

**REPORT OF THE MAFF AGRICULTURAL LAND CLASSIFICATION SURVEY OF LAND  
AT SILVER LANE, RISLEY**

**1. Summary:**

The land has been classified following the Agricultural Land Classification of England and Wales - revised guidelines and criteria for grading the quality of agricultural land (MAFF, 1988). Of the site 7% is classified as Sub-Grade 3a and 75% as Sub-grade 3b with a further 17% in Grade 4.

**2. Climatic Limitations:**

The main parameters used in the assessment of the climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (ATO) as a measure of the relative warmth of the locality. The figures of AAR and ATO indicate that there is no climatic limitation on this site.

**3. Site Limitations:**

The assessment of site factors is primarily concerned at the way in which topography influences the use of agricultural machinery and hence the cropping potential of the land. There are no limitations affecting the use of this land.

**4. Soil Limitations:**

The main soil properties which affect the cropping potential and management requirements of land are texture, structure, depth, stoniness and chemical fertility. These may act as limitations separately, in combination or through interactions with climate or site factors. The physical limitations which result from interactions between climate, site and soil are soil wetness, droughtiness and erosion. The soil wetness limitation exists when the soil water regime adversely affects plant growth or imposes restriction on cultivations or grazing by livestock. The soil wetness assessment takes account of the climatic regime, the soil water regime and the texture of the top 25 cm of the soil. Reference will be made to the soil wetness where it is a limiting factor in Section 7.

**5. Background information:**

The underlying solid geology is mapped as Keuper Sandstone covered with Boulder Clay and peat in the eastern part of the site (sheet 97, Runcorn, scale 1:50,000).

**6. Agricultural Land Use:**

At the time of the survey January 1991, the land was under cereals and grass.

## 7. Agricultural Land Quality:

Sub-grade 3a - the soil typically has a sandy peat texture overlying either clay loam, clay or sand. The combination of peat soil texture and the depth to the slowly permeable layer place these soils in Wetness Class IV, giving a classification of Sub-grade 3a.

The main limitation to the agricultural use of the land is soil wetness.

Sub-grade 3b - the soil typically has a medium clay loam texture overlying clay by 25 cm. Observations of gleying and the depth to the slowly permeable layer in combination with a field capacity day figure of 208 places soils in Wetness Class IV, resulting in a classification of Sub-grade 3b. The main limitation to the agricultural use of the land is soil wetness.

Grade 4 - the soil typically has a heavy clay loam texture overlying clay by 25 cm or clay from the surface. Observations of gleying and the depth of the slowly permeable layer in combination with a field capacity day figure of 208 places these soils in Wetness Class IV and results in a Grade 4 classification. The main limitation to the agricultural use of the land is soil wetness. A small area of restored land is included within the site boundary, where the soils have a medium clay loam topsoil overlying heavy clay loam and clay. There are signs of impeded drainage from the surface and coal fragments present at depth. At the time of the survey water was lying on the surface in places. This land has been given an interim classification of Grade 4, with the main limitation to its agricultural use being wetness.

Other land - includes ponds and buildings.

RESOURCE PLANNING GROUP  
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### Agricultural Land Classification

Grade/ Sub-grade	Area (ha)	% of total area	% of agricultural land
3a	4.7	7	7
3b	49.7	75	76
4	11.0 (65.4)	17	17
Other land	0.9	1	-
<b>TOTAL</b>	66.3	100	100

## NOTE ON SOIL RESOURCES FOR SILVER LANE, RISLEY

### Introduction

Following the Agricultural Land Classification survey of the site a soil resource map has been compiled from information collected. Soil texture and depth data were collected on 100 metre grid augering with a hand held auger to 100 cm, where possible. Several soil pits were dug to obtain further detail on physical characteristics such as structure.

The soil resource map identifies soils of a similar texture and places them into units, thus reflecting the differences in stripping, handling and soil storage requirements. A total of 6 units are identified, including the recently restored area.

### Unit 1

This covers much of the site where soils have a medium clay loam texture overlying clay. The topsoil typically has a medium clay loam texture to 27 cm with a moderately well developed fine sub-angular blocky structure. Below 27 cm clay, extending to at least 100 cm, is present and in places there are pockets of sand too. This subsoil is gleyed with abundant mottling, forms a slowly permeable layer and has a well-developed coarse prismatic structure. Plant roots are abundant in the topsoil and the occasional stone is present.

### Unit 2

The topsoil has a medium clay loam texture overlying an upper subsoil typically of a sandy clay loam or occasionally heavy clay loam texture, with clay present at depths of between 35 and 80 cm. The soil pit showed a topsoil texture of medium clay loam extending to 30 cm with a moderately well developed fine sub-angular blocky structure overlying a sandy loam to 50 cm with a similar structure. The lower subsoil texture of clay is gleyed, forms a slowly permeable layer and has a well developed coarse prismatic structure. Occasional small rounded stones are present within the topsoil and roots are abundant here becoming fewer with depth. Within this unit there is variation in the upper subsoil with heavy clay loam and sandy clay loam textures present.

### Unit 3

This unit is found at the north eastern corner of the site where organic heavy clay loam soils overlie clay. The topsoil has a varying depth between 29 and 35 cm and has a well developed medium sub-angular blocky structure. Within the clay subsoil there are sandy pockets present, and typically it is gleyed and forms a slowly permeable layer with a weakly developed coarse prismatic structure. The porosity is low and occasional small stones are present between 35 cm. Plant roots are abundant in the top 35 cm becoming common below this depth.

#### **Unit 4**

This is found close to the eastern boundary of the site where the topsoil has a sandy peat texture overlying clay loam or occasionally sand between 40 and 55 cm and then on to clay. Typically the topsoil has a strongly developed fine angular blocky structure overlying an upper subsoil of sand with a single grain structure between 43 and 48 cm and then on to clay with a massive structure and abundant mottling. Little or no stone is present throughout the soil and plant roots are common in the topsoil becoming fewer below 43 cm.

#### **Unit 5**

To the south of the Old Abbey Farm an area of heavy clay loam and clay topsoil is identified. Typically the heavy clay loam topsoil overlies mottled clay by 25 cm. No soil pit was dug for this unit.

#### **Unit 6**

The recently restored area is identified as a separate unit. The topsoil has a medium clay loam texture to 27 cm overlying heavy clay loam and on to clay by 44 cm. The topsoil has a moderately developed medium prismatic structure overlying a heavy clay loam with a well-developed medium sub-angular blocky structure and has low porosity. The lower subsoil, clay, has a massive structure with coal fragments present and low porosity. Little stone is present in the profile and plant roots are common in the topsoil.