Cambs 10/93

AGRICULTURAL LAND CLASSIFICATION SURVEY
LAND AT HOME FARM, BATLERS GREEN, RADLETT, HERTS

1.0 INTRODUCTION

1.1 An Agricultural Land Classification (ALC) survey was carried out over 73.1 ha of land at Home Farm, Batlers Green, Radlett, Hertfordshire in connection with a planning application for a proposed golf course development.

1.2 The site is located to the south of Radlett and is bounded by the A5183 road to the east, housing development to the north and open agricultural land to the west and south.

1.3 At the time of survey the majority of the site was in arable agriculture except for the area around Little Kendals Farm which was under very old pasture and the western edge which comprised the remains of an old orchard which was under permanent grass. In addition some areas of woodland are included within the boundary with the largest covering the site of an old brickworks and clay pit. The previous year's cropping was principally winter cereals (wheat,barley and oats), linseed and grass.

1.4 A total of 72 auger borings were made using a dutch auger to a depth of 1.1 m unless prevented by impenetrable stones. In addition a soil pit was dug to help assess subsoil conditions.

1.5 The site is shown as predominantly Grade 2 on the published 1:63,360 scale provisional ALC map (MAFF, 1970) with some Grade 3 on the eastern side and a small area of Grade 4 at the south east corner.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 Climatic information for the site has been interpolated from the 5 km grid dataset produced by the Meteorological Office (Met Office 1989). The average annual rainfall for the site is 539 mm and the number of days that the soils are likely to be at field capacity is 146.

2.2 The accumulated temperature for the area is approximately 1399 degrees Celsius. This parameter indicates the cumulative build up of warmth available for crop growth and in conjunction with rainfall has an influence on the development of soil moisture deficits and susceptibility to drought. The moisture deficits for wheat and potatoes on this site are 106 mm and 99 mm respectively.

2.3 There is no overall climatic limitation to the agricultural use of the land.

Relief

2.4 The site forms a shallow valley running approximately from southwest to northeast with the highest land on the northern boundary. The altitude ranges from 105 m AOD on the northern boundary to approximately 80 m AOD on the eastern boundary to the north of Little Kendals Farm. Slopes are generally relatively gentle in the range 2 to 4° although two small hollows exist in the centre of the site with steeper sides. Relief therefore does not impose any limitation on the agricultural quality of the site.

Geology and Soils

2.5 The area has been mapped by the Geological Survey (Geol Surv, 1951) and the site is shown to be underlain by three different deposits. The majority of the site is mapped as the Woolwich and Reading Beds (Sand, Loam and Pebble Beds), with Upper Chalk in the valley bottom and London Clay at the south east corner. The site has been mapped by the Soil Survey of England and Wales (Soil Surv,1984) as predominantly Bursleden Association*, with a small area of Windsor Association+ to the south.

2.6 Three distinct soil types have been mapped during the current survey. The majority of the site comprises loamy soils over interbedded clays and sands. A typical profile has a dark brown medium clay loam or sandy silt loam topsoil with flint pebbles, to approximately 30 cm depth, overlying a yellowish brown, slightly mottled heavy clay loam upper subsoil. Below approximately 60 cm depth a strongly mottled clay or sandy clay lower subsoil is found. In some profiles the lower subsoil becomes very sandy. The soils are assessed as mainly wetness class II or III although some better drained soils were mapped locally.

2.7 At the southeast and northeast edges of the site, soils developed in the London Clay have been mapped. These soils have a heavy clay loam or clay topsoil to 30 cm depth over a strongly mottled and gleyed clay subsoil. The subsoil is stoneless and slowly permeable resulting in the topsoil being saturated, with localised areas of standing water. These poorly drained soils have been classified as wetness class IV although slightly better drained soils, with a thin fine loamy drift cover over the London Clay, have been mapped around Little Kendals Farm. These soils have a medium clay loam topsoil over a slightly stony heavy clay loam upper subsoil before the underlying clay is reached at 45-60 cm depth.

* Bursleden Association: Loamy soils developed in interbedded loams, sands and clays giving rise to soils of varied drainage status.

+ Windsor Association: Slowly permeable clayey soils developed in Eocene clays.

2.8 Adjacent to the London Clay are small areas of deep sandy soils. These soils have a medium sandy loam topsoil approximately 30 cm deep overlying a loamy sand upper subsoil which in turn overlies silver sand. These soils are generally of limited extent and tend to be rather variable with bands of clay above the sands in some profiles.

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The site has been classified using the guidelines contained in the Agricultural Land Classification of England and Wales (MAFF, 1988). A breakdown of the grades found is given below:

Grade	Area	%
2	40.1	54.8
3a	19.5	26.7
3b	6.2	8.5
Non agricultural	7.3	10.0
Total	73.1	100

Grade 2

3.2 The majority of the site, which has been mapped as Grade 2, comprises the loamy soils overlying the interbedded clays and sands, described in para 2.6 above. These soils are restricted to this grade as a result of slight wetness during the wetter periods of the year and also a minor droughtiness limitation in the drier summer months. The underlying slowly permeable clayey horizons will cause waterlogging in the upper layers, restricting the time that these soils can be safely worked without causing structural damage. Conversely moisture balance calculations indicate that the majority of these soils will be slightly droughty causing stress to the crops and a consequent reduction in yield. A further restriction in some areas is caused by the presence of >5% flint pebbles which will cause additional wear and tear to machinery and may also cause difficulties for crop establishment.

Grade 3a

3.3 Four areas of Grade 3a have been identified on the site. The two areas at the northern end comprise the poorer draining soils described in para 2.6. These soils have been assessed as Wetness class III and as such have a moderate wetness/workability limitation restricting the timing of cultivations. The area in the north eastern corner is more variable with both sandy and stony variants present giving rise to localised droughty areas. Furthermore with the gradients present in this field there is marked evidence of surface erosion, especially in the wheelings, with sand washing down and accumulating at the bottom of the slopes.

3.4 In the area around Little Kendals Farm, soils developed in fine loamy drift over London Clay have been mapped. These soils have been assessed as Wetness Class III and with a medium silty clay loam topsoil are restricted to Grade 3a on wetness and workability.

3.5 A narrow band of Grade 3a has been mapped on the southern edge of the site which comprises the sandy soils described in para 2.8. These soils will be moderately droughty due to their low available water capacity and will result in reduced crop yields.

Grade 3b

3.6 Four small areas of this grade have been mapped which correspond to the presence of London Clay. These soils have a heavy clay loam or clay topsoil over a slowly permeable strongly gleyed clay subsoil and are assessed as Wetness Class IV. They are consequently very wet and intractable for long spells during the wetter periods of the year and at the time of survey there was surface water ponding in parts of these areas.

Non agricultural

3.7 The three areas of land at the northern end of the site which have been classified as non agricultural consist mainly of woodland. The largest area is the location of an old brickworks and consists of the old clay pit which has become overgrown with trees and shrubs together with a house and a small industrial building.

3.8 The old derelict house and buildings at Little Kendals Farm have also been classified as non agricultural as they are no longer used for any agricultural purpose.

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REFERENCES

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