EASINGTON DISTRICT LOCAL PLAN

Agricultural Land Classification (ALC) of Objectors' Sites
Maps and Report

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AGRICULTURAL LAND CLASSIFICATION REPORT

EASINGTON DISTRICT LOCAL PLAN

1. INTRODUCTION

1.1 This report presents the findings of detailed Agricultural Land Classification (ALC) surveys of 23 sites within Easington District. The surveys were carried out during August 1998.

1.2 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 non-inclusion of these sites in the Easington District Local Plan.

This report supersedes any previous ALC information for this land.

1.3 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.

2. SUMMARY

2.1 Fieldwork was conducted at an average density of one boring per hectare and a minimum of one soil pit was dug at each site.

2.2 The findings of the survey are shown on the attached ALC maps which are drawn at scales of 1:5,000 and 1:10,000. They are accurate at the scale at which they have been produced, but any enlargement would be misleading.

2.3 The areas and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 2.1.

Table 2.1: Area of grades and other land

Site	Area (ha)						
	Grade 1	Grade 2	Subgrade 3a	Subgrade 3b	Grade 4	Grade 5	Other Land
South of Dawdon Link Road, Seaham		11.8	48.4	22.1			0.2
Swan Castle Farm, Shotton					3.7		0.5
West Lane, Hawthorn				3.0			
Seaside Lane/Sunderland Road, Easington		3.7					
Flemingfield Farm, Shotton				1.0			0.1
North of Hesleden			4.9	4.0			
Land South of Easington		6.0	1.4	4.3			2.0
Land West of Seaham Hall			0.6	1.6			
Pinedale Estate, South Hetton		2.0		1.6			
Mazine Terrace, Haswell Plough				1.2	3.8		1.6
Wellfield Road, Wingate				5.3			0.6
Front Street, Wingate				1.5			1.8
Dene Crescent, Shotton				1.4			
Cadwell Lane Depot, Easington		0.8		1.1			
Seaton Lane, Seaton				3.8			
North of Dawdon Link Road, Dalton-le-Dale		15.0	36.0	49.6	3.0		4.7
Castle Eden Golf Club				3.0			13.0
Dunelm Road, Thornley			3.2	0.7			1.9
Dalton Heights, Seaham		2.1	4.2	3.0			
Church Park, Wheatley Hill				1.3			0.6
East of A19, Easington		1.3		0.37			0.03
Wheatley Hill, North of Bypass				3.4			
Stockton Road, Castle Eden		4.5		2.5			0.6

3. CLIMATE

3.1 Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

3.2. The key climatic variables used for grading are given in the relevant section for each site and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met. Office, 1989).

3.3. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.

4. LAND SOUTH OF DAWDON LINK ROAD, SEAHAM

4.1 Location, Land Use, and Relief

This site is located between the village of Hawthorn to the south and the recently constructed Dawdon Link Road to the north. At the time of survey almost all of the site was in agricultural use, principally growing wheat, barley and spring-sown oilseed rape. The site lies at between 80m and 122m AOD, and from its lowest point in the centre it rises to both the east and west. The land on the site is level to moderately sloping (0-7°) and at no point does gradient restrict the ALC grade of the land. Equally, neither micro-relief nor flood risk are grade-limiting factors on this site.

4.2 Climate

Table 4.1: Climatic and altitude data, Land South of Dawdon Link Road

Factor	Units	Values
Grid reference	N/A	NZ425467
Altitude	m, AOD	100
Accumulated Temperature	day°C (Jan-June)	1252
Average Annual Rainfall	mm	659
Field Capacity Days	days	162
Moisture Deficit, Wheat	mm	91
Moisture Deficit, Potatoes	mm	77
Overall climatic grade	N/A	Grade 2

4.3 Geology and Soils

The site is underlain by Magnesian Limestone, which outcrops to within one metre of the soil surface in parts of the east and west. Most of the site, however, is overlain by a drift cover of till (BGS Sheet 27) of variable depth. The soils vary between well drained and poorly drained and typically consist of medium to heavy-textured topsoils and upper subsoils overlying heavy-textured lower subsoils. The soils on this site have been mapped as belonging to the Dunkeswick association (Soils of England and Wales, Sheet 1).

4.4 Agricultural Land Classification

Table 4.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	11.8	14.3	14.3
3a	48.4	58.8	58.7
3b	22.1	26.9	26.8
Other land	0.2	N/A	0.2
Total surveyed area	82.3	100	-
Total site area	82.5	-	100

4.4.1 Grade 2

Grade 2, very good quality agricultural land, occurs in the west of this site. The soils are generally well drained (Wetness Class I), consisting of medium clay loam topsoils, medium or heavy clay loam upper subsoils and heavy clay loam or clay lower subsoils. Weathering limestone bedrock begins at around 80cm depth in places and both topsoils and subsoils are typically very slightly to slightly stony, containing between 5% and 15% stones (mainly sandstones and limestones, 3-10% greater than 2cm in size in the topsoil). The ALC grade of this land is limited by the overall climate of the area and , in places, by very slight soil droughtiness and topsoil stoniness.

4.4.2 Subgrade 3a

Land in this subgrade, defined as good quality agricultural land, covers all of the east and parts of the west of the site. The soils are somewhat variable in terms of drainage status, particularly in the east and north, but most profiles are either well drained (Wetness Class I) or imperfectly drained (Wetness Class III), with only occasional moderately well drained (Wetness Class II) or poorly drained (Wetness Class IV) profiles occurring. Profiles typically consist of either medium clay loam or heavy clay loam topsoils and upper subsoils overlying heavy clay loam or clay lower subsoils. Where they occur slowly permeable layers typically begin at between 40cm and 50cm depth and weathering limestone bedrock begins at between 40cm and 100cm depth in parts of the east and north of the site. This land is limited to Subgrade 3a by either slight soil wetness, slight soil droughtiness or, in the case of those several profiles that meet the criteria for Grade 2, a pattern restriction which prevents them being mapped separately from the Subgrade 3a land in this area.

4.4.3 Subgrade 3b

Subgrade 3b, moderate quality agricultural land, is found in the centre and south-west. The soils are imperfectly or poorly drained, falling in Wetness Classes III and IV. Medium clay loam or heavy clay loam topsoils overlie heavy clay loam or clay subsoils in most cases. The subsoils generally become gleyed and slowly permeable at between 25cm and 45cm depth and the ALC grade of this land is limited by the combination of soil wetness and topsoil workability restrictions.

4.4.4 Other Land

A small area of land in the centre of the site was occupied by scrubby vegetation.

RPT File No.: 20,363

5. SWAN CASTLE FARM, SHOTTON

5.1 Location, Land Use, and Relief

Swan Castle Farm lies at the southern edge of the village of Shotton. At the time of survey all of the agricultural land was in permanent pasture whilst other land on the site consisted of the buildings at Swan Castle Farm and their access road. This site lies at an altitude of 125m A.O.D. and is generally level to gently sloping (0-2°) with a southerly aspect. As such gradient does not limit ALC grade at any point and neither flood risk nor microrelief are of importance on this site.

5.2 Climate

The key climatic variables for this site are given in Table 5.1.

Table 5.1: Climatic and altitude data, Swan Castle Farm, Shotton

Factor	*Units*	*Values*
Grid reference	N/A	NZ 394 400
Altitude	m, AOD	125
Accumulated Temperature	day°C (Jan-June)	1226
Average Annual Rainfall	mm	716
Field Capacity Days	days	176
Moisture Deficit, Wheat	mm	85
Moisture Deficit, Potatoes	mm	69
Overall climatic grade	N/A	Grade 2

5.3 Geology and Soils

The area is underlain by Magnesian Limestone and the land at Swan Castle Farm is overlain by drift deposits of till (BGS, Sheet 27). The soils have been mapped as belonging to the Dunkeswick association (Soils of England and Wales, Sheet 1) and are poorly drained. Typically medium-textured topsoils and, in places, heavy-textured upper subsoils overlie gleyed and slowly permeable clay.

5.4 Agricultural Land Classification

Table 5.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
4	3.7	100.0	88.1
Other land	0.5	N/A	11.9
Total surveyed area	3.7	100	-
Total site area	4.2	-	100

5.4.1 Grade 4

All of the agricultural land on this site has been mapped as Grade 4, poor quality land. The soils are poorly drained, falling in Wetness Class IV, and the topsoils and upper subsoils are very slightly to slightly stony, typically containing between 5% and 8% very small and small fragments of coal and shale. Lower subsoils are stoneless. Medium clay loam topsoils 15-20cm thick, and, in places, thin heavy clay loam upper subsoils, overlie gleyed and slowly permeable clay at between 20cm and 30cm depth. Were this land to be regularly ploughed there would be a risk of contaminating the topsoils with heavier-textured subsoils. Thus the ALC grade of this land is limited by the combination of soil wetness and the texture of the top 25cm of the soil profile.

5.4.2 Other Land

Other, non-agricultural, land on this site consists of the house and outbuildings at Swan Castle Farm and their access road.

RPT File No.: 20,364

6. WEST LANE, HAWTHORN

6.1 Location, Land Use, and Relief

This site lies between the village of Hawthorn and the B1432 (Stockton Road). At the time of survey all of the land was in permanent pasture. This site lies at an average altitude of 94m A.O.D. and the land is level to moderately sloping (0-4°) with a north-easterly aspect. As such gradient does not limit ALC grade at any point and neither flood risk nor microrelief are of importance on this site.

6.2 Climate

The key climatic variables for this site are given in Table 6.1.

Table 6.1: Climatic and altitude data, West Lane, Hawthorn

Factor	Units	Values
Grid reference	N/A	NZ 417 455
Altitude	m, AOD	94
Accumulated Temperature	day°C (Jan-June)	1259
Average Annual Rainfall	mm	669
Field Capacity Days	days	165
Moisture Deficit, Wheat	mm	91
Moisture Deficit, Potatoes	mm	76
Overall climatic grade	N/A	Grade 2

6.3 Geology and Soils

The area is underlain by Magnesian Limestone and the land at West Lane is overlain by drift deposits of till (BGS, Sheet 27). The soils have been mapped as belonging to the Dunkeswick association (Soils of England and Wales, Sheet 1) and are poorly drained in most cases. Medium-textured topsoils and, in most places, upper subsoils, overlie gleyed and slowly permeable heavy clay loam.

6.4 Agricultural Land Classification

Table 6.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
3b	3.0	100	100
Total surveyed area	3.0	100	-
Total site area	3.0	-	100

6.4.1 Subgrade 3b

All of the land on this site has been mapped as Subgrade 3b, moderate quality agricultural land. The soils are generally poorly drained (Wetness Class IV) although some moderately well drained profiles (Wetness Class II) also occur. The topsoils and subsoils are very slightly to slightly stony, typically containing between 3% and 8% very small to medium sandstones. Medium clay loam topsoils and upper subsoils overlie gleyed and slowly permeable heavy clay loam at between 30cm and 60cm depth. Although some profiles meet the criteria for Grade 2, they cannot be accurately mapped together as a separate unit and the ALC grade of this land is limited by soil wetness and by a pattern restriction.

RPT File No.: 20,365

7. SEASIDE LANE/SUNDERLAND ROAD, EASINGTON

7.1 Location, Land Use, and Relief

This site lies on the northern edge of the village of Easington. At the time of survey the whole site was in permanent pasture. This site lies at an average altitude of 112m A.O.D. and the land is gently to moderately sloping (3-5°) with a northerly or north-easterly aspect. At no point, therefore, are slopes sufficient to limit ALC grade and neither flood risk nor microrelief are of importance on this site.

7.2 Climate

The key climatic variables for this site are given in Table 7.1.

Table 7.1: Climatic and altitude data, SeasideLane/Sunderland Road, Easington

Factor	Units	Values
Grid reference	N/A	NZ 418 437
Altitude	m, AOD	112
Accumulated Temperature	day°C (Jan-June)	1239
Average Annual Rainfall	mm	684
Field Capacity Days	days	168
Moisture Deficit, Wheat	mm	88
Moisture Deficit, Potatoes	mm	73
Overall climatic grade	N/A	Grade 2

7.3 Geology and Soils

The site is underlain by Magnesian Limestone over which lies a drift cover of till, or, in the north-west and south-west, glacial sand and gravel (BGS, Sheet 27). The soils have been mapped as belonging to the Escrick 2 association (Soils of England and Wales, Sheet 1) and are generally well drained, with medium-textured topsoils overlying similar subsoils in most cases.

7.4 Agricultural Land Classification

Table 7.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	3.7	100	100
Total surveyed area	3.7	100	-
Total site area	3.7	-	100

7.4.1 Grade 2

All of the land on this site has been mapped as Grade 2, very good quality agricultural land. The soils are generally well drained (Wetness Class I) and the topsoils are very slightly stony, typically containing between 4% and 6% very small to medium-sized limestones. The subsoils are very slightly to slightly stony, containing between 4% and 12% very small to medium-sized limestones. Medium clay loam topsoils overlie similar subsoils in most cases although lower subsoils of heavy clay loam occur in a few places. The ALC grade of this land is limited by the overall climate of the area.

RPT File No.: 20,366

8. FLEMINGFIELD FARM, SHOTTON

8.1 Location, Land Use, and Relief

The site lies to the north-east of Shotton Colliery and covers 1.1 ha. At the time of the survey a small area in the north of the site was in ley pasture, while the majority of the site had been sown with wheat, which had apparently then been abandoned. An area in the east of the site is agriculturally derelict. The land slopes gently to the south, the gradient being insufficient to restrict ALC grade.

8.2 Climate

The key climatic variables for this site are given in Table 8.1.

Table 8.1: Climatic and altitude data, Flemingfield Farm, Shotton

Factor	Units	Values
Grid reference	N/A	NZ 388 411
Altitude	m, AOD	145
Accumulated Temperature	day°C (Jan-June)	1203
Average Annual Rainfall	mm	718
Field Capacity Days	days	177
Moisture Deficit, Wheat	mm	83
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.

8.3 Geology and Soils

The area is underlain by Magnesian Limestone, with a covering of glacial till (BGS Sheet 27, Solid and Drift). The soils have been mapped by the Soil Survey of England and Wales as Dunkeswick association (Soils of England and Wales, Sheet 1).

8.4 Agricultural Land Classification

Table 8.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
3b	1.0	100	90.9
Other land	0.1	N/A	9.1
Total surveyed area	1.0	100	-
Total site area	1.1	-	100

8.4.1 Subgrade 3b

All the agricultural land on this site falls in Subgrade 3b, moderate quality agricultural land. The soils are poorly drained (Wetness Class IV) and consist of very slightly stony medium clay loam or medium silty clay loam topsoils over clay subsoil. The ALC grade of this land is limited by soil wetness.

8.4.2 Other Land

Other land on this site occurs in the east of the site and consists of derelict buildings, hard standing and scrubby vegetation.

RPT File No.: 20,367

9. LAND NORTH OF HESLEDEN

9.1 Location, Land Use, and Relief

The site lies to the north of Hesleden village around grid reference NZ 440 385. The land contains gentle slopes with an overall easterly aspect. At the time of survey the land was growing potatoes. A very small parcel of land in the south west did not appear to have been in agricultural use for some time.

9.2 Climate

The key climatic variables for this site are given in Table 9.1.

Table 9.1: Climatic and altitude data, Land North of Hesleden

Factor	Units	Values
Grid reference	N/A	NZ 440 385
Altitude	m, AOD	112
Accumulated Temperature	day°C (Jan-June)	1241
Average Annual Rainfall	mm	683
Field Capacity Days	days	165
Moisture Deficit, Wheat	mm	89
Moisture Deficit, Potatoes	mm	74
Overall climatic grade	N/A	Grade 2

9.3 Geology and Soils

Solid deposits of Magnesian Limestone are covered with till (BGS Sheet 27). Topsoils are typically medium clay loam. Subsoils are more variable. In the west they tend to be gleyed, slowly permeable and clayey (Wetness Class IV). Elsewhere subsoils are lighter textures, often a brown medium clay loam or sandy clay loam, which passes onto a gleyed, slowly permeable clay or heavy clay loam at about 45 cm depth (Wetness Class III).

9.4 Agricultural Land Classification Grades

Table 9.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
3a	4.9	55.1	55.1
3b	4.0	44.9	44.9
Total surveyed area	8.9	100	-
Total site area	8.9	-	100

9.4.1 Subgrade 3a

Land in the east, which is lower lying, contains topsoils which are typically medium clay loam. Subsoils are mostly a brown, medium clay loam or sandy clay loam, which passes onto a gleyed, slowly permeable clay or heavy clay loam at about 45 cm depth (Wetness Class III). Soil wetness and workability problems limit the ALC grade of this land.

9.4.2 Subgrade 3b

Remaining land in the west, which is generally slightly elevated from the 3a land, was Subgrade 3b. Topsoils are typically medium clay loam. Subsoils tend to be gleyed, slowly permeable and clayey (Wetness Class IV). A more severe soil wetness and workability problem than on the 3a land limits the ALC grade.

RPT File 20,368

10. LAND SOUTH OF EASINGTON

10.1 Location, Land Use, and Relief

This site is made up of two parcels of land adjacent to the A1086 dual carriageway south of Easington. Both areas were under wheat at the time of the survey. The eastern part of the site lies on a moderate to gentle south west facing slope, with the southernmost part of the site being level. A strip approximately 10 metres wide running north to south through the centre of the site had been recently disturbed for the laying of a sewer. The western piece of land was level.

A third parcel of land included in this site was previously surveyed in 1994 (Job No. 12/94).

10.2 Climate

Table 10.1: Climatic and altitude data, Land South of Easington

Factor	Units	Values
Grid reference	N/A	NZ 416431
Altitude	m, AOD	120
Accumulated Temperature	day°C (Jan-June)	1231
Average Annual Rainfall	mm	689
Field Capacity Days	days	169
Moisture Deficit, Wheat	mm	87
Moisture Deficit, Potatoes	mm	71
Overall climatic grade	N/A	Grade 2

10.3 Geology and Soils

The area is underlain by Magnesian Limestone, with drift deposits of morainic origin in the west, and glacial sands and gravels in the east (BGS Sheet 27, Durham). Soils across the site consist of medium textured topsoils over variable subsoils. These have been mapped by the Soil Survey of England and Wales as Escrick 2 association (Soils of England and Wales, Sheet 1).

10.4 Agricultural Land Classification

Table 10.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	6.0	51.3	43.8
3a	1.4	12.0	10.2
3b	4.3	36.7	31.4
Agricultural land not surveyed	0.4	N/A	2.9
Other land	1.6	N/A	11.7
Total surveyed area	11.7	100	-
Total site area	13.7	-	100

10.4.1 Grade 2

Land classed as Grade 2 lies in two blocks. One occupies the eastern arm of the western parcel of land and the other is located in the eastern part of the eastern block of land. Soil consist of very slightly stony sandy clay loam or medium clay loam overlying ungleyed heavy or sandy clay loam going on to loamy medium sand at approximately 50cm depth. Profiles are well drained, falling into Wetness Class I, and ALC grade is limited by soil droughtiness and climate.

10.4.2 Subgrade 3a

Land in Subgrade 3a is found at the northern end of the central parcel of land and in a small block in the west of the eastern parcel. Topsoils consist of slightly stony (12% > 2cm) medium clay loam overlying moderately stony (20%) sandy clay loam. Profiles are well drained, falling into Wetness Class I. Grade is limited by soil droughtiness.

10.4.3 Subgrade 3b

Areas of land classed as Subgrade 3b were found in the west of the western parcel of land, in the south of the central parcel and in the south western corner of the eastern parcel. Soils consisted of slightly stony, medium to heavy clay loam overlying slowly permeable clay at between 30 and 55 cm depth (Wetness Classes III and IV). Grade is limited by soil wetness and workability.

10.4.4 Agricultural land not surveyed

A strip approximately 10 metres wide running north to south through the centre of the site had been recently disturbed for the laying of a sewer.

10.4.5 Other Land

An area of 1.6 ha of non-agricultural land lies in the eastern parcel of land.

RPT File No.: 20,369

11. LAND WEST OF SEAHAM HALL

11.1 Location, Land Use, and Relief

The site is located approximately 1.5 km to the north of Seaham town centre, adjacent to the railway line. At the time of the survey the land was in wheat. The site is level to very gently sloping at the north western edge, with a moderate south-facing slope in the east. However, slope is insufficient to limit ALC grade, and neither microrelief nor flood risk is applicable to this site.

11.2 Climate

The key climatic variables for this site are given in Table 11.1.

Table 11.1: Climatic and altitude data, Land West of Seaham Hall

Factor	Units	Values
Grid reference	N/A	NZ 416 505
Altitude	m, AOD	37
Accumulated Temperature	day°C (Jan-June)	1322
Average Annual Rainfall	mm	643
Field Capacity Days	days	158
Moisture Deficit, Wheat	mm	98
Moisture Deficit, Potatoes	mm	86
Overall climatic grade	N/A	Grade 1

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

11.3 Geology and Soils

The geology of the area is shown as till overlying Upper Magnesian Limestone (BGS Sheet 21, Solid and Drift). The soils have been mapped by the Soil Survey of England and Wales as Foggathorpe 1 association (Soils of England and Wales, Sheet 1).

11.4 Agricultural Land Classification

Table 11.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
3a	0.6	27.3	27.3
3b	1.6	72.7	72.7
Total surveyed area	2.2	100	-
Total site area	2.2	-	100

11.4.1 Subgrade 3a

An area of 0.6 ha in the northern corner of the site has been mapped as Subgrade 3a, good quality agricultural land. The soils comprise very slightly stony medium clay loam topsoil overlying clay or heavy clay loam subsoil. Profiles are imperfectly drained, falling into Wetness Class III. ALC grade is limited by soil wetness and workability.

11.4.2 Subgrade 3b

Most of the site (1.6 ha) falls into ALC Subgrade 3b, moderate quality agricultural land. The soils are made up of medium to heavy clay loam topsoils overlying clay subsoils gleyed and slowly permeable below 45 cm. These profiles fall into Wetness Class III. The heavier texture of the topsoil in this area makes the land less workable at critical periods than is the case with the adjoining Subgrade 3a land. The Subgrade 3b land is , therefore, limited to its grade by the combination of soil wetness and topsoil workability restriction.

RPT File No.: 20,370

12. PINEDALE ESTATE, SOUTH HETTON

12.1 Location, Land Use, and Relief

The site lies adjacent to the A182 at South Hetton and is currently used for grazing horses. The field is gently to moderately sloping (3 - 4°), with slopes facing east to south east. These are not sufficiently steep to limit grade, and neither microrelief nor flood risk are applicable to this site.

12.2 Climate

The key climatic variables for this site are given in Table 12.1.

Table 12.1: Climatic and altitude data, Pinedale Estate, South Hetton

Factor	Units	Values
Grid reference	N/A	NZ 375 453
Altitude	m, AOD	117
Accumulated Temperature	day°C (Jan-June)	1234
Average Annual Rainfall	mm	686
Field Capacity Days	days	172
Moisture Deficit, Wheat	mm	87
Moisture Deficit, Potatoes	mm	71
Overall climatic grade	N/A	Grade 2

12.3 Geology and Soils

The area is underlain by Magnesian Limestone with a covering of alluvium in the most eastern part of the site and till elsewhere (BGS, Sheet 27). The soils have been mapped by the Soil Survey of England and Wales as Dunkeswick association (Soils of England and Wales, Sheet 1).

12.4 Agricultural Land Classification

Table 12.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	2.0	55.6	55.6
3b	1.6	44.4	44.4
Total surveyed area	3.6	100	-
Total site area	3.6	-	100

12.4.1 Grade 2

The northern part of this site (2ha) falls into ALC Grade 2. The soils consist of dark brown, probably night-soiled, medium clay loam topsoil to a depth of 30cm, overlying

medium to heavy clay loam subsoils. Profiles are moderately well drained (Wetness Class II), with grade being limited by soil wetness.

12.4.2 Subgrade 3b

Land at the southern end of the site consists of medium clay loam topsoil overlying medium clay loam or sandy clay loam subsoils with slowly permeable clay occurring at approximately 45cm depth. Profiles fall into Wetness Class IV, and lead to a more severe wetness limitation than on the northern part of the site.

RPT File No.: 20,371

13. MAZINE TERRACE, HASWELL PLOUGH

13.1 Location, Land Use, and Relief

The site lies to the east of Haswell Plough and west of Mazine Terrace, around grid reference NZ 372 423. At the time of survey all the agricultural land was in grass, mostly permanent pasture. Other land comprised woodland in the north and farm buildings in the south. The land is mostly moderately sloping with a northerly aspect.

13.2 Climate

The key climatic variables for this site are given in Table 13.1.

Table 13.1: Climatic and altitude data, West of Mazine Terrace, Haswell Plough

Factor	Units	Values
Grid reference	N/A	NZ 372 423
Altitude	m, AOD	135
Accumulated Temperature	day°C (Jan-June)	1215
Average Annual Rainfall	mm	700
Field Capacity Days	days	175
Moisture Deficit, Wheat	mm	85
Moisture Deficit, Potatoes	mm	68
Overall climatic grade	N/A	Grade 2

13.3 Geology and Soils

Natural profiles were generally not found in the centre of the site. Here soils were very variable and mostly appear to have been restored. They often comprise 20cm to 30 cm of medium textured topsoil over cinders and ash. Elsewhere soils were undisturbed and comprised a medium textured topsoil over a clayey, slowly permeable subsoil. These natural soils are derived from till which overlies Magnesian Limestone (BGS Sheet 27 Durham, 1965).

13.4 Agricultural Land Classification

Table 13.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
3b	1.2	24.0	18.2
4	3.8	76.0	57.6
Other land	1.6	N/A	24.2
Total surveyed area	5.0	100	-
Total site area	6.6	-	100

13.4.1 Subgrade 3b

This land is found only in the south of the site. Soils were undisturbed and comprised a medium textured topsoil over a clayey, slowly permeable subsoil, (Wetness Class IV). Soil wetness and workability problems limit the ALC grade of this land.

13.4.2 Grade 4

Natural profiles were generally not found in this part of the site. Here soils were very variable and appear to have been restored. They mostly comprise 20 to 30 cm of medium textured topsoil over cinders and ash. Droughtiness and in places soil depth limit the ALC grade of this land. Also included in this grade is land in the north of the site which has a complex microrelief, which will make the use of mechanical agricultural equipment difficult. This limits the land to Grade 4

13.4.3 Other Land

This comprises farm buildings in the north, derelict land in the centre and woodland in the south.

RPT File Nos.: 20,389 & 20,372

14. WELLFIELD ROAD, WINGATE

14.1 Location, Land Use, and Relief

This site lies on the eastern edge of the village of Wingate, adjoining the A19(T). At the time of survey most of the agricultural land was in barley stubble but one corner consisted of peas. Other, non-agricultural, land consists of Catchgate Farm in the north. The site lies at an average altitude of 125m A.O.D. and is level to strongly sloping (0-8°). A small area of land is limited to Subgrade 3b where the slopes exceed 7° but elsewhere gradient does not limit ALC grade and neither flood risk nor microrelief are of importance on this site.

14.2 Climate

The key climatic variables for this site are given in Table 14.1.

Table 14.1: Climatic and altitude data, Wellfield Road, Wingate

Factor	Units	Values
Grid reference	N/A	NZ 409 382
Altitude	m, AOD	125
Accumulated Temperature	day°C (Jan-June)	1227
Average Annual Rainfall	mm	704
Field Capacity Days	days	172
Moisture Deficit, Wheat	mm	86
Moisture Deficit, Potatoes	mm	70
Overall climatic grade	N/A	Grade 2

14.3 Geology and Soils

Magnesian Limestone underlies this site but there is a thick drift cover of till (BGS, Sheet 27). The soils have been mapped as belonging to the Dunkeswick association (Soils of England and Wales, Sheet 1) although the field survey suggests that the soils are more akin to the Brickfield 3 association. The soils are poorly drained, with medium-textured topsoils overlying heavy-textured or clayey subsoils in most cases.

14.4 Agricultural Land Classification

Table 14.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
3b	5.3	100	89.8
Other land	0.6	N/A	10.2
Total surveyed area	5.3	100	-
Total site area	5.9	-	100

14.4.1 Subgrade 3b

All of the agricultural land on this site falls in Subgrade 3b, moderate quality land. The soils are poorly drained, falling in Wetness IV, and consist of medium clay loam topsoils overlying heavy clay loam or clay subsoils in most cases. Occasional subsoil horizons of sandy clay loam or medium sand are also found. The topsoils and subsoils are very slightly to slightly stony in most cases, with between 4% and 12% sandstones. The subsoils become gleyed and slowly permeable at between 25cm and 35cm depth and the ALC grade of this land is limited by soil wetness restrictions.

14.4.2 Other Land

Other, non-agricultural, land on this site consists of Catchgate Farm in the north.

RPT File No.: 20,373

15. FRONT STREET, WINGATE

15.1 Location, Land Use, and Relief

The site is located around grid reference NZ 401 370 on the eastern edge of the village of Wingate. At the time of survey only the northern part of the site was in agricultural use, growing wheat. Remaining land was in other non agricultural uses including redundant glasshouses and warehousing. Land slopes gently down towards the pond east of the site. Average altitude is 120m AOD.

15.2 Climate

The key climatic variables for this site are given in Table 15.1.

Table 15.1: Climatic and altitude data, Front Street, Wingate

Factor	Units	Values
Grid reference	N/A	NZ 401 370
Altitude	m, AOD	120
Accumulated Temperature	day°C (Jan-June)	1233
Average Annual Rainfall	mm	694
Field Capacity Days	days	170
Moisture Deficit, Wheat	mm	87
Moisture Deficit, Potatoes	mm	71
Overall climatic grade	N/A	Grade 2

15.3 Geology and Soils

Soils on the site are derived from till which overlies Magnesian Limestone (BGS sheet 27, : Durham). Topsoils are medium textured over clayey, heavy textured, slowly permeable subsoils. Profiles are Wetness Class IV. Soils are mapped as Dunkeswick association by the Soil Survey of England and Wales.

15.4 Agricultural Land Classification

Table 15.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
3b	1.5	100	45.5
Other land	1.8	N/A	54.5
Total surveyed area	1.5	100	-
Total site area	3.3	-	100

15.4.1 Subgrade 3b

All agricultural land on the site is mapped as Subgrade 3b, moderate quality land. Soil wetness and workability limitations limit the ALC grade of this land.

15.4.2 Other Land

The remainder of the site falls into this category. It includes redundant glasshouses and warehousing.

RPT File 20,374

16. DENE CRESCENT, SHOTTON

16.1 Location, Land Use, and Relief

This site lies on the eastern edge of the village of Shotton and was in permanent pasture at the time of survey. The site lies at an altitude of 125m A.O.D. and is level to moderately sloping (1-4°) with a generally 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.

16.2 Climate

The key climatic variables for this site are given in Table 16.1.

Table 16.1: Climatic and altitude data, Dene Crescent, Shotton

Factor	Units	Values
Grid reference	N/A	NZ 399 409
Altitude	m, AOD	125
Accumulated Temperature	day°C (Jan-June)	1226
Average Annual Rainfall	mm	714
Field Capacity Days	days	176
Moisture Deficit, Wheat	mm	85
Moisture Deficit, Potatoes	mm	69
Overall climatic grade	N/A	Grade 2

16.3 Geology and Soils

Magnesian Limestone underlies this site but there is a thick drift cover of till (BGS, Sheet 27). The soils have been mapped as belonging to the Dunkeswick association (Soils of England and Wales, Sheet 1) and the soils are poorly drained, with medium-textured topsoils, thin medium to heavy-textured upper subsoils and gleyed and slowly permeable heavy-textured lower subsoils.

16.4 Agricultural Land Classification

Table 16.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
3b	1.4	100.0	100.0
Total surveyed area	1.4	100	-
Total site area	1.4	-	100

16.4.1 Subgrade 3b

All of this site falls in Subgrade 3b, moderate quality land. The soils are poorly drained, falling in Wetness Class IV, and consist of very slightly stony medium clay loam topsoils overlying, in places, thin medium clay loam or heavy clay loam upper subsoils, and gleyed and slowly permeable heavy clay loam or clay. The slowly permeable layers typically start at around 30cm depth and the ALC grade of this land is limited by soil wetness restrictions.

RPT File No.: 20,375

17. CADWELL LANE DEPOT, EASINGTON

17.1 Location, Land Use, and Relief

The site is located to the north of Easington on a moderate north-facing slope. It is currently used as permanent pasture.

17.2 Climate

The key climatic variables for this site are given in Table 17.1.

Table 17.1: Climatic and altitude data, Cadwell Lane Depot, Easington

Factor	Units	Values
Grid reference	N/A	NZ 415 437
Altitude	m, AOD	122
Accumulated Temperature	day°C (Jan-June)	1228
Average Annual Rainfall	mm	689
Field Capacity Days	days	169
Moisture Deficit, Wheat	mm	87
Moisture Deficit, Potatoes	mm	71
Overall climatic grade	N/A	Grade 2

17.3 *Geology and Soils*

The site is underlain by Magnesian Limestone covered by drift deposits of morainic origin (BGS Sheet 27, Durham). The soils are very slightly stony medium clay loam topsoils, overlying variable subsoils. These have been mapped as Dunkeswick association by the Soil Survey of England and Wales (Soils of England and Wales, Sheet 1).

17.4 Agricultural Land Classification

Table 17.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	0.8	42.1	42.1
3b	1.1	57.9	57.9
Total surveyed area	1.9	100	-
Total site area	1.9	-	100

17.4.1 Grade 2

The northern part of the site falls into Grade 2, very good quality agricultural land. This area is made up of medium clay loam overlying sandy clay loam or heavy clay loam. The profiles are not gleyed and fall into Wetness Class I. The grade is limited by both wetness and climate.

17.4.2 Subgrade 3b

The southern part of the site (1.1 ha) falls into Subgrade 3b, moderate quality agricultural land. The soils on the slope and upper area comprise slightly stony medium clay loam overlying moderately stony to very stony medium clay loam or sandy clay loam subsoils. Across the site auger borings showed a high degree of variability in the subsoils consistent with the parent material of morainic drift; stoniness was confirmed by two pits. ALC grade is limited by soil droughtiness.

RPT File No.: 20,377

18 SEATON LANE, SEATON

18.1 Location, Land Use, and Relief

The site is located adjacent to the A19(T) in the north of Seaton village, and is bordered on the north eastern edge by a dismantled railway. It is level to gently sloping, facing south to south-east. At the time of the survey a cereal crop had recently been harvested. Grade on the site is not limited by flood risk or microrelief.

18.2 Climate

The key climatic variables for this site are given in Table 18.1.

Table 18.1: Climatic and altitude data, Seaton Lane, Seaton

Factor	Units	Values
Grid reference	*N/A*	*NZ 398 503*
Altitude	m, AOD	90
Accumulated Temperature	day°C (Jan-June)	1262
Average Annual Rainfall	*mm*	*662*
Field Capacity Days	days	161
Moisture Deficit, Wheat	mm	91
Moisture Deficit, Potatoes	mm	77
Overall climatic grade	N/A	Grade 2

18.3 Geology and Soils

The area is underlain by barrier reef limestone covered with drift deposits of boulder clay (BGS Sheet 21). The soils of the area have been mapped as Nercwys association by the Soils Survey of England and Wales (Soils of England and Wales, Sheet 1).

18.4 Agricultural Land Classification

Table 18.2: Area of grades and other land

Grade/Other land	*Area (hectares)*	*% surveyed area*	*% site area*
3b	3.8	100.0	100.0
Total surveyed area	3.8	100	-
Total site area	3.8	-	100

18.4.1 Subgrade 3b

Soils on the site consisted of very slightly stony medium clay loam topsoils overlying clay subsoils which showed evidence of gleying. The depth to the slowly permeable layer varied across the site between 35cm and 65cm, giving rise to Wetness Classes III

and IV. This variation caused some profiles to be classified as ALC Subgrade 3a and some as Subgrade 3b, however they did not form any discernible pattern, and the whole site has been mapped as Subgrade 3b as a result of the wetness limitation.

RPT File No.: 20,378

19. LAND NORTH OF DAWDON LINK ROAD

19.1 Location, Land Use, and Relief

This site lies between the village of Dalton-le-Dale in the north and the recently built Dawdon Link Road in the south. Much of the east of this site and a smaller area in the south-west were subject to detailed ALC surveys in 1994 and 1993 respectively (References 14/94 and 152/93), which found the land surveyed at that time fell predominantly in Subgrade 3a (22.3ha) and Subgrade 3b (32.6ha). At the time of the 1998 survey most of the site was in winter wheat or had recently been harvested of oilseed rape and winter barley.

The land on this site varies between level and moderately steeply sloping (0-13°). Where the gradient exceeds 11° (which occurs in three small areas covering 3ha in total) the land is limited to Grade 4. Where the gradient is greater than 7° but less than or equal to 11° the land is restricted to Subgrade 3b. This occurs in a number of areas in the north, south and north-west of the site.

Neither flood risk nor microrelief are grade limiting factors on this site.

19.2 Climate

The key climatic variables for this site are given in Table 19.1.

Table 19.1: Climatic and altitude data, Land North of Dawdon Link Road

Factor	Units	Values
Grid reference	N/A	NZ 414 475
Altitude	m, AOD	95
Accumulated Temperature	day°C (Jan-June)	1257
Average Annual Rainfall	mm	661
Field Capacity Days	days	162
Moisture Deficit, Wheat	mm	91
Moisture Deficit, Potatoes	mm	77
Overall climatic grade	N/A	Grade 2

19.3 Geology and Soils

The area is underlain by Magnesian Limestone and although most of the land on this site is overlain by till, small isolated areas occur in the west and centre where the limestone outcrops (BGS, Sheets 21 and 27). The soils have been mapped as belonging to the Dunkeswick association (Soils of England and Wales, Sheet 1). The soils consist of medium to heavy-textured topsoils and subsoils but the profiles vary from well drained to poorly drained.

19.4 Agricultural Land Classification

Table 19.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	15.0	14.4	13.9
3a	36.0	34.8	33.2
3b	49.6	47.9	45.8
4	3.0	2.9	2.8
Other land	4.7	N/A	4.3
Total surveyed area	103.6	100	-
Total site area	108.3	-	100

19.4.1 Grade 2

Land in this grade, defined as very good quality agricultural land, occurs in a block of 15ha in the south-west of the site. The soils are well drained or moderately well drained, falling in Wetness Classes I and II. In most cases medium clay loam topsoils overlie medium clay loam or heavy clay loam subsoils. Horizons of medium silty clay loam occur occasionally and weathering limestone begins at between 80cm and 100cm depth in a few places. Although no profiles were gleyed within 40cm depth, in a few cases gleyed and slowly permeable subsoils began at around 60cm depth. The topsoils and subsoils are very slightly to slightly stony, containing 4-12% sandstones and/or limestones (3-7% greater than 2cm in size in the case of the topsoil). The ALC grade of this land is limited by the overall climate of the area and, in places, by very slight soil wetness, soil droughtiness, or topsoil stoniness.

19.4.2 Subgrade 3a

Subgrade 3a land, good quality agricultural land, occurs in a number of areas totalling 36ha. The soils are moderately well or imperfectly drained (Wetness Classes II and III) in most cases, and consist of medium clay loam or heavy clay loam topsoils overlying similar upper subsoils and heavy clay loam or clay lower subsoils. The lower subsoils form slowly permeable layers and typically begin at between 45cm and 70cm depth. The ALC grade of this land is limited by the combination of soil wetness and topsoil workability restrictions.

19.4.3 Subgrade 3b

Subgrade 3b land (moderate quality agricultural land) occurs over a total of almost 50ha. In most cases the soils are imperfectly or poorly drained (Wetness Classes III and IV) and consist of medium or heavy clay loam topsoils, and in places, thin upper subsoils, overlying gleyed and slowly permeable heavy clay loam or clay at between 25cm and 55cm depth. The ALC grade of this land is limited by the combination of soil wetness and topsoil workability, which is a more severe limitation than on the

adjoining Subgrade 3a land. This subgrade also includes land in the north, in the north-west, and in the south where slopes of 7-10° provide the grade-limiting factor.

19.4.4 Grade 4

Three small areas of Grade 4 land totalling 3ha have been mapped where slopes of 12°-13° are the grade-limiting factor.

19.4.5 Other Land

Other, non-agricultural, land on this site consists of woodland in the north and south, scrub in the west, and an electricity sub-station in the south.

RPT File No.: 20,379

20. CASTLE EDEN GOLF CLUB

20.1 Location, Land Use, and Relief

This site lies to the north west of Castle Eden village around grid reference NZ 415 384. Except for one field in the west all the land is currently occupied by a golf course. The agricultural land was in cereal stubble at the time of survey and had gentle slopes with a northerly aspect.

20.2 Climate

The key climatic variables for this site are given in Table 20.1.

Table 20.1: Climatic and altitude data, Castle Eden Golf Club

Factor	Units	Values
Grid reference	N/A	NZ 415 384
Altitude	m, AOD	125
Accumulated Temperature	day°C (Jan-June)	1227
Average Annual Rainfall	mm	702
Field Capacity Days	days	171
Moisture Deficit, Wheat	mm	86
Moisture Deficit, Potatoes	mm	70
Overall climatic grade	N/A	Grade 2

20.3 Geology and Soils

Soils on the site are derived from till and morainic drift which overlies solid deposits of Magnesian Limestone (BGS Sheet 27, Durham 1965). Soils have medium clay loam topsoils and similar textured upper subsoils. Lower subsoils are clayey and slowly permeable. Profiles vary between Wetness Class III and IV, with the latter being the most frequently observed.

20.4 Agricultural Land Classification

Table 20.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
3b	3.0	100	18.8
Other land	13.0	N/A	81.2
Total surveyed area	3.0	100	-
Total site area	16.0	-	100

20.4.1 Subgrade 3b

Soils have medium clay loam topsoils and similar textured upper subsoils. Lower subsoils are clayey and slowly permeable. Profiles vary between Wetness Class III and

IV, with the latter being the most frequently observed. Although some land meets the criteria for Subgrade 3a, subject to soil wetness and workability limitations, it does not fall into mapable areas. Generally land is of Subgrade 3b quality, again subject to soil wetness and workability limitations but of a more serious nature. This subgrade has been applied to the whole site.

20.4.2 Other Land

This comprises the existing golf course and associated infrastructure buildings

RPT File 20,380

21. DUNELM ROAD, THORNLEY

21.1 Location, Land Use, and Relief

The site is located off Dunelm Road on the south eastern edge of the village of Thornley. Much of the site slopes gently to the south, with a moderate east facing slope at the western end. It is currently used as grazing for horses and associated stabling and storage buildings have been erected on the site. A running track of compacted limestone approximately 3 metres wide has been laid. A hard surfaced track runs through the eastern part of the site, separating off a small paddock also used for grazing horses.

21.2 Climate

The key climatic variables for this site are given in Table 21.1.

Table 21.1: Climatic and altitude data, Dunelm Road, Thornley

Factor	Units	Values
Grid reference	N/A	NZ 358 393
Altitude	m, AOD	165
Accumulated Temperature	day°C (Jan-June)	1182
Average Annual Rainfall	mm	705
Field Capacity Days	days	177
Moisture Deficit, Wheat	mm	81
Moisture Deficit, Potatoes	mm	64
Overall climatic grade	N/A	Subgrade 3a

21.3 Geology and Soils

The area is underlain by Magnesian Limestone with, in places, a covering of till (BGS Sheet 27, Durham). The soils consist of medium clay loam topsoils over heavy clay loam and clay subsoils, and have been mapped as Brickfield 2 association (Soils of England and Wales, Sheet 1).

21.4 Agricultural Land Classification

Table 21.2: Area of grades and other land

Grade/Other land	*Area (hectares)*	*% surveyed area*	*% site area*
3a	3.2	82.1	55.2
3b	0.7	17.9	12.0
Agricultural land not surveyed	1.6	N/A	27.6
Other land	0.3	N/A	5.2
Total surveyed area	3.9	100	-
Total site area	5.8	-	100

21.4.1 Subgrade 3a

The largest part of the site (3.2 ha) falls into ALC Subgrade 3a, good quality agricultural land. The soils comprise well drained (Wetness Class I), slightly stony, medium clay loam topsoil overlying heavy clay loam or clay subsoils. Below approximately 75 cm lies a layer of weathered Magnesian Limestone, leading on to solid rock. In this area grade is limited by climate. The presence of the compacted limestone running track has not been considered a limiting factor in terms of agricultural potential. It seems likely that it could be removed using standard agricultural machinery, based on the assumption that topsoil has not been removed in its construction.

21.4.2 Subgrade 3b

The western part of the site lies above a 4° slope and has been graded as Subgrade 3b. Soils consist of a slightly stony medium clay loam topsoil overlying a slowly permeable heavy clay loam subsoil with evidence of gleying (Wetness Class IV). In this area ALC grade is limited by soil wetness and workability.

21.4.3 Other Land

A small area in the south of the site was occupied by buildings and hard standing. The paddock at the eastern end of the site was not surveyed as no access had been obtained.

RPT File No.: 20,381

22. DALTON HEIGHTS, SEAHAM

22.1 Location, Land Use, and Relief

The site is located between the A19(T) and the B1285, to the north-east of Dalton-le-Dale and was under wheat at the time of the survey. The site lies on a gentle to moderate (1°- 4°) south-east facing slope, with a steeper area (6-8°) in the south forming an eastward facing depression.

22.2 Climate

The key climatic variables for this site are given in Table 22.1.

Table 22.1: Climatic and altitude data, Dalton Heights, Seaham

Factor	Units	Values
Grid reference	N/A	NZ 405 483
Altitude	m, AOD	100
Accumulated Temperature	day°C (Jan-June)	1251
Average Annual Rainfall	mm	662
Field Capacity Days	days	162
Moisture Deficit, Wheat	mm	90
Moisture Deficit, Potatoes	mm	76
Overall climatic grade	N/A	Grade 2

22.3 Geology and Soils

The area is underlain by Middle Magnesian Limestone and Thick Barrier Reef with drift deposits of boulder clay (BGS Sheet 21, Sunderland). Soils comprise slightly stony medium clay loam over heavy clay loam or clay, with horizon depths variable across the site. These are mapped as Dunkeswick association by the Soil Survey of England and Wales (Soils of England and Wales, Sheet 1).

22.4 Agricultural Land Classification

Table 22.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	2.1	22.6	22.6
3a	4.2	45.2	45.2
3b	3.0	32.2	32.2
Total surveyed area	9.3	100	-
Total site area	9.3	-	100

22.4.1 Grade 2

Higher land covering 2.1 ha in the north western corner of the site falls into ALC Grade 2. Soils comprise slightly stony, well drained (Wetness Class I) medium clay loam topsoil overlying ungleyed heavy clay loam subsoil. Grade is limited by soil droughtiness and climate.

22.4.2 Subgrade 3a

Grade boundaries on this site tend to follow the contours, and land adjacent to and downslope from that in Grade 2 falls into Subgrade 3a. This area is made up of slightly stony medium clay loam topsoils overlying heavy clay loam subsoils to depths of 45 to 55cm. Below this lie very slightly stony, gleyed, slowly permeable clay subsoils. Profiles fall into Wetness Class III, and grade is limited by soil wetness.

22.4.3 Subgrade 3b

The southern part of the site (3 ha) is graded as Subgrade 3b, and comprises medium clay loam topsoils to 35 cm depth over slowly permeable clay subsoils (Wetness Class IV). It is possible that the east-facing depression in this part of the site had been night-soiled at some time in the past, with a significant quantity of cinders incorporated into the topsoil. Grade in this area was limited by slope, while the rest of the area was limited by soil wetness and workability.

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23. CHURCH PARK, WHEATLEY HILL

23.1 Location, Land Use, and Relief

This site is located around grid reference NZ 380 395 to the north east of Wheatley Hill. At the time of survey all agricultural land was under permanent grass and grazed by horses, with remaining land being derelict and subject to tipping of inert waste. Land mostly contains moderate to gentle slopes with a northerly aspect.

23.2 Climate

The key climatic variables for this site are given in Table 23.1.

Table 23.1: Climatic and altitude data, Church Park, Wheatley Hill

Factor	Units	Values
Grid reference	N/A	NZ 380 395
Altitude	m, AOD	130
Accumulated Temperature	day°C (Jan-June)	1221
Average Annual Rainfall	mm	707
Field Capacity Days	days	176
Moisture Deficit, Wheat	mm	85
Moisture Deficit, Potatoes	mm	69
Overall climatic grade	N/A	Grade 2

23.3 Geology and Soils

Soils on the site are derived from heavy textured drift which overlies Magnesian Limestone (BGS Sheet 27 Durham). Soils reflect the parent material. Topsoils are medium textured over clayey, slowly permeable subsoils. Profiles are Soil Wetness Class IV.

23.4 Agricultural Land Classification

Table 23.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
3b	1.3	100	68.4
Other land	0.6	N/A	31.6
Total surveyed area	1.9	100	-
Total site area		-	100

23.4.1 Subgrade 3b

All agricultural land is classed as Subgrade 3b, moderate quality land. Soil wetness and workability problems limit the ALC grade of this land.

23.4.2 Other land

This comprises derelict land in the north of the site currently subject to tipping of inert waste.

RPT File 20,384

24. LAND EAST OF A19, EASINGTON

24.1 Location, Land Use, and Relief

This site lies between the western edge of the village of Easington and the A19(T). At the time of survey all of the agricultural land was in permanent pasture and a small area in the north was occupied by farm buildings.

This site lies at an average altitude of 135m A.O.D. and the land is level to strongly sloping (0-10°) with a northerly aspect. Where the slopes exceed 7°, which occurs in two areas in the north and centre of the site respectively, the land is limited by its gradient to Subgrade 3b. Elsewhere on the site slope is not sufficient to limit ALC grade and neither flood risk nor microrelief are of importance on this site.

24.2 Climate

The key climatic variables for this site are given in Table 24.1.

Table 24.1: Climatic and altitude data, Land East of A19, Easington

Factor	Units	Values
Grid reference	N/A	NZ 411 434
Altitude	m, AOD	135
Accumulated Temperature	day°C (Jan-June)	1213
Average Annual Rainfall	mm	696
Field Capacity Days	days	170
Moisture Deficit, Wheat	mm	85
Moisture Deficit, Potatoes	mm	69
Overall climatic grade	N/A	Grade 2

24.3 Geology and Soils

The area is underlain by Magnesian Limestone and the site itself is overlain by morainic drift (BGS, Sheet 27). The soils have been mapped as belonging to the Escrick 2 association (Soils of England and Wales, Sheet 1) and are generally well drained, with light to medium-textured topsoils overlying similar subsoils.

24.4 Agricultural Land Classification

Table 24.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	1.3	77.8	76.5
3b	0.37	22.2	21.7
Other land	0.03	N/A	1.8
Total surveyed area	1.67	100	-
Total site area	1.7	-	100

24.4.1 Grade 2

Most of the land on this site has been mapped as Grade 2, very good quality agricultural land. The soils are generally well drained (Wetness Class I) and the topsoils and subsoils are very slightly to slightly stony, typically containing between 5% and 15% very small to medium limestones. Medium clay loam or medium sandy loam topsoils overlie similar subsoils and weathering limestone seems to occur within 100cm of the soil surface in the south of the site. The ALC grade of the land is limited by the overall climate of the site and, in places, by very slight soil droughtiness.

24.4.2 Subgrade 3b

Two areas of land in the north and centre respectively are limited to Subgrade 3b by slopes of 8°-10°.

24.4.3 Other Land

A small area of Other Land consisting of agricultural buildings (which are being extended at present) occurs in the north of the site.

RPT File No.: 20,385

25. WHEATLEY HILL, NORTH OF BYPASS

25.1 Location, Land Use, and Relief

The site lies between the A181 bypass and the village of Wheatley Hill, around grid reference NZ 375 382. Land is level and at the time of survey was in cereals in the east and grass in the west.

25.2 Climate

The key climatic variables for this site are given in Table 25.1.

Table 25.1: Climatic and altitude data, Wheatley Hill, North of Bypass

Factor	Units	Values
Grid reference	N/A	NZ 375 382
Altitude	*m, AOD*	*160*
Accumulated Temperature	day°C (Jan-June)	1188
Average Annual Rainfall	mm	713
Field Capacity Days	days	177
Moisture Deficit, Wheat	mm	81
Moisture Deficit, Potatoes	mm	64
Overall climatic grade	N/A	Subgrade 3a

25.3 Geology and Soils

Soils are derived from till which overlies solid deposits of Magnesian Limestone (BGS Sheet 27, Durham 1965). Topsoils are medium textured over clayey, slowly permeable subsoils. Profiles are Wetness Class IV.

25.4 Agricultural Land Classification

Table 25.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
3b	3.4	100	100
Total surveyed area	3.4	100	-
Total site area	3.4	-	100

25.4.1 Subgrade 3b

Topsoils are medium textured over clayey, slowly permeable subsoils. Profiles are Wetness Class IV. Soil wetness and workability problems limit the ALC grade of this land.

RPT File 20,390

26. STOCKTON ROAD, CASTLE EDEN

26.1 Location, Land Use, and Relief

The site is located between the Village of Castle Eden and the A1(M) motorway around Grid Reference NZ 419 378. At the time of survey most of the site was in arable use growing cereals. Two small areas of wetland also occur on the site. Land slopes down towards the A1(M) from the minor road in the east. Slopes are mostly moderate or gentle although they exceed 7°, which is described as strongly sloping, in a few places in the west of the site. Average altitude is 125m AOD.

26.2 Climate

The key climatic variables for this site are given in Table 26.1.

Table 26.1: Climatic and altitude data, Stockton Road, Castle Eden

Factor	Units	Values
Grid reference	N/A	NZ 419 378
Altitude	m, AOD	125
Accumulated Temperature	day°C (Jan-June)	1227
Average Annual Rainfall	mm	697
Field Capacity Days	days	170
Moisture Deficit, Wheat	mm	87
Moisture Deficit, Potatoes	mm	71
Overall climatic grade	N/A	Grade 2

26.3 Geology and Soils

Till and morainic drift overlie solid deposits of Magnesian Limestone (BGS sheet 27 Durham). Generally soils are medium textured, freely drained and slightly stony in the east and medium to heavy textured and slowly permeable in the west. Medium textured soils correspond with the Bishampton 1 association and other soils correspond with the Dunkeswick association as mapped by the Soil Survey of England and Wales.

26.4 Agricultural Land Classification

Table 26.2: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	4.5	64.3	59.2
3b	2.5	35.7	32.9
Other land	*0.6*	N/A	7.9
Total surveyed area	7.0	100	-
Total site area	7.6	-	100

26.4.1 Grade 2

This grade, very good quality land, occurs on the higher ground in the east of the site. Topsoils and subsoils are typically a medium clay loam or a sandy clay loam. Profiles are slightly stony making them occasionally difficult to auger below 75cm depth. There is no evidence of gleying in the profiles. Overall climate limits the ALC grade of this land.

26.4.2 Subgrade 3b

Remaining agricultural land is Subgrade 3b, moderate quality land. Topsoils are medium textured over clayey, slowly permeable subsoils. Soil wetness and workability problems limit the ALC grade of this land.

26.4.3 Other Land

This comprises two small wetland areas.

RPT File 20,391

SOURCES OF REFERENCE

British Geological Survey (1978) *Sheet No. 21, Sunderland (Solid and Drift). 1:50,000 scale.* BGS: London.

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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 (date1983) *Sheet* 1 *Northern England. 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.