

AGRICULTURAL LAND CLASSIFICATION SURVEY  
EAST OF SPALDING ROAD, PINCHBECK, LINCS.

1.0 INTRODUCTION

- 1.1 An Agricultural Land Classification (ALC) survey was carried out over 10.8 ha of land to the east of Spalding Road, Pinchbeck Lincolnshire, in connection with a planning application for a proposed industrial development.
- 1.2 The site is located midway between the village of Pinchbeck and Spalding on the eastern side of the A16 road and to the north of Vernatt's Drain, and comprises parts of two fields bounded to the east by a disused railway line. To the north of the site is open agricultural land.
- 1.3 At the time of survey the field to the east had been sown to winter cereals whilst the field to the west had been partly ploughed after the previous season's cereal crop. A total of thirteen observations were made using a dutch auger and two soil pits were dug to assess subsoil conditions.
- 1.4 The site is shown as Grade 1 on the published 1:63,360 scale ALC map for the area (MAFF, 1974).

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

- 2.1 Climatic information for the site has been interpolated from the 5 km grid dataset produced by the Meteorological Office (Met Office 1989). The average annual rainfall for the site is 570 mm and the number of days that the soils are likely to be at field capacity is 107.

- 2.2 The accumulated temperature for the area is approximately 1440 degrees Celsius. This parameter indicates the cumulative build up of warmth available for crop growth and in conjunction with rainfall has an influence on the development of soil moisture deficits and susceptibility to drought. The moisture deficits for wheat and potatoes on this site are 121 mm and 117 mm respectively.
- 2.3 There is no overall climatic limitation to the agricultural use of the land.

#### Relief

- 2.4 The site lies at an altitude of approximately 4 m AOD and is relatively flat with a few very minor localised undulations. It is divided by a track which runs north south beside which is a deep well maintained ditch. Relief therefore does not impose any limitations on ALC grading.

#### Geology and Soils

- 2.5 The published 1:250,000 scale drift edition geology map (Geol Surv. 1971) shows the area to comprise Post Glacial and Recent Alluvium, Peat and Fen Silts and the 1:250,000 scale soil map (Soil Surv. 1984) categorises the area as the Wisbech Association, deep stoneless calcareous coarse silty soils.
- 2.6 The current survey has identified predominantly heavier textured soils than those of the Wisbech Association. Three soil types were identified. Over the northeastern and northwestern corners of the site, the soils are heavy textured silty clays. A typical profile has a non calcareous, silty clay topsoil over a strongly gleyed silty clay subsoil, which in some profiles have layers of silty clay loam at depth. The subsoils are generally coarse structured and slowly permeable.

- 2.7 The southern part of the site comprises soils which have a non calcareous heavy silty clay loam topsoil over weakly mottled silty clay loam upper subsoil below which is a strongly mottled silty clay or heavy silty clay loam layer.
- 2.8 A band of lighter textured soils runs from east to west across the middle of site and these soils have a medium silty clay loam topsoil over a faintly mottled sandy silt loam subsoil which in some profiles is underlain by a strongly mottled heavy silty clay loam or silty clay.

### 3.0 AGRICULTURAL LAND CLASSIFICATION

- 3.1 The site has been classified using the guidelines contained in the Agricultural Land Classification of England and Wales (MAFF, 1988). A breakdown of the grades found is given below:

Grade	Area	%
2	3.8	34.5
3a	4.2	38.0
3b	2.7	24.5
Urban	0.3	3.0
Total	11.0	100

#### Grade 2

- 3.2 The lighter textured soils found in the middle of the site have been mapped as Grade 2. These soils have been assessed as wetness class II and with a medium silty clay loam topsoil are limited to this grade as a result of a minor wetness and workability limitation.

### Grade 3a

- 3.3 Two areas of Grade 3a have been mapped. These areas comprise heavy textured soils which have a wetness and workability restriction. They have been classified as Wetness Class II due to their slowly permeable lower subsoils and with a non calcareous heavy silty clay loam, or in the case of the northern area, a silty clay topsoil are limited to this grade.

### Grade 3b

- 3.4 The Grade 3b areas are restricted to the heaviest textured soils on the site. These soils have a silty clay topsoil over a strongly mottled, slowly permeable, silty clay subsoil and have been assessed as Wetness Class III. At the time of survey the topsoils were waterlogged indicating the slowly permeable nature of the subsoil. These clayey soils will therefore have a moderately severe wetness and workability limitation restricting them to Grade 3b.

### Urban

- 3.5 Two small areas which are built up have been identified on the western side of the site.

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Resource Planning Team  
ADAS, Cambridge.

## REFERENCES

- Geological Survey, (1971). Drift edition Geology Map, Sheet 12, 1:250,000 scale.
- MAFF, (1988). Agricultural Land Classification of England and Wales - Revised guidelines and criteria for grading the quality of agricultural land.
- MAFF, (1974). Provisional Agricultural Land Classification Map, Sheet 123, 1:63,360 scale.
- Meteorological Office, (1989). Climatological Data for Agricultural Land Classification.
- Soil Survey of England and Wales, (1984). Soils and their Use in Eastern England.