

**AGRICULTURAL LAND CLASSIFICATION AND SOIL PHYSICAL CHARACTERISTICS****LAND AT HUSBANDS BOSWORTH, LEICESTERSHIRE****1 BACKGROUND**

1.1 The site, an area of 16.6 hectares is the subject of an application by Steetley Quarry Products Limited as an extension of existing sand and gravel workings in the locality. ADAS carried out a detailed soil survey of the site in June 1992. Soil inspections using a Dutch soil auger were made on a 100 metre grid basis. Two soil inspection pits were also dug to assess subsoil conditions and supplement soil auger boring information.

**2.0 SITE PHYSICAL CHARACTERISTICS**Climate

- 2.1 Climatic data specific to this site have been interpolated from the 5 km grid dataset compiled by the Meteorological Office. This shows average annual rainfall (AAR) to be approximately 694 mm (27.3"). This data indicates that the soils are at field capacity for 156 days and moisture deficits are 94 mm for wheat and 82 mm for potatoes. The accumulated temperature above 0°C January to June (ATO) is 1296 Day °C.
- 2.2 The combination of a relatively high annual average rainfall and a low cumulative build up of warmth available for crop growth (ATO) imposes a slight climatic limitation on the Agricultural Land Classification (ALC) grade of the site. Consequently these climatic characteristics restrict the land to grade 2 (see figure 1, page 6 MAFF, 1988).

Altitude and Relief

- 2.3 The site comprises a gently undulating area which falls gently northwards. The highest ground is just above 155 M AOD in the south east corner of the site. Gradient does not constitute a limitation to ALC grades.

### 3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 On the published 1:63,360 scale provisional ALC map, sheet 132 (MAFF, 1972) the site is shown as being predominantly grade 2 with a small area of grade 3 towards the eastern boundary of the site. This map is of a reconnaissance nature designed primarily for strategic planning purposes and does not delineate areas of less than 80 ha (200 acres). The current survey was undertaken to provide more detailed information on land quality of the site.

3.2 A precise breakdown of the ALC grades in hectares and % terms is provided below. The definitions of grades are included in Appendix 1.

Grade	ha	%
2	5.9	35.5
3a	1.4	8.4
3b	6.3	38.0
Urban	2.6	15.7
Non-Agricultural	<u>0.4</u>	<u>2.4</u>
TOTAL	<u>16.6</u>	<u>100</u>

#### Grade 2

3.4 Land stretching from the north west corner through the middle of the site to the south west corner has been graded 2. This land corresponds to soil type A described in paragraph 4.3. The soils show no evidence of drainage impedance consequently they are freely draining with a wetness class of I although the land experiences no droughtiness imperfections, the climatic limitation described in paragraph 2.2 limits the land quality to grade 2.

#### Subgrade 3a

3.5 There is just one small area of 3a land on the western edge of the site. This soil has similar characteristics to the grade 2 land, although the lower subsoil is heavier and imposes a drainage impediment. Consequently the drainage status is assessed as wetness class III (figure 8, page 9, MAFF, 1988), thus a moderate wetness limitation restricts the land to subgrade 3a.

### Subgrade 3b

- 3.6 The rest of the agricultural land has been graded 3b due to the inherent wetness limitation. The soils (described in paragraph 4.4) are slowly permeable and clayey in the subsoil. The wetness class has been assessed as IV due to the proximity to the surface of a slowly permeable layer. This imposes a significant wetness restriction on the agricultural potential of this land. Consequently land is limited to subgrade 3b.

### Urban

- 3.7 The present site workings are shown on the survey map as urban. There are also two small areas of land associated with agricultural buildings.

## 4.0 SOIL PHYSICAL CHARACTERISTICS

### Geology

- 4.1 The geology has been mapped at a scale of 1:63,360 (Geological Survey of England and Wales 1969). This shows the whole of the area as glacial boulder clay.

### Soils

- 4.2 The published 1:250,000 reconnaissance scale map (Soil Survey of England and Wales, 1983) shows the whole site to comprise the Beccles 3 Association. The soils are described as slowly permeable, seasonally waterlogged fine loamy over clayey soils with similar soils with only slight seasonal waterlogging. Some calcareous clayey soils also occur especially on steeper slopes. The detailed site inspection indicates that two soil types occur.

### Soil Type A (refer to Appendix 2 and Soil Types Map)

- 4.3 This soil type covers about half the site and typically comprises medium (occasionally heavy) clay loam over a deep slightly stony heavy clay loam or sandy clay loam subsoil. Occasionally the lower subsoil is of a clay texture.

Soil Type B (refer to Appendix 2 and Soil Types Map)

- 4.4 The remainder of the site still in agricultural use comprises heavier textured profiles. These typically consist of a medium or heavy clay loam topsoil over a clay (occasionally clay loam) subsoil. These horizons are generally gleyed with the lower subsoil of massive structure which is slowly permeable.

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N A DONE

ADAS, Resource Planning Team  
Cambridge

## DESCRIPTION OF THE GRADES AND SUBGRADES

**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.

**Descriptions of other land categories used on ALC maps****Urban**

Build-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

**Agricultural buildings**

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg polythene tunnels erected for lambing) may be ignored.

## SOIL PHYSICAL CHARACTERISTICS

HUSBANDS BOSWORTH, LEICESTERSHIRE

## SOIL TYPE A

Topsoil	Texture	:	medium or heavy clay loam
	CaCO <sub>3</sub>	:	non-calcareous
	Colour	:	dark brown (10 YR 43)
	Stone	:	very slightly stony (2-3% total)
	Structure	:	cultivation zone - not applicable
	Boundary	:	clear smooth
	Roots	:	many fine and very fine
	Depth	:	30/35 cm
Subsoil	Texture	:	heavy clay loam or sandy clay loam may overlie clay below 50 cm in some locations
	CaCO <sub>3</sub>	:	non-calcareous
	Colour	:	yellowish brown (10 YR 54)
	Stone	:	slightly stony (5-10% angular and subangular flints).
	Structure	:	moderately developed coarse subangular blocky
	Roots	:	many fine and very fine
	Depth	:	120 cm

SOIL TYPE B

Topsoil	Texture	:	medium or heavy clay loam
	CaCO <sub>3</sub>	:	non-calcareous
	Colour	:	dark greyish brown (10 YR 42)
	Stone	:	very slightly stony (2-5%)
	Structure	:	cultivation zone - not applicable
	Boundary	:	abrupt smooth
	Roots	:	many fine and very fine
	Depth	:	30/35 cm
Upper subsoil	Texture	:	heavy clay loam or clay
	CaCO <sub>3</sub>	:	non-calcareous
	Colour	:	yellowish brown (10 YR 54)
	Stone	:	negligible stones
	Structure	:	moderately developed coarse subangular blocky
	Boundary	:	clear smooth
	Roots	:	common fine and very fine
	Depth	:	55/60 cm
Lower subsoil	Texture	:	clay
	CaCO <sub>3</sub>	:	non-calcareous
	Colour	:	light brownish gray (10 YR 62) and strong brown (75 YR 58).
	Stone	:	very slightly stony 2% total angular flints
	Structure	:	massive
	Roots	:	few fine and very fine
	Depth	:	120 cm +