AGRICULTURAL LAND CLASSIFICATION

RIPON LOCAL PLAN

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SECTION 1: INTRODUCTION AND SURVEY METHODOLOGY

Eight separate sites were surveyed during March 1990 around Ripon, North Yorkshire. They cover a total of 149.3 hectares 91 per cent of which is in agricultural production.

The survey work carried out in March 1990 involved examining soil profiles with a 1 metre hand held auger, at 100 metre intervals predetermined by the National Grid. Shallow soil pits were also dug, where necessary, to assess soil structural characteristics and gley morphology.

All assessments of agricultural land quality were made 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).

SECTION 2: LAND AT HUTTON BANK

LOCATION

The site is located around National Grid Reference SE 319721, adjacent to the A61 at North Bridge.

LAND USE

It covers 3.3 hectares, most of which is used for permanent pasture.

CLIMATE

The salient climatic parameters are as follows:

Average Annual Rainfall (AAR):	636 mm
Accumulated Temperature above 0°C (ATO):	1375 day°C
Field Capacity Days:	159 days

These indicate that there is no overall climatic restriction on ALC grade.

RELIEF AND LANDFORM

Altitude varies between 20 and 35 metres above Ordnance Datum. Slopes of between 8 and 12° occur through the middle of the site and often form the overriding limitation on land quality in these areas.

GEOLOGY

Site geology consists of glacial boulder clay overlain by a patchy distribution of superficial sandy to coarse loamy drift. The variable soil distribution resulting from these deposits is discussed below.

AGRICULTURAL LAND CLASSIFICATION GRADES

The ALC grades occurring on the site are as follows:

GRADE	HECTARES	PERCENTAGE OF TOTAL SITE AREA
2	1.2	36.4
3a	1.1	33.4
3b	0.8	24.2
4	0.1	3.0
Non Agricultural	0.1	3.0
TOTAL	3.3	100%

GRADE 2

Land in this grade occupies well drained upper slopes adjacent to the north eastern boundary. Soils fall within Wetness Class II and consist of medium sandy loam to medium clay loam topsoils over similar material to depth. A slight workability problem associated with complex localised soil patterns forms the overriding restriction on ALC grade.

SUBGRADE 3A

Subgrade 3a land occurs in the extreme south. Soils typically consist of medium clay loam topsoils and upper subsoils over gleyed and slowly permeable boulder clay. They fall within Wetness Class III and are limited by a combination of profile soil wetness and topsoil workability problems.

SUBGRADE 3B

Land in this subgrade occurs through the middle of the site. Soils are similar to those above, although slopes in excess of 7° forms the main restricted on ALC grade.

GRADE 4

Land in this grade is confined to a small area on the eastern boundary where slopes in excess of 11° form the overriding limitation on ALC grade.

NON AGRICULTURAL

Approximately 0.1 hectares of non agricultural land occurs along the extreme eastern boundary.

SECTION 3: LAND AT SNOW CLOSE FARM

LOCATION

The site is located around National Grid Reference SE 303724 on the north western side of Ripon between Lark Hill and Palace Road (A6108). It covers 50 hectares most of which is in agricultural use.

LAND USE

Winter cereals were the main crop at the time of survey with grassland common only around Snow Close Farm.

CLIMATE

Average annual rainfall (AAR) is approximately 689 days. Accumulated temperature above 0°C (ATO) is between January and June is 1344 and the land is at field capacity for 169 days a year. There is thus no overall climatic restriction on ALC grade.

RELIEF AND LANDFORM

Altitude on the site varies between 48 and 69 metres above Ordnance Datum and the relief is gently undulating. Slopes rarely exceed 5-6° and do not restrict the use of agricultural machinery.

GEOLOGY AND SOILS

Site geology consists of boulder clay partially overlain by a superficial coarse loamy to sandy drift. Its distribution is variable and can give rise to complex localised soil variations.

Most soils, however, consist of stoneless to slightly stony fine loamy topsoils and upper subsoils which pass into slowly permeable boulder clay. Where significant deposits of lighter drift occur, profiles often consist of very slightly stony coarse loamy to sandy topsoils and subsoils over slowly permeable fine loamy horizons at depth.

Soil wetness and workability problems are often the overriding restriction on land quality, although topsoil stoniness and soil variability can be locally important.

AGRICULTURAL LAND CLASSIFICATION GRADES

The ALC grades occurring on this site are as follows:

GRADE	HECTARES	PER CENT OF TOTAL AGRICULTURAL LAND
2	2.7	5.4
3a	33.8	67.5
3b	13.0	26.1
4	0.1	0.2
Farm Buildings	0.4	0.8
TOTAL	50.0	100%

GRADE 2

A small area of grade 2 land occurs along the eastern boundary. Soils fall into Wetness Classes I or II and consist of medium clay loam or sandy loam topsoils and subsoils to depth. Localised soil variations in this area create slight workability problems which are the overriding restrictions on ALC grade.

SUBGRADE 3A

This is the predominant grade on the site. Soils fall within Wetness Classes II or III and consist typically of medium clay loam topsoils and upper subsoils over slowly permeable boulder clay. Soil wetness and workability problems form the main restriction on ALC grade, although topsoil stone content is also limiting in a few areas. Some better quality (Grade 2) soils also occur within the subgrade 3a areas, but are too small and patchily distributed to separate.

SUBGRADE 3B

Subgrade 3b land occurs through the centre of the site and in the east. Soils fall within Wetness Classes III or IV and consist of medium to heavy clay loam topsoils over slowly permeable boulder clay. Soil wetness and workability problems are more severe than on adjacent 3a quality land and form the main restriction on ALC grade.

GRADE 4

A small area of grade 4 land occurs near Little Harries Lane. Severely disturbed soil profiles, containing concrete and brick rubble, form the main restriction on ALC grade.

FARM BUILDINGS

This category includes an agricultural dwelling, general farm buildings, an access road and hard standing areas around Snow Close Farm.

SECTION 4: LAND AT SPRINGFIELD CLOSE

LOCATION

This site is located around National Grid Reference SE 307721 just west of Palace Road. It covers 3.7 hectares, 76 per cent of which is in agricultural production.

LAND USE

All agricultural land is in permanent pasture. Non agricultural land uses include farm woodland and semi natural scrub vegetation.

CLIMATE

The salient climatic parameters for this site are as follows:

Average Annual Rainfall:	680 mm
Accumulated Temperature above 0° (January-June):	1350 day°C
Field Capacity Days:	167 days

These indicate that there is no overall climatic limitation on ALC grade.

RELIEF AND LANDFORM

The site is gently undulating at a mean altitude of 45 metres above Ordnance Datum. Slope forms a significant agricultural consideration in only one small area. Gradients here are slightly in excess of 7° and thus can restrict the operation of some agricultural machinery.

GEOLOGY AND SOILS

Site geology consists of a coarse loamy to sandy glaciofluvial drift. The soils that have formed over this are very slightly stony and consist of fine to coarse loamy topsoils over similar subsoil textures to depth.

AGRICULTURAL LAND CLASSIFICATION GRADES

The ALC grades occurring on this site are as follows:

GRADE/ SUBGRADE	HECTARES	PERCENTAGE OF TOTAL AGRICULTURAL LAND
3a	2.5	67.6
3b	0.3	8.1
Farm Woodland	0.5	13.5
Other Non Agricultural	0.4	10.8
TOTAL	3.7	100%

SUBGRADE 3A

Land in this subgrade predominates. Soils fall within Wetness Class III and consist of medium clay loam topsoils over similarly textured subsoil to depth. A combination of soil wetness and topsoil workability problems forms the main restriction on ALC grade.

SUBGRADE 3B

Subgrade 3b land occurs in a small area near the middle of the site. Gradients slightly in excess of 7° form the main limitation for ALC grade.

FARM WOODLAND

Two small areas of woodland occur along the southern and eastern site boundaries.

OTHER NON AGRICULTURAL

This consists of vacant land along the eastern site edge.

SECTION 5: LAND AT WHITCLIFFE GRANGE FARM

LOCATION

The site is located to the south of Ripon around National Grid Reference SE 304695. It covers a total area of 33.6 ha, all of which is currently in agricultural use.

LAND USE

Arable crops predominate except for a circular grassland gallop 10 m wide which occupies the perimeter of the site.

CLIMATE

Average annual rainfall is approximately 702 mm and the accumulated temperature above 0°C (Jan-June) is 1342 day°C. The land is at field capacity for 175 days a year. There is thus no overall climatic limitation upon ALC grade.

RELIEF AND LANDFORM

Altitude ranges from 60 m a.o.d. at Whitcliffe Grange Farm to 50 m a.o.d. along West Lane. Slopes never exceed 7° and so do not limit the use of agricultural machinery.

GEOLOGY, SOILS AND DRAINAGE

Soils are all derived from drift deposits which form a layer more than 1 m in thickness over the underlying bedrock. The drift is usually a slightly stony, reddish boulder clay which weathers to form medium clay loam topsoils over clayey slowly permeable subsoils (Wetness Class IV). In a few localised places a lighter, possibly fluvioglacial, deposit overlies the boulder clay and gives better drained soils. These consist of medium clay loam or sandy clay loam topsoils over similar textured upper subsoils. The lower subsoil is usually formed from the reddish boulder

clay and is slowly permeable. Depending on the thickness of this drift, profiles fall within either Wetness Class II or III. Soil wetness is the overriding limitation on ALC grade on all soils.

AGRICULTURAL LAND CLASSIFICATION GRADES

The ALC grades occurring on this site are as follows:

GRADE	HECTARES	% OF TOTAL AREA
3a	8.9	27
3b	24.7	73
TOTAL	33.6	100%

SUBGRADE 3A

Subgrade 3a land occurs in 3 discrete areas although all have similar soil characteristics. Topsoils are usually sandy clay loam or medium clay loam and slightly stony. Upper subsoils are similar textured over a clayey, slowly permeable lower subsoil (Wetness Class II or III). Soil wetness problems restrict this land to a maximum of subgrade 3a.

SUBGRADE 3B

This land is uniform in character across the site and typically consists of medium clay loam topsoils over reddish, clayey, slowly permeable subsoils (Wetness Class IV). Soil wetness problems are more severe than on the adjoining 3a land and are the main limitation on ALC grade. A small area of land towards the centre of the site which is contaminated with rubble has been placed with subgrade 3b because of high topsoil stone content.

SECTION 6: LAND AT BEECHES FARM

LOCATION

This site lies south of the River Ure between Magdalen's Road and the disused railway line (NGR SE 318717).

LAND USE

It covers 8.9 hectares, 4.3 hectares of which are in non-agricultural land uses. The agricultural land (confined to areas adjacent to the Ure and Beeches Farm) has mixed arable and grassland uses.

CLIMATE

Average annual rainfall (AAR) is approximately 638 mm. Accumulated temperature above 0°C (ATO) between January and June is 1375 day°C and the land is at field capacity for 160 days a year. There is thus, no overall climatic limitation on ALC grade.

RELIEF AND LANDFORM

Altitude varies between 20 and 25 metres above Ordnance Datum and the relief is level to very slightly undulating. Slopes seldom exceed 2-3° and do not restrict agricultural machinery.

FLOOD RISK

A moderate flood risk occurs on land adjacent to the River Ure.

GEOLOGY AND SOILS

Very slightly stony coarse loamy drift deposits occur on land around The Beeches. Soils consist of medium clay loam topsoils over similar subsoil material to depth.

Adjacent to the River Ure, stoneless coarse loamy to sandy river alluvium occurs. The profiles formed over this are similar to those above except for the absence of slopes, and marginally deeper topsoils.

AGRICULTURAL LAND CLASSIFICATION GRADES

The ALC grades occurring on this site are as follows:

GRADE/ SUBGRADE	HECTARES	PERCENTAGE OF TOTAL SITE AREA
2	2.4	27.0
3a	2.2	24.7
Non Agricultural	3.8	42.7
Urban	0.5	5.6
TOTAL	8.9	100%

GRADE 2

Land in this grade occurs south of The Beeches. Soils consist of medium clay loam topsoils over similar subsoil material to depth. All profiles fall within Wetness Class II and are limited by slight wetness and workability problems.

SUBGRADE 3A

Similar profiles occur on 3a land adjacent to the River Ure. Flood risk, however, is moderately limiting and forms the main restriction for ALC grade in these areas.

NON AGRICULTURAL

Approximately 3.8 hectares of vacant land occurs around The Beeches and in the extreme south.

URBAN

This comprises a severely disturbed area adjacent to The Beeches, where useable soils are largely absent.

SECTION 7: LAND WEST OF THE RIVER URE

LOCATION

The site is located around National Grid Reference SE 321715, between the River Ure and the disused railway line. It covers 36 hectares, 89 per cent of which is in an agricultural use.

LAND USE

All agricultural land on the site is in arable production with winter cereals forming the main crop at the time of survey.

Non agricultural land is chiefly confined to steeply sloping areas of semi-natural vegetation just north of Skittergate Gutter.

CLIMATE

Average annual rainfall (AAR) is approximately 637 mm. Accumulated temperature above 0°C (ATO) between January and June is 1375 and the land is at field capacity for 159 days a year. These factors indicate that there is no overall climatic restriction on ALC grade.

Summer moisture deficits of 106 mm for winter wheat and 98 mm for potatoes show that there is a moderate drought limitation affecting the gravelly coarse loamy profiles near Skittergate Gutter. Other profiles on the site are not significantly affected by drought.

RELIEF AND LANDFORM

Altitude on the site varies between 21 and 23 metres above Ordnance Datum. Slopes rarely exceed 3-4, except for land near Skittergate Gutter where slopes on non agricultural land often exceed 7°.

FLOOD RISK

A slight flood risk exists on land adjacent to the River Ure.

GEOLOGY

Glacial to recent drift deposits cover the whole site. These consist of recent coarse loamy to sandy alluvium near the River Ure, glacial boulder clay between Skittergate Gutter and Fisher Green, and river terrace sands and gravels between The Beeches and Skittergate Gutter.

SOILS

Soils overlying alluvium consist of fine to coarse loamy topsoils and subsoils over sandy textured lower subsoils. All profiles are non calcareous and mainly stoneless.

Coarse to fine loamy topsoils and upper subsoils occur north of Skittergate Gutter on river terrace sand and gravel. They are slightly stony and often impenetrable to soil auger below about 45 cm.

Soils developing over boulder clay north of Fisher Green consist of stoneless to very slightly stony fine loamy topsoils over gleyed and slowly permeable clay. These profiles are non calcareous and suffer moderate to severe wetness and workability problems during winter months.

AGRICULTURAL LAND CLASSIFICATION GRADES

The ALC grades occurring on the site are as follows:

GRADE	HECTARES	PERCENTAGE OF TOTAL SITE AREA
2	14.2	39.4
3a	10.1	28.1
3b	7.6	21.1
Non Agricultural	4.1	11.4
TOTAL	36.0	100%

GRADE 2

Grade 2 land occurs on recent alluvium adjacent to the River Ure. All profiles fall within Wetness Class I and consist of stoneless medium clay loam topsoils and upper subsoils that occasionally pass into sandy textured lower subsoils at depth.

A slight winter flood risk forms the main restriction on ALC grade.

SUBGRADE 3A

Land north of Skittergate Gutter and adjacent to the River Skell consists of slightly stony sandy loam or sandy clay loam topsoils and upper subsoils over post glacial and recent river gravels. Soil droughtiness is thus moderately limiting and forms the overriding restriction on ALC grade.

SUBGRADE 3B

Most of the land in this subgrade occurs around Skittergate Gutter. Soils fall within Wetness Class IV and consist of medium to heavy clay loam topsoils over gleyed and slowly permeable boulder clay. Soil wetness and workability problems are more severe than on adjacent 3a quality land and forms the main limitation for ALC grade.

NON AGRICULTURAL

Land in this category consists of semi-natural vegetation on steeply sloping, and often disturbed, land north of Skittergate Gutter.

SECTION 8: LAND AT THE COLLEGE OF RIPON AND YORK ST JOHN

LOCATION

The site is located around National Grid Reference SE 318720 on the north western side of Ripon between Kirkby Road and the A6108 (Palace Road). It covers 10.8 hectares, 77 per cent of which is in agricultural use.

LAND USE

All agricultural land is in a grassland use. Non agricultural land includes a sports field adjacent to the college and small areas of vacant land in the east.

CLIMATE

Average annual rainfall (AAR) is approximately 689 mm. Accumulated temperature above 0°C (ATO) between January and June is 1344 day°C and the land is at field capacity for 169 days a year. There is thus, no overall climatic limitation on ALC grade.

RELIEF AND LANDFORM

Altitude on the site varies between 36 and 47 metres above Ordnance Datum and the relief is gently undulating in the west to strongly sloping in the east.

Slopes of between 9 and 18° occur in the eastern quarter of the site and often form the overriding restriction on ALC grade in these areas.

GEOLOGY AND SOILS

Site geology consists of a reddish boulder clay partially overlain by coarse loamy drift deposits on which, very slightly stony fine to coarse loamy profiles have formed.

These deposits are largely absent in the eastern quarter of the site where boulder clay occurs close to the surface. The soils found here consist of stoneless to very slightly stony fine loamy topsoils over gleyed and slowly permeable boulder clay to depth.

AGRICULTURAL LAND CLASSIFICATION GRADES

The ALC grades occurring on this site are as follows:

GRADE	HECTARES	PERCENTAGE OF TOTAL SITE AREA
3a	6.4	59.3
3b	1.4	12.9
4	0.5	4.6
Non Agricultural	2.2	20.7
Open Water	0.3	2.8
TOTAL	10.8	100%

SUBGRADE 3A

Land in this subgrade occurs in the eastern half of the site and along most of the southern site boundary. Soils fall within Wetness Class III and consist of very slightly stony medium clay loam topsoils over sandy clay loam subsoils to depth. Soil wetness and workability problems form the main restriction on ALC grade.

SUBGRADE 3B

Land in this subgrade occurs in the eastern quarter of the site. Soils fall within Wetness Class IV and consist of medium clay loam topsoils over gleyed and slowly permeable clay. Wetness and workability problems from the main restriction on ALC grade, although some areas are also limited by slopes of between 7 and 11°.

GRADE 4

A narrow strip of grade 4 land occurs in the extreme east. Although soil profiles are similar to these above, slopes in excess of 11° are severely limiting and form the overriding restriction on ALC grade.

NON AGRICULTURAL

This includes a sports field near the college and small areas of vacant land in the eastern quarter of the site.

OPEN WATER

This comprises a small pond in the western half of the site.

SECTION 9: LAND ADJACENT TO LITTLE STUDLEY ROAD

LOCATION

This site is located around National Grid Reference SE 310725, adjacent to Little Studley Road on the northern edge of the town. It covers 3.1 hectares, 81 per cent of which is in agricultural production.

LAND USE

All agricultural land is in permanent pasture. Non agricultural and urban land uses consist of recent residential housing to the south and small areas of scrub vegetation along the eastern site boundary.

CLIMATE

Average annual rainfall (AAR) is approximately 66 mm. Accumulated temperature above 0°C (ATO) between January and June is 1361 day°C and the land is at field capacity for 164 days a year. There is thus no overall climatic restriction to ALC grade.

Summer moisture deficits of 104 mm for winter wheat and 94 mm for potatoes indicate that soil droughtiness is only significantly limiting in a small area near Little Studley Road where lighter textured, coarse loamy to sandy, profiles occur.

RELIEF AND LANDFORM

The site slopes west - east at an altitude of between 38 and 23 metres above Ordnance Datum. Slopes of 7 to 10° occur in the northern quarter of the site and the extreme north east where the gradient forms an overriding limitation on ALC grade.

GEOLOGY AND SOILS

Soils on the site occur on superficial coarse loamy to sandy drift deposits that overlie slowly permeable gleyed boulder clay at depth.

This drift is thickest on lower slopes near Little Studley Road. This gives rise to lighter textured and better drained profiles.

AGRICULTURAL LAND CLASSIFICATION GRADES

The ALC grades occurring on this site are as follows:

GRADE/ SUBGRADE	HECTARES	PERCENTAGE OF TOTAL SITE AREA
3a	0.9	29.0
3b	1.2	38.7
4	0.4	12.9
Non Agricultural	0.1	3.3
Urban	0.5	16.1
TOTAL	3.1	100%

SUBGRADE 3A

A narrow strip of subgrade 3a quality land occurs near Little Studley Road. Soils consist of medium sandy loam to clay loam topsoils over heavy clay loam topsoils which pass into loamy sand with depth. Soil droughtiness is moderately limiting and forms the main restriction on ALC grade.

SUBGRADE 3B

Land in this subgrade covers most of the remaining site area. Soils consist of medium clay topsoils and upper subsoils over slowly permeable boulder clay. All profiles fall within Wetness Class IV and are limited by soil wetness and workability problems.

A small strip of strongly sloping land occurs through the centre of the site. Soil profiles suffer the same restrictions discussed above but are additionally limited by gradients of between 7 and 10°.

GRADE 4

This land occurs in the extreme north east. Severely disturbed soil profiles (a result of past quarrying) form the overriding restriction to ALC grade.

URBAN

This consists of recent residential development in the south eastern corner of the site.

MAPS