Cambs 10|91

MINISTRY OF AGRICULTURE FISHERIES & FOOD

PHYSICAL CHARACTERISTICS REPORT INCORPORATING AGRICULTURAL LAND CLASSIFICATION

LAND AT DUMPLING GREEN, EAST DEREHAM, NORFOLK

1.0 INTRODUCTION

1.1 A survey was carried out over 29 hectares of land in February 1991 in connection with a proposed residential development.

1.2 A total of 30 inspections were made using a dutch auger to a depth of 1.2 metres unless stopped by impenetrable stone. In addition two soil pits were dug to assess subsoil conditions.

2.0 AGRICULTURAL LAND CLASSIFICATION

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

Grade	ha	%
2	18.8	66.0
3a	7.5	26.3
3b	2.2	7.7
TOTAL	28.5	100.0

2.2 Soils typically comprise variably calcareous medium sandy loam or sandy clay loam topsoils overlying slightly stony subsoils with textures of loamy medium sand, clay loam or occasionally sandy clay loam. The main limitations to agricultural land quality for this site are droughtiness and wetness imperfections. A fuller description of the individual grades of land found on site are included within Appendix 1.

2.3 A full description of site and soil physical characteristics is given below.

3.0 SITE PHYSICAL CHARACTERISTICS

Climate

3.1 Climatic information for this site has been interpolated from the 5km grid agroclimatic dataset produced by the Meteorological Office (Met Office, 1989). The average annual rainfall for the site is 651 mm. The number of days of which the site is of field capacity is 134.

3,2 The accumulated temperature for this area is approximately 1379 degrees celsius and soil moisture deficits for wheat and potatoes are 110 and 103 mm respectively.

3.3 These climatic characteristics do not impose a climatic limitation on the ALC grading of the site.

Relief

3.4 The site occupies fairly level land at an approximate altitude of 50 m AOD. Gradient and altitude do not constitute limitations to ALC grade.

Geology

3.5 The published 1:50 000 solid and drift edition geology sheet 161 (Norwich) shows the site as underlain by glacial boulder clay drift.

3.6 The published 1:10,0000 soils map (Norfolk) maps the site as Burlingham association. During the course of this survey a detailed inspection of the soils indicated the presence of two main soil types which are more fully described in section 4.0.

4.0 SOIL PHYSICAL CHARACTERISTICS

4.1 SOIL MAPPING UNIT 1 (6.7 ha)

Topsoil

Texture: Medium sandy loam

CaC03: non calcareous

Colour: dark brown (10 YR 3/3, 4/3) or dark greyish brown (10 YR 4/2)

Stone: typically 5% >2 cm and 8% total comprising mainly small and medium flints.

Depth: Commonly 35 cm

Structure: Cultivation zone - not applicable

Boundary: Smooth and clear

Roots: Common fine and very fine roots

Upper Subsoil

Texture: Medium sandy loam, occasionally sandy clay loam.

CaC03: non calcareous

Colour: Yellowish brown (10 YR 5/4, 5/5)

Stone: in the range of 2-15%, typically 12% comprising small and medium flints.

Depth: Variable in the range 40-80 cm, typically 55 cm.

Structure: Moderately developed coarse and very coarse sub angular blocky.

Consistence: friable

Boundary: Smooth and clear

Roots: Common fine and very fine roots

Lower Subsoil

Texture: typically loamy medium sand, occasionally sandy clay loam or rarely clay at depth.

CaC03: occasionally calcareous

Colour: yellowish brown (10 YR 5/4) or brown (10 YR 5/3).

Stone: in the range 10-35%, typically 15-20% mainly comprising small and medium flints.

Depth:	120 cm +
Structure:	Weakly developed very coarse sub angular blocky
Consistence:	Very friable
roots:	Few fine and very fine

4.4 SOIL MAPPING UNIT 2 (21.8 ha)

Topsoil

Texture: Sandy clay loam, heavy clay loam or occasionally medium sandy loam.

CaC03: Occasionally calcareous

Colour: typically dark brown (10 YR 4/3)

Stone: Commonly 4-6% >2 cm and 7-8% total stone comprising small and medium flints.

Depth: in the range 28-35 cm, typically 32 cm.

Structure: Cultivation zone - not applicable

Boundary: Smooth clear lower boundary

Roots: Common fine and very fine roots.

Upper Subsoil

Texture: typically heavy clay loam, occasionally clay or sandy clay loam.

CaC03: Occasionally calcareous

Colour: typically brown (10 YR 5/3) or yellowish brown (10 YR 5/4)

Stone: in the range 5-20% total stone, typically 15% comprising small and medium flints.

Depth: typically 55-60 cm

Structure: moderately developed very coarse sub angular blocky.

Consistence: Firm

Boundary: Smooth clear lower boundary.

Roots: Common fine and very fine roots.

Lower Subsoil

Texture: Clay, rarely sandy clay loam or heavy clay loam.

CaC03: Commonly calcareous

Colour: typically brown (10 YR 5/3) or light yellowish brown (2.5Y 6/4)

Stone: typically 15% small and medium chalk and/or flint stones.

Depth: 120 cm +

Structure: moderately developed coarse prismatic.

Consistence: Firm

roots: few fine and very fine roots.

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ALC GRADES AT DUMPLING GREEN APPENDIX 1

GRADE 2

Although grade 2 land occurs within the two soil mapping units described in paragraphs 4.3 to 4.4. the majority of this grade is found in the south west of the site on the better drained variants of soil type 2. A small area of grade 2 occurs in the north eastern corner of the site on the less stony variants of soil type 1. Droughtiness constitutes the main limitation to land quality.

GRADE 3a

Grade 3a land occurs in an area to the east of the centre of the site. This land is limited by droughtiness on the lighter type 1 soils and by wetness limitation on the heavier type 2 soils.

GRADE 3b

A small area to the South east of the Site was graded 3b. The main limitations in this area are wetness and workability imperfections.