AGRICULTURAL LAND CLASSIFICATION

WALKERS HOUSE FARM, STONY STANTON, LEICS

1.0 INTRODUCTION

1.1 A Soil and Agricultural Land Classification (ALC) survey was carried out in December 1994 by the ADAS Statutory Group over approximately 25 ha of land at Walkers House Farm, Leicestershire, in connection with a planning application for the construction of a golf course.

1.2 A semi-detailed survey was conducted over the site using a dutch auger. In addition 2 soil pits were dug to assess the subsoil structural development.

1.3 At the time of the survey the majority of the land was under grass while the remainder had been cropped and was currently lying fallow.

1.4 On the Provisional 1:63 360 scale ALC map Sheet 132 (MAFF, 1972) the whole site is shown as grade 3.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

2.1 Climatic information for the site has been extrapolated from the 5 km grid dataset produced by the Meteorological Office (1989). This indicated that the average annual rainfall is 645 mm. Field capacity days were calculated to be 147 with moisture deficits for wheat and potatoes being 99 mm and 89 mm respectively. These climatic characteristics do not impose any limitation on the ALC grade for the site.

Altitude and Relief

2.2 The altitude varies from about 95 m in the south to 82 m in the north. A stream flows north from the centre of the northern part of the site, forming a valley feature in this area. No gradient within the site was sufficient to impose any restrictions on the farming of the land and thus its potential ALC grade.

Geology and Soils

2.3 The published 1:63 360 Drift Map Sheet 169 (Geological Survey of England and Wales 1948) shows the whole site to be underlain by Recent and Pleistocene Boulder Clay.

2.4 The Soil Survey of England and Wales have mapped the soils in the Stony Stanton area at a reconnaissance scale of 1:250 000 (Soil Survey, 1984). This map shows most of the site to comprise Beccles 1 Association (*1) with the northwestern part of the site comprising Salop Association (*2).

2.5 The current more detailed survey identified three soil types across the site.

Over the majority of the site the soils comprised mainly heavy clay loam topsoils over heavy clay loam or clay subsoils which were gleyed. On the upper slopes of the valley feature small areas of lighter textured soils were found. These comprised medium or heavy clay loam top soils over heavy clay loam gleyed subsoils. A small area of coarser textured soils were identified on

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(*1) Beccles 1 Association - slowly permeable seasonally waterlogged fine loamy over clayey soils, associated with similar clayey soils.

(*2) Salop Association - slowly permeable seasonally waterlogged reddish fine loamy over clayey, fine loamy and clayey soils associated with fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging.

the western boundary of the site. These comprise medium clay loam topsoil over sandy loam or sandy medium clay loam subsoils which were gleyed. This soil type did not contain any slowly permeable layers within auger depth however, the gleying present indicates that there may be a seasonal groundwater limitation.

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The distribution of Agricultural Land Classification grades is shown below:

Grade	Area (ha)	% of total area
2	1.1	4.3
3a	5.3	21.2
3b	18.6	74.5
TOTAL	25.0	100.0

3.2 Grade 2

One area of grade 2 land has been identified, to the north of the disused Granitethorpe Quarry. These soils comprise medium clay loam topsoil over sandy loams. The subsoils are gleyed indicating a minor wetness restriction. Although the subsoils are sandy, moisture balance figures indicate that drought is not restricting for crop growth. There is no slowly permeable subsoil horizon within 80 cm. However, the slight wetness restriction limits these soils to grade 2.

3.3 Grade 3a

Three areas of subgrade 3a have been identified. The northern most and southern most areas lie on the upper slopes of the valley feature and are lighter textured than those lower down. They comprise medium or heavy clay loam top soils over heavy clay subsoils. The central area of subgrade 3a lies between the lighter textured sandy soils found within the area mapped as grade 2 and the heavier soils mapped as subgrade 3b. The soils here are sandy in nature and can be considered a transitional soil type.

The subsoils within this subgrade are gleyed and a slowly permeable layer was usually encountered at approximately 45 cm. These soils are therefore limited by wetness as they are imperfectly drained with wetness class assessed as III or IV.

3.4 Grade 3b

The land mapped within this grade occurred on the lower slopes and bottom of the valley feature within this site. These are heavy textured, imperfectly drained soils comprising heavy clay loam topsoils over heavy clay loam or clay subsoils being assessed as wetness class III or IV. This wetness limitation and the heavy topsoils limits the grade for these soils to 3b.

REFERENCES

Geological Survey of England and Wales (1948) Drift edition, Sheet 169, Coventry.

MAFF (1972) Agricultural Land Classification Map Sheet 132, 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 3, Soils of Midland and Western 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 (e.g. 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.