

AGRICULTURAL LAND CLASSIFICATION REPORT FOR LAND AT DEANS HOUSE FARM, RAINSHILL

1. Introduction

An Agricultural Land Classification survey of approximately 48.1 ha of land around Deans House Farm, Rainshill, was carried out in February 1992 to determine land quality on a proposed golf course.

The survey was undertaken using a hand-held 5 cm Dutch auger and the soils were augered at 100 m grid intersections to a depth of about 100 cm or to an impenetrable layer if closer to the surface, to give a density of 1 boring per 0.9 ha. Five soil pits were dug to determine soil structure.

The land is underlain by Boulder Clay and Glacials Sands and Gravels with Bunter Pebble Beds in the north. Land quality ranges from Grade 2 to Grade 4.

2. Agricultural Land Classification

2.1 Climatic limitations

The main parameters used in the assessment of the climatic limitation are average annual rainfall, as a measure of overall wetness; and accumulated temperature, as a measure of the relative warmth of a locality. The site received an average annual rainfall of approximately 866 mm and has an accumulated temperature (January to June) of 1406°C. Climate is a neutral factor in the classification of the land.

2.2 Location and site limitations

The land lies to the south of Blundell's Hill extending from the lane in the north to the motorway in the south. It is surrounded by agricultural land in the east and west.

The land lies at an altitude of approximately 40 m in the south rising to 50 m in the north. Most of the land is very gently sloping and gradient only limits land quality in one small area in the west, where slopes of up to 13° occur.

2.3 Geology and soil limitations

The area is underlain by Boulder Clay in the south east, on which soils of the Salop Series have developed. These soils are medium to heavy textured and fall into Wetness Class IV.

In the west and north west glacial sands and gravels give rise to deep sandy soils which have horizons of iron cementing within some profiles. These soils are mainly freely drained and prone to drought.

In the north Bunter Pebble Beds give rise to sandy soils over hard sandstone. These soils are shallow and prone to drought.

2.4 Interactive limitations

The physical limitations which result from interactions between climate, site and soil are soil wetness, droughtiness and erosion. Soil wetness expresses the extent to which excess water imposes restrictions on crop growth and cultivations, whilst droughtiness indicates the degree to which a shortage of soil water influences the range of crops which may be grown and the level of yield which may be achieved.

Soil wetness is a major limiting factor in the classification of this land; it takes account of the climatic regime, the soil water regime and the texture of the top 25 cm of soil.

This area is at field capacity for approximately 203 days and soils fall into Wetness Classes I to IV, the Wetness Class being determined by the depth to gleying and a slowly permeable layer.

2.5 Land use

The majority of the site is set aside and has been sown to grass. To the south of the drain, cereals are grown.

3. Agricultural Land Classification

Land quality ranges from Grade 2 to Grade 4.

3.1 Grade 2

This grade accounts for 4.5 ha and 9.4% of the area. It is mapped over deep sandy soils which fall into Wetness Class I. Some profiles are gleyed or wet below 60 cm. Most of the soils in this grade have very sandy subsoils and are slightly prone to drought in dry years.

3.2 Subgrade 3a

This subgrade accounts for 16.9 ha and 35.1% of the area. It is mapped over sandy loam or sandy clay loam soils which fall into Wetness Class III or sandy clay loam soils which fall into Wetness Class II. Most profiles are gleyed or slowly permeable within 80 cm.

At the northern end of the site, sandy loams have formed over hard sandstone or an impenetrable iron pan. In these areas the soils are too droughty for a higher grade having a moisture balance of between -20 and +5 for wheat and -30 and -10 for potatoes.

3.3 Subgrade 3b

This subgrade accounts for 19.5 ha and 40.6% of the area. It includes deep medium sandy loam or sandy clay loam soils which are gleyed and overlie a slowly permeable layer within 55 cm. These soils fall into Wetness Class IV and so could not be graded higher. At the north eastern end of the site 30-40 cm of sandy loam overlies sandstone and in these areas the soils are too drought prone for a higher grade.

3.4 Grade 4

This grade is mapped in the west over 0.4 ha and 0.8% of the site to include slopes of between 11 and 13°.

3.5 Farm Buildings

0.4 ha and 0.8% of the site is covered by buildings.

3.6 Non Agricultural

6.4 ha and 13.3% of the area is mapped as Non Agricultural, being covered by woodland, old quarries and small ponds.

3.7 Summary of Agricultural Land Classification

<u>Grade</u>	<u>Hectares</u>	<u>%</u>
2	4.5	9.4
3a	16.9	35.1
3b	19.5	40.6
4	0.4	0.8
Non Ag.	6.4	13.3
Farm Buildings	0.4	0.8
Total	<u>48.1</u>	<u>100.0</u>