

TOWN AND COUNTRY PLANNING (MINERALS) ACT 1981

AGRICULTURAL LAND CLASSIFICATION AND SURVEY OF PHYSICAL CHARACTERISTICS
- LAND SOUTH OF GRAIN, ISLE OF GRAIN, NORTH KENT

1 INTRODUCTION

1 1 The site covers 9 ha of land south of Grain (886763) It consists of a single field bounded by housing to the north and roads to the south, east and west

1 2 A detailed Agricultural Land Classification survey and survey of physical characteristics was carried out in October 1985 using a 1:2,500 scale base map The soils were examined using a hand auger and auger borings were made at 100 m intervals on a grid pattern Further information was obtained by digging a soil pit (see Appendix I) where it was considered the soil was representative of the main soil type in the site

1 3 The results have been mapped at a scale of 1:5,000

2 LAND USE AND LANDSCAPE FEATURES

2 1 The site consists of a single field bordering the built-up area of Grain At the time of survey the land was used for growing cereals

2 2 In the north the field boundary was marked by a chestnut paling fence The remaining field boundaries were marked by trees and bushes

3 PHYSICAL FACTORS AFFECTING LAND QUALITY

3 1 Altitude and Relief

The site lies at an altitude of about 12 m OD and is level

3 2 Climate

Average annual rainfall in the area is about 500-550 mm of which approximately 55% falls as summer rainfall (April-September inclusive) The low rainfall will have an effect on Agricultural Land Classification since greater depths of soil will be required to meet the criteria for each grade The site is not likely to be particularly frost-prone, but is likely to be exposed The growing season is greater than 280 days

3 3 Geology and Soils

The geology of the area has been covered by the Geological Survey of England and Wales (Sheet 272, Chatham) The site is shown to be underlain by river gravel deposits

One main soil type was identified in the site This consists of variable depths between 30-55 cm of brown fine sandy loam, overlying pale brown loamy fine sand or loamy sand, over orange brown sand or coarse sand A stony layer occurs within the profile below about 35-45 cm Often this is impenetrable with a hand auger The soil profile pit

showed this layer to be about 25 cm deep, made up of an estimated 45-50% by volume, small and medium sized subangular and rounded flints in a loamy sand matrix. It is likely that this layer will tend to limit rooting depth. Below this stony layer is sand. The topsoil stone content is slight and made up of mostly small and medium-sized flints. There are no signs of impeded drainage. There is some localised compaction between about 35-60 cm causing slight drainage impedence but this is not considered to be a long term limitation to agricultural use as it can be removed by standard agricultural operations.

The soil must be handled carefully during stripping and storage to avoid structural breakdown. Soil movement should only take place under dry conditions when the soil is friable.

4 AGRICULTURAL LAND CLASSIFICATION

4 1 Grade 2

Land with some minor limitations which exclude it from Grade 1. Such limitations are frequently connected with the soil, for example, its texture, depth or drainage, though minor climatic or site restrictions, such as exposure or slope, may also cause land to be included in this Grade.

These limitations may hinder cultivations or harvesting of crops, lead to lower yields or make the land less flexible than that in Grade 1. However a wide range of agricultural and horticultural crops can usually be grown though there may be restrictions in the range of horticultural crops and arable root crops on some types of land in this Grade.

Grade 2 occurs over a small area in the centre of the site where the soil consists of about 60 cm brown fine sandy loam overlying orange fine sand. The soil is slightly stony and the main factor influencing grading is stone content.

4 2 Grade 3

Land with moderate limitations due to the soil, relief or climate, or some combination of these factors which restrict the choice of crops, timing of cultivations, or level of yield. Soil defects may be of structure, texture, drainage, depth, stoniness or water holding capacity. Other defects, such as altitude, slope or rainfall, may also be limiting factors.

The range of cropping is comparatively restricted on land in this Grade. Only the less demanding horticultural crops can be grown and, towards the bottom of the Grade, arable root crops are limited to forage crops. Grass and cereals are thus the principal crops, land in the middle range of the Grade is capable of giving reasonable yields under average management. Some of the best quality permanent grassland may be placed in this Grade where the physical characteristics of the land make arable cropping inadvisable.

4 2 1 Subgrade 3a

This land shares the moderate degree of limitation common to Grade 3 but has some physical advantages which lead to appreciably better performance than land in the remainder of the grade.

Subgrade 3a occurs at the eastern and western ends of the site. The upper horizon consists of a variable depth between about 40-55 cm of brown fine sandy loam. This either overlies a very stony layer that is impenetrable with a hand auger, or gives way to loamy sands and loamy fine sands over sand extending to depth.

The soils have very slightly or slightly stony topsoils and are well drained. The main factor influencing grading is the slightly droughty nature of the soils in dry seasons.

4 2 2 Subgrade 3b

Most of this land is capable of average production - typically of cereals and grass - although areas where yields are slightly below average are also eligible provided there is an advantage such as greater flexibility of cropping.

Subgrade 3b occurs around the centre of the site. The soil generally consists of about 35 cm brown slightly stony, fine sandy loam over a very stony layer that is impenetrable with a hand auger. Where slightly deeper soils occur the soil tends to become moderately stony below 35 cm. The soil is well drained. The main factor causing downgrading is the droughty nature of the soil in dry seasons.

4 3 The approximate proportions of the Agricultural Land Classification grades in this site are as follows -

<u>Grade/Subgrade</u>	<u>% Total Area</u>
2	6.6
3a	72.6
3b	20.8
<hr/>	<hr/>
TOTAL	100.0 (9.4 ha)

S. ATTER
 Research Officer
 Land and Water Service

October 1985