AGRICULTURAL LAND CLASSIFICATION
PROPOSED DEVELOPMENTS AT
ROSSINGTON HALL, DONCASTER
SOUTH YORKSHIRE
FEBRUARY 1993

ADAS
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SUMMARY

An Agricultural Land Classification survey of approximately 825ha of land to the west and south of Rossington was carried out between autumn 1991 and spring 1992. Changes to the boundaries of the original survey area were made in January 1993 to take account of the revised planning application.

The vast majority of the area is in agricultural use. Of this 96 hectares fall within Grade 2, 365 hectares within Subgrade 3a, 256 hectares within Subgrade 3b and 6 hectares within Grade 4. The remainder of the site consists of woodland, playing fields, urban land including mineral workings, open water and farm buildings.

The Grade 2 land scattered across the site consists of either peaty soils limited to this Grade by wetness or slight droughtiness or well drained sandy loams limited mainly by droughtiness.

The Subgrade 3a land which is most widespread in the central and western parts of the site varies from thin peaty deposits or medium clay loams on the carrlands south and west of Rossington to very light sandy soils further east. Land quality is limited mainly by wetness on the peat and clay loam soils and by droughtiness on the sands.

Subgrade 3b land occurs principally in the east. Here soils are very light textured and sometimes stony and are limited to Subgrade 3b by either droughtiness or topsoil stoniness.

The two small areas of Grade 4 land in the east consist of very light very stony gravel soils which are extremely droughty and limited to Grade 4 for this reason.

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1. AGRICULTURAL LAND CLASSIFICATION

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1. INTRODUCTION AND SITE CHARACTERISTICS

1.1 Introduction

The site covers a total of 824.8 ha and lies to the east, south and west of the village of New Rossington. The centre of the area surveyed lies at National Grid Reference SK614968, 1 km south of New Rossington and 7 km south-east of Doncaster town centre.

Previous surveys covering parts of the site had been carried out in April and August 1990 for earlier development applications. The remainder was surveyed during November and December 1991, January 1992 and April 1992. Changes to the boundaries of the original survey area were made in January 1993 to take account of the revised planning application. Soils were examined by hand auger borings to a depth of 100cm (less where the presence of stones prevented the auger entering deeper) at 100m intervals predetermined by the National Grid. Further borings were made, where necessary, to refine grade boundaries.

1.2 Land Use

Most of the area is in arable use but there are also significant areas of ley grassland, woodland and park land (principally around Rossington Hall School, in the east of the site) and urban land (Rossington Hall School itself, a sand and gravel quarry at Common Lane and a number of minor roads and farm tracks).

1.3 Climate and Relief

Average Annual Rainfall is approximately 600mm. The accumulated temperature above 0°C (January to June) is 1417 day°C and the site is at field capacity for around 120 days a year. The temperature and rainfall figures indicate that there is no overall climatic limitation on ALC grade but moisture deficits of 111mm for wheat and 104mm for potatoes indicate a moderate to severe droughtiness limitation on the light-textured soils in the east and centre of the site.

Site altitude varies from 5m AOD to 30m AOD. the west of the site is flat while the centre and east of the site contain gentle to moderate slopes.

1.4 Geology, Soils and Drainage

The entire site is underlain by the Bunter sandstone except for a small area near the western edge where Permian marls outcrop. Although soils derived from Bunter sandstone occur in parts of the centre and east, most of the site is covered by a variety of drift deposits. The most important of these are the glacial sands and gravels in the east and alluvium in the centre and west, smaller areas of peat (centre and west), and boulder clay (in centre and east) also occur. The soils occurring on the site closely reflect the drift geology and range from well-drained (Wetness Class I) light-textured droughty soils on the gravel deposits to moderately well-drained and imperfectly drained (Wetness Classes II and III) alluvial and boulder clay soils, along with areas of thin organic and peaty soils (varying from well to poorly drained) on the carrlands around Rossington Village.

2. AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2	96.20	11.7
3a	365.20	44.3
3b	256.90	31.1
4	6.10	0.7
5		
(Sub total)	(724.40)	(87.8)
Urban	32.20	3.9
Non Agricultural	23.70	2.9
Woodland - Farm	42.30	5.1
- Commercial		
Agricultural Buildings	0.40	0.1
Open Water	1.80	0.2
Land not surveyed		
(Sub total)	(100.40)	(12.2)
TOTAL	824.80	100

2.1 Grade 2

This grade occurs in a number of relatively small areas scattered across the site. The Grade 2 land in the carrlands in the centre and west generally consists of deep organic mineral or peaty topsoils (greater than 40cm in depth), overlying either light-textured (loamy sand or sand) or heavy-textured (clay or silty clay) alluvial subsoils. in places peat, loamy peat or sandy peat occurs to depths of 80-100cm. Where heavy-textured subsoils occur below the peat slowly permeable layers generally begin at 45 to 50cm depth and soil wetness is the factor which limits ALC grade. Where light-textured subsoils occur, soils are limited to Grade 2 by slight droughtiness.

In the east of the area, Grade 2 soils consist of either medium sandy loam or loamy medium sand topsoils overlying medium sandy loam subsoils (in which case there is a slight droughtiness limitation on ALC grade) or, medium sandy loam or medium clay loam topsoils and upper subsoils over heavy-textured lower subsoils. In profiles of this type slowly permeable layers occur at depths of 50 to 70cm and slight soil wetness is the main limiting factor.

2.2 Subgrade 3a

Land in this subgrade covers much of central and western parts of the development area and also occurs in patches in the east. There are three main soil types included within this subgrade. The first is the sandy soils in the central and eastern parts of the site. These are derived from glacial sand and gravel deposits or directly from Bunter Sandstone. Profiles consist of slightly to moderately stony loamy medium sand or medium sandy loam topsoils overlying loamy medium sand or medium sand subsoils. These soils have a small water holding capacity and soil droughtiness is the main factor limiting ALC grade.

The second soil type, which is widespread in the carrlands south of Rossington village, consists of peaty or organic topsoils overlying either light-textured (loamy sand or sand) or heavy-textured (heavy clay loam, clay or silty clay) subsoils. Topsoils are generally 30-35cm thick and in places subsoil appears at the surface where it has been brought up by ploughing. There is a risk that intensive use of

this land will result in shrinkage of the organic or peaty topsoil and for that reason this land has been placed in Subgrade 3a rather than Grade 2.

The third soil type falling within Subgrade 3a occurs mainly in the centre of the site and consists of medium-textured topsoils (usually medium clay loam) overlying heavy-textured soils (usually heavy clay loam or clay). Slowly permeable layers occur at depths of between 30cm and 60cm and thus soil wetness is the main factor limiting ALC grade.

2.4 Subgrade 3b

Subgrade 3b land occurs principally in the east of the area but also in smaller patches in the west and centre. Land in this subgrade generally consists of medium sandy loam topsoils overlying loamy medium sand or medium sand subsoils. Both topsoils and subsoils are moderately stony (often with 20-30% small rounded hard stones). Soils of this type have a very small water holding capacity and soil droughtiness along with topsoil stoniness are the main factors limiting ALC grade. In some parts of the east and north west of the site are heavy-textured soils which also fall within Subgrade 3b. These consist of heavy clay loam or heavy silty clay loam topsoils overlying clay or silty clay subsoils. Slowly permeable layers occur at around 30cm depth and soil wetness is the factor limiting ALC grade.

2.5 Grade 4

Grade 4 land occurs in two areas in the east. Soils are light or very light textured and moderately to very stony. Typically they consist of medium sandy loam or loamy medium sand topsoils overlying loamy medium sand or sand subsoils. Topsoil stone content is around 20% and subsoil stone content is up to 40%. These soils are extremely droughty and restricted to Grade 4 for this reason.

2.6 Urban

Land in this category includes a number of minor roads and farm tracks, a sand and gravel quarry to the east of Hunster Grange Farm, and Rossington Hall School.

2.7 Non-Agricultural

Non-agricultural land occurs mainly in the central and eastern parts of the site. It includes farm woodland, parkland (mainly around Rossington Hall School) and playing fields.

2.8 Open Water

This consists of a small lagoon in the north east of the site. It probably represents the remains of an old gravel working.

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MAP