CASTLE MORPETH
DISTRICT LOCAL PLAN

Agricultural Land Classification
ALC Maps and Report

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Resource Planning Team
Northern Region
FRCA, Leeds

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AGRICULTURAL LAND CLASSIFICATION REPORT

CASTLE MORPETH DISTRICT LOCAL PLAN

1.0 INTRODUCTION

1.1 This report presents the findings of detailed Agricultural Land Classification (ALC) surveys of nine sites within Castle Morpeth District. The surveys were carried out in August and September 1997. The surveys were carried out by the Farming and Rural Conservation Agency (FRCA) for the Ministry of Agriculture, Fisheries and Food (MAFF), in connection with the Castle Morpeth District Local Plan. These surveys supersede any previous ALC information for this land.

1.2 The work was conducted by members of the Resource Planning Team in the Northern Region of FRCA . The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.

1.3 At the time of survey the land use on the sites was as follows:-

Site N/M 26, Lancaster Park
All of the agricultural land on this site was under ley grass. Non-agricultural land consists of West Lane End Farm, its access road and gardens.

Site N/M27, Fulbeck
The easternmost field of this site was in winter cereals whilst the remaining agricultural land consisted of ley grass. Other, non-agricultural, land consisting of scrub and gardens occurs in the east of the site.

Site MH1/ME1/ME2/ME3, Land at St George's Hospital
All land was in grass except for a field of wheat in the north of the site and hospital buildings in the south.

Site ME3, Fairmoor
All of this land was in ley grass at the time of survey.

Site ME1, Loansdean
All of the agricultural land was in winter wheat. Other land occurs in the west and south and consists of recently planted woodland.

Site MPS4, Loansdean
The south of this site consists of recently planted woodland whilst the remainder was in winter wheat.

Site ME3,East Riding and Swinneys Field
The site comprises a mixture of arable and grass uses along with some sports fields mapped as Other land.

Site ME3, Adjacent Searle's
At the time of survey this site was in cereal stubble.

Site N/PG16, Pegswood North Farm
Most of this site was under either ley or permanent grass. A small area of disturbed land (mapped as Other, non-agricultural, land) occurs in the centre of the site.

SUMMARY

1.4 Fieldwork was conducted at an average density of one boring per hectare. Additional borings were made where necessary to refine grade boundaries and at least one soil pit was dug at each site.

1.5 The survey findings are shown on the attached ALC maps which are drawn at a scale of 1:5,000. They are accurate at this scale but any enlargement would be misleading.

The areas of ALC grades and subgrades are shown in Table 1.

Table 1

Site	Area (ha)				
	Grade 2	Subgrade 3a	Subgrade 3b	Grade 4	Other land
N/M 26, Lancaster Park	-	-	10.1	-	0.7
N/M27, Fulbeck	-	-	5.8	0.3	0.8
MH1/ME1/ME2.ME3	-	7.5	45.3	-	1.4
ME3, Fairmoor	-	-	7.6	-	-
ME1, Loansdean	-	4.1	2.9	-	0.5
MPS4, Loansdean	-	1.2	-	-	1.7
ME3,East Riding and Swinneys Field	4.3	-	0.2	-	1.3
ME3, Adjacent Searle's	-	-	13.1	-	-
N/PG16, Pegswood North Farm	-	1.4	1.7	-	0.1

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2. SITE N/M26, LANCASTER PARK

Climate

The key climatic variables for this site are given in Table 2.

Table 2: Climatic and altitude data - Site N/M 26, Lancaster Park

Factor	Units	Values
Grid reference	N/A	NZ 187 869
Altitude	m, AOD	63
Accumulated Temperature	day°C (Jan-June)	1281
Average Annual Rainfall	mm	721
Field Capacity Days	days	188
Moisture Deficit, Wheat	mm	87
Moisture Deficit, Potatoes	mm	72
Overall climatic grade	N/A	Grade 2

The combination of rainfall and temperature at this site means that there is an overall climatic limitation of Grade 2.

Site

This land is level to gently sloping (0-3°) with a northerly or north-easterly aspect. As such gradient does not limit ALC grade at any point, and nor do microrelief or flood risk.

Geology and Soils

Till overlies Millstone Grit on this site (BGS, Sheet 9). The soils are poorly drained (Wetness Class IV), with medium-textured topsoils overlying gleyed and slowly permeable heavy-textured subsoils. The soils have been mapped as belonging to the Dunkeswick association (Soils of England and Wales, Sheet 1).

AGRICULTURAL LAND CLASSIFICATION

Subgrade 3b

All of the agricultural land on this site falls in Subgrade 3b, moderate quality land. The soils are poorly drained (Wetness Class IV) and consist of medium clay loam topsoils overlying clay subsoils. In some places a thin layer of medium or heavy clay loam separates the topsoil from the clayey subsoil. The subsoils become gleyed and slowly permeable at between 25 cm and 40 cm depth and soil wetness is the factor which limits the land to Subgrade 3b.

Other land

Other, non-agricultural, land on this site occurs in the north and consists of West Lane End Farm, its access road, outbuildings and gardens.

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3. SITE N/M27, FULBECK

Climate

The key climatic variables for this site are given in Table 3.

Table 3: Climatic and altitude data - Site N/M 27, Fulbeck

Factor	Units	Values
Grid reference	N/A	NZ 188 872
Altitude	m, AOD	60
Accumulated Temperature	day°C (Jan-June)	1285
Average Annual Rainfall	mm	716
Field Capacity Days	days	187
Moisture Deficit, Wheat	mm	88
Moisture Deficit, Potatoes	*mm*	*73*
Overall climatic grade	N/A	Grade 2

The combination of rainfall and temperature at this site means that there is an overall climatic limitation of Grade 2.

Site

This land is generally level to gently sloping (1-3°) with variable aspect but slopes of between 11° and 14° occur in parts of the northern block of land. This strongly to moderately steeply sloping land is limited to Grade 4. Neither microrelief nor flood risk are significant on this site.

Geology and Soils

The site is underlain by Millstone Grit over which lie deposits of till (BGS, Sheet 9). The soils are poorly drained (Wetness Class IV), with medium clay loam topsoils and, in places, thin upper subsoils, overlying clay in most cases. The soils have been mapped as Dunkeswick association (Soils of England and Wales, Sheet 1).

AGRICULTURAL LAND CLASSIFICATION

Subgrade 3b

Most of the site is Subgrade 3b, moderate quality agricultural land. The soils are poorly drained (Wetness Class IV) and consist of medium clay loam topsoils and, in places, thin upper subsoils, overlying gleyed and slowly permeable clay subsoils. Gleying begins at between 25 cm and 40 cm depth and the slowly permeable layers begin at between 30 cm and 45 cm depth. Soil wetness is the factor limiting the ALC grade of this land.

Grade 4

Slopes of between 11° and 14° in parts of the northern block of land on this site are limited to Grade 4 by their gradient.

Other land

Land in this category occurs in the east and consists of scrub and gardens.

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4. SITE MH1, ME1, ME2 and ME3, LAND AT ST GEORGE'S HOSPITAL

Climate

The key climatic variables for this site are given in Table 4.

Table 4: Climatic and altitude data - Site MH1, ME1, ME2 and ME3

Factor	Units	Values
Grid reference	N/A	NZ 197 874
Altitude	m, AOD	67
Accumulated Temperature	day°C (Jan-June)	1273
Average Annual Rainfall	mm	723
Field Capacity Days	days	188
Moisture Deficit, Wheat	mm	87
Moisture Deficit, Potatoes	mm	72
Overall climatic grade	N/A	Grade 2

The combination of rainfall and temperature at this site means that there is an overall climatic limitation of Grade 2.

Site

The land on the site is mostly level although steeper slopes occur in the west and east adjacent to Fulbeck and the How Burn streams.

Geology and Soils

The site is underlain by Middle Coal Measures which are mostly covered with thick deposits of till. Sand and gravel however occurs in a small area in the east of the site (BGS, Sheet 9).

AGRICULTURAL LAND CLASSIFICATION

Subgrade 3a

A relatively small area in the east of the site meets the criteria for Subgrade 3a. Topsoils and upper subsoils are light textured, often a medium sandy loam over a gleyed, clayey and slowly permeable subsoil. Profiles are Soil Wetness Class III and the land suffers from a soil wetness and workability limitation.

Subgrade 3b

Most of the site is Subgrade 3b. Topsoils are typically medium clay loam over a clayey slowly permeable subsoil (Wetness Class IV). A significant soil wetness and workability problem limits the ALC grade of this land.

Other land

This includes a part of the hospital complex that was included in the objectors site.

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5. SITE ME3, FAIRMOOR

Climate

The key climatic variables for this site are given in Table 5.

Table 5: Climatic and altitude data - Site ME3, Fairmoor

Factor	Units	Values
Grid reference	N/A	NZ 183 872
Altitude	m, AOD	65
Accumulated Temperature	day°C (Jan-June)	1279
Average Annual Rainfall	mm	725
Field Capacity Days	days	189
Moisture Deficit, Wheat	mm	87
Moisture Deficit, Potatoes	mm	72
Overall climatic grade	N/A	Grade 2

The combination of rainfall and temperature at this site means that there is an overall climatic limitation of Grade 2.

Site

The land on this site is level to moderately sloping (0-5°) with variable aspect but at no point does gradient limit the ALC grade. Equally, neither microrelief nor flood risk are limitations on this site.

Geology and Soils

This site is underlain by Millstone Grit over which lie deposits of till (BGS, Sheet 9). The soils are poorly drained (Wetness Class IV) and have been mapped as belonging to the Dunkeswick association (Soils of England and Wales, Sheet 1).

AGRICULTURAL LAND CLASSIFICATION

Subgrade 3b

All of this site falls in Subgrade 3b, moderate quality agricultural land. The soils are poorly drained (Wetness Class IV) and consist of medium clay loam topsoils overlying clay subsoils. In some places a thin layer of medium or heavy clay loam separates the topsoil from the clayey subsoil. The subsoils become gleyed and slowly permeable at between 25 cm and 35 cm depth and soil wetness is the factor which limits the land to Subgrade 3b.

RPT File: 20,213

6. SITE ME1, LOANSDEAN

Climate

The key climatic variables for this site are given in Table 6.

Table 6: Climatic and altitude data - Site ME1, Loansdean

Factor	Units	Values
Grid reference	N/A	NZ 198 842
Altitude	m, AOD	65
Accumulated Temperature	day°C (Jan-June)	1280
Average Annual Rainfall	mm	720
Field Capacity Days	days	186
Moisture Deficit, Wheat	mm	88
Moisture Deficit, Potatoes	mm	73
Overall climatic grade	N/A	Grade 2

The combination of rainfall and temperature at this site means that there is an overall climatic limitation of Grade 2.

Site

The land on this site is level to gently sloping (0-3°) with an easterly or north-easterly aspect. As such gradient does not restrict ALC grade at any point and neither flood risk nor microrelief are limiting at any point.

Geology and Soils

This site is underlain by Upper Carboniferous Coal Measures over which lies drift consisting of till (BGS, Sheet 9). The soils vary between well and poorly drained (Wetness Classes I to IV) with light to medium-textured topsoils and upper subsoils overlying light to heavy-textured lower subsoils.

AGRICULTURAL LAND CLASSIFICATION

Subgrade 3a

The south of this site is Subgrade 3a, good quality agricultural land. The soils vary between well and imperfectly drained (Wetness Classes I to III) with medium clay loam, sandy clay loam or medium sandy loam topsoils and upper subsoils overlying either medium sandy loam or clay lower subsoils. The soils become gleyed at between 30 cm and 40 cm depth and where they occur slowly permeable layers begin at between 45 cm and 65 cm depth. The ALC grade of this land is limited by soil wetness restrictions.

Subgrade 3b

The north of the site has been mapped as Subgrade 3b, moderate quality agricultural land. The soils are poorly drained (Wetness Class IV) and consist of medium clay loam topsoils overlying gleyed and slowly permeable sandy clay loam, heavy clay loam or clay subsoils at around 30 cm depth. Soil wetness is a more significant problem than on the adjoining Subgrade 3a land and it is this factor which limits this land to Subgrade 3b.

Other land

Other land on this site consists of belts of recently planted woodland in the south and west.

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7. SITE MPS4, LOANSDEAN

Climate

The key climatic variables for this site are given in Table 7.

Table 7: Climatic and altitude data - Site MPS4, Loansdean

Factor	Units	Values
Grid reference	N/A	NZ 200 840
Altitude	m, AOD	63
Accumulated Temperature	day°C (Jan-June)	1282
Average Annual Rainfall	mm	716
Field Capacity Days	days	185
Moisture Deficit, Wheat	mm	88
Moisture Deficit, Potatoes	mm	73
Overall climatic grade	N/A	Grade 2

The combination of rainfall and temperature at this site means that there is an overall climatic limitation of Grade 2.

Site

This site is level to gently sloping (0-3°) with a north-easterly aspect. As such gradient does not limit ALC grade at any point and neither flood risk nor microrelief are of significance on this site.

Geology and Soils

The area is underlain by Upper Carboniferous Coal Measures over which lies drift consisting of till (BGS, Sheet 9). The soils are generally moderately well drained (Wetness Class II), with medium clay loam topsoils overlying gleyed medium clay loam or sandy clay loam subsoils.

AGRICULTURAL LAND CLASSIFICATION

Subgrade 3a

All of the agricultural land on this site falls in Subgrade 3a. The soils are moderately well drained (Wetness Class II) and consist of medium clay loam topsoils overlying gleyed but permeable medium clay loam or sandy clay loam subsoils. The gleying begins within 40 cm depth and the ALC grade of the land is limited by soil wetness and topsoil workability restrictions.

Other land

A block of recently planted woodland occurs in the south of this site.

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8. SITE ME3, EAST RIDING AND SWINNEYS FIELD

Climate

The key climatic variables for this site are given in Table 8.

Table 8: Climatic and altitude data - Site ME3, East Riding and Swinneys Field

Factor	Units	Values
Grid reference	N/A	NZ 207 866
Altitude	m, AOD	28
Accumulated Temperature	day°C (Jan-June)	1321
Average Annual Rainfall	mm	669
Field Capacity Days	days	177
Moisture Deficit, Wheat	mm	95
Moisture Deficit, Potatoes	mm	83
Overall climatic grade	N/A	Grade 1

The combination of rainfall and temperature at this site means that there is no overall climatic limitation on ALC grade.

Site

Most of this land is gently sloping (2-3°) with a southerly aspect and as such gradient places no restriction on ALC grade. However, in the south-west strongly sloping land of approximately 9° is limited to Subgrade 3b. Neither microrelief nor flood risk are of significance on this site.

Geology and Soils

This site is underlain by Upper Carboniferous Coal Measures which are overlain by deposits of glacial sand and gravel (BGS, Sheet 14). The soils are well drained (Wetness Class I) and consist of sandy loam or sandy silt loam topsoils and subsoils in most cases.

AGRICULTURAL LAND CLASSIFICATION

Grade 2

Most of the site is Grade 2, very good quality agricultural land. The soils are well drained (Wetness Class I) with very slightly stony medium sandy loam, medium sandy silt loam or occasional medium silty clay loam topsoils and upper subsoils overlying very slightly stony *medium sandy loam, medium sandy silt loam or occasional loamy medium sand lower subsoils.* Although there is no limitation on the ALC grade of some profiles, others are limited to Grade 2 by slight soil droughtiness or topsoil workability restrictions. However, the better profiles form no apparent pattern and so all of the land has been mapped as Grade 2.

Subgrade 3b

A small area in the south-west falls in Subgrade 3b, moderate quality agricultural land. Slopes of 9° approximately are the grade-limiting factor in this case.

Other land

This occurs in the north (a spoil heap) and in the south (scrub and playing fields).

RPT File: 20,216

9. SITE ME3, ADJACENT SEARLE'S

Climate

The key climatic variables for this site are given in Table 9.

Table 9: Climatic and altitude data - Site ME3, Adjacent Searle's

Factor	Units	Values
Grid reference	N/A	NZ 184 838
Altitude	m, AOD	90
Accumulated Temperature	day°C (Jan-June)	1252
Average Annual Rainfall	mm	756
Field Capacity Days	days	192
Moisture Deficit, Wheat	mm	82
Moisture Deficit, Potatoes	mm	66
Overall climatic grade	N/A	Grade 2

The combination of rainfall and temperature at this site means that there is an overall climatic limitation of Grade 2.

Site

The land is level to gently sloping (0-3°) with a northerly or north-easterly aspect. Neither gradient, flood risk nor microrelief limit the ALC grade at any point on this site.

Geology and Soils

Till overlies Millstone Grit on this site (BGS, Sheet 14). The soils are generally poorly drained (Wetness Class IV) with medium-textured topsoils and, in places, upper subsoils, overlying heavy-textured lower subsoils. The soils correspond to the Dunkeswick association as mapped by the Soil Survey and Land Research Centre.

AGRICULTURAL LAND CLASSIFICATION

Subgrade 3b

All of this site has been mapped as Subgrade 3b, moderate quality agricultural land. The soils are generally poorly drained (Wetness Class IV) although occasional moderately well or imperfectly drained profiles (Wetness Classes II and III) occur. In most cases medium clay loam topsoils and, in places, thin upper subsoils, overlie gleyed and slowly permeable heavy clay loam, clay or sandy clay. The ALC grade of this land is limited by soil wetness restrictions.

RPT File: 20,217

10. SITE N/PG16, PEGSWOOD NORTH FARM

Climate

The key climatic variables for this site are given in Table 10.

Table 10: Climatic and altitude data - Site N/PG16, Pegswood North Farm

Factor	Units	Values
Grid reference	N/A	NZ 226 876
Altitude	m, AOD	55
Accumulated Temperature	day°C (Jan-June)	1289
Average Annual Rainfall	mm	703
Field Capacity Days	days	170
Moisture Deficit, Wheat	mm	91
Moisture Deficit, Potatoes	mm	77
Overall climatic grade	N/A	Grade 2

The combination of rainfall and temperature at this site means that there is an overall climatic limitation of Grade 2.

Site

The land on this site is level to gently sloping (0-2°) with a northerly aspect. As such gradient does not limit ALC grade at any point and neither flood risk nor microrelief are significant limitations.

Geology and Soils

This site is underlain by Upper Coal Measures consisting of interbedded sandstones and shales, over which lie deposits of till (BGS, Sheet 9). The soils in the north are poorly drained (Wetness Class IV) while those in the south are typically imperfectly drained (Wetness Class III). The soil in these areas has been mapped as Dunkeswick association (Soils of England and Wales, Sheet 1).

AGRICULTURAL LAND CLASSIFICATION

Subgrade 3a

The south of the site is Subgrade 3a, good quality agricultural land. The soils are generally imperfectly drained (Wetness Class III) although some well drained profiles (Wetness Class I) occur in the far south. Typically medium clay loam topsoils overlie medium clay loam or medium sandy loam upper subsoils and sandy clay loam or clay lower subsoils. The soils become gleyed and, in most cases, slowly permeable at between 45 cm and 60 cm depth and soil wetness is the main grade-limiting factor.

Subgrade 3b

The north of the site has been mapped as Subgrade 3b, moderate quality agricultural land. The soils are poorly drained (Wetness Class IV) and consist of medium clay loam or organic medium clay loam topsoils overlying gleyed and slowly permeable clay subsoils at between 25 cm and 35 cm depth. Soil wetness is a more significant problem than on the adjoining Subgrade 3a land and so the north of the site is limited to Subgrade 3b.

Other land

Other land on this site consists of a small area of disturbed land in the centre which has been fenced off.

RPT File: 20,218

SOURCES OF REFERENCE

British Geological Survey (1977) *Sheet No. 9, Rothbury, 1:50,000 scale.*
BGS: London.

British Geological Survey (1977) *Sheet No. 14, Morpeth, 1:50,000 scale.*
BGS: London.

Ministry of Agriculture, Fisheries and Food (1988) *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land.* MAFF: London.

Met. Office (1989) *Climatological Data for Agricultural Land Classification.*
Met. Office: Bracknell.

Soil Survey of England and Wales (1983) *Soils of England and Wales, Sheet 1, 1:250,000 scale.*
SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in Northern England*
SSEW: Harpenden

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2: Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a: Good Quality Agricultural Land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b: Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4: Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5: Very Poor Quality Agricultural Land

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.