

Agricultural Land Classification

**Proposed Development Site,
Silsoe, Bedfordshire**

AGRICULTURAL LAND CLASSIFICATION SURVEY AT SILSOE BEDFORDSHIRE

1.0 INTRODUCTION

- 1.1 An agricultural land classification survey was carried out on an area of approximately 3.7 ha (9 acres) on the edge of Silsoe village in Bedfordshire. The land forms part of Home Farm, Wrest Park, Silsoe and is the subject of a planning application for residential development.
- 1.2 The land is bounded on its western side by the High Street, across which is an area of allotments and at the northern end, some houses and the Lord Nelson Public House. The southern edge of the site abuts the end of the existing housing on the eastern side of the High Street. The boundary of the eastern side of the site has been fixed so that the proposed development will be kept below the crest of the existing ridge whilst to the north is a farm road.
- 1.3 A total of 15 inspections were made to a depth of 1.2m where possible using a dutch auger. This information was supplemented by 3 soil pits and the data gained used to assess the grading of the site using the criteria contained within the revised guidelines of the Agricultural Land Classification of England and Wales (MAFF 1988).
- 1.4 At the time of survey the site was under the stubble of fodder maize.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Relief

- 2.1 The site is located on the side of a ridge which falls to the west and north. The slopes on the land are approximately 3 to 4° and the aspect is predominantly west. The altitude of the site ranges from 59m on the western boundary to approximately 64m AOD on the ridge.

Climate

- 2.2 The average annual rainfall for the site has been computed to be 582mm (Met Office 1988) which is relatively low by national standards. The low rainfall combined with the relatively high spring and summer temperatures can result in moderately large moisture deficits building

ALC grade	Hectares	%
2	0.8	21.6
3b	2.9	78.4
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Total	3.7	100

3.2 The soils fringing the northern and western boundaries of the site have been classified as grade 2. These coarse and fine loamy soils are deep rooting and thus have a moderately high available water capacity which will prevent serious drought stress except in the driest years. The topsoils are relatively coarse textured and hence field work can be carried out at most times of the year.

3.3 The bulk of the site has been graded 3b on account of its low water holding capacity. These sandy soils have a high proportion of coarse sand within the whole profile and with the presence of ironstone within the profile can restrict the depth of rooting. Consequently any crops grown will suffer considerable drought stress in most years. Where the ironstone is found at shallow depths and in a continuous layer individual profiles may be of grade 4 potential. However the findings of the survey indicate the majority to be of grade 3b quality. A further limitation associated with this land is the potential for erosion. Due to the light topsoil texture and slope of the land, soil movement down the slope can occur. At the time of the survey there was slight evidence of surface sand movement down the slope and consequently care must be taken in the direction of cultivations to prevent a serious problem occurring.

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up. The calculated moisture deficits for wheat and potatoes on this site are 116 and 110mm respectively and thus to prevent drought stress, the soil will need to provide a good reservoir of available water. The growing season in the area is long at 249 days (MAFF 1984).

Geology

- 2.3 The site is located on the Lower Greensand which outcrops in this part of Bedfordshire.

Soils

- 2.4 Three soil types were found on the site. The majority of the site comprises soils developed directly on the Lower Greensand. These soils have a dark brown coarse sandy loam or coarse loamy sand topsoil overlying a reddish brown coarse loamy sand upper subsoil beneath which the strongly weathered Lower Greensand was encountered as a reddish brown banded coarse sand. In many profiles the coarse sand of the weathered sandstone was capped by a thin layer of ironstone. Where the ironstone was continuous the roots were seen to form a mat on its top but where broken the roots continued down into the weathered sandstone.
- 2.5 The other two soil types were found on the lower slopes fringing the northern and western sides of the site. Both soil types were influenced by the sandy soils upslope due to erosion and runoff.
- 2.6 At the northern end of the site heavier textured soils were encountered. These soils have a dark brown sandy clay loam topsoil, with localized areas of coarse sand enrichment, overlying a brown sandy clay loam upper subsoil. Beneath this the subsoil was a heavy clay loam or sandy clay with some ochreous mottling indicating periodic waterlogging at depth.
- 2.7 On the western boundary the soils have a lower clay content than those described above. They have a coarse sandy loam topsoil overlying a sandy loam subsoil to depth and are free draining.

3.0 AGRICULTURAL LAND CLASSIFICATION

- 3.1 The site has been graded using the revised guidelines of the Agricultural Land Classification system (MAFF 1988) as 2 and 3b. A breakdown of the grades in hectares and % terms is given below.

References

MAFF (1984) Reference Book 435. The Agricultural Climate of England and Wales.

MAFF (1988) Agricultural Land Classification of England and Wales, revised guidelines.

Meteorological Office (1988) Unpublished meteorological data.