



Agricultural Land Classification Report

**Land adjacent to the A614,
Worksop,
S80 3PA**

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1.0 Summary

The Land adjacent to the A614, Worksop, Derby

There are 3 large enclosures divided into 9 sub-sections.

The soil – Variable -mainly light sandy soils to heavy clay loam.

Gradient = up to 9° (degrees) in places.

Soil depths 13-18" (inches)

Height above sea level: 44m or 145' m (Ft)

Grades = 3a and 3b

The lands on inspection total: Approximately 250 acres (101 hectares)

2.0 Introduction

Davis Meade was instructed by to carry out a land quality assessment of the land shown coloured red and sub divided green, on maps in Appendices below. A field survey was conducted on 12/02/2024.

3.0 Subject

To investigate the designated land grades at land adjacent to the A614, Worksop,

To advise One Planet Developments on the land classification(s) To inform a planning application for a proposed solar farm and battery energy storage system.

4.0 The Site

The land consists of 3 main fields divided out for the purpose of the report into 9 field sections (as per Site map, appendix 3).

5.0 Basic Methodology

Soil samples were taken and examined from trial digs and from topsoil. Investigations show topsoil depth from approximately 13- 18”.

A desktop study of existing soils and climatic information was undertaken, followed by fieldwork to study soil and site limitations.

The land was classified using the system outlined in the Ministry of Agriculture, Fisheries and Food (MAFF now DEFRA) publication *Agricultural Land Classification (ALC) of England and Wales-Revised guidelines and criteria for grading the quality of agricultural land* (October 1988).

This requires that the lowest factor to decide the grade. The deciding factors are soil depth, stoniness, rain fall, climate, gradient and water logging. The main deciding factors were, in this report, were stoniness ,some waterlogging and soil type.

6.0 Details of Methodology

- 1) The ALC requirement is that whatever any factors show, that it is the lowest factor that creates the grade.
- 2) The 5 main factors are soil depth, stoniness, climate, slope, wetness. There are further factors that can be considered, but they need laboratory analysis mainly to define soil type. Such analysis would only, if appropriate, bring the grade down lower and are not considered in this report. The grade is reduced in cases of the soil being in poor condition perhaps from long-term non-use.
- 3) An example is marshy land, which although level, or of a slope less than 7 degrees (which it would have to be to be grade 1,2 and 3a) but because of its wetness is grade 5.
- 4) The parcel is therefore surveyed for the lowest factor and that can sometimes be easy to ascertain say in marshland (excessive wet Grade 5) or as in the case of steep hill land (above 18 degrees) as those factors in themselves, sets the grade at 5. There is thus no need to make any further investigations in the block, such as soil depth etc as the lowest Grade has been established.
- 5) Historically fields were internally fenced or partitioned into blocks that produced similar crops i.e., arable, or grazing land. The grazing land was fenced off to prevent stock from getting into the arable crops. Arable fields are often (especially internally) partitioned insecurely between each other, but the hedge or fencing sometimes remains from a time when the fields were smaller.
- 6) It is not suggested that the soil of each field is necessarily exactly the same throughout a parcel but it is not unreasonable to regard that as the default position.
- 7) Accordingly, some initial digs in the parcel are made and recorded and then the remainder of the field is walked to look for change in soil type upon which further 'digs' are made. Fields with slopes need a dig at the top and bottom as well, to check for soil depth. The walk is also used to note the amount and size of stones across the field. The amount of stones does often vary in a parcel, especially in arable fields where the stones are usually on or near the surface having been brought up by the cultivation work and further exposed by the weather. Again, the regulations give lower grades depending on stoniness and even they only refer to stones "up to 6cm". Attention is therefore drawn where there are, in some cases stones up to 20cm to 25cm (8-10"). These size stones can cause heavy wear or even damage to machinery and the ALC recognises this as Grade reduction.
- 8) Similarly, a slope of any more than 7 degrees eliminates the parcel from being grades 1,2 or 3a and a table of degrees defines lower grades as do the regulations concerning uneven land which machinery cannot easily work on.
- 9) If a Grade 5 factor is not immediately obvious in a parcel, then the lowest of the factors are considered to produce the Grade.
- 10) Soil type/ wetness. Clay soils will hold water and can become waterlogged. The length of time the wetness remains again defines the grade under the wetness factor. Sandy soils dry out and may need irrigation and are specified as eliminated from grades 1,2 & 3a. Sandy loam is excluded from Grade 1. Enquires are made about waterlogging time where necessary.
- 11) Climate- This is another factor and arable crops do not do so well above about 750/800 feet a.m.s.l, so may downgrade a block for that reason, especially in hilly areas.
- 12) Soil depth, A "dig" involves making a spade hole approximately ½ meter square down to the subsoil, or to uncultivated stoniness, or a half round 18" probe may be used and a sample brought to the surface. The topsoil's depth is then recorded, and the Grade is limited to the ALC table for soil depth. This depth is often the depth zone within which the field is frequently cultivated but deeper soils may make the grade higher if this aids drainage, but of course other factors may be the dominant factor if lower, to finally define the Grade.
- 13) Finally, a basic cross check of the location is made with "The soils of England and Wales" maps and descriptions. However, these maps are 1:250,000 and do not show individual fields or even farms but usually generally give an idea of soils (not grades) in that location and thus give an idea of the type of farming carried out in the area which can then be crossed checked with the ALC definitions. Samples originally to create these maps were only taken one in every 80 hectares or 190 acres.

7.0 Results

Notes

- The National Grid numbers (XX XXXX 5300 etc.) are calculated by reference to the centre of the field. This report is not able to locate the exact centre of a parcel so the number may vary with other references. However, any location reference in the parcel will be unique to that parcel.
- The acreages are estimate only taken from a “Magic “plan measurement.
- Reference to “level” indicates 7° or less
- Any reference to flooding (opposed to waterlogging) is listed, (none in this report).
- This is an initial ALC survey only. It does not include any laboratory examinations of the soil which if carried out may only serve to lower the grade. Thus, only Tables 1 to 5 of the guidelines are considered in making this report.

7.1 The Land

Field Number	Acreage	National Grid Number	Grade
Field 1 Section 1.1	27.4	SK 65016 75456	Grade 3a
Medium sandy soil 15” over orange subsoil, undulating but not enough to change the grade.			

Field Number	Acreage	National Grid Number	Grade
Field 1 Section 1.2	28.9	SK 65214 75242	Grade 3a
Medium sandy soil 15” over orange subsoil, undulating but not enough to change the grade.			

Field Number	Acreage	National Grid Number	Grade
Field 2	40.7	SK 65158 74750	Grade 3b
Heavy sandy-clay loam 14-16” over sandy orange subsoil. 15-20% gravel and pebbles, and Some larger 8 cm stones. Some waterlogging. Land use as per Agricultural Land Classification description of 3b.			

Field Number	Acreage	National Grid Number	Grade
Field 3	25.3	SK 65456 74751	Grade 3a
Light sandy soil 15-18”. Few stones.			

Field Number	Acreage	National Grid Number	Grade
Field 4 Section 4.1	27.9	SK 65689 74820	Grade 3b
15-16" sandy clay loam with 15-20% gravel, over orange subsoil. Slopes up to 9°. Some 5-7" stones, some waterlogging			

Field Number	Acreage	National Grid Number	Grade
Field 4 Section 4.2	20.8	SK 65955 74829	Grade 3b
15-16" sandy clay loam with 15-20% gravel, over orange subsoil. Slopes up to 9°. Some 5-7" stones, some waterlogging			

Field Number	Acreage	National Grid Number	Grade
Field 5 Section 5.1	32.5	SK 65671 75320	Grade 3b
13-14" medium sandy soil, over sandy silt, over orange subsoil. High gravel content 15-20% with pebbles,. Some larger stones 5-7". Level.			

Field Number	Acreage	National Grid Number	Grade
Field 5 Section 5.2	15.2	SK 65858 75288	Grade 3b
13-14" medium sandy soil, over sandy silt, over orange subsoil. High gravel content 15-20% with pebbles, Some larger stones 5-7". Level.			

Field Number	Acreage	National Grid Number	Grade
Field 5 Section 5.3	31.6	SK 66076 75419	Grade 3b
13-14" medium sandy soil, over sandy silt, over orange subsoil. High gravel content 15-20% with pebbles, Some larger stones 5-7". Level.			

7.2 Soils of England and Wales Maps

Show this area as 551b CUCKNEY 1 Well drained sandy and course loamy soils, over soft sandstone. Risk of wind erosion. Cereals, sugar beet and potatoes, some woodland and short term grassland.

7.3 Site Limitations and Conclusion

The lands varied from sandy soils to heavy clayey soils. Only 2 fields were of the soil quality for specialist crops beyond cereals and grass. This fits in with Grades 3a and 3b and also fits in with the general description of Soils in the area as shown on the Soils of England and Wales.

8.0 Grades applicable to or referred to in the Survey.

The MAFF publication specifies land:


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 cereals 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.

Note- More than 50% of the land in England and Wales comes in the Grade 3 category and most of that is **Grade 3b**.



Signed.....

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Appendices

Appendix 1- Description of All grades and sub grades

Appendix 2- Percentages of Grades

Appendix 3- Site plan

Appendix 4- Location plan

Appendix 5- Original Instruction Map

1. Description of all the grades and subgrades

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 and 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 cereals 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 moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

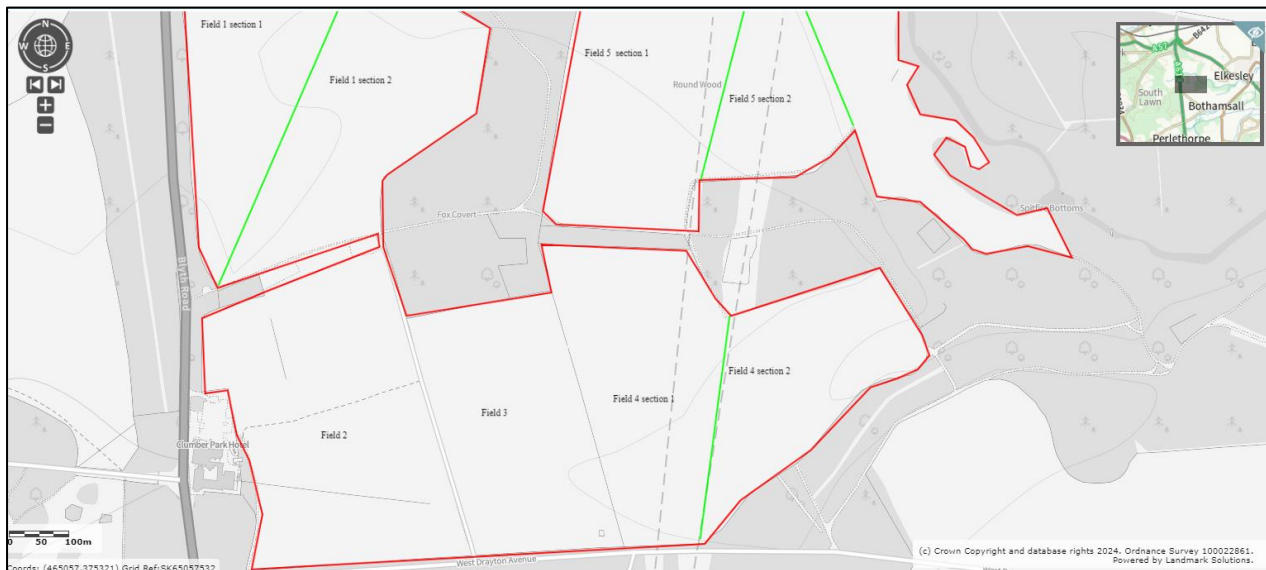
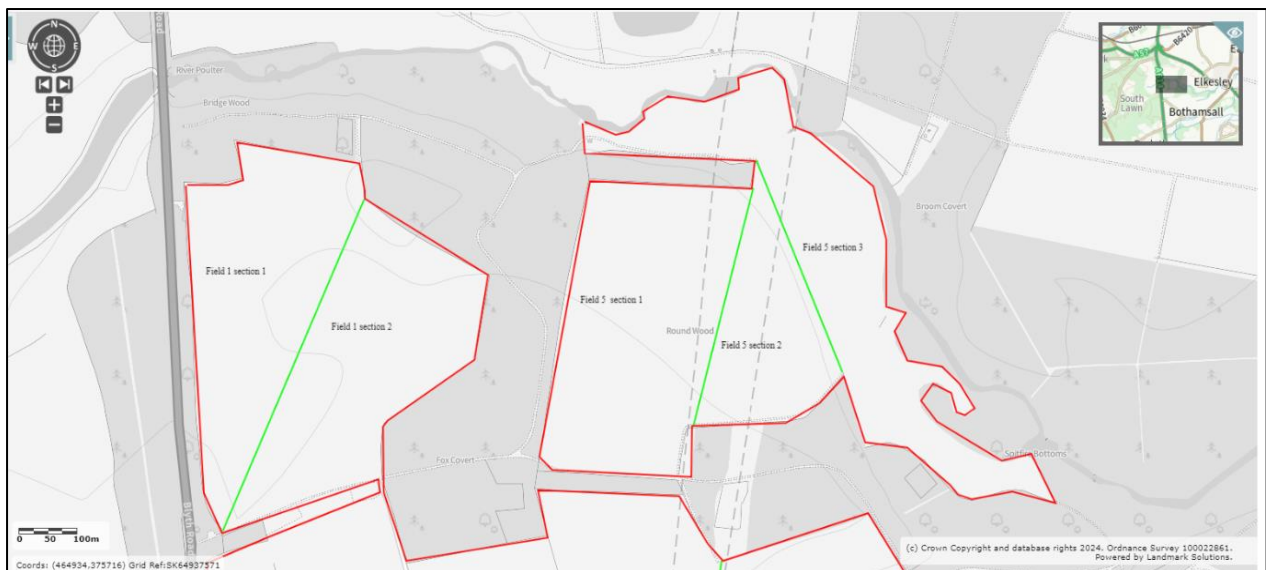
Grade 5 - very poor-quality agricultural land

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

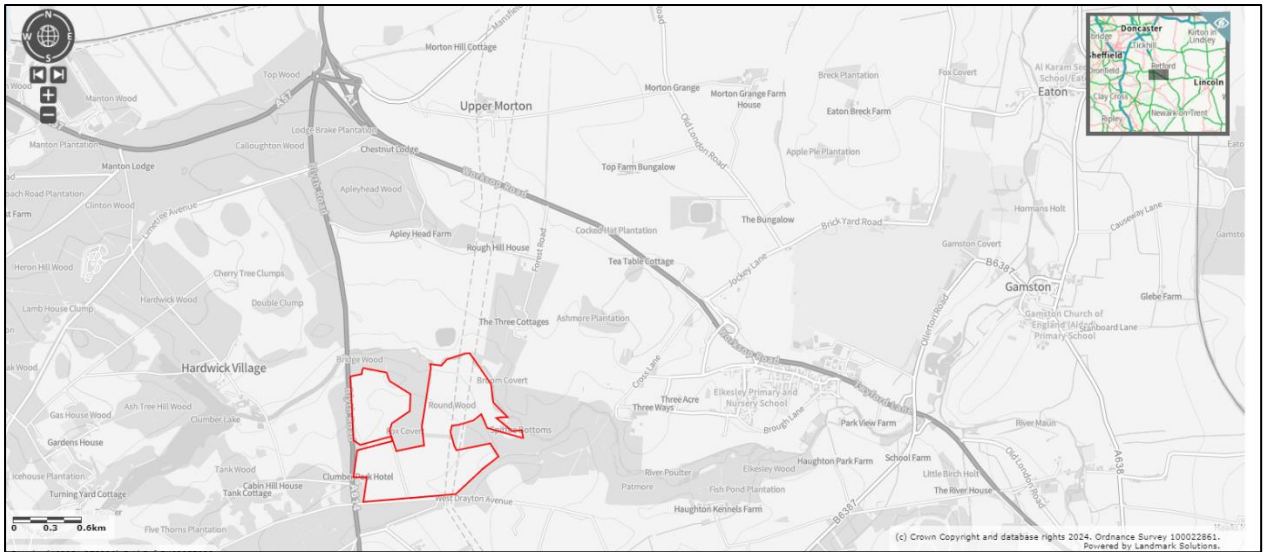
2. Percentages of Grades

Total Area (acres)	Grade 1	Grade 2	Grade 3a	Grade 3b	Grade 4	Grade 5
250.3	-	-	61.6 (24.6%)	188.7 (75.3%)	-	-

3. Site map of land:



4. Location Plan



5. Original Instruction Map

