ADAS LAND MANAGEMENT SERVICES

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A D A S

AGRICULTURAL LAND CLASSIFICATION

Water Lane, Clifton

York

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AGRICULTURAL LAND CLASSIFICATION REPORT ON LAND AT WATER LANE, CLIFTON, YORK

1.1 INTRODUCTION

The site is located around national Grid Reference SE 597543 between the northern outskirts of York and the Clifton Moor commercial development, west of the B1363 Helmsley road. It covers an area of 27.2 ha most of which consists of derelict grassland and the remains of a wartime military base. Agricultural Land Classification (ALC) Survey work was carried out in September 1989 when soils were examined by hand auger borings to a depth of one metre. Borings were made at 26 points predetermined by the National Grid giving a density of almost 1 boring per hectare. Additional borings were made where necessary to check and refine grade boundaries.

Land quality assessments were made using the revised guidelines published by MAFF in 1988. Definitions of all terms used in this report can be found in this publication. Brief descriptions of the five land quality grades defined by MAFF are given below:-

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 and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to slight droughtiness or 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.

Grade 3 - good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where 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 level of yields. It is mainly suited to grass with occasional arable crops (eg 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 very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

1.2 CLIMATE AND RELIEF

Average annual rainfall at Clifton is 629 mm and the accumulated temperature above 0°C (January to June) is 1385 day °C. The land is at field capacity for about 141 days each year. The temperature and rainfall figures indicate that there is no overall climatic limitation on ALC grade.

Most of the site is virtually level and lies at an altitude of about 15 m aod.

1.3 GEOLOGY SOILS AND DRAINAGE

Soils over most of the site are formed on heavy, stoneless glaciolacustrine clay. Topsoils in this material consist of heavy clay loam about 20 cm in thickness over stoneless clay subsoils some of which contain thin seams and lenses of sandy material. Lighter soils are more common near the southern boundary where there is a patchy cover of variable sandy and loamy postglacial drift over the clay. Topsoils in these areas vary from medium clay loam to sandy loam and overlie subsoils which can be of sandy clay loam, sandy loam or clay depending on the thickness of postglacial drift over the underlying clay.

Drainage over most of the site is poor. The small areas of light coarse loamy soil near the southern boundary, however, are better drained with no slowly permeable clayey layers at less than 55-60 cm from the surface. These soils fall generally within Wetness Class III. The more common, heavy clay loam over clay soils, are slowly permeable immediately below the topsoil at 20-25 cm depth and are thus placed in Wetness Class IV. On the lighter soils in the south summer droughtiness is likely to be a problem in some years.

2. AGRICULTURAL LAND CLASSIFICATION

Grade	Area (ha)	% of total land area
2	2.3	8%
3a	2.7	10%
3b	13.5	50%
Non agricultural	8.7	32%
	27.2	100

2.1 GRADE 2

The small area of Grade 2 land adjoining the southern edge of the site consists of sandy loam topsoils over similar upper subsoils which pass into clay below about 55-60 cm depth. These soils fall within (Wetness Class III) and are easy to work, but are likely to suffer from slight droughtiness and are restricted to Grade 2 for this reason.

2.2 SUBGRADE 3a

This subgrade occurs as a narrow strip adjoining the grade 2 land in the south and as a smaller patch near the playing fields on the eastern boundary. It corresponds with areas containing variable thicknesses of loamy drift over the underlying clay. Top and upper subsoils are usually of medium clay loam or occasionally sandy clay loam over clayey lower subsoils. These soils fall largely within Wetness Class III and are limited to subgrade 3a by slight wetness and workability problems.

2.3 SUBGRADE 3b

Subgrade 3b land covers the remainder of the agricultural land. Soils are predominantly heavy and consist of heavy clay loams or heavy silty clay loams over clay or silty clay subsoils. These soils all fall within Wetness Class IV and are limited to the subgrade by wetness and workability problems which are more severe then on the adjoining subgrade 3a land.

NON-AGRICULTURAL

This consists of the remains of the military base and adjoining areas of scrub and woodland.

Reference

MAFF (1988) Revised guidelines and criteria for grading quality of agricultural land.

APPENDIX

SCHEDULE OF SOIL AUGER BORINGS - GLOSSARY OF ABBREVIATIONS USED

NA	Non agricultural
msl	Medium sandy loam
mcl	Medium clay loam
hcl	Heavy clay loam
scl	Sandy clay loam
hzcl	Heavy silty clay loam
zc	Silty clay
c	Clay

MOTTLING

Col	Colour
Abun	Abundance
Cont	Contrast
O	Ochreous
G	Grey
F	Few
C	Common
M	Many
F	Faint
D	Distinct
P	Prominent

PACKING DENSITY

M	Medium
H	High

Soil textures are defined according to the MAFF Agricutlural Land Classification System.

All soil colours (eg 10YR4/2) are defined according to the Munsell soil colour system (Munsell Colour Company Inc; Baltimore, Maryland, 21218, USA)

SCHEDULE OF SOIL AUGER BORINGS

BORING	DEPTH	TEXTURE	COLOUR	COL	MOTTLES ABUND	CONT	STONY	PACK DENSITY
001	0-20	hcl	10YR32	O	C	D		H
	20-45	c	10YR52	OG	M	P		H
	45-100	C	75YR42	OG	M	D		H
002	0-20	hcl	10YR32	0	C	D		
	20-60	c	10YR52	OG	M	P		H
	60-100	c	75YR42	OG	M	D		H
003	NA							
004	NA							
005	0-15	hcl	10YR	0	C	D		
	15-45	c	10YR52	OG	M	P		H
	45-100	c	75YR52	OG	M	D		H
006	0-15	hcl	10YR32	O	C	D		
	15-45	c	10YR52	OG	M	P		H
	45-100	c	75YR44	OG	M	D		H
007	0-20	hcl	10YR32	O	C	D		
	20-50	c	10YR52	OG	M	P		H
	50-100	c	75YR42	OG	M	D		H
008	0-20	hzcl	10YR41	O	M	P		
	20-45	zc	10YR52	OG	M	P		H
	45-100	c	75YR52	OG	M	D		H
009	NA							
010	NA							
011	NA							
012	0-20	hcl	10YR32	O	C	D		
	20-60	c	10YR53	OG	M	P		H
	60-100	c	75YR42	OG	M	D		H
013	0-20	hcl	10YR41	O	C	D		
	20-50	c	10YR52	OG	M	P		H
	50-100	C	75YR44	OG	C	D		H
014	0-20	hcl	10YR32	OG	C	D		H
	20-100	c	75YR52	OG	M	P		H
015	NA							
016	0-25	hcl	10YR32	O	C	D		
	25-100	c	75YR44	OG	M	D		H
017	0-25	hcl	10YR32	0		F		
	25-100	zc	75YR42	OG	M	P		

BORING	DEPTH	TEXTURE	MOTTLES COLOUR	MOTTLES COL	MOTTLES ABUND	MOTTLES CONT	STONY	PACK DENSITY
018	0-25	mcl	10YR32	O	C	D		
	25-45	hcl	10YR52	OG	C	D		
	45-100	zc	N5	OG	M	P		
019	0-25	dist.mcl	10YR32	O	F	D		
	25-45	mcl	10YR52	O	F	D		
	40-120	zc	N5	OG	M	P		
020	0-25	scl	10YR42	O	F	F		
	25-60	msl	10YR53	O	F	D		
	60-100	zc	N5	OG	M	P		
021	0-30	msl	10YR33					
	30-55	msl	10YR53	O	F	F		
	55-100	c	N5	OG	C	D		H
022	0-25	mcl	10YR42					
	25-55	mcl	10YR52	OG	C	D		
	55-100	zc	N5	OG	M	P		H
023	0-25	mcl	10YR42		C	D		
	25-50	mcl	10YR52	OG	C	D		
	50-120	c	N4	OG	M	P		H
024	0-25	mcl	10YR32	0	F	D		M
	25-35	mcl	10YR52	OG	C	D		H
	35-100	zc	75YR40	OG	C	D		H
025	0-25	msl	10YR32	O	C	D		
	25-55	msl	10YR52	OC	D	D		
	55-120	zc	75YR40	OG	M	P		H
026	0-25	msl	10YR42					
	25-55	msl	10YR53	O	C	D		
	55-75	scl	10YR63	OG	C	D		H
	75-120	zc	75YR50	OG	M	P		H