

PHYSICAL CHARACTERISTICS REPORT INCORPORATING
 AGRICULTURAL LAND CLASSIFICATION
 LAND AT ESSEX SHOWGROUND, GREAT LEIGHS, ESSEX

1. INTRODUCTION

- 1.1 A Soil and Agricultural Land Classification Survey was carried out over 24.2 hectares of land at the Essex Showground, to the north of Great Leighs, Essex, in connection with a proposed sand and gravel extraction.
- 1.2 MAFF surveyed the site in September 1990 by examining soil profile pits excavated at a density of approximately one per hectare.

2.0 SITE PHYSICAL CHARACTERISTICS

Climate

- 2.1 The climatic data for the site has been interpolated from data contained in the agricultural climatic dataset (Met Office 1989). This indicates for the sites median altitude of 70m AOD, the annual average rainfall is 590 mm. This dataset also indicates that field capacity days are 108 and moisture deficits are 117 mm for wheat and 111 mm for potatoes. These climatic characteristics do not impose any climatic limitation on the ALC grading of the survey site.

Altitude and Relief

- 2.2 The altitude of the site is approximately 70m AOD. Land falls very gently from west to east (1°). Towards the south of the site the land is gently undulating. Gradient and altitude do not constitute limitations to the ALC grade.

3.0 SOIL PHYSICAL CHARACTERISTICS

Geology

- 3.1 The published 1:50,000 Solid and Drift editions geology sheet 223 (Braintree) shows the site to comprise Boulder Clay Drift overlying deposits of London Clay.

Soils

- 3.2 During this survey, a detailed inspection of the soils indicated the presence of one soil type over the site.

4.0 AGRICULTURAL LAND CLASSIFICATION

- 4.1 The definition of the Agricultural Land Classification grades are included in Appendix 1.

4.2 The table below shows the breakdown of ALC grades in hectares and percentage terms for the survey area.

Agricultural Land Classification		
Grade	ha	%
2	3.0	12.5
3a	21.2	87.5
<hr/>		
Total	24.2	100.0

4.3 GRADE 2

Land classified as grade 2 occurs in a small area on the western side of the site. Soils were assessed as Wetness Class II and are very slightly stony (5-8% >2 cm in the topsoil). Soils typically comprise medium clay loam topsoils over heavy (occasionally medium) clay loam upper subsoils overlying clay at 45/65 cm+. This land is excluded from grade 1 due to stoniness and wetness imperfections.

4.4 GRADE 3a

The majority of the land has been graded 3a(*). Stone content is variable but is commonly in the range 5-12%. >2 cm in the topsoil and approximately 10% total stone in the subsoil. Soils typically comprise non calcareous medium or heavy clay loam upper horizons overlying clay at 35/75 cm+. Occasionally profiles comprise SCL or CSL upper horizons overlying SCL, MSL or MS at variable depths. These soils are limited from a higher grade due to either/or a combination of, wetness, topsoil stone or droughtiness limitations.

* At a few locations land was limited to grade 3b due to topsoil stone content, however they cover too small an area to delineate separately.

SOIL MAPPING UNIT

Topsoil

Texture: medium clay loam or heavy clay loam. D⁵
CaCO₃: typically non calcareous, rarely calcareous.
Colour: dark brown (10YR 3/3)
Stone: total stone content is in the range 4-25%,
typically 5-12% comprising mainly small and medium
flints.
Depth: in the range 20-35 cm typically 27 cm.
Structure: not applicable.
Boundary: smooth clear lower boundary.
Roots: common fine and very fine roots.

Upper Subsoil

Texture: medium clay loam and heavy clay loam occasionally
clay (rarely coarse sandy loams or sandy clay
loam).
CaCO₃: non calcareous
Colour: yellowish brown, typically 10YR 5/4
Stone: Variable, in the range 2-50%, typically 10-15%,
comprising small and medium flints.
Depth: in the range 45-80 cm, typically 45 cm.
Structure: typically moderately developed medium and coarse
sub angular blocky, occasionally weakly developed
medium and coarse sub angular blocky.
Consistence: typically firm.
Boundary: typically smooth and clear, occasionally wavy and
clear.
Roots: few fine and very fine.

Lower subsoil

Texture: typically clay, occasionally heavy clay loam (rarely SCL, CSL, MSL or MS).

CaCO₃: non calcareous

Colour: commonly grey, (10YR 6/2, 6/1)

Stone: in the range 0-25%, typically 0-5%, comprising mainly small flints.

Depth: 120 cm

Structure: typically moderately developed medium and coarse prismatic or weakly developed medium and coarse sub angular blocky.

Consistence: typically very firm

Roots: few fine and very fine.

References

Agricultural Land Classification, 1974. Provisional Sheet 149. 1:63,360.

Soil Survey of England and Wales, 1980. Sheet TL71 (Little Waltham) 1:25,000.

Geological Survey of Great Britain, 1982, Solid and Drift edition, Sheet 223 (Braintree) 1:50,000.

Meteorological Office, 1989. Climatological data for Agricultural Land Classification.