[redacted]

Ministry of
Agriculture
Fisheries
and Food

AGRICULTURAL LAND CLASSIFICATION
TYNEDALE DLP
POTENTIAL DEVELOPER SITES
NORTHUMBERLAND
AUGUST 1995

ADAS
Leeds Statutory Group

Job No:- 177-185/95
MAFF Ref:- EL 10046/A
Commission No:- 2021

2 FCS 11102

SUMMARY

Detailed Agricultural Land Classification (ALC) surveys were carried out on nine sites in Tynedale District in August 1995 ("Tynedale DLP-Potential Developer Sites"). The table below gives a summary of the ALC grades on each site and the factors limiting the ALC grade.

Site No.	Grade Areas & Limiting Factors				Other Land
	2	3a	3b	4	
209, Acomb	2.5 ha (Climate, Soil droughtiness)	-	-	-	-
253, Acomb	22.1 ha* (Soil droughtiness, Topsoil Workability)	14.0 ha* (Soil droughtiness)	3.3 ha* (Soil Wetness)		2.7 ha
38, Hexham	-	-	2.1 ha (Soil Wetness)		
39 & 236 Hexham	-	2.9 ha (Soil droughtiness)	4.9 ha (Soil Wetness)	-	-
39a, Hexham	-	0.2 ha (Soil Wetness)	1.1 ha (Soil Wetness)	-	-
213 & 214, Hexham	-	-	8.1 ha (Soil Wetness)	-	-
215, Hexham	-	-	9.8 ha (Soil Wetness)	-	1.5 ha
237 & 238, Hexham	-	-	1.5 ha (Slope)	0.5 ha (Slope)	1.1 ha
239a & 239b Corbridge	2.1 ha* (Flood risk)	1.9 ha (Soil droughtiness, topsoil stoniness)	-	1.0 ha (Slope)	

* Provisional grading, subject to results of laboratory analyses.

CONTENTS

AGRICULTURAL LAND CLASSIFICATION REPORT ON LAND AROUND ACOMB, HEXHAM AND CORBRIDGE (TYNEDALE DLP - POTENTIAL DEVELOPER SITES)

1. INTRODUCTION

1.1 Location and Survey Methods

Nine sites within Tynedale District were subject to detailed Agricultural Land Classification (ALC) surveys in August 1995. The soils were examined by hand auger borings at 100m intervals predetermined by the National Grid and a number of soils pits were dug at representative points to allow more detailed 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).

2.1 SITE 209, ACOMB

2.1.1 Location

This site lies on the northern edge of the village of Acomb, around Grid Reference NY928664.

2.1.2 Land Use and Relief

At the time of survey the land was in arable use.

Site altitude varies from 49m AOD in the south to approximately 60m AOD in the north and the land in gently to moderately sloping (2-4°) with a southerly aspect.

2.1.3 Climate

Grid Reference	: NY928664
Altitude (m)	: 55
Accumulated Temperature above 0°C (January - June)	: 1305 day °C
Average Annual Rainfall (mm)	: 675
Climatic Grade	: 2
Field Capacity Days	: 181
Moisture Deficit (mm) Wheat	: 93
Moisture Deficit (mm) Potatoes	: 79

2.1.4 Geology, Soils and Drainage

River terrace deposits overlie Carboniferous Limestone on this site. The soils are well drained (Wetness Class I) and consist of very slightly stony medium sandy loam topsoils over very slightly stony medium sandy loam upper subsoils and stoneless to very stony loamy medium sand or medium sand lower subsoils.

The soils belong to the Ellerbeck Association as mapped by the Soil Survey and Land Research Centre.

2.1.5 AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2	2.5	100.0
3a		
3b		
4		
5		
(Sub total)	(2.5)	(100.0)
Urban		
Non Agricultural		
Woodland - Farm		
- Commercial		
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)		
TOTAL	2.5	100

2.1.6 Grade 2

All of this site falls in Grade 2. The soils are well drained, falling in Wetness Class I, and consist of medium sandy loam topsoils overlying medium sandy loam upper subsoils and loamy sand or medium sand lower subsoils. The topsoils and upper subsoils are very slightly stony, with 3-5% hard stones, while the lower subsoils are often very stony, with around 50% hard stones. The overall climate of the area and, in some places, slight soil droughtiness, are the factors limiting this land to Grade 2.

2.2 SITE 253, ACOMB

2.2.1 Location

Site 253 lies south-west of the village of Acomb and is enclosed by the A69(T) to the south, the A6079 to the east, and the River Tyne to the west.

2.2.2 Land Use and Relief

At the time of the survey 94% of the site was in agricultural use, mostly cereal and oilseed rape stubble but with a smaller area of permanent grass. The remainder of the site consists of Non Agricultural land and Woodland.

The site varies in altitude from around 37m AOD in the south to 47m AOD in the north and the land is typically level to gently sloping (0-2°) with a southerly aspect.

2.2.3 Climate

Grid Reference	: NY925659
Altitude (m)	: 40
Accumulated Temperature above 0°C (January - June)	: 1323 day °C
Average Annual Rainfall (mm)	: 666
Climatic Grade	: 1
Field Capacity Days	: 180
Moisture Deficit (mm) Wheat	: 95
Moisture Deficit (mm) Potatoes	: 83

2.2.4 Geology, Soils and Drainage

Deposits of alluvium and river terrace overlie Carboniferous Limestone on this site. Generally the soils are well drained, falling in Wetness Class I, and consist of very slightly to slightly stony sandy clay loam or medium sandy loam topsoils overlying very slightly to moderately stony medium sandy loam, sandy clay loam, loamy sand or sand subsoils in most cases. In the south-west of the site is an area of heavy-textured alluvium where the soils are poorly drained (Wetness Class IV) and consist of medium clay loam topsoils over gleyed and slowly permeable clay subsoils.

The soils on the site correspond to the Wharfe and Ellerbeck Associations as mapped by the Soil Survey and Land Research Centre.

2.2.5 AGRICULTURAL LAND CLASSIFICATION

The ALC grades * occurring on this site are as follows:

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2	22.1	52.5
3a	14.0	33.3
3b	3.3	7.8
4		
5		
(Sub total)	(39.4)	(93.6)
Urban		
Non Agricultural	0.6	1.4
Woodland	2.1	5.0
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)	(2.7)	(6.4)
TOTAL	42.1	100

2.2.6 Grade 2*

Most of the centre and north of this site fall in Grade 2. The soils are generally well drained (Wetness Class I) and consist of very slightly stony sandy clay loam or medium sandy loam topsoils and subsoils. Slightly to very stony horizons of loamy sand or sand occur at depth in places. The land is limited to Grade 2 by slight soil droughtiness or a slight topsoil workability limitation.

2.2.7 Subgrade 3a*

Subgrade 3a land is found in the south and north-west of the site. The soils are well drained (Wetness Class I) and typically consist of very slightly to slightly stony medium sandy loam topsoils overlying very slightly to moderately stony medium sandy loam, loamy medium sand or medium sand subsoils. The water holding capacity of these soils is lower than those on the adjoining Grade 2 land and it is soil droughtiness which limits these areas to Subgrade 3a.

2.2.8 Subgrade 3b*

A small area of Subgrade 3b land occurs in the south-east. The profiles are poorly drained, falling in Wetness Class IV, and consist of medium clay loam or sandy clay loam topsoils overlying gleyed and slowly permeable clay subsoils, at around 25 cm depth. In this case soil wetness restricts the ALC grade.

2.2.9 Non Agricultural

A small area of Non Agricultural land consisting of scrub occurs in the south-east.

2.2.10 Woodland

2.1 ha of Woodland occur in the north-west of the site.

*NOTE Some parts of the flood plain of the River Tyne and River South Tyne are contaminated with lead and other metals associated with lead mining. Although there is no reason to believe that it will be a significant problem on this site, laboratory analyses are being carried out and these gradings are therefore provisional, subject to the results of the analyses.

2.3 SITE 38, HEXHAM

2.3.1 Location

Site 38 lies 1km south of Hexham Abbey and covers 2.1 ha.

2.3.2 Land Use and Relief

At the time of survey all of the land was in permanent grass. Site altitude varies from 110m AOD in the south to 125m AOD in the north and the land is gently sloping (3°) with a northerly aspect.

2.3.3 Climate

Grid Reference	: NY933631
Altitude (m)	: 117
Accumulated Temperature above 0°C (January - June)	: 1236 day °C
Average Annual Rainfall (mm)	: 711
Climatic Grade	: 2
Field Capacity Days	: 187
Moisture Deficit (mm) Wheat	: 84
Moisture Deficit (mm) Potatoes	: 67

2.3.4 Geology, Soils and Drainage

This area is underlain by Millstone Grit of the Carboniferous period and overlain by deposits of boulder clay.

The soils are poorly drained (Wetness Class IV) and consist of medium clay loam or sandy clay loam topsoils overlying gleyed and slowly permeable sandy clay loam or clay subsoils at around 25cm depth.

These soils correspond to the Brickfield 3 Association as mapped by the Soil Survey and Land Research Centre.

2.3.5 AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2		
3a		
3b	2.1	100.0
4		
5		
(Sub total)	(2.1)	(100.0)
Urban		
Non Agricultural		
Woodland - Farm		
- Commercial		
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)		
TOTAL	2.1	100

2.3.6 Subgrade 3b

All of Site 38 falls in Subgrade 3b. The soils are poorly drained (Wetness Class IV) and consist of medium clay loam or sandy clay loam topsoils overlying gleyed and slowly permeable sandy clay loam or clay subsoils at around 25cm depth. Soil wetness is, therefore, the grade limiting factor in this case,

2.4 SITES 39 AND 236, HEXHAM

2.4.1 Location

These two sites adjoin each other and lie approximately 1 km south-east of Hexham Abbey.

2.4.2 Land Use and Relief

At the time of survey most of the land was in cereal stubble while the easternmost field was in permanent grass. Altitude varies from 135m AOD in the north-east to 155m AOD in the south and the land is generally gently to moderately sloping (2-5°) with a northerly aspect. Steeper slopes of 8° in the north-east limit a small area to Subgrade 3b.

2.4.3 Climate

Grid Reference	: NY941631
Altitude (m)	: 145
Accumulated Temperature above 0°C (January - June)	: 1204 day °C
Average Annual Rainfall (mm)	: 726
Climatic Grade	: 2
Field Capacity Days	: 188
Moisture Deficit (mm) Wheat	: 80
Moisture Deficit (mm) Potatoes	: 62

2.4.4 Geology, Soils and Drainage

The area is underlain by Carboniferous Millstone Grit, which outcrops to within one metre of the soil surface in the centre of the site. Elsewhere there is a drift cover of boulder clay. The soils developed over shallow gritstone are well to moderately well drained (Wetness Classes I and II) and consist of medium clay loam or sandy clay loam topsoils and subsoils overlying weathering gritstone at between 50 cm and 60 cm depth. Those soils developed in boulder clay are poorly drained (Wetness Class IV) with medium clay loam or sandy clay loam topsoils overlying gleyed and slowly permeable sandy clay loam subsoils at around 25 cm depth.

The soils in this area correspond to the Brickfield 3 Association as mapped by the Soil Survey and Land Research Centre

2.4.5 AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2		
3a	2.9	37.2
3b	4.9	62.8
4		
5		
(Sub total)	(7.8)	(100.0)
Urban		
Non Agricultural		
Woodland - Farm		
- Commercial		
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)		
TOTAL	7.8	100

2.4.6 Subgrade 3a

The centre of this area has been mapped as Subgrade 3a. The soils are well or moderately well drained, falling in Wetness Classes I and II, and consist of medium clay loam or sandy clay loam topsoils and subsoils overlying weathering gritstone at between 50 cm and 60 cm depth. The topsoils are very slightly to slightly stony while the subsoils are slightly to very stony with up to 36% angular sandstones. Soil droughtiness is the factor limiting this land to Subgrade 3a.

2.4.7 Subgrade 3b

The east and west of the area fall in Subgrade 3b. A small area in the north-east is limited to this subgrade by slopes of 8°. Elsewhere the soils are poorly drained, falling in Wetness Class IV, with medium clay loam or sandy clay loam topsoils overlying gleyed and slowly permeable sandy clay loam subsoils at around 25 cm depth. In this case soil wetness is the grade limiting factor.

2.5 SITE 39a, HEXHAM

2.5.1 Location

Site 39a lies just over 1 km south-east of Hexham Abbey.

2.5.2 Land Use and Relief

This site was under permanent grass when surveyed. It's altitude varies from 140 m AOD in the north-west to 155 m AOD in the south-east and the land is gently sloping (2-3°) with a north-westerly aspect.

2.5.3 Climate

Grid Reference	: NY939629
Altitude (m)	: 147
Accumulated Temperature above 0°C (January - June)	: 1202 day °C
Average Annual Rainfall (mm)	: 728
Climatic Grade	: 2
Field Capacity Days	: 189
Moisture Deficit (mm) Wheat	: 79
Moisture Deficit (mm) Potatoes	: 62

2.5.4 Geology, Soils and Drainage

This site is also underlain by Millstone Grit, over which lie deposits of boulder clay.

The soils are imperfectly or poorly drained (Wetness Classes III and IV) and consist of medium clay loam or sandy clay loam topsoils overlying sandy clay loam subsoils.

These soils correspond to the Brickfield 3 Association as mapped by the Soil Survey and Land Research Centre.

2.5.5 AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2		
3a	0.2	15.4
3b	1.1	84.6
4		
5		
(Sub total)	(1.3)	(100.0)
Urban		
Non Agricultural		
Woodland - Farm		
- Commercial		
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)		
TOTAL	1.3	100

2.5.6 Subgrade 3a

The south of Site 39a falls in Subgrade 3a. The soils are imperfectly drained, falling in Wetness Class III, and consist of medium clay loam topsoils overlying unmottled sandy clay loam upper subsoils and gleyed and slowly permeable sandy clay loam lower subsoils at around 45 cm depth. Soil wetness is, thus, the factor restricting this land to Subgrade 3a.

2.5.7 Subgrade 3b

The remainder of Site 39a has been mapped at Subgrade 3b. The soils are poorly drained (Wetness Class IV) and medium clay loam or sandy clay loam topsoils overlie gleyed and slowly permeable sandy clay loam subsoils at around 25 cm depth. A more severe soil wetness problem than on the adjoining Subgrade 3a land further limits these areas to Subgrade 3b.

2.6 SITES 213 AND 214, HEXHAM

2.6.1 Location

These sites lie 1½ km south-west of Hexham Abbey.

2.6.2 Land Use and Relief

Both sites were under permanent grass when surveyed, and their altitude varies from 130m AOD in the north-east to 175m AOD in the south-west. The land is gently to moderately sloping (2-4°) with a north easterly aspect.

2.6.3 Climate

Grid Reference	: NY920632
Altitude (m)	: 152
Accumulated Temperature above 0°C (January - June)	: 1196 day °C
Average Annual Rainfall (mm)	: 737
Climatic Grade	: 2
Field Capacity Days	: 192
Moisture Deficit (mm) Wheat	: 79
Moisture Deficit (mm) Potatoes	: 60

The above climate data is an average for the site, however, land above 153m AOD is limited by climate to no better than Subgrade 3a.

2.6.4 Geology, Soils and Drainage

Sites 213 and 214 are underlain by Millstone Grit, over which lie deposits of boulder clay. The soils are generally poorly drained, falling in Wetness Class IV, with medium clay loam or sandy clay loam topsoils overlying sandy clay loam, heavy clay loam or clay subsoils in most cases.

The soils correspond to the Brickfield 3 Association as mapped by the Soil Survey and Land Research Centre.

2.6.5 AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2		
3a		
3b	8.1	100.0
4		
5		
(Sub total)	(8.1)	(100.0)
Urban		
Non Agricultural		
Woodland - Farm		
- Commercial		
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)		
TOTAL	8.1	100

2.6.6 Subgrade 3b

All of this site has been mapped as Subgrade 3b. The soils are generally poorly drained (Wetness Class IV), with medium clay loam or sandy clay loam topsoils overlying sandy clay loam, heavy clay loam or clay subsoils. The subsoils are generally gleyed within 25 cm depth and slowly permeable within 45 cm depth and it is soil wetness which limits this site to Subgrade 3b.

2.7 SITE 215, HEXHAM

2.7.1 Location

Site 215 lies 1½ km south-south-west of Hexham Abbey.

2.7.2 Land Use and Relief

At the time of survey all of this site was under permanent grass, with the exception of a small area of woodland in the north.

The altitude of the site varies from 145m AOD in the north to 210 AOD in the south-west. The land is gently to steeply sloping (2-11°) with a north-easterly aspect.

2.7.3 Climate

Grid Reference	: NY928626
Altitude (m)	: 175
Accumulated Temperature above 0°C (January - June)	: 1170 day °C
Average Annual Rainfall (mm)	: 748
Climatic Grade	: 3a
Field Capacity Days	: 194
Moisture Deficit (mm) Wheat	: 75
Moisture Deficit (mm) Potatoes	: 56

The climate data given above is a site average. However, land lying below 154m AOD is only restricted to Grade 2 by climate whilst land above 208m is restricted to Subgrade 3b.

2.7.4 Geology, soils and Drainage

Underlain by Millstone Grit, this site is overlain by deposits of boulder clay.

The soils are poorly drained (Wetness Class IV) and consist of medium clay loam or sandy clay loam topsoils overlying gleyed (and usually slowly permeable) sandy clay loam, heavy clay loam or clay subsoils.

The soils correspond to the Brickfield 3 Association as mapped by the Soil Survey and Land Research Centre.

2.7.5 AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2		
3a		
3b	9.8	86.7
4		
5		
(Sub total)	(9.8)	(86.7)
Urban		
Non Agricultural		
Woodland	1.5	13.3
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)	(1.5)	(13.3)
TOTAL	11.3	100

2.7.6 Subgrade 3b

All of the agricultural land on this site falls in Subgrade 3b. The soils are poorly drained, falling in Wetness Class IV, and consist of medium clay loam or sandy clay loam topsoils overlying sandy clay loam, heavy clay loam or clay subsoils. The subsoils are gleyed within 40 cm depth and become slowly permeable within 50 cm depth. The ALC grade of the land is restricted by soil wetness. A small area in the north of the site is limited by slopes between 8° and 11°.

2.7.7 Woodland

A small area of woodland occurs in the north of the site.

2.8 SITES 237 AND 238, HEXHAM

2.8.1 Location

These two sites lie just over 1 km south of Hexham Abbey and cover a total area of 3.1 ha.

2.8.2 Land Use and Relief

At the time of survey 2 ha of the land was under permanent grass while the remaining 1.1 ha was Woodland and Urban land.

The altitude of the two sites varies from 120m AOD in the north to 150m AOD in the south and the land is strongly to steeply sloping (8-15°) with a northerly aspect.

2.8.3 Climate

Grid Reference	: NY936630
Altitude (m)	: 137
Accumulated Temperature above 0°C (January - June)	: 1213 day °C
Average Annual Rainfall (mm)	: 723
Climatic Grade	: 2
Field Capacity Days	: 189
Moisture Deficit (mm) Wheat	: 81
Moisture Deficit (mm) Potatoes	: 64

2.8.4 Geology and Soils

These sites are underlain by Millstone Grit and overlain by a thin cover of boulder clay. The soils correspond to the Brickfield 3 Association as mapped by the soil Survey and Land Research Centre.

2.8.5 AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2		
3a		
3b	1.5	48.4
4	0.5	16.1
5		
(Sub total)	(2.0)	(64.5)
Urban	0.3	9.7
Non Agricultural		
Woodland	0.8	25.8
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)	(1.1)	(35.5)
TOTAL	3.1	100

2.8.6 Subgrade 3b

Most of the agricultural land on these sites falls in Subgrade 3b. Slopes of 8° to 11° are the factor limiting the ALC grade in this case.

2.8.7 Grade 4

The south-western corner of the area has slopes of around 15° which limit the ALC grade to Grade 4.

2.8.8 Urban

An access road in the east of the sites has been mapped as Urban.

2.8.9 Woodland

Much of the north of the area is covered by mature woodland.

2.9 SITES 239a AND 239b, CORBRIDGE

2.9.1 Location

These sites lie around 350 metres north-west of the centre of Corbridge village.

2.9.2 Land Use and Relief

All of these sites was under permanent grass at the time of survey.

Their altitude varies from just under 30m AOD in the south, alongside the River Tyne, to just over 40m AOD in the north.

The land is generally level to gently sloping (0-2°) but an area in the centre of the site which marks a river terrace is steeply sloping (17°). The aspect is southerly.

2.9.3 Climate

Grid Reference	: NY985647
Altitude (m)	: 35
Accumulated Temperature above 0°C (January - June)	: 1328 day °C
Average Annual Rainfall (mm)	: 639
Climatic Grade	: 1
Field Capacity Days	: 171
Moisture Deficit (mm) Wheat	: 95
Moisture Deficit (mm) Potatoes	: 82

2.9.4 Geology Soils and Drainage

The area is underlain by Carboniferous Limestone and the south is overlain by river alluvium while the north is covered by river terrace deposits.

The soils are well drained, falling in Wetness Class I, and consist of slightly stony medium sandy loam topsoils over moderately stony sand subsoils (in the north) or stoneless sandy clay loam topsoils and subsoils to depth (in the south). The soils correspond to the Wharfe Association (in the South) and the Ellerbeck Association (in the North), as mapped by the Soil Survey and Land Research Centre.

2.9.5 AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2	2.1	42.0
3a	1.9	38.0
3b		
4	1.0	20.0
5		
(Sub total)	(5.0)	(100.0)
Urban		
Non Agricultural		
Woodland -		
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)		
TOTAL	5.0	100

2.9.6 Grade 2

The south of this area has been provisionally mapped as Grade 2. Stoneless sandy clay loam topsoils overlie similar subsoils, and the profiles are well drained, falling in Wetness Class I.

Some parts of the flood plain of the River South Tyne and River Tyne are contaminated with lead and associated metals and, although there is no reason to believe that it will be a significant problem on these sites, a soil sample has been sent for analysis in order to confirm this. This land has therefore been provisionally placed in Grade 2 due to a slight flood risk.

2.9.7 Subgrade 3a

The north falls in Subgrade 3a. The soils are well drained (Wetness Class I) and consist of slightly stony medium sandy loam topsoils overlying moderately stony coarse sand subsoils. The stone contents are approximately 15% total hard stones(12% > 2cm) in the topsoil and 20% total hard stones in the subsoil. This land is limited to Subgrade 3a by topsoil stoniness and soil droughtiness.

2.9.8 Grade 4

Slopes of 12° to 17° in the centre of the site restrict the land to Grade 4.