey soils described in paragraph 2.6, having moderately stony topsoils. These topsoil stone contents act as an impediment to cultivation, harvesting and crop growth and this restricts the land to subgrade 3b (moderate quality agricultural land).

3.5 In the southeast of the site land graded 3b is associated with the soils described in paragraph 2.5 which are underlain by chalk at between 50/80 cm. The depth to this chalk and profile stone content impose a moderate droughtiness limitation which restricts land quality to subgrade 3b.

3.6 A small area of land west of Bridge Place Farm is also graded 3b. It is associated with the very light textured and moderately stony soils described in paragraph 2.5. Profile stone content in combination with the very light textures results in droughtiness imperfections which exclude the land from a higher grade.

Urban

3.7 A house and garden occur in the northwest of the site.

Non-Agricultural

3.8 This land corresponds to a disused quarry area in the northwest of the site.

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REFERENCES

BRITISH GEOLOGICAL SURVEY, 1990. Solid and drift edition geology map, sheet 207, scale 1:50 000.

MAFF, 1972. Agricultural Land Classification map, Sheet 149, Provisional, scale 1:63 360.

MAFF, 1972. Agricultural Land Classification map, Sheet 150, Provisional, scale 1:63 360.

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

METEOROLOGICAL OFFICE, 1989. Published climatic data extracted from the agricultural dataset, compiled by the Meteorological Office.

SOIL SURVEY OF ENGLAND AND WALES, 1983. Sheet 4, Soils of Eastern England, scale 1:63 360.

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 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 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.