PROPOSED RESIDENTIAL DEVELOPMENT

LAND TO THE WEST OF METCALFE LANE, OSBALDWICK, YORK

ENVIRONMENTAL STATEMENT

CHAPTER 1: AGRICULTURE

May 2003

1. INTRODUCTION

1.1 Land Use Consultancy Services (LUCS) have been commissioned to undertake an Agricultural Land Classification (ALC) assessment of land proposed for residential development at Metcalfe Lane, Osbaldwick, York.

1.2 The proposed development site is allocated as Site H1.6 in the May 1998 Deposit draft of the City of York Local Plan for residential development. It covers approximately 22 hectares and is identified on Fig 1.1.

1.3 This assessment has been prepared in support of a planning application for the development. The application is submitted in outline with access and structural landscaping also to be considered at this stage.

1.4 A Development Brief for the site has been prepared by the council to guide, in general terms, the form of the development. The Brief envisages that 30% of the site will be laid out as amenity and/or outdoor playing space and/or landscaping and that the remainder will be developed at densities consistent with PPG3 advice - that is between 30 and 50 dwellings per hectare.

1.5 Although, with the exception of the access arrangements and structural landscaping, no details of the development are included in the application (for example, details of the site layout and numbers of dwellings), for the purposes of the environmental impact assessment, it has been assumed that some 540 dwellings can be accommodated within a net developable area of about 15 hectares.

1.6 The application also makes provision for community buildings, which may include shops and/or community facilities in a central location. Both the location and the range of facilities can only be indicative at this stage. It is also proposed to provide a car park within the site for Osbaldwick Village Hall.

1.7 This assessment should be read in conjunction with the application site plan reference A/1418/2.3/04, Supporting Statement and accompanying illustrative material. The design concept for the general layout of the site, which flows in large part from the access arrangements, envisages 4 separately accessed residential neighbourhoods linked by a network of footpaths and cycleways but with no "through" routes for vehicles, except buses. Approximately the following number of dwellings will be provided in each neighbourhood:

Neighbourhood

A	(accessed from Fifth Avenue)	185 dwellings
B	(accessed from Meadlands)	125 dwellings
C	(accessed from Temple Avenue)	125 dwellings
D	(accessed from Osbaldwick Village)	105 dwellings

1.8 This chapter of the Environmental Statement assesses agricultural land quality and viability issues which are material to the determination of the application.

2. SURVEY METHODS

2.1 Fieldwork was undertaken on the 7th and 10th May 2002.

2.2 The soils were examined by hand auger borings to a depth of 120cm at 100 metre intervals across the site at points predetermined by the National Grid. Additional observations were made to confirm soil types and boundaries. Soil profiles were inspected, where necessary, to assess soil structural conditions.

2.3 Agricultural Land Classification assessments were made using the revised guidelines and criteria of the Department for Environment, Food and Rural Affairs (DEFRA) - formerly the Ministry of Agriculture, Fisheries and Food (MAFF) - and described in "Agricultural Land Classification of England and Wales" (MAFF, 1988).

2.4 ALC grade is determined by the most limiting factor present, according to the degree to which these limitations affect long-term agricultural use. Climatic criteria are considered first, followed by site and soil characteristics and, finally, interactive limitations are assessed.

2.5 The limitations which result from interactions between climate, site and soil are soil wetness, droughtiness and erosion. The limitations are not mutually exclusive in that some soils can be wet in winter but droughty in summer.

2.6 For ALC purposes wetness and droughtiness are assessed separately by relating solid profile characteristics to appropriate climatic parameters.

2.7 A soil wetness limitation exists where the soil water regime adversely affects plant growth or imposes restrictions on cultivations or grazing by livestock. Soil droughtiness indicates the degree to which a shortage of soil water influences the range of crops which may be grown and the level of yield which may be achieved.

2.8 The definition of land classification grades is given in **Appendix 1** and soil wetness classes are defined in **Appendix 2**.

3. CLIMATE

3.1 Site-specific Met. Office agro-climatic data for SE 630 520 are as follows:

Average Annual Rainfall	607mm
Accumulated Temperature (above 0 degrees C Jan to June)	1386 day degrees C
Field Capacity Period	135 days
Moisture Deficit - Wheat	111mm
- Potatoes	103mm

3.2 These data show that the combination of rainfall and temperature does not impose a climatic limitation upon land grade and that the best possible grade is Grade 1.

3.3 Topsoil texture and soil wetness are moderately severe limitations which take the land out of Grade 1 and determine the final assessment of land quality across much of the

site. In the north-east, topsoil stoniness and soil droughtiness are the main limitations. There are no erosion limitations at the site to the west of Metcalfe Lane.

4. THE SITE

4.1 The site occupies level and very gently undulating land (slopes in the range 0-3 degrees).

4.2 Altitude is approximately 14 metres OD.

4.3 There are no site limitations which affect the final assessment of land grade.

5. LAND USE

5.1 At the time of the survey the site was under a mixture of permanent grassland and non-agricultural use.

5.2 The non-agricultural land is made up of a National Grid compound, associated derelict buildings and the occupied Grid Cottage - towards the eastern boundary of the site - and a Sustrans Track along a disused railway line - running from west to east, across the centre of the site.

6. GEOLOGY

6.1 The geographical map of the York area (Sheet 63. Geological Survey of Great Britain, 1983) shows that the site to the west of Metcalfe Lane is covered by deposits of warp and lacustrine clay.

6.2 The published detailed 1:25,000 soil map of the area - Soils in Yorkshire 1: Sheet SE65 (York East). Soil Survey of England and Wales, 1971 - shows the land to the north of the disused railway line to be dominated by poorly drained, clayey soils of the Foggathorpe series. Soils with sandy or sandy loam topsoils and upper subsoils passing into clay at depth are mapped as imperfectly drained soils of the Stockbridge series and occupy rising ground in the north-east. The remainder of the site is "unsurveyed".

6.3 The generalised soil map of the area - 'Soils in Northern England' published by the Soil Survey of England and Wales in 1983 - also shows the area around the site to be covered by soils of the Foggathorpe 2 Association developed in glaciolacustrine clay and described as:

> *Slowly permeable seasonally waterlogged stoneless clayey and fine loamy over clayey soils. Some similar coarse loamy over clayey soils.*

6.4 This general soil pattern was confirmed during the detailed LUCS surveys and profiles of the Foggathorpe series were found to dominate the site.

6.5 Typical soil profiles found across the site have stoneless medium clay loam or, occasionally, sandy clay loam topsoils. These overlie slowly permeable clayey subsoils of at depths of between 20 and 64cm from the surface. Where the slowly permeable layer is encountered within 37cm depth the soils are Wetness Class IV and where the

slowly permeable layer is at between 37 and 64cm depth the soils are Wetness Class III.

6.6 Slightly humose and humose topsoils were noted - across the centre and in the south-east of the site - where dominantly clayey profiles also pass, on occasion, into sandy silt loam textures at depths greater than 100cm.

6.7 On slightly rising ground in the north-east of the site, soils profiles with slightly stoney (6-15% by volume; medium and large in size) sandy loam and sandy clay loam topsoils and upper subsoils with common to many stones (6-35%) overlie slowly permeable stoneless clay at depths of between 50 and 100cm from the surface. These are soils similar to those of the Portington series, an intermediate soil between clayey Foggathorpe profiles and the sandy Stockbridge series.

6.8 Soils of the Portington series with slowly permeable layers at between 37 and 64cm depth are Wetness Class III and where the slowly permeable layer is at more than 64cm depth they are Wetness Class II

7. AGRICULTURAL LAND CLASSIFICATION GRADES

The ALC grades found across the site to the west of Melcalfe Lane are shown on the map which accompanies this report (**Map 1**) and are described below:

7.1 **Grade 1** - None

7.2 **Grade 2** - None

7.3 **Subgrade 3a**

Soils with medium clay loam or sandy clay loam topsoils over slowly permeable horizons starting at between 37 and 64cm depth (Wetness Class III) form land within this subgrade because of moderately severe soil wetness limitations.

Similar soils with slightly stony sandy loam and sandy clay loam topsoils and upper subsoils over slowly permeable horizons start at below 64cm depth (Wetness Class II) also form land within this subgrade because of topsoil stoniness limitations and, where moderately stony subsoils (16-35% volume) are encountered, slightly droughtiness for potatoes.

7.4 **Subgrade 3b**

Land in this subgrade is represented by soils with medium and heavy clay loam topsoils over slowly permeable subsoils starting within 37cm of the surface. They are naturally poorly drained and waterlogged for long periods in winter (Wetness Class IV).

Included within this subgrade are similar soils with heavy clay loam topsoils overlying slowly permeable horizons starting within 64cm of the surface (Wetness Class III and IV).

7.5 **Grade 4** - None.

7.6 **Grade 5** - None.

7.7 **Non-agricultural land**

Land within this category is sub-divided into 'hard' uses with relatively little potential for a return to agriculture and 'soft' uses where most of the land could be returned relatively easily to agriculture.

All the non-agricultural land at the site to the west of Metcalfe Lane is in "hard" use and comprises; the National Grid compound and associated derelict buildings, Grid Cottage and the Sustrans Track along the disused railway line.

8. PROPORTION OF LAND WITHIN EACH GRADE

8.1 Table 1 - Proportion of land by grade - whole site

Grade	Area (approx. ha)	% (approx.)
Grade 1	Nil	Nil
Grade 2	Nil	Nil
Subgrade 3a	1.9	8.6
Subgrade 3b	17.4	44.4
Grade 4	Nil	Nil
Grade 5	Nil	Nil
Non-agricultural	4.51	12.3
	22.0	100.0

9. PUBLISHED INFORMATION

9.1 The map of Agricultural Land Classification for the area to the east of York (Sheet 97), published by the Ministry of Agriculture in 1969 at a scale of one inch to one mile, shows the site to the west of Metcalfe Lane to be Grade 3 land.

9.2 Grade 3 land is shown to occupy much of the land to the north and east of York from Sutton-on-the-Forest southwards to Howden. Grade 2 is shown as the dominant grade across the southern Vale of York from Wetherby and York in the north to Pontefract and Goole in the south, whilst Grade 1 land occupies the warplands along the River Ouse from Cawood to the south of Goole.

[**Note 1:** The MAFF ALC maps at this scale do not differentiate between the three subgrades of Grade 3 recognised at the time of publication.]

9.3 The classification system used to produce the MAFF ALC map was replaced in 1988 by a system which take account of new knowledge and data and which improved the objectivity and consistency of assessments.

[**Note 2:** In 1996 MAFF withdrew the national series of 1 inch to 1 mile ALC maps from sale. It is acknowledged that the published ALC maps are accurate only to 80 ha. (200 acres) and give a general indication of land quality. They should be used only at a regional/strategic level and not for site-specific surveys. Actual grades can only be determined following detailed survey by experienced and qualified soil scientists.

9.4 An interpretation of the MAFF ALC map using the current ALC classification, information from the published soil maps and geological information indicates that the agricultural land classification grades found across the site to the south of Monks Cross are typical of those to be found on similar deposits elsewhere in the area to the east of York.

9.5 Land within Grades 1 and 2 and Subgrade 3a is regarded as 'best and most versatile' and, in the national interest, is afforded special protection within the planning system whilst changes to land in Subgrade 3b and Grades 4 and 5 are not normally opposed on land quality grounds.

9.6 Planning Policy Guidance (PPG7, 1997) states that if land in Grades 1, 2 or 3a needs to be developed, and there is a choice between sites in different grades, development should be directed towards land in the lowest grade.

9.7 The site to the west of Metcalfe Lane, although it contains a small proportion of 'best and most versatile' land under DEFRA/MAFF ALC criteria, exhibits a range of soil types and land quality which place it below other sites in the wider York area if it were to be ranked on this 'worst first' principle in which lower ranked sites are more acceptable for development than those with a higher ranking.

10. IMPACT ON AGRICULTURAL HOLDINGS

10.1 The application site, apart from the National Grid land, is down to permanent pasture/ rough grazing. It does not constitute or form part of an agricultural unit and there are no agricultural tenancies applying to the land.

10.2 The proposed development will therefore have no adverse impact on the viability of any farm holding.

11. CONCLUSIONS

11.1 Less than 10% of the site falls within the definition of best and most versatile land which Government policy generally seeks to protect, and all of this land (which extends only to 1.9 hectares) falls within the lowest category of best and most versatile land. There are no farm tenants on the land, none of which forms part of any agricultural holding.

11.2 Accordingly, no mitigation is required.

APPENDIX 1 DEFINITION OF LAND CLASSIFICATION GRADES

Grade 1 - excellent quality agricultural land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality

Grade 2 - very good quality agricultural land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.

Grade 3 - good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 or 2.

Subgrade 3a - good quality agricultural land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b - moderate quality agricultural land

Land capable of producing moderate yields of a narrow range of crops, principally cereal and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4 - poor quality agricultural land

Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5 - very poor quality agricultural land

Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Land in other categories

Urban

Built up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: golf courses, private parkland, public open spaces, sports fields, allotments and soft-surfaced area on airports/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

APPENDIX 2 DEFINITION OF SOIL WETNESS CLASSES

Wetness Class	Duration of Waterlogging *
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years.
II	The soil profile is wet within 70 cm depth for 31-90 days in most years *or*, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 90 days, but not wet within 40 cm depth for more than 30 days in most years.
III	The soil profile is wet within 70 cm depth for 91-180 days most years *or*, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31 and 90 days in most years.
IV	The soil profile is wet within 70 cm depth for more than 180 days, but not wet within 40 cm depth for more than 210 days in most years *or*, if there is no slowly permeable layer within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years.
V	The soil profile is wet within 40 cm depth for 211-335 days in most years.
VI	The soil profile is wet within 40 cm depth for more than 335 days in most years.

* the number of days specified is not necessarily a continuous period.
"in most years" is defined as more than 10 out of 20 years.

The calculation of Wetness Class assumes that the soils have an appropriate underdrainage system and that there are satisfactory outfalls. Additional land drainage measures would not improve the assessment.

LAND USE CONSULTANCY SERVICES

Land Use Consultancy Services is an independent land use Consultancy established in 1986 and specialising in soil and land evaluation and general agricultural and horticultural advice for farmers, growers, land owners, local and national authorities and all those with an interest in land use.

S J King became Principal Consultant with LUCS in March 1992 after a career with the Soil Survey and Land Research Centre (formerly the Soil Survey of England and Wales).

He has worked in Cheshire, Cumbria, Durham, Humberside, Northumberland and Yorkshire and was the Soil Survey's Senior Research Scientist and Agricultural Manager for the North of England based at Bishop Burton College of Agriculture, Beverley and latterly at York University.

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