AGRICULTURAL LAND CLASSIFICATION

BARNSLEY METROPOLITAN BOROUGH COUNCIL

M1 CORRIDOR

PROPOSED DEVELOPMENT SITES 1 TO 7

MAFF

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AGRICULTURAL LAND CLASSIFICATION REPORT ON THE
BARNSLEY M1 CORRIDOR PROPOSED DEVELOPMENT SITES

Introduction

A total of 7 proposed development sites along the Barnsley M1 corridor were surveyed in January 1990. Detailed background information including agricultural land classification gradings of each site follow this introduction. Soils were examined by hand auger borings at points predetermined by the National Grid at a density of at least one boring per hectare. In addition soil profile pits were dug where appropriate to study the soil in more detail and to collect samples for laboratory analysis. Land quality assessments were made using the revised guidelines published by MAFF in 1988.

Site 1. Proposed Business Park at Haigh

1.1 Introduction

The site (NGR SE 302114) lies between the M1 motorway and Woolley Colliery and covers a total area of 16.0 hectares. A small additional plot of land to the west of the M1 (NGR SE 299117) measuring 0.9 hectares was also included in this survey.

1.2 Climate and Relief

Salient climatic parameters are as follows:-

Average Annual Rainfall (mm)	666
Accumulated Temperature above 0°C (Jan-June)	1348
Field Capacity Days	164
Moisture Deficit (mm) wheat	99
potatoes	88

These factors indicate that there is no overall climatic limitation on ALC grade. The site lies on the floodplain of the River Dearne and is virtually flat. Local knowledge suggests that flooding is only a medium or short term problem usually in the winter months. Average altitude is 70 m a.o.d.

1.3 Land Use

All farmland is in arable use currently growing winter cereals. The 0.9 hectare plot to the west of the M1 has been covered with hardcore.

1.4 Geology, Soils and Drainage

The site contains two soil types. Alongside the River Dearne, alluvial deposits have produced freely drained (Wetness Class I) soils usually with a silty clay loam top and subsoil. Elsewhere alluvium is absent and Carboniferous Coal measure Shales have weathered to produce silty clay loam topsoils over clayey, slowly permeable subsoils (Wetness Class IV).

1.5 Agricultural Land Classification

1.5.1 Subgrade 3a (7.8 hectares/48.8% of total area)

The alluvial soils alongside the River Dearne fall within subgrade 3a. Soil wetness is not limiting but this land cannot be placed within a higher grade because of the winter flooding risk.

1.5.2 Subgrade 3b (7.3 hectares/45.6% of total area)

The soils formed on weathering Coal Measure Shales are all limited to subgrade 3b by wetness and workability problems (Wetness Class IV).

1.5.3 Urban (0.9 hectares/5.6% of total area)

The area of hardcore west of the M1 falls within this category.

Site 2. Proposed Business Park at Birthwaite

2.1 Introduction

The site (NGR SE 305105) lies between Birthwaite Hall to the west and the M1 motorway to the east and covers a total of 14.7 hectares.

2.2 Climate and Relief

Salient climatic parameters are as follows:-

Average Annual Rainfall (mm)	667
Accumulated Temperature above 0°C (Jan-June)	1348
Field Capacity Days	166
Moisture Deficit (mm) wheat	100
potatoes	88

These factors indicate that there is no overall climatic limitation on ALC grade. The land is flat to the south and moderately sloping further north. Maximum altitude is 80 m a.o.d. and the minimum 65 m a.o.d. with an average of about 70 m a.o.d.

2.3 Land Use

The northerly field is currently growing winter cereals. All remaining land is under permanent grass.

2.4 Geology, Soils and Drainage

The site contains two distinct soil types. South of the drainage ditch which bisects the site soils are all formed on restored land consisting of up to 50 cm of medium and heavy textured, compacted soil over rubble and colliery waste. Elsewhere soils are undisturbed and have developed on weathering Carboniferous Coal Measure Shales. Topsoils consist of medium or heavy silty clay loam over slowly permeable, clayey subsoils (Wetness Class IV).

2.5 Agricultural Land Classification

2.5.1 Subgrade 3b (7.2 hectares/44% of total area)

The undisturbed profiles to the north of the site all fall within subgrade 3b. Topsoils consist of either medium or heavy silty clay loam over slowly permeable silty clay subsoils (Wetness Class IV). Soil wetness and workability problems are the main limitations and restrict this area to subgrade 3b.

2.5.2 Grade 4 (6.7 hectares/46% of total area)

All the restored area is placed within Grade 4. The main limitations on this land are shallow soil depth, high topsoil stone contents and wetness caused by severe subsoil compaction.

2.5.3 Non Agricultural (0.8 hectares/5% of total area)

Two small corners of fields containing scrub vegetation are included in this category.

Site 3. Proposed Business Park at Darton

3.1 Introduction

The site (NGR 310090) lies east of the M1 motorway and south of Kexbrough. it covers a total of 37 hectares, 96% of which is in agricultural use.

3.2 Climate and Relief

Salient climatic parameters are as follows:-

Average Annual Rainfall (mm)	641
Accumulated Temperature above 0°C (Jan-June)	1360
Field Capacity Days	161
Moisture Deficit (mm) wheat	103
potatoes	92

These factors indicate that there is no overall climatic limitation on ALC grade. The land slopes gently down to the Cawthorne Dike which runs west to east through the middle of the site. Altitude ranges from 80 m a.o.d. in the north west to 58 m a.o.d. at Barugh Low Bridge with an average of about 60 m a.o.d.

Local knowledge suggests that flooding is a short or medium term problem, mainly in winter.

3.3 Land Use

Most of the farmland is in arable use but 3 fields to the south east are currently under grass. Three small areas contain scrub vegetation and are not farmed.

3.4 Geology, Soils and Drainage

The site contains two soil types. Alongside the Cawthorne Dike alluvial deposits have produced freely drained soils (Wetness Class I) usually with a silty clay loam top and subsoil. Further away from the Dike where alluvium is absent Carboniferous Coal Measure Shales have weathered to produce silty clay loam topsoils over clayey, slowly permeable subsoils (Wetness Class IV).

3.5 Agricultural Land Classification

3.5.1 Subgrade 3a (4.6 hectares/12% of total area)

The alluvial soils alongside the Cawthorne Dike all fall within subgrade 3a. The risk of short and medium term winter flooding prevents this land from being placed within a higher grade.

3.5.2 Subgrade 3b (31.1 hectares/84% of total area)

The soils formed on weathering Coal Measure Shales are all limited to subgrade 3b by soil wetness and workability problems (Wetness Class IV).

3.5.3 Non Agricultural (1.3 hectares/4% of total area)

Three small areas containing scrub vegetation are placed within this category.

Site 4. Junction 37 Proposed Employment Site

4.1 Introduction

Site 4 (NGR 318060) covers 16.1 hectares and lies north of Dodworth and south west of the M1 motorway.

4.2 Climate and Relief

Salient climatic parameters are as follows:-

Average Annual Rainfall (mm)	708
Accumulated Temperature above 0°C (Jan-June)	1259
Field Capacity Days	169
Moisture Deficit (mm) wheat	88
potatoes	73

These factors impose an overall climatic limitation of grade 2. The site has a southerly aspect with gentle slopes and an average altitude of 150 m a.o.d.

4.3 Land Use

There is a mixture of arable and grassland areas.

4.4 Geology, Soils and Drainage

The site contains a mixture of both restored and natural profiles. The restored soils consist of medium clay loam or silty clay loam topsoils over clayey slowly permeable subsoils (Wetness Class IV). The natural profiles are formed on weathering Carboniferous Coal Measure Shale deposits and also have medium clay loam or silty clay loam topsoils over clayey, slowly permeable subsoils (Wetness Class IV).

4.5 Agricultural Land Classification

4.5.1 Subgrade 3b (14.2 hectares/88% of total area)

This area contains soils which are restricted to subgrade 3b by soil wetness and workability problems.

4.5.2 Grade 4 (1.0 hectares/6% of total area)

This small area of badly restored soils has more serious soil wetness and workability limitations which restrict it to Grade 4.

4.5.3 Non Agricultural Farm Buildings (0.9 hectares, 6% of total area)

This consists of Land Head Farm and associated farm buildings.

Site 5. Proposed Business Park at Elmhirst Lane

5.1 Introduction

The site (NGR 307057) which covers 5.9 hectares lies north of Fall Bank Industrial Estate.

5.2 Climate and Relief

Salient climatic parameters are as follows:-

Average Annual Rainfall (mm)		720
Accumulated Temperature above 0°C (Jan-June)		1248
Field Capacity Days		175
Moisture Deficit (mm)	wheat	86
	potatoes	71

These factors indicate there is no overall climatic limitation of grade 2. The land slopes gently to the south east at an average altitude of 160 m a.o.d.

5.3 Land Use

All the land is under grass.

5.4 Geology, Soils and Drainage

All the soils are formed on restored land and typically consist of medium or heavy clay loam topsoils over rubble or occasionally a shallow clayey subsoil (Wetness Class IV).

5.5 Agricultural Land Classification

5.5.1 Grade 4 (5.1 hectares/86% of total area)

Severe soil wetness prevents this land from being placed in a higher grade.

5.5.2 Non Agricultural (0.8 hectares/14% of total area)

This consists of land being reclaimed at present.

Site 6. Proposed Business Park at Tankersley

6.1 Introduction

This site (NGR SE 347999) lies south of the A61 trunk road towards Glebe Farm. It covers a total of 8.7 hectares 86% of which is currently in agricultural use.

6.2 Climate and Relief

Salient climatic parameters are as follows:-

Average Annual Rainfall (mm)		736
Accumulated Temperature above 0°C (Jan-June)		1261
Field Capacity Days		170
Moisture Deficit (mm)	wheat	86
	potatoes	69

These factors indicate that there is an overall climatic limitation of grade 2. The land is gently sloping at an average altitude of about 150 m a.o.d.

6.3 Land Use

All the land is currently under grass except for some woodland in the west.

6.4 Geology, Soils and Drainage

Soils are all formed on weathering Carboniferous Coal Measure deposits. These consist mainly of weathering shales which give silty clay loam topsoils over clayey, slowly permeable subsoils (Wetness Class IV). In the middle of the site, however, sandstone occurs and has weathered to produce well drained (Wetness Class I) soils with sandy clay loam top and subsoils.

6.5 Agricultural Land Classification

6.5.1 Subgrade 3a (1.3 hectares/15% of total area)

The small area containing moderately stony sandy, clay loam top and subsoils over sandstone is restricted to subgrade 3a by droughtiness and topsoil stoniness.

6.5.2 Subgrade 3b (6.2 hectares/71% of total area)

In this area shale has weathered to produce a clayey, slowly permeable subsoil (Wetness Class IV) beneath a silty clay loam topsoil. Soil wetness and workability problems limit these soils to this subgrade.

6.5.3 Non Agricultural (1.2 hectares/14% of total area)

One wooded field in the west falls within this category.

Site 7. Proposed Business Park at Hoyland

7.1 Introduction

This site (NGR SK 355998) lies to the south west of Hoyland immediately east of the M1 motorway. It covers 73.9 hectares 98% of which is currently in agricultural use.

7.2 Climate and Relief

Salient climatic parameters are as follows:-

Average Annual Rainfall (mm)	723
Accumulated Temperature above 0°C (Jan-June)	1272
Field Capacity Days	168
Moisture Deficit (mm) wheat	87
potatoes	72

These factors indicate that there is an overall climatic limitation of grade 2. The area is level or gently sloping except in the south east corner where there are some moderate slopes. Average altitude is 140 m a.o.d.

7.3 Land Use

The site contains a mixture of grassland and arable land uses.

7.4 Geology, Soils and Drainage

Most of the land has been restored after opencast coal extraction. Topsoils consist of medium or heavy clay loam over a compacted, clayey, slowly permeable subsoil (Wetness Class IV). Towards the northern end of the site soils do not appear to have been stripped and restored, but are often disturbed or mixed with cinders, coal and colliery shale. Here topsoils consist of clay loam over clayey slowly permeable subsoils (Wetness Class IV). These profiles have developed from weathering Carboniferous Coal Measure Shales.

7.5 Agricultural Land Classification

7.5.1 Subgrade 3b (72.7 hectares/98% of total area)

All the farmland falls within subgrade 3b including both the restored land and the naturally formed profiles. Common to both soil types are soil wetness and workability problems and these are the main limitation on ALC grade.

7.5.2 Non Agricultural (0.5 hectares/1% of total area)

Two small fields used to store machinery are included in this category.

7.5.3 Urban (0.7 hectares/1% of total area)

Roads that fall within the site boundary are classified as urban land.