STATEMENT OF PHYSICAL CHARACTERISTICS AND AGRICULTURAL LAND CLASSIFICATION NEWTHORPE QUARRY, SHERBURN-IN-ELMET NORTH YORKSHIRE PROPOSED QUARRY EXTENSION MARCH 1993

ADAS
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SUMMARY

An Agricultural Land Classification survey of approximately 6.5ha of land at Newthorpe was carried out in March 1993.

5.6ha of this was in agricultural use of which 0.5ha falls within Grade 2. Soils within this grade are moderately deep (60-70cm) and well drained (Wetness Class I). Topsoils are light to medium textured (typically fine sandy loams to sandy clay loams) and stoneless to very slightly stony. Subsoils are medium to heavy textured but pass into soft limestone at about 65cm depth. Slight soil droughtiness is the main factor limiting the ALC grade of this land.

Subgrade 3a land covers 1.6ha. Profiles are well drained (Wetness Class I) and stoneless to very slightly stony. Light to medium textured topsoils (fine sandy silt loams and medium silty clay loams) overlie medium to heavy textured subsoils (heavy silty clay loams and medium silty clay loams). Weathering limestone occurs within 40cm to 60cm. Soil droughtiness is the main factor limiting ALC grade.

Subgrade 3b land totalling 3.5ha occurs across the southern part of the site. Profiles are well drained (Wetness Class I) and very slightly to slightly stony. Medium to light textured topsoils overlie medium to heavy textured subsoils or weathering limestone, which occurs within 20cm to 40cm of the surface. Severe soil droughtiness is the main limitation on ALC grade.

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1. INTRODUCTION AND STATEMENT OF PHYSICAL CHARACTERISTICS

1.1 Location and Survey Methods

The site lies 4Km south west of Sherburn-in-Elmet immediately south of the Leeds-Selby railway around National Grid Reference SE 464321. It covers a total of 6.5ha. Survey work was carried out in March 1993 when soils were examined by 14 hand auger borings at points predetermined by the National Grid. A soil pit was dug to assess subsoil structure. Land quality was assessed using methods outlined in "Agricultural Land Classification of England and Wales." (MAFF 1988).

1.2 Land Use and Relief

At the time of the survey 86% of the site was in arable use. The remainder was taken up by an extension to the existing quarry. Site altitude varies from approximately 60cm to 70cm AOD and the land is flat to very slightly sloping (typically 0-3°) with an easterly aspect.

1.3 Climate

Grid Reference	: SE 464 321
Altitude (m)	: 65
Accumulated Temperature above 0°C (January-June)	: 1347 day°C
Average Annual Rainfall (mm)	: 663
Climatic Grade	: 1
Field Capacity Days	: 143
Moisture Deficit (mm) Wheat	: 100
Moisture Deficit (mm) Potatoes	: 89

1.4 Geology, Soils and Drainage

The area is underlain by deposits of Lower Magnesian Limestone which occur within 20-50cm of the surface in parts of the site. The soils are similar to those of the Aberford Association as mapped by the Soil Survey and Land Research Centre. Profiles are well drained, falling in Wetness Class I. Topsoils are generally light to medium textured, typically sandy silt loam or medium silty clay loam. Subsoils are medium to heavy textured, typically heavy silty clay loam or heavy clay loam, and vary in thickness.

1.5 Soil Properties

One main soil type subdivided into units of different thickness occurs on this site. Descriptions are given below. Topsoil and subsoil resources are also shown on the accompanying maps along with soil thickness and volume information.

(a) Soil Type 1:- Light over medium to heavy textured soils (Unit T1/S1) (Full Profile Description, Table 1)

This soil formed on limestone occurs over the whole of the site. It is characterised by well drained profiles with ight to medium textured topsoils over heavier textured subsoils passing to bedrock between 30 and 80cm.

1.6 Soil Resources

(i) Topsoils

Unit T1 occurs over the whole site. It is light to medium textured and consists of sandy loam, sandy silt loam, medium clay loam or medium silty clay loam and stoneless to slightly stony (typically around 2-4% small and medium subangular limestones, rising to 10% in places). It has a weakly developed medium to coarse subangular blocky structure. Mean unit thickness is 25cm.

(ii) Subsoils

Unit S1A is confined to the north western corner of the site. It is medium to heavy textured consisting of sandy clay loam or occasionally heavy clay loam. This unit is stoneless to very slightly stony (typically 2% small subrounded limestones). It has a moderately well developed coarse subangular blocky structure. Mean unit thickness is 45cm.

Unit S1B. This unit occurs in the central part of the site. It is identical to Unit S1A except for mean thickness which is 30cm.

Unit S1C. This unit is widespread in the southern and eastern parts of the site. Textures and stone contents are similar to S1A and S1B but mean thickness is only 10cm.

2. SOIL PROFILE DESCRIPTIONS

Table 1 Light over medium to heavy textured soil, T1/S1B

Profile Pit 1 (Near auger boring 15)

Slope:- 0
Land Use:- Cereals
Weather:- Fine, mild with little recent rain

Depth cm	Horizon Description
0-25	Brown (10 YR4/3) fine sandy loam; no mottles; very slightly stony (2%) small subangular limestones; moist; weakly developed medium to coarse subangular blocky strcture; friable; very porous; common very fine fibrous roots; slightly sticky; moderately plastic; non-calcareous; abrupt smooth boundary.
25-45	Strong brown (7-5YR4/6) heavy silty clay loam; no mottles; very slightly stony (35, total, small and medium angular limestones); moist; moderately developed coarse subangular blocky structure; moderately porous; firm; few fine fibrous roots; moderately sticky; moderately plastic

T1/S1A Subsoil extends to a depth of 70cm

T1/S1C Subsoil extends to only 35cm depth.

3. AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:-

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2	0.5	7.7
3a	1.6	24.6
3b	3.5	53.8
4		
5		
(Sub total)	(5.6)	(86.1)
Urban	0.9	13.9
Non Agricultural		
Woodland - Farm		
- Commercial		
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)	(0.9)	(13.9)
TOTAL	6.5	100

3.1 Grade 2

Grade 2 land occurs in the north west of the site. Topsoils are light or medium textured (sandy clay loam or fine sandy loam) and overlie light to medium textured subsoils (fine sandy loam to sandy clay loam). Profiles are well drained (Wetness Class I) and stoneless to very slightly stony, with weathering limestone bedrock occurring within 60cm to 70cm depth. Slight soil droughtiness is the factor which limits this land to Grade 2.

3.2 Subgrade 3a

Land in this subgrade occurs in the centre of the site. Profiles are well drained (Wetness Class I) and consist of light to medium textured topsoils (fine sandy silt loams and medium silty clay loams) overlying medium to heavy textured subsoils (typically heavy silty clay loams and medium silty clay loams). Profiles are stoneless to very slightly stony. Weathering limestone bedrock occurs at between 40cm and 60cm.

3.3 Subgrade 3b

Land in this subgrade occurs extensively across the site. Profiles are well drained (falling in Wetness Class I). The topsoils are medium to light textured (typically fine sandy silt loam to medium silty clay loam). Subsoils consist of heavy clay loams and sandy clay loams. Profiles are very slightly stony to slightly stony (typically 4 to 10% subangular limestones). Weathering limestone occurs within 20cm to 40cm and soil droughtiness is, therefore, the main factor limiting this land to Subgrade 3b.

3.4 Urban

This refers to an area in the north west of the site where the existing quarry has already been extended.

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MAPS