AGRICULTURAL LAND CLASSIFICATION

SEDGEFIELD LOCAL PLAN

WHITWORTH HALL, SPENNYMOOR

COUNTY DURHAM

SEPTEMBER 1992

ADAS

LEEDS STATUTORY GROUP

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SEDGEFIELD LOCAL PLAN

WHITWORTH HALL

SPENNYMOOR

SUMMARY

Land covering a total of 231 ha was surveyed at Whitworth Hall, Spennymoor. 78% of this was in agricultural production, of which approximately 29.5ha has been classified as subgrade 3a, 141.0ha as subgrade 3b, 8.1ha as grade 4 and 1.8 ha as grade 5.

The area is extensively covered by boulder clay and contains areas of disturbed soil that have been restored from old coal workings. Topsoil textures consist mainly of medium clay loam overlying heavy clay loam or clay subsoils. Most soils are poorly drained and restricted by soil wetness to subgrade 3b. Lighted textured soils do occur in isolated patches, where permeable imperfectly drained upper horizons are deeper. The wetness restriction on soils of this type is not as severe and the land is limited only to subgrade 3a.

A small area of old surface workings with very thin or no topsoil occurs in the south of the site and is restricted to grade 4.

An area of steep gradients occurs in the north on the edge of the Wear valley. Here, two areas, are limited to grade 4 and one to grade 5 by slopes steep enough to severely restrict the use of agricultural machinery.

A summary of soil types, ALC grades and limitations can be found in the appendix.

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MAP

1. INTRODUCTION AND SITE CHARACTERISTICS

The site at Whitworth Hall, Spennymoor is located around Grid Reference NZ 243347, immediately to the south of the River Wear and north west of Spennymoor. It covers an area of 231 ha, the majority of which is in agricultural use.

Survey work was carried out in September 1992 when soils were examined by hand auger borings at 100m intervals predetermined by the National Grid. The land quality was assessed using the methods described in "Agricultural Land Classification of England and Wales, Revised guidelines for assessing the quality of agricultural land" (MAFF 1988).

Climate

Grid Reference	NZ 243347
Altitude (m)	100
Accumulated Temperature above 0°C (January-June)	1261 day°C
Average Annual Rainfall (mm)	683
Climatic Grade	2
Field Capacity Days	170
Moisture Deficit (mm) Wheat:	88
Moisture Deficit (mm) Potatoes:	73

Land Use and Relief

At the time of the survey 78% of the land was in agricultural production. Large areas of woodland constituted a non-agricultural use and accounted for almost 14% of the land. The remainder consisted of 7% urban use and 0.3% was not surveyed.

Of the agricultural land the majority was under permanent pasture (a small part of which was being used as a deer park), with smaller areas in arable use.

Most of the site south of Charhill Wood is gently sloping, with an overall easterly aspect. North of Charhill Wood the land falls away very steeply to the north dropping from 90m to 50m onto the flood plain of the River Wear.

Geology and Soils

The whole of the site is underlain by Carboniferous Coal Measures over which are deposits of boulder clay and other glacial drift.

Topsoils over most of the site consist of either medium or heavy clay loam. Sandy clay loam topsoils occur in some areas in the east and south where weathered fragments of underlying sandstone have mixed with the boulder clay to form slightly lighter textures. Subsoils on the whole are heavy textured (generally clay or heavy clay loam). On the flood plain on the River wear they are also stony.

As a result of the predominantly heavy textures most profiles are slowly permeable at depth and thus imperfectly or poorly drained (wetness Class III or IV) and soil wetness is a restricting factor over the majority of the site.

An undefined area in the north and central part of the site has been worked in the past for opencast coal extraction, and soils examined here show the typically heavy textures and compact nature of profiles that have been disturbed.

2. AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on the site are as follows:-

Grade/Subgrade	Hectares	Percentage of Total Area
3a	29.55	12.8
3b	141.09	61.0
4	8.16	3.5
5	1.80	0.8
(Subtotal)	(180.60)	(78.1)
Non-Agricultural	31.96	13.8
Urban	15.66	6.8
Agricultural Buildings	2.34	1.0
Not Surveyed	0.64	0.3
TOTAL	231.2	100

Subgrade 3a

Land in this subgrade occurs in the eastern and southern parts of the site. Soils in this subgrade tend to be quite variable, but typically consist of medium or sandy clay loam topsoils overlying heavy clay loam or sandy clay loam upper subsoils which in turn overlie heavy clay loam or clay lower subsoils. The heavy textured subsoils are slowly permeable in nature below about 45cm depth and profiles are therefore imperfectly drained and fall into wetness Class III, the land being limited to subgrade 3a by soil wetness.

Subgrade 3b

Subgrade 3b land occurs over most of the northern, western and central parts of the site. Soils typically consist of medium clay loam topsoils (heavy clay loam in places) overlying heavy textured subsoils of clay or heavy clay loam over clay. In the areas of restored land, adjacent to Whitworth Hall and on the flood plain

of the River Wear topsoil textures are heavier and more compact, and also contain stones of varying sizes and composition. Subsoils in the restored areas are intensely gleyed, slowly permeable and hard.

Profiles on all the subgrade 3b land are poorly drained (wetness Class IV) and limited to the subgrade by soil wetness.

Grade 4

Grade 4 land occurs in the south east and northern parts of the site. The south eastern area consists of land which has been disturbed by old mine workings. It now has virtually no topsoil resources and is limited to Grade 4 for this reason.

The Grade 4 land in the northern part of the site occurs on the steeply sloping land above the Wear Valley. Here slopes of 17° restrict the use of farm machinery and the area is limited to Grade 4 for this reason.

Grade 5

Land in grade 5 occurs on the steep slopes above the river flood plain in the north. Slopes exceed 18° and some areas are suffering from erosion as a result. The use of farm machinery is virtually impossible on such gradients and the land is restricted to Grade 5 for this reason.

Non Agricultural Land

The areas of non-agricultural land are made up of areas of farm woodland, small areas of parkland and a number of rough farm tracks.

Urban and Agricultural Buildings

The areas of urban use consist of Whitworth Hall in the west of the site, various farms and their outbuildings, some private housing, old mine workings and a number of permanent roads or tracks between the above.

Resource Planning Team
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APPENDIX 1

SUMMARY OF ALC GRADES ON THE WHITWORTH HALL, SPENNYMOOR SITE OF THE SEDGEFIELD LOCAL PLAN

Subgrade 3a:- Eastern and Southern parts of site

12.8%of Total Site Area	Soil Types	Limiting Factor
	Medium clay loam topsoils (some places sandy clay loam), over sandy clay loam, medium sandy loam or heavy clay loam upper subsoils. These overlie heavy clay loam or clay lower subsoils.	Soil Wetness

Subgrade 3b:- Northern, Western and Central part of site.

61.0% of Total Site Area	Soil Types	Limiting Factor
	Medium clay loam or heavy clay loam topsoil over heavy clay loam or clay subsoil (some places occur overburden)	Soil Wetness

Grade 4:- South eastern part of site.

Soil Types	Limiting Factor
Restored heavy clay loam subsoils	Lack of Topsoil

Grade 4:- Northern part of site.

3.5% of Total Site Area (SE and northern parts of site)	Soil Types	Limiting Factor
	N/A	Gradient

Grade 5:- Northern part of site.

0.8% of Total Site Area	Soil Types	Limiting Factor
	N/A	Gradient