AGRICULTURAL LAND CLASSIFICATION

LAND AT FOSSETT'S FARM, SOUTHEND-ON-SEA, ESSEX

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1.0 BACKGROUND

1.1 ADAS Statutory Group were requested on behalf of MAFF to assess the agricultural land classification (ALC) of the site at Fossett's Farm in connection with a golf course proposal.

1.2 On the published Provisional 1:63 360 scale Agricultural Land Classification Map, sheet number 162 (MAFF, 1969) the site is shown as entirely grade 1. Since this map is of a reconnaissance nature, designed primarily for strategic planning purposes, the current survey was undertaken to provide more detailed information on land quality.

1.3 Detailed ALC information was also available from an adjacent site at Foxhall to the east.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 Site specific climatic information has been obtained by interpolating data contained within the 5 km climatological dataset for Agricultural Land Classification produced by the Meteorological Office (1989). This information shows that the site has an average annual rainfall of 551 mm and an accumulated temperature of 1467 °C. Moisture deficits are relatively high, being 128 mm for wheat and 127 mm for potatoes, and the site is at field capacity for 94 days each year. These characteristics do not impose any overall climatic limitation to land quality at the site. However, climatic factors specifically field capacity days and soil moisture deficits do interact with soil

factors to influence soil wetness and droughtiness. At this locality the climate is relatively dry in national terms.

Altitude and Relief

2.2 The site lies on land gently sloping northwest towards a tributary stream of Paglesham Reach. The altitude of the site ranges from 26 m AOD in the southeast to 12 m AOD in the northwest adjacent to Sutton Road. Neither gradient or altitude impose any limitation on agricultural land quality.

Geology and Soils

2.3 The published 1:50 000 scale geology map, sheets 258/259 (Geological Survey of Great Britain 1976) shows the site to comprise mainly river terrace gravels, with smaller areas of river terrace brickearth in the southeast and Head deposits in the centre of the site.

2.4 The Soil Survey of England and Wales have mapped this area at a reconnaissance level (1:250 000 scale) and this map (Sheet 4, Soil Survey, 1983) indicates the whole area comprises soils of the Hamble 2 Association*. During the current survey a more detailed inspection of the soils was carried out and four soil types were found on site which broadly reflects the site geology.

2.5 Firstly, over the majority of the site soils are heavy in texture. They typically comprise heavy silty clay loam or heavy clay loam topsoils over similar textured or occasionally clay or silty clay subsoils which tend to be slowly permeable. These overlie slowly permeable clay or silty clay lower subsoils

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* Hamble 2 Association: deep stoneless well drained silty soils and similar soils affected by groundwater; over gravel locally. Usually flat land.

from depths of 45/70 cm. These soils are typically very slightly stony and occasionally become more stony in the lower subsoil, and profiles are non-calcareous throughout. Wetness class is assessed as III due to poor drainage.

2.6 In the east of the site profile textures are slightly lighter with soils typically comprising medium silty clay loam or medium clay loam topsoils over similar upper subsoils which overlie slowly permeable silty clay or clay lower subsoils below 40/55 cm (i.e. wetness class II). Soils are typically very slightly to slightly stony and non-calcareous.

2.7 In the central south part of the site, textured soils which overlie the river terrace gravels occur. These profiles typically comprise slightly stony (10% flint) medium clay loam or occasionally medium sandy loam topsoils over moderately stony (15-30% flint gravel) medium sandy loam upper subsoils. These overlie medium sandy loam or loamy medium sand horizons with 40% flint gravel from depths of 40/55 cm. These soils are free draining (i.e. wetness class I).

2.8 The fourth soil type corresponds to the brickearth deposits and most closely resembles the deep silty soils of the Hamble 2 Association. These soils are found in the southeast and northwest of the site and profiles typically comprise medium silty clay loam or silt loam topsoils over heavy silty clay loam or medium silty clay loam subsoils. Profiles are typically free draining (wetness class I), very slightly stony throughout and non-calcareous.

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The definitions of the Agricultural Land Classification (ALC) grades are included in Appendix 1.

3.2 The table overleaf provides a breakdown of the ALC grades in hectares and percentage terms.

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Grade	ha	%
1	0.3	1
2	4.4	15
3a	3.4	12
3b	20.8	70
Non-Agricultural	0.2	1
Woodland	0.4	1
TOTAL	29.5	100

Grade 1

3.3 A small area of grade 1 land is present in the southeast of the site coinciding with the silty soils developed over brickearth described in paragraph 2.8. Profiles are well drained and have high available water capacities and consequently despite the high moisture deficits that are prevalent in this area most crops will rarely suffer from drought. The land is easily cultivated and highly versatile allowing a wide range of crops to be grown and has no or very minor limitations to agricultural use and is therefore graded 1 (excellent quality agricultural land).

Grade 2

3.4 In the southeast and northwest of the site grade 2 land occurs, corresponding to the better bodied (i.e. silty clay loam) soils developed from the brickearth described in paragraph 2.8. While these soils are very similar to those described above, also being free draining, they have a slightly lower available water capacity due to the presence of slightly heavier textures. Moisture balance calculations indicate that these soils are slightly droughty and therefore the land is restricted to grade 2 (very good quality agricultural land).

Subgrade 3a

3.5 Subgrade 3a land is present in the east of the site corresponding to the fine textured soils, with slowly permeable clayey lower subsoils, described in paragraph 2.6. These soils are moderately well drained and have been assessed as wetness class II. The main limitation to land quality is moderate droughtiness limitations caused by the presence of heavy subsoil textures which reduce the available water capacity for crop growth. Therefore the land is graded 3a (good quality agricultural land).

Subgrade 3b

3.6 Land graded 3b is mainly associated with the heavy textured clayey soils which cover the majority of the site (described in paragraph 2.5). These profiles are poorly drained (wetness class III) and this factor in combination with the relatively heavy topsoil textures restricts land quality to subgrade 3b (moderate quality agricultural land) on significant wetness and workability grounds.

3.7 A small area of 3b land is associated with the soils developed over the river terrace deposits described in paragraph 2.7. These soils typically overlie gravel below 40/55 cm depth and therefore have low available water capacities. Due to the significant droughtiness limitations imposed by the reduced amount of water available to plants the land is precluded from a higher grade.

Non-Agricultural

3.8 Fossett's Farm which comprises a derelict building and the track leading to it have been mapped as non-agricultural land.

Woodland

3.9 A small wooded area is present in the north of the site.

REFERENCES

GEOLOGICAL SURVEY OF GREAT BRITAIN ENGLAND AND WALES, 1976. Sheets 258/259, Southend and Foulness, solid and drift edition, scale 1:50 000.

MAFF, 1969. Agricultural Land Classification Map (Provisional), Sheet 162, scale 1:63 360.

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

METEOROLOGICAL OFFICE, 1989. Climatological Datasets for Agricultural Land Classification. Meteorological Office, Bracknell.

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

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.