

**AGRICULTURAL LAND CLASSIFICATION  
BARNSELY UDP, OBJECTORS SITES  
(NOS. 11, 12 AND 14)  
SOUTH YORKSHIRE  
JANUARY 1996**

ADAS  
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## SUMMARY

Detailed Agricultural Land Classification surveys of three sites at Shafton Two Gates, Darfield and Great Houghton (Barnsley UDP Objectors Sites 11, 12 and 14) were carried out in December 1995 and January 1996. The following table summarises the results of these surveys.

Site	Grade Areas (ha)			
	2	3a	3b	Other land
No. 11, Shafton Two Gates	-	-	7.1	-
No. 12, Darfield	4.1	10.2	17.1	2.2
No. 14, Great Houghton	-	2.5	4.5	-

## CONTENTS

1. Introduction
2. Site 11, Shafton Two Gates
  - 2.1 Location, Land Use and Relief
  - 2.2 Climate
  - 2.3 Geology, Soils and Drainage
  - 2.4 Agricultural Land Classification Grades and Map
3. Site 12, Darfield
  - 3.1 Location, Land Use and Relief
  - 3.2 Climate
  - 3.3 Geology, Soils and Drainage
  - 3.4 Agricultural Land Classification Grades and Map
4. Site 14, Great Houghton
  - 4.1 Location, Land Use and Relief
  - 4.2 Climate
  - 4.3 Geology, Soils and Drainage
  - 4.4 Agricultural Land Classification Grades and Map

AGRICULTURAL LAND CLASSIFICATION REPORT FOR BARNSELY UDP OBJECTORS  
SITES 11, 12 AND 14, SOUTH YORKSHIRE

1. INTRODUCTION

Detailed Agricultural Land Classification (ALC) surveys of three objectors sites for Barnsley UDP at Shafton Two Gates, Darfield and Great Houghton were carried out in December 1995 and January 1996. The survey work involved examining the soils using hand auger borings at 100 m intervals predetermined by the National Grid and at least one soil pit was dug on each site to allow a full profile description to be made. The land quality in each case 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).

2. Site 11, Shafton Two Gates

2.1 Location, Land Use and Relief

The site lies to the south of the A628, east of Shafton, and is centred on National Grid Reference SE398106. At the time of the survey, all of the site was in agricultural use as part of an arable rotation. The site is predominantly gently sloping (2° to 3°) but is moderately sloping (4° - 7°) in the south. Site altitude ranges from 60 to 80 metres AOD and the aspect is southerly.

2.2 Climate

Grid Reference	: SE398106
Altitude (m)	: 70
Accumulated Temperature above 0°C (January - June)	: 1352 day °C
Average Annual Rainfall (mm)	: 657
Climatic Grade	: 1
Field Capacity Days	: 143
Moisture Deficit (mm) Wheat	: 102
Moisture Deficit (mm) Potatoes	: 91

### 2.3 Geology, Soils and Drainage

Soils have developed directly from underlying shales belonging to the Carboniferous Coal Measures. Soils generally consist of medium or heavy textured topsoils and upper subsoils over heavy textured, slowly permeable lower subsoils. The upper subsoils are sometimes slowly permeable. Soils are imperfectly or poorly drained, falling within Wetness Class III or IV. Soils are similar to those of the Bardsey association as mapped by the Soil Survey and Land Research Centre.

## 2.4 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		
3a		
3b	7.1	100
4		
5		
(Sub total)	(7.1)	(100)
Other Land		
TOTAL	<u>7.1</u>	<u>100</u>
	<u>      </u>	<u>      </u>

### 2.4.1 Subgrade 3b

All of the site falls within Subgrade 3b. Soil profiles generally comprise medium clay loam or heavy clay loam topsoils over similar, gleyed upper subsoils. Upper subsoils are sometimes slowly permeable at less than 40 cm depth. Lower subsoils consist of heavy clay loam or clay and are slowly permeable. These soils are imperfectly or poorly drained (Wetness Class III to IV). The land is limited to Subgrade 3b by soil wetness and workability restrictions which are exacerbated by widespread heavy textured topsoils.

MAP

### 3. Site 12, Darfield

#### 3.1 Location, Land Use and Relief

This site lies on the east side of the village of Darfield, around grid reference SE425039. At the time of the survey 93% of the site was in agricultural use (growing winter cereals and oilseed rape) whilst 7% consisted of scrub, disused sandstone quarries, and a disused road. The land is level in the far south and gently to moderately sloping (2° - 5°) in the north. One small area in the west is limited to Subgrade 3b by slopes of around 10°

#### 3.2 Climate

Grid Reference	: SE425039
Altitude (m)	: 36
Accumulated Temperature above 0°C (January - June)	: 1387 day °C
Average Annual Rainfall (mm)	: 621
Climatic Grade	: 1
Field Capacity Days	: 135
Moisture Deficit (mm) Wheat	: 107
Moisture Deficit (mm) Potatoes	: 99

#### 3.3 Geology, Soils and Drainage

This site is underlain by Carboniferous Coal Measures consisting of interbedded sandstones and shales. Over most of the site the soils are derived from sandstone (which generally outcrops to within one metre of the soil surface) although in the south and north-east the soils have formed in shales and in localised drift derived from shales respectively.

The soils on the site closely reflect the underlying geology. Those formed over sandstone are well drained (Wetness Class I) and consist of very slightly to slightly stony medium sandy loam topsoils and subsoils overlying weathering sandstone at between 40 cm and 80 cm depth in most cases.



Where the soils have formed in Head deposits of shale (locally derived drift), the soils are generally well or moderately well drained (Wetness Classes I and II) and consist of medium-textured topsoils and subsoils, with slowly permeable heavy-textured horizons occurring at depth in places.

Those soils, principally in the south of the site, formed in situ over shale outcrops are generally imperfectly or poorly drained (Wetness Classes III and IV), with medium to heavy-textured topsoils and subsoils.

The soils on the site correspond to the Rivington 1 association as mapped by the Soil Survey and Land Research Centre.

### 3.4. 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	4.1	12.2
3a	10.2	30.4
3b	17.1	50.9
4		
5		
(Sub Total)	(31.4)	(93.5)
Other Land	2.2	6.5
<b>TOTAL</b>	<b>33.6</b>	<b>100</b>

#### 3.4.1 Grade 2

Land in this grade occurs in the north-east. The soils are well or moderately well drained (Wetness Classes I and II) and typically consist of medium clay loam topsoils and subsoils, with gleyed and slowly permeable heavy silty clay loams occurring below around 60 cm depth in places. Slight soil droughtiness and/or slight soil wetness are the factors which restrict this land to Grade 2.

#### 3.4.2 Subgrade 3a

Subgrade 3a land occurs in the north and east. The soils are generally well drained (Wetness Class I) and consist of medium sandy loam topsoils and subsoils overlying weathering sandstone at between 60 cm and 75 cm depth. Soil droughtiness restricts the ALC grade of these areas. In parts of the far east of the site the Subgrade 3a land consists of imperfectly drained soils (Wetness Class III) where medium clay loam and medium silty clay loam topsoils and upper subsoils overlies gleyed and slowly permeable heavy silty clay

loam or silty clay lower subsoils at between 40 cm and 60 cm depth. In this case soil wetness is the grade-limiting factor.

#### 3.4.3 Subgrade 3b

In the north and centre of the site the Subgrade 3b land consists of well drained soils (Wetness Class I) where sandy loam topsoils and subsoils overlie weathering sandstone at between 30 cm and 60 cm depth. Severe soil droughtiness limits these areas to Subgrade 3b. In the south of the site the soils are typically imperfectly to poorly drained (Wetness Classes III and IV), with medium or heavy clay loam topsoils overlying gleyed and slowly permeable medium clay loam, medium silty clay loam, heavy silty clay loam or silty clay subsoils. This land is limited to Subgrade 3b by soil wetness restrictions.

#### 3.4.4 Other land

Other land on this site consists of a disused minor road (Cathill Road), disused sandstone quarries and, north of Skew Bridge, scrub land.

MAP

#### 4. Site 14, Great Houghton

##### 4.1 Location, Land Use and Relief

This site lies on the eastern side of the village of Great Houghton, north of the B6411. At the time of the survey all of the land was in cereal stubble. Site altitude varies between 38 m AOD approximately in the north-east and 50 m AOD in the south-west. The land alongside the ditch in the north of the site is level but elsewhere there are gentle to moderate slopes (2° - 5°) with an easterly aspect.

##### 4.2 Climate

Grid Reference	: SE438063
Altitude (m)	: 45
Accumulated Temperature above 0°C (January - June)	: 1376 day °C
Average Annual Rainfall (mm)	: 640
Climatic Grade	: 1
Field Capacity Days	: 135
Moisture Deficit (mm) Wheat	: 104
Moisture Deficit (mm) Potatoes	: 95

##### 4.3 Geology, Soils and Drainage

This area is underlain by Carboniferous Coal Measures consisting of interbedded sandstones and shales. The soils over most of the site are formed in situ over weathering sandstone and are well drained (Wetness Class I) with medium sandy loam topsoils and subsoils overlying weathering sandstone at between 50 cm and 100 cm depth in most cases. Alongside the ditch in the north of the site there is a band of poorly drained alluvial soils (Wetness Class IV) where medium or heavy silty clay loam topsoils overlie gleyed and slowly permeable heavy silty clay loam subsoils.

The soils on the site correspond to the Bardsey association as mapped by the Soil Survey and Land Research Institute.

#### 4.4 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		
3a	2.5	35.7
3b	4.5	64.3
4		
5		
(Sub Total)	(7.0)	(100.0)
Other Land		
TOTAL	7.0	100

##### 4.4.1 Subgrade 3a

Subgrade 3a land is found in the south-west of the site. The soils are well drained (Wetness Class I) and consist of medium sandy loam topsoils overlying medium sandy loam or medium clay loam subsoils. Weathering sandstone occurs below around 60 cm depth in some places and gleyed and slowly permeable heavy silty clay loams below 80 cm depth in others. This land is, thus, limited to Subgrade 3a by soil droughtiness and by a pattern limitation.

##### 4.4.2 Subgrade 3b

Land in this subgrade occurs in the north and east of the site. In the north the soils are poorly drained (Wetness Class IV) with medium or heavy silty clay loam topsoils overlying gleyed and slowly permeable heavy silty clay loam subsoils at around 25 cm depth. Soil wetness limits the ALC grade of this land. Elsewhere the soils are well drained (Wetness

Class I), with medium sandy loam topsoils and subsoils overlying weathering sandstone at between 40 cm and 50 cm depth. In this case soil droughtiness limits the land to Subgrade 3b.

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MAP