



AGRICULTURAL LAND CLASSIFICATION
BARNSELY UDP
(AREA OF SEARCH FOR AIRFIELD)
SOUTH YORKSHIRE
JANUARY 1995

ADAS
Leeds Statutory Group

Job No:- 9/95
MAFF Ref:- EL 47/2
Commission No:- 1568

2 FCS 10616

SUMMARY

An Agricultural Land Classification survey of 173 ha of land south of Billingley ("Barnsley UDP, Area of Search for Airfield") was carried out in three stages between August 1993 and January 1995. The final auger boring density was one per hectare over the whole site.

4.0 ha of Grade 2 land was mapped. These soils are well drained and consist of light-textured topsoils over light to medium-textured subsoils. Slight soil droughtiness limits this land to Grade 2.

48.2 ha of Subgrade 3a land occurs on the site. Most of the soils are well drained, with light-textured topsoils over light to very light-textured subsoils. Weathering sandstone occurs at between 60cm and 80cm depth and moderate soil droughtiness restricts these areas to Subgrade 3a. In a few cases the soils are imperfectly drained, with medium-textured topsoils over medium to heavy-textured upper and lower subsoils. The upper subsoils are generally gleyed while the lower subsoils, which begin at between 40cm and 60cm depth, are both gleyed and slowly permeable. Soil wetness limits this land to Subgrade 3a.

The remainder of the agricultural land (117.3 ha) falls in Subgrade 3b. In the south and east the soils are well drained with light-textured topsoils over light or very light-textured subsoils. Weathering sandstone begins at around 40cm depth and severe soil droughtiness limits these areas to Subgrade 3b. In the north and west the soils are poorly drained, with medium to heavy-textured topsoils overlying gleyed and slowly permeable heavy-textured subsoils at around 30cm depth. Soil wetness and topsoil workability restrictions limit this land to Subgrade 3b.

The remainder of this site consists of Urban land (2.7 ha in the north and south-west) and Non Agricultural land (1.1 ha in the south-west).

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1. AGRICULTURAL LAND CLASSIFICATION

AGRICULTURAL LAND CLASSIFICATION REPORT ON LAND SOUTH OF BILLINGLEY
(BARNSELY UDP, AREA OF SEARCH FOR AIRFIELD)

1. INTRODUCTION AND SITE CHARACTERISTICS

1.1 Location and Survey Methods

The site lies approximately 10km east-south-east of Barnsley town centre, on the south side of the A635 Barnsley-Doncaster road. It covers a total area of 173 ha. Much of the south and east had been surveyed at a semi-detailed level (one auger boring per two hectares) in August 1993 ("Barnsley UDP, Site DE18") and 21 ha in the north had been the subject of a detailed ALC survey in October 1994 ("Woodbine OCCS"). Previously unsurveyed areas were subject to a detailed survey in January 1995 when the soils were examined by hand auger borings at 100m intervals predetermined by the National Grid, and additional borings were carried out in the area previously subject to a semi-detailed survey to bring the boring density up to the same level of one per hectare as on the rest of the site. Four pits were dug to allow full profile descriptions to be made. The land quality was assessed using the methods described in "Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land" (MAFF, 1988).

This report and its accompanying map supersede the report and map provided in 1993, "Barnsley UDP, Site DE18", where the survey work was only semi-detailed.

1.2 Land Use and Relief

At the time of the most recent survey (January 1995) 98% of the site was in agricultural, principally arable, use. The remainder consists of Urban land (consisting of housing and a spoil heap) and Non-Agricultural land (consisting of scrub).

Site altitude varies between 20m AOD in the south-west and 40m AOD in the south-east and the land is level to gently sloping in the north (1-3° with a southerly aspect) and gently to strongly sloping in the south (2-8°, with a northerly aspect).

1.3 Climate

Grid Reference	: SE 439 036
Altitude (m)	: 30
Accumulated Temperature above 0°C (January - June)	: 1394 day °C
Average Annual Rainfall (mm)	: 622
Climatic Grade	: 1
Field Capacity Days	: 132
Moisture Deficit (mm) Wheat	: 107
Moisture Deficit (mm) Potatoes	: 99

1.4 Geology, Soils and Drainage

The area is underlain by Carboniferous Coal Measures, consisting of interbedded sandstones and shales. Weathering sandstone bedrock is found within one metre of the soil surface over much of the south of the site while weathering shale frequently occurs at similar depths in the north.

With the exception of localised Head deposits and a narrow band of alluvium alongside Carr Dike, in the centre of the site, there are no drift deposits.

Where the soils have formed in weathering sandstone the profiles are generally well drained (Wetness Class I) with medium sandy loam topsoils overlying medium sandy loam or loamy medium sand subsoils. Weathering sandstone occurs at between 30cm and 100cm depth in most cases.

The soils derived from weathering shale are imperfectly or poorly drained, falling in Wetness Classes III and IV and typically consist of medium or heavy clay loam topsoils over heavy clay loam or heavy silty clay loam subsoils. Weathering shale occurs at depths of between 30cm and 100cm in some areas.

The alluvial soils alongside Carr Dike are also poorly drained, falling in Wetness Class IV, with heavy clay loam topsoils over heavy silty clay loam, clay or silty clay subsoils.

Most of the soils on this site correspond to the Bardsey and Rivington Series as mapped by the Soil Survey and Land Research Centre.

2. AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:

<u>Grade/Subgrade</u>	<u>Hectares</u>	<u>Percentage of Total Area</u>
1		
2	4.0	2.3
3a	48.2	27.8
3b	117.3	67.7
4		
5		
(Sub total)	(169.5)	(97.8)
Urban	2.7	1.6
Non Agricultural	1.1	0.6
Woodland - Farm		
- Commercial		
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)	(3.8)	(2.2)
TOTAL	<u>173.3</u>	<u>100</u>

2.1 Grade 2

Approximately 4 ha of Grade 2 land occurs in the south-east of the site. The soils here are well drained, falling in Wetness Class I, and typically consist of medium sandy loam topsoils overlying medium sandy loam, medium silty clay loam or sandy clay loam subsoils. Both topsoils and subsoils are very slightly stony, containing around 4% small and medium subangular sandstones. Slight soil droughtiness is the factor limiting this land to Grade 2.

2.2 Subgrade 3a

Much of the south and east of the site falls in this Subgrade. In most cases the soils are well drained (Wetness Class I) with medium sandy loam topsoils overlying medium sandy loam or loamy medium sand subsoils. Weathering sandstone bedrock occurs at between 60cm and 80cm depth in most places and topsoils are very slightly stony (with around 4% small and medium subangular sandstones) while subsoils are very slightly to slightly stony (with between 4% and 12% subangular sandstones). A more severe soil droughtiness limitation restricts this land to Subgrade 3a.

In a few cases in the north of the site the Subgrade 3a land consists mainly of imperfectly drained soils which fall in Wetness Class III. Medium clay loam topsoils overlie gleyed medium silty clay loam, sandy clay loam or heavy clay loam upper subsoils and gleyed and slowly permeable sandy clay loam or heavy clay loam lower subsoils. The lower subsoils begin at between 40cm and 60cm depth and soil wetness is the factor limiting the ALC grade.

2.3 Subgrade 3b

The remainder of the agricultural land on this site falls in Subgrade 3b. In the south and east the soils are generally well drained (Wetness Class I) and consist of medium sandy loam topsoils over medium sandy loam or loamy medium sand subsoils. Weathering sandstone typically begins at around 40cm depth. Topsoils are very slightly stony, containing around 4% small and medium subangular sandstones, and subsoils are slightly stony, with between 6% and 15% small to large subangular sandstones. Severe soil droughtiness limits this land to Subgrade 3b.

In the north and west the Subgrade 3b land generally consists of poorly drained (Wetness Class IV) soils with medium clay loam or heavy clay loam topsoils overlying gleyed and slowly permeable heavy clay loam, heavy silty clay loam or clay in most cases. These slowly permeable subsoils typically begin at around 30cm depth and soil wetness and topsoil workability restrict this land to Subgrade 3b.

2.4 Urban

This category includes houses in the north and a spoil heap in the south-west.

2.5 Non Agricultural

This category includes an area of scrub in the south-west of the site.

RPT File: 2FCS 10616
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MAP