0301-52-94

AGRICULTURAL LAND CLASSIFICATION

PITSTONE WORKS, LEIGHTON BUZZARD, BEDFORDSHIRE

1.0 BACKGROUND

1.1 This restored land site, covering an area of 13.8 hectares is the subject of a planning application to facilitate restoration of an existing chalk quarry. The survey area constitutes the proposed access route for landfill materials into the existing quarry. ADAS Statutory Resource Planning Team surveyed the site in June 1994 to assess the agricultural land quality at an auger boring density of approximately 1 boring per hectare. These borings were supplemented by a soil inspection pit in order to assess subsoil conditions.

1.2 At the time of the survey the site comprised land under set-aside.

1.3 The published Provisional 1:63 360 scale Agricultural Land Classification Map, sheet 159 (MAFF, 1971) shows the majority of the site as non-agricultural corresponding to the area of the quarry on the site at the time (1971), with a small area of grade 2 land in the northwest. Since the site has been restored and the ALC map is of a reconnaissance nature designed primarily for strategic planning purposes, the current survey was undertaken to provide more detailed information on land quality in the survey area.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 Climate data for the site was extrapolated from data in the published Agricultural Climatic Dataset (Meteorological Office, 1989). This indicates that for a typical site altitude of 130 m AOD the average annual rainfall for the site is 702 mm (27.6"). This data also indicates that the field capacity days are 154 with moisture deficits of 99 mm for wheat and 88 mm for potatoes. These characteristics do not impose any limitation on the ALC grade of the survey site.

Altitude and Relief

2.2 The survey area comprises predominantly flat land with a maximum altitude of 130 m AOD and a minimum altitude of 120 m. Neither gradient nor altitude impose a limitation to ALC grade.

Geology and Soils

2.3 The published 1:50 000 scale Drift Edition geology map, sheet 238, Aylesbury, (Geological Survey of England and Wales, 1972) shows the whole site to comprise Cretaceous Lower Chalk.

2.4 No detailed soil map exists for this area. In addition, the soils now present on the site may be different from those originally present, before the site was worked for chalk and subsequently restored using soil material of unknown origin. However, the Soil Survey of England and Wales have mapped this area at a reconnaissance scale of 1:250 000 (SSEW, 1983) and this map indicates the occurrence of soils of the Charity 2 Association (*1) over the majority of the site, with the Wantage 1 Association (*2) in the north. The current detailed survey identified one soil type.

2.5 The site typically comprises slightly stony (10-15%) heavy clay loam topsoils which overlie slightly to moderately stony (15-20%) clay subsoils which show evidence of compaction immediately below the topsoil at approximately 30 cm, resulting in impeded drainage (wetness class III).

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The distribution of the Agricultural Land Classification (ALC) grades at the site is shown overleaf. The definitions of the ALC grades in included in Appendix I.

(*1) Charity 2 Association - well drained flinty fine silty soils in valley bottoms. Calcareous fine silty soils over chalk or chalk rubble on valley sides, sometimes shallow.

(*2) Wantage 1 Association - well drained calcareous silty soils, in places shallow over argillaceous chalk.

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Grade	Hectares	%
3b	4.4	31.9
Urban	9.4	68.1
TOTAL	13.8	100

Subgrade 3b

3.2 This occurs over the southern part of the site corresponding to the clayey disturbed soils described in paragraph 2.5. Topsoils comprise heavy clay loams which overlie heavier compacted subsoils. The compaction results in impeded drainage within the profile (wetness class III) and this combines with the topsoil textures to impose significant wetness and workability limitations on the land, restricting it to subgrade 3b.

Urban

3.3 The north of the site comprises a cement works with associated kiln dust tips and excavated ponds. This has been mapped as urban.

July 1994

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