

AGRICULTURAL LAND CLASSIFICATION REPORT FOR LAND UNDER CONSIDERATION IN THE WARRINGTON LOCAL PLAN

Sites at Appleton Thorn and Culcheth were classified using the MAFF Revised Agricultural Land Classification system. The soils were surveyed in July 1990 in sufficient detail to map the results at a scale of 1:25000. The land was augered and soil pits dug as necessary to provide a density of one boring per 2.1 ha.

1.0 Climate and site limitations

The first site lies to the east of Appleton Thorn between the disused airfield and the motorways. The second site is adjacent to the eastern urban edge of Culcheth. The areas include level to gently sloping land which lies at an altitude of less than 70 m at Appleton Thorn and less than 30 m at Culcheth, the areas are warm and moist having an Accumulated Temperature (January to June) of about 1400°C, and a rainfall of about 850 mm. The climate does not impose a limitation to the agricultural use of the land.

2.0 Geology and soil limitations

The area is underlain by Permo Triassic sandstones and mudstones on which Boulder clays and Laminated clays have been deposited with smaller areas of glacial sand and gravel. The resulting soils are generally stoneless to very slightly stony sandy loams to clay loams which overlie heavy clay loams and clay. These soils generally fall into Wetness Class IV or III and are mapped as Salop series by the Soil Survey and Land Resource Centre. To the east of the airfield at Appleton Thorn and around Ratcliffe House Farm, Culcheth sandier soils are freely drained and fall into Wetness Class I or II. Iron cementing and slightly stony subsoils have limited the available water capacity of some of these soils.

3.0 Interactive limitations

The interaction between climate and soils determines whether wetness or droughtiness will be limiting factors in the classification of the land. At Appleton Thorn the soils are at field capacity for 193 days, whilst at Culcheth field capacity is maintained for about 209 days. These areas are relatively wet and soil wetness is a limiting factor on the medium and heavy textured soils. The soils generally fall within Wetness Class IV or III and therefore into subgrade 3b or 3a.

On the light textured soils, drought may limit yields in some years although in this relatively wet area drought is only a minor limitation. Droughtiness is measured by comparing available profile water with the potential moisture deficit which at Appleton Thorn is 88 mm for wheat and 75 mm for potatoes and at Culcheth 86 mm and 73 mm respectively. In these areas drought is a limiting factor only where stones, coarse textured subsoils limit the amount of available water, or where iron pans restrict rooting depth.

4.0 Agricultural Land Classification

The majority of the land is mapped as Grade 3 with smaller areas of Grade 2.

4.1 Grade 2

This grade is mapped over 10.5 ha and 5% of the area, to include sandy loam and fine sandy loam soils which overlie loamy sand and sand or gravel. The profiles are able to hold at least 95 mm of water and often considerably more although iron cementing or stony horizons have restricted rooting in some areas. Isolated areas of Grade 1 occur around Ratcliffe House Farm, Culcheth.

4.2 Subgrade 3a

This subgrade is mapped over 66.1 ha and 33% of the area to include sandy loam and sandy clay loam soils which overlie clay loam and clay and fall into Wetness Class III, having no slowly permeable layer within about 55 cm of the surface. To the south of the disused railway at Culcheth medium clay loam soils which overlie mottled loamy sand and sand fall into Wetness Class II and hence into Subgrade 3a.

4.3 Subgrade 3b

This subgrade is mapped over 97.5 ha and 48% of the area to include sandy loam to medium clay loam soils which overlie clay loam or clay. The slowly permeable layer occurs within about 55 cm of the surface and the soils fall into Wetness Class IV and hence into Subgrade 3b. Disturbed ground on the edge of the airfield has also been placed in this Subgrade.

4.4 Grade 4

This grade accounts for 0.6 ha and less than 1% of the area. It is mapped to include a cultivated dismantled railway where a mottled heavy clay loam matrix contains clinker and stones.

4.5 Farm buildings

Farm buildings account for 4.6 ha and 2% of the area.

4.6 Non agricultural

Non agricultural land accounts for 12.1 ha and 6% of the area and is mapped to include part of an un-farmed airfield and woods.

Urban

The urban classification is placed over 2.4 ha and 1% of the area to include roads and houses.

Not surveyed

8.7 ha and 4% of the land was not surveyed because of a standing crop of oilseed rape.

Summary

The majority of the land on the two sites is medium to heavy textured, falling into Wetness Classes IV or III and hence into Grade 3. Patches of sandier soil are of a higher quality.

Summary of ALC Grades

Total area

Grade	Area	% Total	% Agricultural Land
2	10.5	5	6
3a	66.1	33	37
3b	97.5	48	54
4	0.6	<1	<1
Farm buildings	4.6	2	2
Non agricultural	12.1	6	
Urban	2.4	1	
Not surveyed	8.7	4	
Total	<u>202.5</u>	<u>100</u>	<u>100</u>

Appleton Thorn site

Grade	Area	% Total	% Agricultural Land
2	4.3	3	3
3a	48.5	33	39
3b	70.5	47	56
Farm buildings	2.4	2	2
Non agricultural	11.9	8	
Urban	2.2	1	
Not surveyed	8.7	6	
Total	<u>148.5</u>	<u>100</u>	<u>100</u>

Culcheth

Grade	Area	% Total	% Agricultural Land
2	6.2	11	12
3a	17.6	33	33
3b	27.0	50	50
4	0.6	1	1
Farm Buildings	2.2	4	4
Non agricultural	0.2	<1	
Urban	0.2	<1	
Total	<u>54.0</u>	<u>100</u>	<u>100</u>

MRS R A PEEL
Senior Research Officer
Wolverhampton RO
July 1990