AGRICULTURAL LAND CLASSIFICATION

GOOLE/HOOK LOCAL PLAN
SITES SURVEYED FOR BOOTHFERRY BOROUGH COUNCIL'S
INDUSTRIAL LAND SUITABILITY STUDY

ADAS
Leeds Regional Office

February 1991
2FCS 5205

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1. INTRODUCTION

Land covering a total area of 282 ha was surveyed on 6 separate sites around Goole.

Survey work was carried out in January 1991 when soils were examined by hand auger borings at 100 metre intervals at points predetermined by the National Grid. The density of borings was one boring per hectare. Where necessary additional borings were made to check and refine grade boundaries.

All assessments of agricultural land quality were made using the methods described in the "Agricultural Land Classification of England and Wales (MAFF 1988)".

CLIMATE

There is little variation in climate between the sites and the data below is representative of climatic conditions on all 6 sites. Average Annual Rainfall (AAR) is approximately 600 mm. Accumulated temperature (ATO) above 0°C between January and June is about 1410 day°C and the average duration at which the land is at field capacity is approximately 125 days per year. These factors indicate there is no overall climatic limitation on ALC grade.

LAND USE

All of the agricultural land surveyed is in arable use except for some parts of sites 1 and 6.

Summer soil moisture deficits of 110 mm and 105 mm for wheat and potatoes respectively indicate that soil droughtiness may be a limiting factor where light textured soils are dominant.

RELIEF

Land at the 6 sites surveyed is flat and altitude varies from 2 to 5 m above ordnance datum. Land on each side of field boundaries and drainage ditches

differs in height at some locations by 1-2 m as a result of the warping processes that formed most soils in the Goole district.

GEOLOGY AND SOILS

Soils on most parts of the 6 sites are formed on recent, often calcareous, silt loam, silty clay loam or silty clay marine alluvium (warp), which forms a cover of variable thickness over the underlying lacustrine clays. The warp can be a result of either natural or artificial flooding. Where the boundary between these two deposits occurs within auger depth it is often marked by a buried topsoil. This is particularly noticeable in parts of site 4 (north of Rawcliffe Road) where the buried topsoil occurs at a depth of about 50 cm from the surface. Glacio fluvial sand lenses and patches are also common on sites 1 and 2 (Howdendyke and Boothferry Bridge) where they vary in thickness from over a metre to just a few centimetres on top of the lacustrine clay. This clay occurs at the surface only in parts of site 1.

Most soil profiles on the warp consist of calcareous medium or heavy silty clay loam or silty clay topsoils over similarly textured subsoils. In places where the warp is thin lower subsoils are formed on the buried lacustrine clay. Profiles formed on calcareous silt loams or sandy silt loam are less common and usually occur only in areas close to the river or which have been artificially warped. Non calcareous alluvial soils consisting of heavy silty clay loam or silty clay topsoils over slowly permeable silty clay subsoils are common on parts of sites 1, 2 and 3. The patches of sandy soil in sites 1 and 2 have a medium sandy loam or loamy medium sand topsoil over loamy medium sand or medium sand upper subsoils, again followed by lacustrine day at depths of between 40 and 100 cm. Where the lacustrine clay occurs at the surface in site 1 heavy clay loam topsoils 30-35 cm in thickness overlie gleyed slowly permeable clay subsoils.

DRAINAGE

The calcareous warp soils although often heavy in texture do not usually contain slowly permeable layers even though they are sometimes gleyed between 35 and 50 cm depth. Profiles thus fall within Wetness Class I. Subsoils of lacustrine clay or non-calcareous alluvial clay, however, are slowly permeable and profiles of this type fall within Wetness Classes II, or III depending on depth to the slowly permeable horizon. The sand soils are free from any drainage impediment and usually fall within Wetness Class I.

SITE 1 - HOWDENDYKE

Site 1 is located around National Grid Reference SE 754270 between the M62 to the north and the River Ouse to the south.

The site covers an area of approximately 42 ha, 78% of which is in agricultural use. The remaining 22% in urban use consists of factories, sewage works and associated vacant land.

Agricultural Land Classification Grades

The ALC grades occurring on this site are as follows:

Grade	Hectares	Percentage of Total Site Area
2	11.2	26.5
3a	12.1	28.5
3b	9.6	22.6
Urban	9.4	22.4
TOTAL	42.3	100.0

Grade 2

Land in this grade occurs along Husbandman's Drain and in the vicinity of Ouse Carr. Two smaller areas occur on the eastern boundary and adjoining the M62.

Profiles are well drained and fall within Wetness Class I. Soils in the Husbandman's drain area consist of calcareous heavy silty clay loam topsoils over similar or heavier subsoils to depth. Workability problems associated with the heavy topsoil texture, restrict land in this area to grade 2.

Soils in the Ouse Carr location of this grade consist of medium sandy loam to medium silty clay loam topsoils over similar subsoils. Slight soil droughtiness on soils with medium sandy loam topsoils and workability problems on soils with medium silty clay loam topsoils are the limiting factors on land within this grade.

Subgrade 3a

Land in this subgrade occurs between the M62 and the Howdendyke industrial site.

Soils are imperfectly drained and fall within Wetness Class III. Topsoils consist of fine sandy loam or medium clay loam over sandy clay loam or heavy clay loam upper subsoils passing to silty clay or clay at depth. Lower subsoils are gleyed and slowly permeable and soil wetness and workability are the main limiting factors on land within this subgrade.

Subgrade 3b

This subgrade occurs in patches across the site. The area adjoining the M62 west of Ouse Carr consists of loamy medium sand topsoils over similar subsoils which pass to medium sand at depth in some locations. Soil droughtiness is the main limitation on land within this area of the subgrade.

Land in the remaining areas of the subgrade consists of heavy clay loam topsoils over slowly permeable clay subsoils. Soil wetness (Class III) and workability are the main limitations on land within these areas of the subgrade.

Urban

Land in this grade consists of factory buildings, sewage works and associated maintenance yards.

SITE 2 - BOOTHFERRY BRIDGE

Site 2 is located around National Grid Reference SE 734256 to the south of the River Ouse. It is bounded by the M62, Boothferry Road and Hook Lane.

The site covers an area of approximately 35 ha, 98% of which is in agricultural use. The remaining 2% of urban land consists of a disused roadway.

Agricultural Land Classification Grades

The ALC grades occurring on this site are as follows:

Grade	Hectares	Percentage of Total Site Area
1	11.3	32.4
2	6.7	19.2
3a	6.6	18.9
3b	9.5	27.2
Urban	0.8	2.3
TOTAL	34.9	100.0

Grade 1

Land in this grade occurs in the northern part of the site, close to the River Ouse.

Soils consist of calcareous silt loam to medium silty clay loam topsoils over similar subsoils. They are well drained and fall into Wetness Class I. There are no climatic or soil limitations on the use of land within this grade.

Grade 2

Land in this grade occurs in 2 separate parts of the site. The area in the centre contains calcareous medium silty clay loam topsoils over heavy silty clay loam subsoils which are slowly permeable between 40 cm and 60 cm depth. These soils fall within Wetness Classes II and III and are limited to Grade 2 by slight wetness and workability problems.

The area adjoining the M62 at the southern end of the site consists of medium clay loam or sandy loam topsoils over loamy medium sand or medium sandy loam subsoils. These soils are well drained (Wetness Class I) but are limited to Grade 2 by slight droughtiness.

Subgrade 3a

Land in this subgrade occurs towards the north eastern and south western edges of the site. In both locations topsoils consist of calcareous, medium or heavy silty clay loams over heavy silty clay loam at depth. Most profiles fall within Wetness Classes II and III and are restricted to subgrade 3a by soil wetness and workability problems.

Subgrade 3b

Land in this subgrade occurs around and to the north of Town drain in the centre of the site. Soils consist of non-calcareous heavy silty clay loam or silty clay topsoils over slowly permeable heavy silty clay loam or silty clay subsoils.

Profiles in this type are imperfectly drained and fall within Wetness Class III. They are limited to subgrade 3b by soil wetness and workability problems which are more severe than on the adjoining grade 2 and subgrade 3a land.

Urban

Land in this grade consists of a disused part of the A614.

SITE 3 - HOOK LANE

Site 3 is located around National Grid Reference SE 745254 immediately south of the River Ouse between the M62 and Hook village.

The site covers an area of approximately 39 ha, almost all of which is in agricultural use. The only non-agricultural land consists of a track crossing site.

Agricultural Land Classification Grades

The ALC grades occurring on this site are as follows:

Grade	Hectares	Percentage of Total Site Area
1	8.2	20.7
2	10.2	25.7
3a	16.9	42.2
3b	4.2	10.6
Urban	0.3	0.8
TOTAL	39.6	100.0

Grade 1

Land in this grade consists of calcareous silt loam topsoils over similar subsoils. These are well drained and fall within Wetness Class I. There are no climatic or soil limitations on the use of land within this grade.

Grade 2

Grade 2 land consists of calcareous silt loam, medium silty clay loam or heavy clay loam topsoils over heavy silty clay loam or silty clay subsoils. Profiles are well to moderately well drained and fall into Wetness Classes I or II. Soil wetness and workability problems due to heavy topsoil texture are the limiting factors on land within this grade.

Subgrade 3a

Land in this subgrade is widespread, especially in the southern part of the site.

Soils consist of calcareous heavy silty clay loam topsoils over similar subsoils or, in some locations, medium sand. Soils are well to imperfectly drained and fall into Wetness Classes I and III. Soil workability and wetness are the limiting factors where subsoils consist of heavy silty clay. Profiles containing medium sand subsoils are limited to subgrade 3a by droughtiness. Both types of profile occur in close proximity.

Subgrade 3b

Land in subgrade 3b occurs as a tongue protruding from the western boundary of the site. Topsoils consist of non-calcareous heavy silty clay loam over slowly permeable heavy silty clay loam to silty clay subsoils. Soils of this type are imperfectly drained and fall within Wetness Class III. Soil wetness and workability problems are the limiting factors on land within this subgrade.

Urban

This consists of a track running from north to south across the site.

SITE 4 - RAWCLIFFE ROAD

This site is located around National Grid Reference SE 727220 to the north of Rawcliffe Road immediately east of Junction 36 on the M62. The site covers an area of approximately 45 ha, 97% of which is in agricultural use. The remaining 3% consists of tracks, storage sheds and residential land.

Agricultural Land Classification Grades

The ALC grades occurring on this site are as follows:

Grade	Hectares	Percentage of Total Site Area
2	44.1	96.9
Urban	1.4	3.1
TOTAL	45.5	100.0

Grade 2

Land in this subgrade dominates the site. Soils consist of calcareous medium or heavy silty clay loam or silty clay or non calcareous medium clay loam topsoils over similar upper subsoils. Lacustrine clay is common at depth especially in the western part of the site. The lacustrine clay is slowly permeable and most profiles fall within Wetness Class II. Slight soil wetness and workability problems are the main limiting factors on land within this grade.

Urban

This consists of Parson's Lane, storage sheds, associated yards and residential land.

SITE 5 - POTTER GRANGE SOUTH

The site is located around National Grid Reference SE 728228 north of the Dutch River and Goole-Knottingley railway. It covers approximately 62 hectares, 75% of which is in agricultural use. At the time of the survey all land was in arable use and under cereals. Non agricultural land (25%) consists mainly of rough ground, derelict railway land and a track running along a dismantled railway.

Agricultural Land Classification Grades

The ALC grades occurring on this site are as follows:

Grade	Hectares	Percentage of Total Site Area
2	46.4	74.6
Non Agricultural	7.7	12.4
Urban	8.1	13.0
TOTAL	62.2	100.0

Grade 2

All arable land on the site falls within this grade. Soils consist of medium or heavy calcareous silty clay loam or occasionally silty clay topsoils over heavy silty clay loam or silty clay subsoils. Sandy silt loam and fine loamy sand occur at depth in places. All soils are well drained and fall within Wetness Class I. Soils of this type are limited to Grade 2 by slight workability problems.

Non Agricultural

Land in this category includes disused and derelict land and scrub.

Urban

This consists of tracks, rubble and derelict railway land around Goole Junction.

SITE 6 - HOOK PASTURE

Site 6 is located around National Grid Reference SE 738222 immediately south of the Dutch River west of the A161 in Old Goole.

The site covers an area of approximately 58 ha, 80% of which is in agricultural use. The remaining 20% in urban use consists of roads, farm buildings (1.7%), a factory, a scrap yard and a waste disposal site.

Agricultural Land Classification Grades

The ALC grades occurring on this site are as follows:

Grade	Hectares	Percentage of Total Site Area
1	41.6	71.2
2	3.5	6.0
3a	0.9	1.5
5	0.8	1.4
Urban	10.6	18.2
Farm Buildings	1.0	1.7
TOTAL	58.4	100.0

Grade 1

This is the dominant grade on this site. Soils consist of calcareous fine sandy silt loams or silt loams over similar subsoils. All soils are well drained, even though subsoils are mottled, and fall within Wetness Class I. There are no limitations on agricultural land use.

Grade 2

Grade 2 land occurs in 3 small patches. The 2 areas on the western and northern sides of the site consist of calcareous medium or heavy silty clay loam topsoils over heavy silty clay loam subsoils. Soils of this type fall within Wetness Classes I and II and are limited to Grade 2 by slight wetness and workability problems. The third area of Grade 2 land adjoining Cottingham Street consists of disturbed land containing bricks, cinders and rubble in the profile. This area is limited to Grade 2 by topsoil stone content.

Subgrade 3a

This small area consists of calcareous heavy silty clay loam topsoils over slowly permeable heavy silty clay loam at 40 cm depth. These soils fall within Wetness Class III and are limited to subgrade 3a by wetness and workability problems.

Grade 5

Land in this grade occurs on the northern edge of the site. It consists of large grass topped mounds which may possibly have been waste disposal areas. Soils consist of stony silty clay loams to depth. Gradients on the sides of the mounds are up to 30° and the area is limited to Grade 5 for this reason.

Urban

Access roads, a scrap yard, factory buildings and a waste disposal site fall into this category.

Farm Buildings

This consists of Bridge House Farm.

RPG
Leeds Regional Office
February 1991

MAPS