MAFF Ministry of Agriculture Fisheries and Food

AGRICULTURAL LAND CLASSIFICATION
EAST YORKSHIRE BOROUGH
WIDE LOCAL PLAN
HUMBERSIDE
SITES AROUND DRIFFIELD
MARCH 1994

ADAS
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AGRICULTURAL LAND CLASSIFICATION, EAST YORKSHIRE BOROUGH WIDE LOCAL PLAN

SUMMARY

A total of 63.8 ha of land was surveyed on four sites to the east of Driffield. 61.8 ha of this was agricultural land of which 7.3 ha falls in Grade 2. Profiles are well drained with slightly stony medium-textured topsoils and upper subsoils overlying very stony medium-textured lower subsoils at between 40cm and 70cm depth. This land is limited to Grade 2 by slight soil droughtiness.

33.4 ha of the land surveyed falls in Subgrade 3a. In most cases profiles are imperfectly drained with medium-textured topsoils and upper subsoils overlying gleyed and slowly permeable medium to heavy-textured lower subsoils at around 50cm depth. This land is limited to Subgrade 3a by soil wetness restrictions.

21.1 ha falls in Subgrade 3b. Profiles are poorly drained, typically with medium-textured topsoils overlying gleyed and slowly permeable medium to heavy-textured subsoils at between 30cm and 40cm depth. This land is restricted to Subgrade 3b by soil wetness and, in places, by topsoil workability limitations.

The remainder of the area surveyed consists of Urban land (0.2 ha), Woodland (1.6 ha) and Open Water (0.2 ha).

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1. INTRODUCTION AND SITE CHARACTERISTICS

1.1 Survey Methods

Land covering an area of approximately 64 ha was surveyed on four sites on the eastern side of Driffield. The agricultural land quality on each of these sites is described in the following parts of this report.

Survey work was carried out in March 1994 when soils were examined by hand auger borings at 100m intervals predetermined by the National Grid. Extra borings were made where necessary to refine grade boundaries and a number of soil pits were dug to allow the assessment of subsoil structure, to confirm depth to slowly permeable layers and to allow the collection of samples for laboratory analysis. All assessments of 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).

1.2 Land Use and Relief

At the time of survey 97% of the land was in agricultural use, principally as arable or grassland although some appeared to be in set aside. There were also small areas of Urban and Non Agricultural Land, Woodland and Open Water.

The altitude of the sites varies between 40m AOD (Site 2) and 15m AOD (Sites 3 and 4). The land is typically flat to gently sloping (0 - 3°) with variable aspect.

1.3 Climate

As all four sites lie close to each other, one set of climatic data was used for all of the sites.

Grid Reference	: TA 031 581
Altitude (m)	: 30
Accumulated Temperature above 0°C (January-June)	: 1356 day°C
Average Annual Rainfall (mm)	: 684
Climatic Grade	: 1
Field Capacity Days	: 166
Moisture Deficit (mm) Wheat	: 101
Moisture Deficit (mm) Potatoes	: 91

1.4 Geology and Soils

All of the sites are underlain by deposits of Cretaceous Chalk. Site 2 and the additional land east of the General Hospital are covered by deposits of boulder clay, as are the north and east of Site 3. The south-west of Site 3 and the north-west of Site 4 are covered by deposits of glacial sand and gravel and the south of Site 3 and the south and east of Site 4 are covered by glaciofluvial sheet deposits.

The soils on the sites surveyed correspond to the Burlingham 2 and Hunstanton Associations, as mapped by the Soil Survey and Land Research Centre.

2.1 ADDITIONAL LAND EAST OF GENERAL HOSPITAL

2.1.1 Location

The site lies around Grid Reference TA 034 586, to the east of East Riding General Hospital. It covers a total area of 2.5 ha, all of which was in agricultural use at the time of survey.

2.1.2 Soils and Drainage

The soils on this site are formed in boulder clay deposits and profiles are imperfectly drained, falling in Wetness Class III. The soils are stoneless to very slightly stony with medium clay loam or sandy clay loam topsoils and upper subsoils overlying gleyed, slowly permeable heavy clay loam lower subsoils.

2.1.3 *Agricultural Land Classification Grades*

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

2.1.4 Subgrade 3a

All of this site falls in Subgrade 3a. Profiles are imperfectly drained (Wetness Class III) with medium clay loam or sandy clay loam topsoils and upper subsoils overlying gleyed, slowly permeable heavy clay loam lower subsoils at between 45cm and 50cm depth. This land is, therefore, restricted to Subgrade 3a by soil wetness limitations.

2.2 DRIFFIELD SITE 2

2.2.1 Location

This site lies around Grid Reference TA 028 588, on the north-eastern side of Driffield. It covers a total area of 9 ha, all of which was under ley grass at the time of survey.

2.2.2 Soils and Drainage

The soils on this site are formed in boulder clay deposits and profiles are imperfectly or poorly drained, falling in Wetness Classes III or IV. The soils are stoneless to very slightly stony with medium clay loam or sandy clay loam topsoils, and in places upper subsoils, overlying gleyed, slowly permeable sandy clay loam or heavy clay loam.

2.2.3 Agricultural Land Classification Grades

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2		
3a	3.4	37.8
3b	5.6	62.2
4		
5		
(Sub total)	(9.0)	(100)
Urban		
Non Agricultural		
Woodland - Farm		
- Commercial		
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)		
TOTAL	9.0	100

2.2.4 Subgrade 3a

Subgrade 3a land occurs in the north of the site. Profiles are imperfectly drained (Wetness Class III) with, typically, medium clay loam or sandy clay loam topsoils and upper subsoils overlying gleyed and slowly permeable sandy clay loam or heavy clay loam lower subsoils at between 45cm and 50cm depth. Soil wetness is the factor which restricts this land to Subgrade 3a.

2.2.5 Subgrade 3b

Land in this subgrade occurs in the centre and south of the site. Profiles are typically poorly drained (Wetness Class IV) with medium clay loam topsoils overlying gleyed and slowly permeable sandy clay loam or heavy clay loam subsoils at between 30cm and 40cm depth. Soil wetness and workability limitations restrict this land to Subgrade 3b.

2.3 DRIFFIELD SITE 3 PLUS ADDITIONAL AREA

2.3.1 Location

The site lies around Grid Reference TA 036 581, on the east side of Driffield. It covers a total area of 34.1 ha of which 32.2 ha was in agricultural use at the time of survey.

2.3.2 Soils and Drainage

There are three distinct soil types found on this site. The first consists of well drained profiles (Wetness Class I) where medium-textured topsoils and upper subsoils overlie chalky gravel at variable depth; the second consists of imperfectly or poorly drained boulder clay soils (Wetness Classes III and IV) where medium-textured topsoils and, in places, upper subsoils, overlie slowly permeable sandy clay loam or heavy clay loam; the third soil type consists of poorly drained soils of glaciofluvial origin (Wetness Class IV) where medium to heavy-textured topsoils overlie slowly permeable heavy-textured subsoils. These soil types occur in the south-west, the north and east, and the south of the site respectively.

2.3.3 Agricultural Land Classification Grades

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2		
3a	20.1	58.9
3b	12.1	35.5
4		
5		
(Sub total)	(32.2)	(94.4)
Urban	0.1	0.3
Non Agricultural		
Woodland	1.6	4.7
Agricultural Buildings		
Open Water	0.2	0.6
Land not surveyed		
(Sub total)	(1.9)	(5.6)
TOTAL	34.1	100

2.3.4 Subgrade 3a

Subgrade 3a land occurs principally in the north and centre of the site. Two main soil types fall within this subgrade. The first consists of medium clay loam topsoils overlying medium clay loam or sandy clay loam subsoils. Profiles are well drained (Wetness Class I) but topsoils and upper subsoils are slightly stony (containing around 8% very small, small and medium sized chalk stones) while lower subsoils are very stony, with around 50% very small, small and medium-sized chalk stones. This land is limited to Subgrade 3a by a soil droughtiness limitation and a pattern limitation.

The second soil type consists of imperfectly drained profiles (Wetness Class III) where medium clay loam or sandy clay loam topsoils and upper subsoils overlie gleyed and slowly permeable sandy clay loam or heavy clay loam lower subsoils at around 50cm depth. The ALC grade of this land is limited by soil wetness restrictions.

2.3.5 Subgrade 3b

Two areas of Subgrade 3b land occur on the site - one in the south and one in the north. In both cases profiles are poorly drained, falling in Wetness Class IV, with medium clay loam topsoils (or heavy clay loam in the south) overlying gleyed and slowly permeable sandy clay loam or heavy clay loam subsoils (in the north of the site) or heavy clay loam, heavy silty clay loam or silty clay subsoils (in the south). The slowly permeable subsoils typically begin at between 30cm and 40cm depth and the land is restricted to Subgrade 3b by soil wetness and topsoil workability limitations, which are more severe than on the adjoining Subgrade 3a land.

2.3.6 Urban

This includes a construction compound in the south-west of the site.

2.3.7 Woodland

This category includes belts of woodland in the centre and east.

2.3.8 Open Water

A recently dug pond in the south of the site has been mapped as Open Water.

2.4 DRIFFIELD SITE 4 PLUS ADDITIONAL AREA

2.4.1 Location

The site lies around Grid Reference TA 035 475, on the south-eastern side of Driffield. It covers a total area of 18ha of which over 99% was in agricultural use at the time of survey.

2.4.2 Soils and Drainage

Two main soil types occur on this site. The first consists of well drained (Wetness Class I) profiles where medium-textured topsoils and upper subsoils overlie chalky gravel at variable depth. The second consists of imperfectly or poorly drained soils which fall in Wetness Classes III or IV. Typically medium-textured topsoils and, in places, upper subsoils, overlie gleyed and slowly permeable medium to heavy-textured lower subsoils.

2.4.3 Agricultural Land Classification Grades

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2	7.3	40.1
3a	7.4	40.7
3b	3.4	18.7
4		
5		
(Sub total)	(18.1)	(99.5)
Urban	0.1	0.5
Non Agricultural		
Woodland		
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)	(0.1)	(0.5)
TOTAL	18.2	100

2.4.4 Grade 2

Grade 2 land occurs in the north-west of this site. Profiles are well drained falling in Wetness Class I, with medium silty clay loam topsoils overlying sandy clay loam, medium silty clay loam or medium clay loam subsoils. Topsoils and upper subsoils are slightly stony, containing around 8% very small to medium-sized chalk stones, while very stony lower subsoils begin at between 40cm and 70cm depth. These lower subsoils contain up to about 50% chalk stones and the land is limited to Grade 2 by slight soil droughtiness.

2.4.5 Subgrade 3a

Subgrade 3a land occurs in the centre and south of the site. Profiles are well to imperfectly drained, falling in Wetness Classes I, II or III, with medium clay loam or medium silty clay loam topsoils overlying similar or heavier-textured (heavy clay loam or heavy silty clay loam) subsoils. The subsoils are often gleyed and slowly permeable layers occur in places at around 60cm depth. Soil wetness restrictions limit some of this land to Subgrade 3a and, although some profiles meet the requires of Grades 1 or 2, a pattern limitation prevents these being mapped as a separate unit.

2.4.6 Subgrade 3b

Land in this subgrade occurs in the east of the site and in a small area in the west. Profiles are typically poorly drained, falling in Wetness Class IV, with medium clay loam or medium silty clay loam topsoils overlying gleyed and slowly permeable clay or silty clay subsoils at around 25cm depth. Soil wetness restrictions, therefore, restrict this land to Subgrade 3b.

2.4.7 Urban

This category includes the house and gardens at Meadow Gate in the north-east of the site.

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