

## AGRICULTURAL LAND CLASSIFICATION &amp; SOIL PHYSICAL CHARACTERISTICS

MEADOW LANE, ST IVES, CAMBS

## 1. BACKGROUND

The site, an area of 9.2 hectares, is the subject of an application by ARC Limited for the extraction of sand and gravel. MAFF surveyed the site in September 1991 to assess the agricultural land quality and the soil physical characteristics.

## 2. SITE PHYSICAL CHARACTERISTICS

2.1 Climate

Climate data for the site was obtained from the published agricultural climatic dataset (Met Office, 1989). This indicates that for this site's mid range altitude of 5m AOD the annual average rainfall is 545 mm (21"). This data also indicates that the field capacity days are 89 and moisture deficits are 119 mm for wheat and 115 mm for potatoes. These characteristics do not impose any climatic limitation on the ALC grading of the survey site.

2.2 Altitude and Relief

The land comprises a level floodplain of 5m AOD adjacent to the River Ouse.

## 3. AGRICULTURAL LAND CLASSIFICATION

3.1 The definitions of the Agricultural Land Classification (ALC) grades are included in Appendix 2.

3.2 The whole site is graded 3b (9.27 ha).

3.3 Subgrade 3b

Both parcels of land comprise the same soil type (described in paragraph 4.2). The clay topsoil texture and presence of a shallow slowly permeable layer imposes a significant workability and drainage

limitation. As a result the drainage status is assessed as wetness class III, wetness combined with heavy topsoil textures restricts the ALC grade to subgrade 3b (moderate quality agricultural land).

#### 4. SOIL PHYSICAL CHARACTERISTICS

##### 4.1 Geology

The geology of the area has been mapped on two occasions, firstly, in 1950, at a scale of 1" to 1 mile (Geological Survey of England and Wales, Sheet No 187) and secondly, in 1981, at a scale of 1:25,000 (The Institute of Geological Science). These maps show the site to comprise Holocene alluvium deposits overlying Oxford Clay.

##### 4.2 Soils

During this survey a detailed inspection of the soils identified a single soil type. This typically comprises heavy clay topsoils, which are occasionally calcareous, particularly on the land adjacent to the river. Subsoils are clayey, gleyed from 25 cm and slowly permeable from 35 cm. The soils over the whole site are stone free.

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Resource Planning Group

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## Description of soil physical characteristics.

TOPSOIL	Texture:	Clay (occasionally calcareous)
	Stone:	Negligible
	Depth:	25 cm
UPPER SUBSOIL	Texture:	Clay (occasionally calcareous)
	Stone:	Negligible
	Structure:	Moderately developed coarse angular blocky
	Consistence:	Firm
	Depth:	50 cm
LOWER SUBSOIL	Texture:	Clay
	Stone:	Negligible
	Structure:	Well developed very coarse prismatic
	Consistence:	Very firm
	Depth:	120 cm+

**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 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.

## REFERENCES

GEOLOGICAL SURVEY OF ENGLAND & WALES 1950. Drift edition geology sheet 187  
Huntingdon. Scale 1" to 1 mile.

INSTITUTE OF GEOLOGICAL SCIENCES 1981. The sand and gravel resources of the  
country around Huntingdon and St Ives, Cambridgeshire. Mineral  
Assessment Report No 54. Part of sheets TL16, 17, 26, 27, 36 and 37.  
Scale 1:25,000.

MAFF, 1988. Agricultural Land Classification of England & Wales (Revised  
Guidelines and Criteria for grading the quality of agricultural land).  
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METEOROLOGICAL OFFICE 1989. Climate data extracted from the published  
Agricultural Climatic Dataset.