SANDS LANE, MIRFIELD
WEST YORKSHIRE

Agricultural Land Classification
and Statement of Physical Characteristics

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Resource Planning Team
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AGRICULTURAL LAND CLASSIFICATION AND STATEMENT OF PHYSICAL CHARACTERISTICS REPORT

SANDS LANE, MIRFIELD, WEST YORKSHIRE

INTRODUCTION

1. This report presents the findings of a detailed Statement of Physical Characteristics and Agricultural Land Classification (ALC) survey of 7.8 ha of land at Sands Lane, Mirfield.

2. The survey was carried out by the Farming and Rural Conservation Agency (FRCA) for the Ministry of Agriculture, Fisheries and Food (MAFF), in connection with a proposal to extract sand and gravel from the site, with an open water restoration.

3. The work was conducted by members of the Resource Planning Team in the Northern Region of FRCA . The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.

4. At the time of survey the agricultural land on the site was in ley grass.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:5,000. It is accurate at this scale but any enlargement would be misleading.

6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
1			
2			
3a	6.8	90.7	87.1
3b	0.7	9.3	9.0
4			
5			
Agricultural land not surveyed		N/A	
Other land	0.3	N/A	3.9
Total surveyed area	7.5	100	-
Total site area	7.8	-	100

7. The fieldwork was conducted at an average density of 1 boring per hectare. A total of 10 borings and 2 pits were examined.

FACTORS INFLUENCING ALC GRADE

Climate

8. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

9. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5 km grid datasets using the standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factor	*Units*	Values
Grid reference	N/A	SE 217 195
Altitude	m, AOD	45
Accumulated Temperature	day°C (Jan-June)	1376
Average Annual Rainfall	mm	734
Field Capacity Days	days	187
Moisture Deficit, Wheat	mm	97
Moisture Deficit, Potatoes	mm	58
Overall climatic grade	N/A	1

10. The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

11. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (ATO, January to June), as a measure of the relative warmth of a locality.

12. The combination of rainfall and temperature at this site mean there is no climatic limitation.

Site

13. Most of the site is level at an altitude of 40m A.O.D. The smaller parcel west of Sands Lane contains strongly sloping land (9°) in the extreme south east. The larger parcel contains a small terrace in the south east corner. Land slopes very steeply up to the small terrace about 10m above the rest of the site. Flood risk on the site is described in paragraph 15.

Geology and soils

14. The site is underlain by Carboniferous Coal Measures which are covered with sand and gravel then alluvium, according to BGS Sheet 77 and information provided by the applicant. Soils are developed from the alluvium and are uniform across the site. Topsoils are medium-silty clay loam over a medium or heavy silty clay loam subsoil. Both horizons are stoneless, and ungleyed. Profiles are assessed as Soil Wetness Class I.

A small area in the extreme south east contains disturbed topsoil profiles over a compacted shale material.

AGRICULTURAL LAND CLASSIFICATION

15. The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1, page 1.

Subgrade 3a.

This land contains deep well drained soil profiles (Wetness Class 1). Information indicates that frequent short or occasional medium term winter flooding will limit the land to Subgrade 3a. Short term is defined as not more than 2 days and medium is 2 - 4 days. Frequent is defined as more than once in 3 years and occasional once in 3 to once in 9 years.

Subgrade 3b.

Slopes of (9°) limit some land west of Sands Lane to Subgrade 3b. Remaining land in this Subgrade is limited by soil depth and soil pattern problems. This land is found in the south east of the site where profiles have been disturbed. Topsoils are occasionally shallow (less than 30cm deep) and subsoils comprise a compacted shale material.

16. **Statement of Physical Characteristics.**

One main soil type was identified on the site, description of which is given below. Topsoil and subsoil resources are shown on the accompanying maps along with soil thickness and volume information. Representative pit descriptions are given in Appendix II.

a). **Soil Type 1 (T1/S1).**

This soil type occurs across almost all agricultural land on the site. It has a medium textured topsoil over a medium to heavy textured subsoil. Both horizons are stoneless. A small area of disturbed land in the south east of the site does not have a mappable area of subsoil.

Topsoils.

T1. All topsoils on the site are included in this unit. They are normally a stoneless medium silty clay loam with a strongly developed structure. Mean depth of the topsoil is 30cm.

Subsoils.

S1. Again there is only one subsoil type on the site. It is generally medium silty clay loam or heavy silty clay loam and stoneless. It is brown with a strongly developed structure and a mean thickness of 90cm. (Note S1 is absent in the disturbed area in SE of the site).

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SOURCES OF REFERENCE

British Geological Survey (1978) *Sheet No 77, Huddersfield 1:50,000.* BGS: London.

Ministry of Agriculture, Fisheries and Food (1988) *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land.* MAFF: London.

Met. Office (1989) *Climatological Data for Agricultural Land Classification.* Met. Office: Bracknell.

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

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 or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due 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 land.

Grade 3: Good to Moderate Quality Land

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

APPENDIX II

SOIL PROFILE DESCRIPTIONS

Pit 1 T1/S1

Location	Adjacent to B3
Land Use	Ley grass
Weather	Mild, rain
Slope and aspect	0°

Depth	Horizon Description
0 - 32	Very dark greyish brown (10YR3/2); unmottled; medium silty clay loam; stoneless; moist; strongly developed fine subangular blocky; friable; > 0.5% biopores; common fine fibrous roots; non calcareous; gradual smooth boundary.
32 - 120	Brown (10YR5/3); unmottled, medium silty clay loam; stoneless; moist; strongly developed medium subangular blocky; friable; >0.5% biopores; common fibrous roots; non calcareous.

Pit 2 T1 (Disturbed)

Location	Adjacent to B6
Land Use	Ley grass
Weather	Mild, rain
Slope and aspect	0°

Depth	Horizon Description
0 - 29	Very dark grey (10YR3.1), unmottled; medium clay loam; 3% coal and cinder inclusions; moist; strongly developed medium subangular blocky; friable; > 0.5% biopores; common fine fibrous roots; non calcareous; abrupt wavy boundary to grey compacted shale.
29 +	Grey compacted shale.