

**LAND AT ARBORFIELD,
WOKINGHAM**

**AGRICULTURAL LAND
CLASSIFICATION AND
CONSIDERATIONS**

April 2025





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1 INTRODUCTION

1.1 This report considers the agricultural land quality of a parcel of land extending to approximately 6.44ha on land at Reading Road, Arborfield.

1.2 The Site is shown outlined in red on the aerial image below.

Insert 1. The Site (boundary approx.)



1.3 A detailed Agricultural Land Classification has been carried out over the Site. The Site is recorded to contain a small area of Subgrade 3a, Subgrade 3b and Grade 4 quality land with an area of non-agricultural land. Therefore, the Site contains best and most versatile agricultural land.

1.4 This report:

- (i) reviews the relevant planning policy in section 2;
- (ii) describes the Site and the ALC survey findings in section 3;
- (iii) assesses the findings against policy in section 4; and
- (iv) ends with a summary and conclusion in section 5.

1.5 This report has been prepared by Kernon Countryside Consultants Ltd. We specialise in assessing the effects of development proposals on agricultural land and businesses.

National Planning Policy Framework

- 2.1 The National Planning Policy Framework (NPPF) (2024), paragraph 187 notes that planning policies and decisions should contribute to enhance the natural and local environment by, inter alia, recognising **“the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land”**.
- 2.2 The best and most versatile (BMV) agricultural land is defined in Annex 2 of the NPPF as land which is of Grade 1, 2 and Subgrade 3a of the Agricultural Land Classification.
- 2.3 Paragraph 188 of the NPPF discusses plan making. It requires plans to, inter alia, allocate land with the least environmental or amenity value, where consistent with other policies in the Framework. Footnote 65 of the NPPF identifies that **“where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality”**.
- 2.4 There is no definition of what constitutes “significant” development. However, the “Guide to assessing development proposals on agricultural land” (Natural England, February 2021) advises local planning authorities to **“take account of smaller losses (under 20 ha) if they’re significant when making your decision”**, suggesting that 20ha is a suitable threshold for defining “significant” in many cases.

Local Plan

- 2.5 Within the Wokingham Borough Local Development Framework (January 2010) reference is made to the use of best and most versatile agricultural land within Core Policy CP1 (Sustainable Development) stating that:

“Planning permission will be granted for development proposals that:

7) Avoid areas of best and most versatile agricultural land”

Guidance

- 2.6 Natural England's “Guide to Assessing Development Proposals on Agricultural Land” (February 2021) describes the ALC process and sets out guidance on managing soils. It advises on the consultation process where more than 20ha of BMV land is involved.
- 2.7 The Institute of Environmental Management and Assessment (IEMA) produced a Guide “A New Perspective on Land and Soil in Environment Impact Assessment” in February

2022. Whilst this refers to EA development, it identifies in table 3 (page 49) the magnitude of the impacts on soil resources. Losses of under 5ha are defined as minor magnitude losses. Losses of between 5 – 20 ha is classified as moderate losses. Losses of over 20ha are considered to be major losses.

3 AGRICULTURAL LAND QUALITY OF THE SITE

The ALC System

- 3.1 The Agricultural Land Classification (ALC) system provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long term limitations on the agricultural use of the Site. The ALC system divides agricultural land into five grades. Grade 1 of the ALC is describes as being of excellent quality and Grade 5, at the other end of the scale, is described as being of very poor quality. The current guidelines and criteria for the ALC were published by the Ministry of Agriculture, Fisheries and Food (MAFF) in 1988.
- 3.2 The ALC system is further described in Natural England's Technical Information Note 049 which can be found reproduced in **Appendix KCC1**.

Detailed ALC Survey Results

- 3.3 A detailed ALC survey was carried out on the 20th February 2025 across the Site. 8 auger point inspection sites were examined on a regular 100m grid, using a spade and soil auger to a maximum depth of 120cm where possible.
- 3.4 One soil pit was dug to measure the stoniness and to better describe the soil profiles. Three samples were sent for laboratory analysis for the fractions of sand, silt and clay.
- 3.5 A detailed ALC report is set out in **Appendix KCC2**.
- 3.6 The results of the survey can be seen in the table below.

Table 1. ALC Results

ALC Grade	Description	Area (Ha)	Proportion (%)
Subgrade 3a	Good	0.7	11
Subgrade 3b	Moderate	1.7	27
Grade 4	Poor	1.9	30
Non-Agricultural	-	2.4	32
Total	-	6.4	100

- 3.7 The distribution of grading can be seen on the extract of the ALC plan below. The full plan can be found at the back of the report referenced **Plan KCC3871/02**.

Insert 2. Extract of the ALC Plan



- 3.8 As can be seen from the above, the Site is made up of a small area of Subgrade 3a, Subgrade 3b and Grade 4 land with an area of non-agricultural land.

4 POLICY ASSESSMENT

4.1 The NPPF (2024) identifies that the economic and other benefits of BMV land be recognised. In plan making terms the NPPF requires that, where significant development of agricultural land is involved, poorer quality land should be used in preference. Therefore, we consider the economic and other benefits then go on to consider the plan-making considerations.

Economic Benefits

- 4.2 The NPPF (2024) does not prevent development of BMV land. It requires only that the economic and other benefits of BMV land be recognised.
- 4.3 There is no research available that we are aware of that seeks to analyse the productive economic advantages of BMV to non-BMV land.
- 4.4 In the absence of any empirical data, an economic assessment is inevitably crude. Taking standard budging textbooks, such as the John Nix Pocketbook for Farm Management (extracts which have been reproduced in **Appendix KCC3**), it is possible to show the difference between moderate and high yields as an illustration between crops.
- 4.5 Taking that crude measure and applying it to Winter Wheat and Oilseed Rape, the differences are shown below.

Table 2. Assessment of Economic Farmed Land

Item	Winter Wheat		Oilseed Rape	
	Average	High	Average	High
Yield (t/ha)	8.3t/ha	9.5t/ha	3.5t/ha	4.0t/ha
Output (£)	£1,765/ha	£1,993/ha	£1,488/ha	£1,700/ha
Gross Margin (£)	£1,110/ha	£1,338/ha	£906/ha	£1,118/ha
Uplift (£)	-	£228/ha	-	£212/ha

John Nix Pocketbook for Farm Management, September 2024

- 4.6 Based on the economic benefits of the 0.7ha of BMV land to non-BMV land would be £160 per annum (£148 - £160 based on 2025 budgets). Hence the economic benefits of a land parcel of this size are limited.
- 4.7 Therefore, for development management purposes, the economic benefits of BMV land have been recognised and quantified, and these will need to be considered in the overall planning balance.

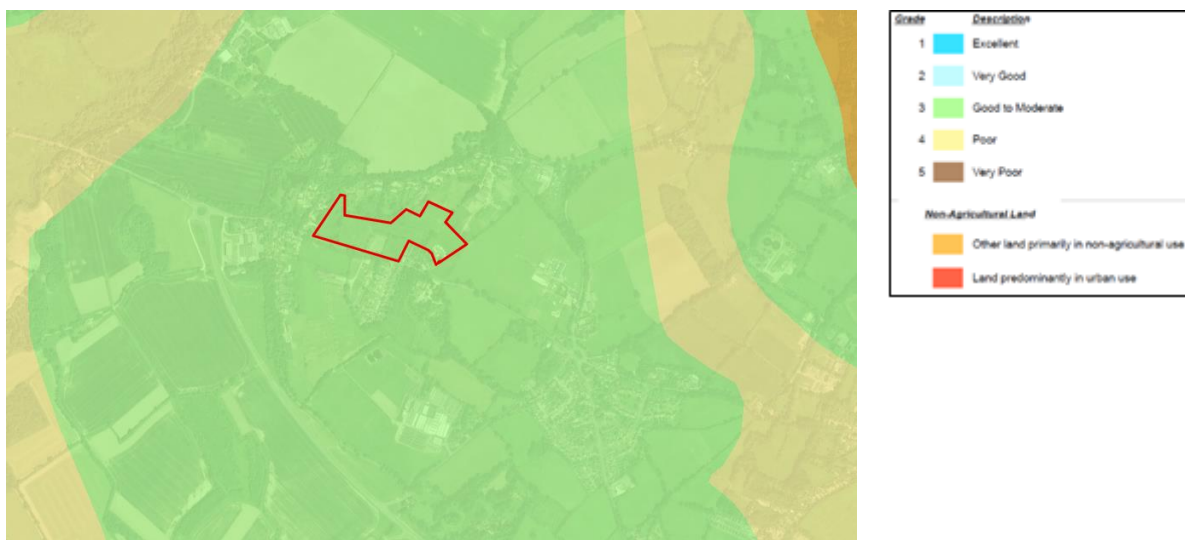
Whether this is “Significant” Development

- 4.8 This proposal falls below the threshold for consultation with Natural England and is therefore arguably not “significant” development of agricultural land in the context of the NPPF.
- 4.9 Footnote 65 to paragraph 188 of the NPPF considers whether poorer quality land is available. This footnote is to paragraph 188, which is a plan making policy paragraph. Setting that aside, the trigger for an assessment of poorer quality land is that the proposal involves **“significant development of agricultural land”**. **“Significant Development”** is not defined in the NPPF. One threshold for determination of what is significant is the threshold for consultation with Natural England, which is set at the loss of 20ha or more of BMV land (as can be seen in the TIN049 in **Appendix KCC1**). This has been the threshold for consultation with MAFF since 1987.
- 4.10 At 0.7ha the quantum of BMV within the Site is under 4% of the threshold for consultation with Natural England. Therefore, this quantum is not “significant development”.
- 4.11 The “Guide to assessing development proposals on agricultural land” (Natural England, 5th February 2021) (**Appendix KCC4**) does not define a threshold but does provide some guidance. This adds to our view that 20ha is a reasonable threshold for defining what is significant development:
- paragraph 6 states **“you should take account of smaller losses (under 20ha) if they are significant when making your decision”**, which suggests that losses of under 20ha would not be significant unless there are particular local circumstances. What those particular local circumstances are, is not defined but it would be reasonable consider that the loss of 20 ha may be significant in an area where BMV land is rare, for example; and
 - paragraph 7.1 states that you can use Natural England’s chargeable discretionary advice system **“if your proposal is large, for example 20ha or more, and requires more detailed advice”**. The definition of large as being more than 20ha suggests that a site under 20ha is considered small, and hence, not significant.
- 4.12 This is not significant development of BMV land. Therefore, the requirement to consider if poorer quality land is available, under footnote 65, is not triggered. For completeness, however, we now turn to assess that.

Land Quality in the Area Generally and Whether Poorer Quality Land is Available

- 4.13 The significance of development involving agricultural land needs to be considered in context. Across England it is estimated that 42% of farmland is of Grade 1, 2 and 3a quality (see TIN049, **Appendix KCC1**).
- 4.14 The Utilised Agricultural Area (UAA) of England, which is less than the total amount of agricultural land, was 8.7 million hectares in June 2024 (Agricultural Land Use in England on 1 June 2024, DEFRA, 26 September 2024). This suggests that about 3.7 million hectares of BMV land is in active agricultural use.
- 4.15 Statistically about 40% of Grade 3 land falls within Subgrade 3a. However, in parts of the country the proportion of Subgrade 3a is expected to be much higher, as there are large areas of the country where land is poor (eg Lake District, Pennines, Dartmoor etc).
- 4.16 Therefore, it is not considered that BMV quality is a rare resource.
- 4.17 On the published “provisional” ALC maps from the 1970’s the land is shown as being mapped as undifferentiated Grade 3 land quality.

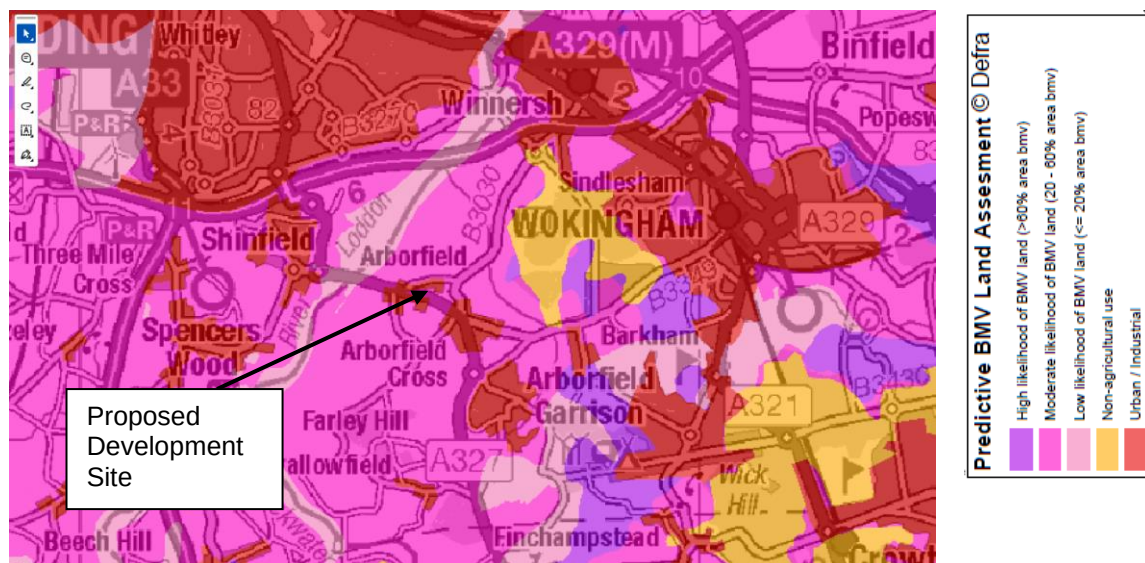
Insert 3. Provisional ALC Map



- 4.18 There are limitations with the “provisional” maps, which are described in TIN049 (**Appendix KCC1**). In 2017 Natural England produced predictive best and most versatile maps. These estimate the proportion of land within an area that is of BMV quality. There are three categories which are low (<20% area of BMV), moderate (20-60% area BMV), and high (>60% area BMV).

- 4.19 The predictive BMV likelihood maps predict that the land has a moderate likelihood of BMV.

Insert 4 Predictive BMV Map



- 4.20 From the above maps it is noted that the majority of land within the immediate proximity of the Site is also considered to have a moderate likelihood of BMV.
- 4.21 The predictive maps indicate an area to the west of the Site that is of low likelihood of BMV. However, google earth imagery does show that this area runs along the River Loddon. Therefore, there would be limitations around this area as a result of wetness classification.
- 4.22 The Proposed Development Site has not been previously surveyed. Survey results for sites in close proximity to the Site have been searched for as published on www.magic.gov.uk.
- 4.23 The available survey results have identified that the majority of land within the area comprises of Subgrade 3a and Subgrade 3b land quality, with small pockets of Grade 4 land quality. Thus, being similar to the Proposed Development Site.
- 4.24 The available, results can be seen on the insert below.

Insert 5. Surveyed Land in the Area.



- 4.25 Based on the above, it can be concluded that, in terms of land quality in the local area:
- (i) land is shown on the provisional mapping as undifferentiated Grade 3 land quality;
 - (ii) the predictive likelihood of BMV maps shows that the Site is located in an area of moderate likelihood of BMV. Land within immediate proximity of the Site predicted to be of a low likelihood of containing BMV quality land, however this is assumed to be due the River Loddon; and
 - (iii) survey results in close proximity to the Site have been found to contain land quality similar to that of the Proposed Development Site, thus containing BMV quality land.
- 4.26 The Site itself comprises of a small proportion of Subgrade 3a, Subgrade 3b and Grade 4 land quality with an area of non-agricultural land. In the event that there was a need to consider whether poorer land is available, when taking into consideration the data from the previously surveyed sites in the area, whilst it is acknowledged BMV quality land is available and it is not a rare resource in the area, it cannot be concluded that there is no poorer quality land available within the area.
- 4.27 Nevertheless, this Proposed Development Site is not classified as significant development and therefore whether there is poorer quality land within the area does not need to be assessed.

Conclusion

- 4.28 A survey of the Site was carried out in February 2025. This identified that the Site was made up of Subgrade 3a, Subgrade 3b and Grade 4 land quality with a proportion of non-agricultural land.

4.29 At approximately 0.7ha of BMV land the Site is under 4% of the threshold for consultation with Natural England. Therefore, the quantum of BMV is not significant.

5 SUMMARY AND CONCLUSION

- 5.1 The Proposed Development Site extends to 6.44ha.
- 5.2 The land has been classified as comprising of 0.7ha (11%) Subgrade 3a, 1.7ha (27%) Subgrade 3b, 1.9ha (30%) Grade 4 and 2.1ha (32%) non-agricultural land. Therefore, the Site contains best and most versatile agricultural land.
- 5.3 The NPPF requires economic benefits to be considered. The economic benefits of this Site are limited at £160 per annum over the BMV land.
- 5.4 In terms of the NPPF, this is not considered significant development of agricultural land. Accordingly, poorer quality land does not need to be considered in preference.
- 5.5 Based on the above, it is concluded that only minimal weight can be given to this loss of agricultural land.

Appendix KCC1
Natural England's Technical
Information Note TIN 049

Agricultural Land

Classification: protecting the best and most versatile agricultural land

Most of our land area is in agricultural use. How this important natural resource is used is vital to sustainable development. This includes taking the right decisions about protecting it from inappropriate development.

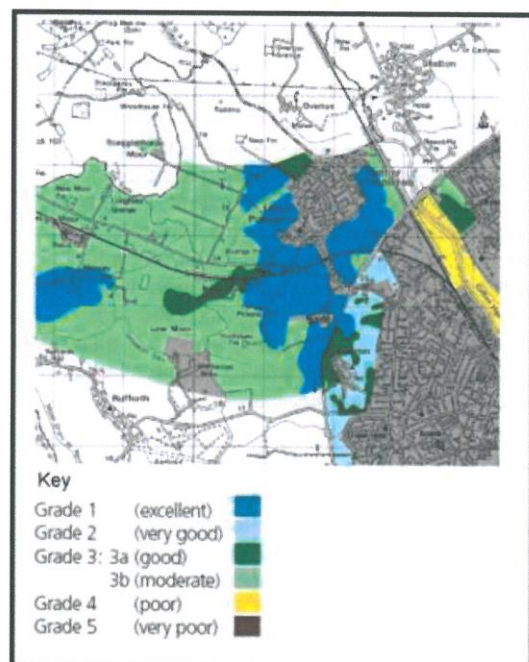
Policy to protect agricultural land

Government policy for England is set out in the National Planning Policy Framework (NPPF) published in March 2012 (paragraph 112). Decisions rest with the relevant planning authorities who should take into account the economic and other benefits of the best and most versatile agricultural land. Where significant development of agricultural land is demonstrated to be necessary, local planning authorities should seek to use areas of poorer quality land in preference to that of higher quality. The Government has also re-affirmed the importance of protecting our soils and the services they provide in the Natural Environment White Paper The Natural Choice: securing the value of nature (June 2011), including the protection of best and most versatile agricultural land (paragraph 2.35).

The ALC system: purpose & uses

Land quality varies from place to place. The Agricultural Land Classification (ALC) provides a method for assessing the quality of farmland to enable informed choices to be made about its future use within the planning system. It helps

underpin the principles of sustainable development.



Agricultural Land Classification - map and key

Agricultural Land Classification: protecting the best and most versatile agricultural land

The ALC system classifies land into five grades, with Grade 3 subdivided into Subgrades 3a and 3b. The best and most versatile land is defined as Grades 1, 2 and 3a by policy guidance (see Annex 2 of NPPF). This is the land which is most flexible, productive and efficient in response to inputs and which can best deliver future crops for food and non food uses such as biomass, fibres and pharmaceuticals. Current estimates are that Grades 1 and 2 together form about 21% of all farmland in England; Subgrade 3a also covers about 21%.

The ALC system is used by Natural England and others to give advice to planning authorities, developers and the public if development is proposed on agricultural land or other greenfield sites that could potentially grow crops. The Town and Country Planning (Development Management Procedure) (England) Order 2010 (as amended) refers to the best and most versatile land policy in requiring statutory consultations with Natural England. Natural England is also responsible for Minerals and Waste Consultations where reclamation to agriculture is proposed under Schedule 5 of the Town and Country Planning Act 1990 (as amended). The ALC grading system is also used by commercial consultants to advise clients on land uses and planning issues.

Criteria and guidelines

The Classification is based on the long term physical limitations of land for agricultural use. Factors affecting the grade are climate, site and soil characteristics, and the important interactions between them. Detailed guidance for classifying land can be found in: *Agricultural Land Classification of England and Wales: revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988):

- **Climate:** temperature and rainfall, aspect, exposure and frost risk.
- **Site:** gradient, micro-relief and flood risk.
- **Soil:** texture, structure, depth and stoniness, chemical properties which cannot be corrected.

The combination of climate and soil factors determines soil wetness and droughtiness.

Wetness and droughtiness influence the choice of crops grown and the level and consistency of yields, as well as use of land for grazing livestock. The Classification is concerned with the inherent potential of land under a range of farming systems. The current agricultural use, or intensity of use, does not affect the ALC grade.

Versatility and yield

The physical limitations of land have four main effects on the way land is farmed. These are:

- the range of crops which can be grown;
- the level of yield;
- the consistency of yield; and
- the cost of obtaining the crop.

The ALC gives a high grading to land which allows more flexibility in the range of crops that can be grown (its 'versatility') and which requires lower inputs, but also takes into account ability to produce consistently high yields of a narrower range of crops.

Availability of ALC information

After the introduction of the ALC system in 1966 the whole of England and Wales was mapped from reconnaissance field surveys, to provide general strategic guidance on land quality for planners. This Provisional Series of maps was published on an Ordnance Survey base at a scale of One Inch to One Mile in the period 1967 to 1974. These maps are not sufficiently accurate for use in assessment of individual fields or development sites, and should not be used other than as general guidance. They show only five grades: their preparation preceded the subdivision of Grade 3 and the refinement of criteria, which occurred after 1976. They have not been updated and are out of print. A 1:250 000 scale map series based on the same information is available. These are more appropriate for the strategic use originally intended and can be downloaded from the Natural England [website](http://magic.defra.gov.uk/). This data is also available on 'Magic', an interactive, geographical information website <http://magic.defra.gov.uk/>.

Since 1976, selected areas have been re-surveyed in greater detail and to revised

Agricultural Land Classification: protecting the best and most versatile agricultural land

guidelines and criteria. Information based on detailed ALC field surveys in accordance with current guidelines (MAFF, 1988) is the most definitive source. Data from the former Ministry of Agriculture, Fisheries and Food (MAFF) archive of more detailed ALC survey information (from 1988) is also available on <http://magic.defra.gov.uk/>. Revisions to the ALC guidelines and criteria have been limited and kept to the original principles, but some assessments made prior to the most recent revision in 1988 need to be checked against current criteria. More recently, strategic scale maps showing the likely occurrence of best and most versatile land have been prepared. Mapped information of all types is available from Natural England (see *Further information* below).

New field survey

Digital mapping and geographical information systems have been introduced to facilitate the provision of up-to-date information. ALC surveys are undertaken, according to the published Guidelines, by field surveyors using handheld augers to examine soils to a depth of 1.2 metres, at a frequency of one boring per hectare for a detailed assessment. This is usually supplemented by digging occasional small pits (usually by hand) to inspect the soil profile. Information obtained by these methods is combined with climatic and other data to produce an ALC map and report. ALC maps are normally produced on an Ordnance Survey base at varying scales from 1:10,000 for detailed work to 1:50 000 for reconnaissance survey

There is no comprehensive programme to survey all areas in detail. Private consultants may survey land where it is under consideration for development, especially around the edge of towns, to allow comparisons between areas and to inform environmental assessments. ALC field surveys are usually time consuming and should be initiated well in advance of planning decisions. Planning authorities should ensure that sufficient detailed site specific ALC survey data is available to inform decision making.

Consultations

Natural England is consulted by planning authorities on the preparation of all development

plans as part of its remit for the natural environment. For planning applications, specific consultations with Natural England are required under the Development Management Procedure Order in relation to best and most versatile agricultural land. These are for non agricultural development proposals that are not consistent with an adopted local plan and involve the loss of twenty hectares or more of the best and most versatile land. The land protection policy is relevant to all planning applications, including those on smaller areas, but it is for the planning authority to decide how significant the agricultural land issues are, and the need for field information. The planning authority may contact Natural England if it needs technical information or advice.

Consultations with Natural England are required on all applications for mineral working or waste disposal if the proposed afteruse is for agriculture or where the loss of best and most versatile agricultural land will be 20 ha or more. Non-agricultural afteruse, for example for nature conservation or amenity, can be acceptable even on better quality land if soil resources are conserved and the long term potential of best and most versatile land is safeguarded by careful land restoration and aftercare.

Other factors

The ALC is a basis for assessing how development proposals affect agricultural land within the planning system, but it is not the sole consideration. Planning authorities are guided by the National Planning Policy Framework to protect and enhance soils more widely. This could include, for example, conserving soil resources during mineral working or construction, not granting permission for peat extraction from new or extended mineral sites, or preventing soil from being adversely affected by pollution. For information on the application of ALC in Wales, please see below.

Agricultural Land Classification: protecting the best and most versatile agricultural land

Further information

Details of the system of grading can be found in: *Agricultural Land Classification of England and Wales: revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988).

Please note that planning authorities should send all planning related consultations and enquiries to Natural England by e-mail to consultations@naturalengland.org.uk. If it is not possible to consult us electronically then consultations should be sent to the following postal address:

Natural England
Consultation Service
Hornbeam House
Electra Way
Crewe Business Park
CREWE
Cheshire
CW1 6GJ

ALC information for Wales is held by Welsh Government. Detailed information and advice is available on request from Ian Rugg (ian.rugg@wales.gsi.gov.uk) or David Martyn (david.martyn@wales.gsi.gov.uk). If it is not possible to consult us electronically then consultations should be sent to the following postal address:

Welsh Government
Rhodfa Padarn
Llanbadarn Fawr
Aberystwyth
Ceredigion
SY23 3UR

Natural England publications are available to download from the Natural England website: www.naturalengland.org.uk.

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Appendix KCC2
Agricultural Land Classification

AGRICULTURAL LAND CLASSIFICATION

- 1 This section of the report provides the findings of a detailed Agricultural Land Classification (ALC). It is based on a desktop study of relevant published information on climate, topography, geology, and soil, in conjunction with a soil survey. The approximately 6.2-hectare (ha) Study Area is shown in **Plan KCC3897/01**.

Methodology

- 2 The work has been carried out by a Chartered Scientist (CSci), who is a Fellow (F. I. Soil Sci) of the British Society of Soil Science (BSSS). This ALC survey has been carried out by a soil scientist who meets the BSSS Professional Competency Standard (PSC) scheme requirements for ALC (see BSSS PCS Document 2 '*Agricultural Land Classification of England and Wales*'¹). The BSSS PSC scheme is endorsed, amongst others, by the Department for Environment, Food and Rural Affairs (Defra), Natural England, the Science Council, and the Institute of Environmental Assessment and Management (IEMA).
- 3 This assessment is based upon the findings of a study of published information on climate, geology and soil in combination with a soil investigation carried out in accordance with the Ministry of Agriculture, Fisheries and Food (MAFF) 2 '*Agricultural Land Classification of England and Wales: Revised Guidelines and Criteria for Grading the Quality of Agricultural Land*', October 1988 (henceforth referred to as the 'the ALC Guidelines').
- 4 The ALC system provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The ALC system divides agricultural land into five grades (Grade 1 'Excellent' to Grade 5 'Very Poor'), with Grade 3 subdivided into Subgrade 3a 'Good' and Subgrade 3b 'Moderate'. Agricultural land classified as Grade 1, 2 and Subgrade 3a falls in the '*best and most versatile*' category in Paragraphs 187 and 188 of the National Planning Policy Framework (NPPF), revised on the 12th of December 2024. Further details of the ALC system and national planning policy implications are set out in Natural England's '*Guide to assessing development proposals on agricultural land*' online³.

¹ British Society of Soil Science. Professional Competency Scheme Document 2 '*Agricultural Land Classification of England and Wales*'. Available online @ <https://www.soils.org.uk/sites/default/files/events/flyers/ipss-competency-doc2.pdf> Last accessed April 2025

² The Ministry of Agriculture, Fisheries and Food (MAFF) was incorporated within the Department for Environment, Food and Rural Affairs (Defra) in June 2001

³ Natural England (2022) '*Guide to assessing development proposals on agricultural land*'. Available online at <https://www.gov.uk/government/publications/agricultural-land-assess-proposals-for-development/guide-to-assessing-development-proposals-on-agricultural-land> Last accessed April 2025

- 5 A detailed ALC survey of the Study Area was carried out on the 20th of February 2025. The ALC survey involved the examination of the soil's physical properties at eight auger-bores within the Study Area at a density of one auger-bore per hectare (ha). One soil pit, i.e., Pit 1 located near auger-bore location 6, was excavated with a spade to examine certain soil physical properties, such as stone content and subsoil structure, in more detail. See **Plan KCC3897/01** for the location of auger bores and soil pits.
- 6 The sample locations were located using a hand-held Garmin E-Trec Geographic Information System (GIS) to enable the sample locations to be relocated for verification, if necessary.
- 7 The soil profile at each sample location was examined to a maximum depth of approximately 1.2 m by hand using a 5 cm diameter Dutch (Edleman) soil auger. The soil profile at each sample location was described using the '*Soil Survey Field Handbook: Describing and Sampling Soil Profiles*' (Ed. J.M. Hodgson, Cranfield University, 1997). Each soil profile was ascribed a grade following the ALC Guidelines. A log of the soil profiles examined and described on-site is given in **Attachment 1**, and a description of the soil pit is given in **Attachment 2**.
- 8 A topsoil sample was collected at auger-bore locations 1, 6 and 8, as shown in **Plan KCC3897/01**. The samples were sent to an accredited laboratory for particle size analysis, i.e., sand, silt, and clay proportions. This is to determine the definitive texture class of the topsoil, especially regarding distinguishing between medium clay loams (i.e., <27% clay) and heavy clay loams (27% to 35% clay). The results of the laboratory particle size (texture) analysis are given in Section 3.0, and a laboratory report is given in **Attachment 3**.
- 9 As described in the ALC Guidelines, the main physical factors influencing agricultural land quality are:
- climate;
 - site;
 - soil; and
 - interactive limitations.
- 10 These factors are considered in turn below.

Climate

- 11 Interpolated climate data relevant to determining the ALC grade of land at the Site is given in Table 1 below.

Table 1: ALC Climate Data

Climate Parameter	Grid Ref: SU755675
Average Altitude (m)	51
Average Annual Rainfall (mm)	665
Accumulated Temperature above 0°C (January – June)	1466
Moisture Deficit (mm) Wheat	138
Moisture Deficit (mm) Potatoes	115
Field Capacity Days (FCD)	109
Grade according to climate	1

- 12 Parameters used for assessing overall climate are accumulated temperature, a measure of relative warmth, and average annual rainfall, a measure of overall wetness. Regarding Figure 1 ‘Grade according to climate’ on page 6 of the ALC Guidelines, there is no overall climatic limitation to the quality of agricultural land at the Site. This means that agricultural land at the Site could be graded as ALC Grade 1 in overall climatic terms without any other limiting factor, i.e., site, soil, and/or interactive limitations.
- 13 The soil profiles across the Study Area are predicted to be at field capacity (i.e., the amount of soil moisture or water content held in the soil after excess water has drained away) for approximately 138 Field Capacity Days (FCD) per year, mainly over the late autumn, winter and early spring. The climate interacts with soil physical properties, i.e., soil texture and wetness class, and can limit agricultural land quality due to soil wetness as per Table 6 of the ALC Guideline ‘Grade according to soil wetness’. It should be noted that the number of FCD at this Site falls in the FCD category 126-150 for determining the grade according to wetness.

Site

- 14 As shown in **Plan KCC3897/01**, the Study Area is located in the centre of Arborfield, Wokingham. The approximate centre of the Site is located at British National Grid (BNG) reference SU755675. The Study Area is bordered by Reading Road to the south, Church Road to the west, residential development to the north and agricultural land to the east.
- 15 From a Wilson Bailey ‘Desk Study and Ground Investigation Report’ (Reference J21429, dated November 2024), it is understood that:

“Records indicate that the central part of this site has been previously developed as a recreational fishing lake during the early 2000s, with the lake subsequently infilled by 2015. The southeastern part of the site is also shown to have been developed through the construction of four chicken houses as part of the adjoining former farm, Some of these buildings still remain, whilst most have been demolished and the southeastern part of the site repurposed for caravan storage. Within the central southern part of the site are a series of single storey sheds, stables, field shelters and ancillary buildings that are in various states of dilapidation and associated with the former fishing lake and the housing of ponies’ that graze the paddocks within the southern part of the site. The eastern and northeastern parts of the site are currently grazed paddocks, with the remaining central and western parts of the site overgrown.”

- 16 The description of the site was corroborated during the ALC survey in February 2025, as shown in Plates 1-2 below.

*Plate 1: Poorly restored land on former fishing lake - auger bore 3 (see **Plan KCC3897/01**)*



*Plate 2: Poorly restored land on former fishing lake - auger bore 4 (see **Plan KCC3897/01**)*



Plate 3: Other/Non-agricultural land – former chicken shed and hardstanding



Plate 4: Other/Non-agricultural land – horse stables and paddock (equine)



- 17 With regard to the ALC Guidelines, agricultural land quality can be limited by one or more of three main site factors as follows:
- gradient;
 - micro-relief (i.e., complex change in slope angle over short distances); and
 - risk of flooding.

Gradient and Micro-Relief

- 18 The Study Area is located on a gentle, west-facing slope at approximately 57 metres (m) Above Ordnance Datum (AOD) at the highest point in the east at auger bore 6 and approximately 28m AOD at the lowest elevation in the west at auger bore 2.
- 19 The quality of agricultural land within the Study Area is not limited by gradient, which does not exceed 7° (refer to Table 1 of ALC Guidelines).
- 20 The presence of ridge and furrows in the field around auger bore 7 limit the land to Subgrade 3b due to the micro-relief, i.e., where complex changes in slope angle and direction over short distances, or the presence of boulders or rock outcrops, even on level ground or gentle slopes, can severely limit the use of agricultural machinery.

Risk of Flooding

- 21 According to the Government Flood Map for Planning website⁴, the land in the Study Area is in Flood Zone 1 at a low risk of flooding. The MAFF ALC Guidelines (1988) take account of the frequency, duration, and timing of flooding in the summer and winter (re Table 2 '*Grade according to flood risk in summer*' and/or Table 3 '*Grade according to flood risk in winter*'). There is no evidence the grade of agricultural land in the Study Area is limited by flood risk during the summer or winter following the ALC Guidelines.

Soil

- 22 **Geology/Soil Parent Material.** British Geological Survey (BGS) online⁵ information has been utilised to identify the Bedrock underlying the Study Area and any Superficial (Drift) Deposits over the Bedrock. This information helps to determine the parent material⁶ from and within which a soil has formed.

⁴ Government/Environment Agency. 'Get flood risk information for planning in England'. Available online at <https://flood-map-for-planning.service.gov.uk/> Last accessed April 2025

⁵ British Geological Survey 'Geology of Britain Viewer'. Available online @ <http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html> Last accessed April 2025

⁶ British Geological Survey. A 'parent material' is a soil-science name for a weathered rock or deposit from and within which a soil has formed. In the UK, parent materials provide the basic foundations and building blocks of the soil, influencing their texture, structure, drainage and chemistry. Available online @ [Soil Parent Material Model - British Geological Survey \(bgs.ac.uk\)](http://www.bgs.ac.uk/SoilParentMaterialModel/) Last accessed April 2025

- 23 From the BGS information, the Study Area is underlain by clay, silt and sand in the London Clay Formation. The bedrock in the west of the site is covered by sand and gravel river terrace deposits, with some gravel, sand, silt and clay Head in the center of the site, between auger bore locations 4 and 5. The remainder of the Study Area is not covered by any superficial deposits.

Published Information on Soil

- 24 Soil information on the National Soil Map⁷ indicates that land in the west of the Site is covered by soils grouped in the Hurst Association, with soils in the Wickham 4 Association in the east. As described by the Soil Survey of England and Wales (SSEW)⁸, the main soils in the Hurst association are gravelly, and are developed principally in low-level river terrace deposits over Tertiary strata. Most land is low-lying and level or gently sloping. Coarse loamy over gravelly Hurst series, typical argillic gley soils, predominate but Southminster series, typical cambic gley soils, with flinty fine loamy upper layers and coarse loamy Swanwick series, typical argillic gley soils, are also widespread. Coarse loamy over gravelly Breamore soils and fine loamy Waterstock soils, both gleyic argillic brown earths, are found where groundwater levels are lowest, often nearest the river. The wettest soils, at the borders of terraces on receiving sites adjacent to higher ground, include coarse or fine loamy over gravelly humic gley soils. Loquiers and Wickham series are present on slopes between river terraces. The duration of waterlogging is readily reduced by drainage improvements except where outfalls are inadequate. Drained Southminster soils are only occasionally waterlogged (Wetness Class II) but most of the other more permeable soils become well drained (Wetness Class I). Reserves of soil available water are small and crop production is limited by drought in most years but irrigation is widely used.
- 25 The Wickham 4 association consists of seasonally waterlogged soils with clayey slowly permeable subsurface horizons. It occurs mainly in southern England, and is extensive on gently undulating land in clay vales where the underlying Tertiary clay is thinly covered by loamy drift. The dominant soils are Wickham series, typical stagnogley soils, fine loamy or fine silty over clayey and with grey and ochreous mottles throughout. The associated Windsor and Denchworth series, are pelo-stagnogley soils, clayey to the surface and are found where the Head is very thin or absent. Both soils have grey and ochreous mottles, but Windsor soils become brownish at depth. Wickham soils are most common on gently sloping valley sides and footslopes. Windsor and Denchworth soils occur on moderate slopes. The association occurs in Hertfordshire in small areas between Bishops Stortford

⁷ Cranfield University (2025) Soil site report, Soil Report for location 475548E, 167465N, 1km x 1km, Cranfield University.

⁸ Soil Survey of England and Wales, National Soil Resource Institute, Cranfield University (2023). *The Soils Guide*. Available online at https://www.landis.org.uk/soilsguide/mapunit_list.cfm Last accessed April 2025

and Ware on Reading Beds and London Clay, and also near Rickmansworth. Wickham and Windsor series are the main soils. Most component soils are waterlogged for long periods (Wetness Class IV) where undrained. The slowly permeable clayey subsoils and moisture retentive surface horizons lead to poor water infiltration and rapid run-off. Underdrainage in these soils improves the rate of removal of excess water in winter (Trafford and Walpole 1975) and reduces waterlogging (Wetness Class III). Comparison of profile available water and crop-adjusted mean potential soil moisture deficits indicates that Wickham, Denchworth and Windsor soils in south Hampshire are slightly droughty for cereals and moderately droughty for grass. Soils in west Berkshire are slightly less droughty for most crops but the drought risk is greater in the drier climate of north Kent.

Soil Survey

- 26 The soil profiles recorded at each auger-bore location are given in **Attachment 1**. A detailed description of Soil Pit 1 is given in **Attachment 2**.

Topsoil Particle Size Analysis

- 27 To substantiate topsoil texture determined during the ALC survey by hand-texturing, three topsoil samples were collected over the Study Area, i.e., from auger bore locations 1, 6, and 8, see **Plan KCC3897/01**. The topsoil samples were sent to an accredited laboratory for analysis of particle size distribution (PSD), based on the British Standard Institution particle size grades. The certificate of analysis is provided as **Attachment 3**. The findings of the PSD analysis are shown in Table 2 below.

Table 2: Topsoil Particle Size Analysis

Topsoil Sample Location (See Fig. 1)	% sand 0.063-2.0 mm	% silt 0.002- 0.063 mm	% clay <0.002 mm	ALC Soil Texture Class
1	54	29	17	Medium Sandy Loam
6	55	32	13	Medium Sandy Loam
8	60	27	13	Medium Sandy Loam

Interactive Limitations

- 28 From the information above, together with the findings of the detailed soil survey (see Soil Profile Log given in **Attachment 1**), it has been determined that the quality of agricultural land at the Site is limited by soil wetness, and soil droughtiness in the east, as described below.

Soil Wetness

- 29 From the ALC Guidelines, a soil wetness limitation exists where *‘the soil water regime adversely affects plant growth or imposes restrictions on cultivations or grazing by livestock’*. Agricultural land quality at the Site is limited by soil wetness as per Table 3 below (based on Table 6 ‘Grade According to Soil Wetness – Mineral Soils’ in the ALC Guidelines).

Table 3: ALC Grade According to Soil Wetness

Wetness Class	Texture of the Top 25 cm	126-150 Field Capacity Days
I	Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	1
	Sandy Clay Loam/Medium Silty Clay Loam /Medium Clay Loam*	1
	Heavy Silty Clay Loam/Heavy Clay Loam**	2
	Sandy Clay/Silty Clay/Clay	3a(2)
II	Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	1
	Sandy Clay Loam/Medium Silty Clay Loam /Medium Clay Loam*	2
	Heavy Silty Clay Loam/Heavy Clay Loam**	3a(2)
	Sandy Clay/Silty Clay/Clay	3b(3a)
III	Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	2
	Sandy Clay Loam/Medium Silty Clay Loam /Medium Clay Loam*	3a(2)
	Heavy Silty Clay Loam/Heavy Clay Loam**	3b(3a)
	Sandy Clay/Silty Clay/Clay	3b(3a)
IV	Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	3a
	Sandy Clay Loam/Medium Silty Clay Loam /Medium Clay Loam*	3b
	Heavy Silty Clay Loam/Heavy Clay Loam**	3b
	Sandy Clay/Silty Clay/Clay	3b
Key: * 18% to <27% clay; and ** 27% to 35% clay		

- 30 In a climate area with 138 FCD, profiles that are slowly permeable and seasonally waterlogged for long periods during the winter (i.e., Wetness Class IV) are limited by soil wetness to Subgrade 3a where the topsoil texture is medium sandy loam.
- 31 Where the profiles are located on poorly restored land on the former fishing lake area in the central part of the site, the shallow topsoil (where present) over inert landfill (soil, brick, etc), the land is waterlogged at the surface and is placed in Wetness Class V (severely waterlogged). Here, the land is limited to Grade 4 (poor quality) due to soil wetness.

Soil Droughtiness

- 32 From the ALC Guidelines, a soil droughtiness limitation exists *‘in areas with relatively low rainfall or high evapotranspiration, or where the soil holds only small reserves of moisture available to plant roots.’* The ALC grade according to soil droughtiness is shown in Table 4 below (based on Table 8 ‘Grade According to Droughtiness’ in the ALC Guidelines). To be eligible for Grades 1 to 3b the moisture balances (MBs) must be equal to, or exceed, the stated minimum values for both wheat and potatoes. If the MB for either crop is less (i.e., more negative) than that shown for Subgrade 3b, the soil is Grade 4 on droughtiness):

Table 4: ALC Grade According to Soil Droughtiness

Grade/Subgrade	Moisture Balance (MB) Limits (mm)	
	Wheat	Potatoes
1	+30	+10
2	+5	-10
3a	-20	-30
3b	-50	-55
4	<-50	<-55

- 33 The Moisture Balance (MB) values and ALC grade according to soil droughtiness per auger-bore are shown in **Attachment 1**. It has been determined that soil droughtiness is sufficient to limit the quality of agricultural land within the eastern part of the Study Area around auger bore 6 to Subgrade 3b.

ALC Grading at the Site

- 34 By detailed ALC survey, it has been determined that the quality of agricultural land at the Site is limited by several limiting factors as follows:
- (i) Soil wetness limits in-site (undisturbed) agricultural land in the Study Area to Subgrade 3a (i.e., 138 FCD; medium sandy loam topsoil; Wetness Class IV);
 - (ii) Soil Wetness limits poorly restored land on the former fishing lake area (Wetness Class V) to Grade 4 (poor quality);
 - (iii) Soil droughtiness in the east of the Study Area around auger bore 6 is sufficient to limit the land to Subgrade 3b; and
 - (iv) Micro-relief: the presence of ridge and furrows in the field around auger bore 7 significantly hinders the use of mechanical cultivations and limits the land to Subgrade 3b; and

- (v) Other/non-agricultural land: Former chicken sheds, hard-standing, and horse stables and paddock (i.e., equine land use), and land used for storing caravans in the east of the Study Area, has been classified as 'other/non-agricultural land'.

35 The area and proportion of agricultural land in each ALC grade have been measured from an ALC map given in **Plan KCC3792/02**. The findings are reported in Table 5 below.

Table 5: Agricultural Land Classification

ALC Grade	Area (Ha)	Area (% of Total Site)
Grade 1 (Excellent)	0	0
Grade 2 (Very Good)	0	0
Subgrade 3a (Good)	0.7	11
Subgrade 3b (Moderate)	1.7	27
Grade 4 (Poor)	1.9	31
Grade 5 (Very Poor)	0	0
Non-agricultural / Other land	1.9	31
Total	6.2	100

Attachment 1
Soil Pit Log

Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1				Stones - type 2			Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC					
	NGR	X	Y					Top	Btm	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour			%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength	Size					Shape	MBw	MBp	Gd	WC	Gw	Limitation 1	Limitation 2	Limitation 3	Grade	
1	SU 75333	67595	475333	167595	50	≤7	Level	PGR	0	20	20	10YR3/2				No	MSL - Medium sandy loam	6	4	2							Moderate	NON - Non-calcareous (<0.5% CaCO3)	No	No	-18	-8	3a	WC III	2	Droughtiness				3a		
									20	41	21	10YR5/3	FD - Few Distinct	10YR5/6		Yes	MZCL - Silty clay loam (medium)	6									Moderate	NON - Non-calcareous (<0.5% CaCO3)	No	No	No											
									41	80	39	10YR5/2	MD - Many Distinct	7.5YR5/8		Yes	C - Clay	6									Poor	NON - Non-calcareous (<0.5% CaCO3)	No	No	Yes											
2	SU 75300	67500	475300	167500	48	≤7	Level	PGR	0	12	12	10YR4/2				No	MSL - Medium sandy loam	4	2	2							Moderate	NON - Non-calcareous (<0.5% CaCO3)	No	No	-25	-14	3b	WC IV	3a	Droughtiness				3b		
									12	40	28	10YR5/3	MD - Many Distinct	7.5YR5/6		Yes	MZCL - Silty clay loam (medium)	20									Moderate	NON - Non-calcareous (<0.5% CaCO3)	No	No	No											
									40	80	40	10YR5/2	MD - Many Distinct	7.5YR5/8		Yes	C - Clay	6									Poor	NON - Non-calcareous (<0.5% CaCO3)	No	No	Yes											
3	SU 75400	67500	475400	167500	49	≤7	Level	PGR	0	10	10	10YR6/1				Yes	C - Clay											Not Applicable			Yes	-98	-92	4	WC V	4	Depth	Droughtiness	Wetness	4		
4	SU 75500	67500	475500	167500	51	≤7	Level	PGR	0	10	10	10YR6/1				Yes	C - Clay											Not Applicable			Yes	-98	-92	4	WC V	4	Depth	Droughtiness	Wetness	4		
5	SU 75600	67500	475600	167500	51	≤7	Level	PGR	0	10	10	10YR6/1				Yes	C - Clay											Not Applicable			Yes	-98	-92	4	WC V	4	Depth	Droughtiness	Wetness	4		
6	SU 75700	67500	475700	167500	53	≤7	Level	PGR	0	16	16	10YR4/1				No	MSL - Medium sandy loam	4	2	2							Moderate	NON - Non-calcareous (<0.5% CaCO3)	No	No	-24	-13	3b	WC IV	3a	Droughtiness				3b		
									16	40	24	10YR5/3	MD - Many Distinct	7.5YR5/6		Yes	MZCL - Silty clay loam (medium)	20									Moderate	NON - Non-calcareous (<0.5% CaCO3)	No	No	No											
									40	80	40	10YR5/2	MD - Many Distinct	7.5YR5/8		Yes	C - Clay	6									Poor	NON - Non-calcareous (<0.5% CaCO3)	No	No	Yes											
7	SU 75655	67572	475655	167572	57	≤7	Level	PGR	0	22	22	10YR4/2				No	MSL - Medium sandy loam	6	4	2							Moderate	NON - Non-calcareous (<0.5% CaCO3)	No	No	-19	-9	3a	WC III	2	Microrelief				3b		
									22	44	22	10YR5/3	FD - Few Distinct	10YR5/6		Yes	HCL - Clay loam (heavy)	6									Moderate	NON - Non-calcareous (<0.5% CaCO3)	No	No	No											
									44	80	36	10YR5/2	MD - Many Distinct	7.5YR5/8		Yes	C - Clay	6									Poor	NON - Non-calcareous (<0.5% CaCO3)	No	No	Yes											
8	SU 75531	67423	475531	167423	51	≤7	Level	PGR																												N/A				Non-Ag		
END																																										

Attachment 2
Soil Pit Description

Soil Survey				Surveyor	RWA
Easting (X)	475700	Northing (Y)	167500	Alt (m)	53
Land Use	PGR	Reference	6 (Pit 1)	Slope °	≤7
Bedrock	London Clay Formation	Superficial	None recorded	Aspect	Level
				Grid Reference	SU 75700 67500
				Date	20/02/2025

Layer		Topsoil	2	3	4	5	6	7
Lower Depth (cm)		16	40	80				
Texture		MSL - Medium s	MZCL - Silty clay loam (me	C - Clay				
Matrix Colour		10YR4/1	10YR5/3	10YR5/2				
Gley (Y/N)		No	Yes	Yes				
Ochreous Mottles	Form		MD - Many Distinct	MD - Many Distinct				
	Munsell Colour		7.5YR5/6	7.5YR5/8				
Grey Mottles	Form							
	Munsell Colour							
Manganese (Y/N)		No	No	No				
% Stones (type 1)		4	20	6				
Stones > 2cm		2						
Stones > 6cm		2						
Stone Type		HR - All hard roc	HR - All hard rocks or stone	HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger)				
% Stones (type 2)								
Stones > 2cm								
Stones > 6cm								
Stone Type								
CaCO3		NON - Non-calca	NON - Non-calcareous (<0	NON - Non-calcareous (<0.5% CaCO3)				
Shape of Peds.		SAB - Subangular	AB - Angular Blocky	PRIS - Prismatic				
Size of Peds.		M - Medium	M - Medium	C - Coarse				
Subsoil Structure		Moderate	Moderate	Poor				
Soil or Ped. Strength		Firm	Firm	Very firm				
Degree of Ped. Development		M - Moderate	M - Moderate	W - Weak				
Slowly Permeable Layer (Y/N)		No	No	Yes				

MDw	MDp	FCD
115	109	138

Wetness	Class (WC)	WC IV
	Grade (WE)	3a

Notes	Moisture Balance (MB): Wheat = -24mm; Potatoes = -13mm (Subgrade 3b according to soil droughtiness)
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Attachment 3
Laboratory Analysis

ANALYTICAL REPORT										
Report Number	80499-25	P248	SARAH KERNON							
Date Received	21-FEB-2025		KERNON COUNTRYSIDE							
Date Reported	04-MAR-2025		CONSULTANTS LTD							
Project	KCC3897		GREENACRES BARN							
Reference	ARBORFIELD WOKINGHAM		PURTON STOKE							
Order Number	KCC3897		WILTSHIRE SN5 4LL							
Laboratory Reference		SOIL738927	SOIL738928	SOIL738929						
Sample Reference		1	6	8						
Determinand	Unit	SOIL	SOIL	SOIL						
Sand 2.00-0.063mm	% w/w	54	55	60						
Silt 0.063-0.002mm	% w/w	29	32	27						
Clay <0.002mm	% w/w	17	13	13						
Textural Class **		SL	SL	SL						
Notes										
Analysis Notes	The sample submitted was of adequate size to complete all analysis requested. The results as reported relate only to the item(s) submitted for testing. The results are presented on a dry matter basis unless otherwise stipulated.									
Document Control	This test report shall not be reproduced, except in full, without the written approval of the laboratory.									
Reported by	** Please see the attached document for the definition of textural classes. <i>Teresa Clyne</i> Natural Resource Management, a trading division of Cawood Scientific Ltd. Coopers Bridge, Braziers Lane, Bracknell, Berkshire, RG42 6NS Tel: 01344 886338 Fax: 01344 890972 email: enquiries@nrm.uk.com									

ADAS (UK) Textural Class Abbreviations

The texture classes are denoted by the following abbreviations:

Class	Code
Sand	S
Loamy sand	LS
Sandy loam	SL
Sandy Silt loam	SZL
Silt loam	ZL
Sandy clay loam	SCL
Clay loam	CL
Silt clay loam	ZCL
Clay	C
Silty clay	ZC
Sandy clay	SC

For the *sand*, *loamy sand*, *sandy loam* and *sandy silt loam* classes the predominant size of sand fraction may be indicated by the use of prefixes, thus:

vf	Very Fine (more than 2/3's of sand less than 0.106 mm)
f	Fine (more than 2/3's of sand less than 0.212 mm)
c	Coarse (more than 1/3 of sand greater than 0.6 mm)
m	Medium (less than 2/3's fine sand and less than 1/3 coarse sand).

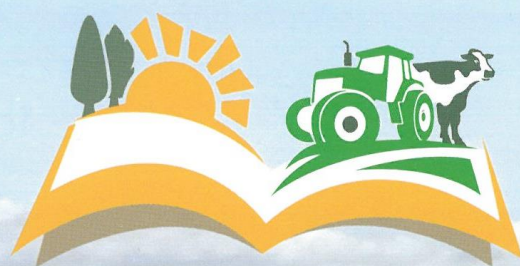
The subdivisions of *clay loam* and *silty clay loam* classes according to clay content are indicated as follows:

M	medium (less than 27% clay)
H	heavy (27-35% clay)

Organic soils i.e. those with an organic matter greater than 10% will be preceded with a letter O.

Peaty soils i.e. those with an organic matter greater than 20% will be preceded with a letter P.

Appendix KCC3
John Nix Pocketbook for Farm
Management (55th Ed) Extracts



NIX FARM MANAGEMENT POCKETBOOK

2025 55TH
EDITION

The most comprehensive business information in British agriculture

Graham Redman

WHEAT

Feed Winter Wheat

Production level	Low	Average	High	
Yield: t/ha (t/ac)	7.1 (2.9)	8.3 (3.4)	9.5 (3.8)	
	£	£	£	£/t
Grain at £190/t	1,349	1,577 (639)	1,805 (731)	
Straw in Swath	188 (76)	188 (76)	188 (76)	
Total Output	1,537 (622)	1,765 (715)	1,993 (807)	213
Variable Costs £/ha (£/ac):				
Seed.....		82 (33)		10
Fertiliser.....		295 (119)		36
Sprays.....		278 (112)		33
Total Variable Costs		655 (265)		79
Gross Margin £/ha (ac)	882 (357)	1110 (449)	1,338 (542)	134

Fertiliser Basis 8.3t/ha				Seed:	prays £/ha:		
Nutrient	Kg/t	Kg/Ha	£/Ha	£/t C2	£515	Herbicides	£121
N	23	190	£184	Kg/Ha	175	Fungicides	£110
P	7.0	58	£58	% HSS	30%	Insecticides	£3
K	10.5	87	£52	£/t HSS	£354	PGRs	£16
						Other	£27

1. *Yields.* The average yield is for all winter feed wheat, i.e. all varieties and 1st and subsequent wheats. See over for First and Second Wheats. The yield used for feed and milling wheats including spring varieties is 8.18t/ha (overall 10-year average *Defra*).

The table below offers a weighted estimate of yield variations according to wheat type based on a national yield of 8.4t/ha. Percentages compare yield categories with 'all wheat'. These yields are used in the gross margins.

Calculation of spread of 'average yields depending on wheat type –

	Yield					
	Adjustment	Winter	1st WW	2nd WW	spring	Total
t/ha		101%	102%	93%	85%	100%
Total	100%	8.27	8.40	7.61		8.18
Feed	101%	8.35	8.48	7.69		8.27
Bread	93%	7.69	7.81	7.08	6.02	7.61
Biscuit	99%	8.18	8.32	7.54		8.10

2. *Straw* is sold in the swath. Assuming 1 hectare is worth 2.5 tonnes baled straw at 4.2t/ha. So £75/tonne baled = £188/ha for winter wheat.
3. *Seed* is costed with a single purpose dressing. Up to a third of growers require additional seed treatments, specifically to suppress BYDV. This can add £170/t of seed (£30/ha). This has not been added in the gross margins.
4. This schedule does not account for severe *grass weed infestations* such as Black Grass or Sterile Brome. Costs associated with managing such problems can amount to up to £190/hectare additional agrochemical costs. Yield losses increase as infestation rises:

OILSEED RAPE

Winter Oilseed Rape

Production level	Low	Average	High	
Yield: t/ha (t/ac)	3.0 (1.2)	3.50 (1.4)	4.0 (1.6)	
	£	£	£	£/t
Output at £425/t	1275 (516)	1,488 (602)	1,700 (689)	425
Variable Costs £/ha (£/ac):				
Seed.....		73 (29)		21
Fertiliser.....		257 (104)		73
Sprays.....		252 (102)		72
Total Variable Costs		582 (236)		166
Gross Margin £/ha (ac)	693 (281)	906 (367)	1,118 (453)	259

Fertiliser Basis 3.5t/ha				Seed:		Sprays:	
Nutrient	Kg/t	Kg/Ha	£/Ha	£/Ha C	43	Herbicides	£124
N	54	190	£184	£/Ha Hy	88	Fungicides	£68
P	14	49	£49	£/Ha HSS	29	Insecticides	£16
K	11	39	£23	C:Hy:HSS	20:20:60	PGRs	£0
	Seed write-off	8%		Kg/Ha	5.5	Other	£44

Spring Oilseed Rape

Production level	Low	Average	High	
Yield: t/ha (t/ac)	1.9 (0.8)	2.25 (0.9)	2.6 (1.1)	
	£	£	£	£/t
Output at £425/t	808 (327)	956 (387)	1,105 (448)	425
Variable Costs £/ha (£/ac):				
Seed.....		69 (28)		31
Fertiliser.....		115 (47)		51
Sprays.....		131 (53)		58
Total Variable Costs		316 (128)		140
Gross Margin £/ha (ac)	492 (199)	641 (259)	789 (320)	285

1. **Prices.** The price used is £399/t plus oil bonuses at 44% oil content making £425/. The bonus is paid on the percentage of oil over 40%, at 1.5 times the sale value of the crop and an equal but opposite penalty below 40%. For example, in this case, the bonus is on 4% oil x £410 x 1.5 = £25.
2. **Spring OSR Inputs:** Seed as per WOSR, but 35% conventional, 5% HSS, 60% hybrid. Fertiliser: N/P/K at 70/32/25 kg/ha. Sprays, Herbicides. £50, Fungicides, £41, Insecticides £13, and Others £27/ha
3. **Winter Versus Spring:** As little as 8,000 hectares of spring OSR are grown in the UK which is 2.5% of the entire crop. The financial reward is slim compared with other combinable crops.

Appendix KCC4
Natural England's "Guide to Assessing
Development Proposals on Agricultural Land



(<https://www.gov.uk/government/organisations/natural-england>)

Guidance

Guide to assessing development proposals on agricultural land

Updated 5 February 2021

Applies to England

Contents

1. Policies to protect agricultural land and soil
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3. LPAs: how to use agricultural land classification (ALC)
4. About ALC grades
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6. Use ALC to support your planning decisions
7. Developers: check if your proposal affects agricultural land



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This publication is available at <https://www.gov.uk/government/publications/agricultural-land-assess-proposals-for-development/guide-to-assessing-development-proposals-on-agricultural-land>

1. Policies to protect agricultural land and soil

Developers and local planning authorities (LPAs) should refer to the following government policies and legislation when considering development proposals that affect agricultural land and soils. They aim to protect:

- the best and most versatile (BMV) agricultural land from significant, inappropriate or unsustainable development proposals
- all soils by managing them in a sustainable way

Natural England uses these policies to advise on development proposals as a [statutory consultee](https://www.gov.uk/guidance/consultation-and-pre-decision-matters#Statutory-consultees) (<https://www.gov.uk/guidance/consultation-and-pre-decision-matters#Statutory-consultees>) in the planning process.

1.1 A Green Future: Our 25 Year Plan to improve the Environment 2018

[A Green Future: Our 25 Year Plan to Improve the Environment](https://www.gov.uk/government/publications/25-year-environment-plan) (<https://www.gov.uk/government/publications/25-year-environment-plan>) sets out the government's 25-year plan to improve the health of the environment by using natural resources more sustainably and efficiently. It plans to:

- protect the best agricultural land
- put a value on soils as part of our natural capital
- manage soils in a sustainable way by 2030
- restore and protect peatland

1.2 National Planning Policy Framework (NPPF)

LPAs should use the NPPF to make decisions about the natural and local environment to:

- protect and enhance landscapes, biodiversity, geology and soils
- recognise soils as a natural capital asset that provide important ecosystem services
- consider the economic and other benefits of BMV agricultural land, and try to use areas of poorer quality land instead of higher quality land
- prevent soil, air, water, or noise pollution, or land instability from new and existing development

Read [Chapter 15: Conserving and enhancing the natural environment](https://www.gov.uk/guidance/national-planning-policy-framework/15-conserving-and-enhancing-the-natural-environment) (<https://www.gov.uk/guidance/national-planning-policy-framework/15-conserving-and-enhancing-the-natural-environment>) for full details.

1.3 Town and Country Planning (Development Management Procedure (England) Order) (DMPO) 2015

Planning authorities must consult Natural England on all non-agricultural applications that result in the loss of more than 20 hectares (ha) of BMV land if the land is not included in a [development plan](https://www.gov.uk/guidance/national-planning-policy-framework/3-plan-making) (<https://www.gov.uk/guidance/national-planning-policy-framework/3-plan-making>). For example, this includes the likely cumulative loss of BMV land from the proposed development if it's part of a phased development.

This is required by [schedule 4\(y\) of the Order](http://www.legislation.gov.uk/uksi/2015/595/schedule/4/made) (<http://www.legislation.gov.uk/uksi/2015/595/schedule/4/made>).

1.4 Planning Practice Guidance for the Natural Environment

[Paragraphs 001 and 002: Planning Practice Guidance for the Natural Environment](https://www.gov.uk/guidance/natural-environment#brownfield-land-soils-and-agricultural-land) (<https://www.gov.uk/guidance/natural-environment#brownfield-land-soils-and-agricultural-land>) explain why planning decisions should take account of the value of soils and [agricultural land classification \(ALC\)](#) to enable informed choices on the future use of agricultural land within the planning system.

2. LPAs: consult Natural England

You must consult Natural England for development proposals that are both:

- likely to cause the loss (or likely cumulative loss) of 20ha or more of BMV land
- not in accordance with an approved development plan

Natural England will advise you on the level of impact the proposal may have on BMV agricultural land. Natural England will take into account the type of development and its likely long-term effects.

Email consultations@naturalengland.org.uk or write to:

Natural England consultation service
Hornbeam House
Electra Way
Crewe Business Park
Crewe
Cheshire
CW1 6GJ

3. LPAs: how to use agricultural land classification (ALC)

You can use ALC to help inform decisions on the appropriate sustainable development of land.

ALC uses a grading system to enable you to assess and compare the quality of agricultural land in England and Wales.

A combination of climate, topography and soil characteristics and their unique interaction determines the limitation and grade of the land. These affect the:

- range of crops that can be grown
- yield of crop
- consistency of yield
- cost of producing the crop

4. About ALC grades

ALC is graded from 1 to 5.

The highest grade goes to land that:

- gives a high yield or output
- has the widest range and versatility of use
- produces the most consistent yield
- requires less input

BMV agricultural land is graded 1 to 3a.

4.1 Grade 1 – excellent quality agricultural land

Land with no or very minor limitations. A very wide range of agricultural and horticultural crops can be grown and commonly includes:

- top fruit, for example tree fruit such as apples and pears
- soft fruit, such as raspberries and blackberries
- salad crops
- winter harvested vegetables

Yields are high and less variable than on land of lower quality.

4.2 Grade 2 – very good quality agricultural land

Land with minor limitations that affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown. 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.

4.3 Grade 3 – good to moderate quality agricultural land

Land with moderate limitations that 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.

4.4 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 crops including:

- cereals
- grass
- oilseed rape
- potatoes
- sugar beet
- less demanding horticultural crops

4.5 Subgrade 3b – moderate quality agricultural land

Land capable of producing moderate yields of a narrow range of crops, principally:

- cereals and grass
- lower yields of a wider range of crops
- high yields of grass which can be grazed or harvested over most of the year

4.6 Grade 4 – poor quality agricultural land

Land with severe limitations which significantly restrict the range of crops or level of yields. It is mainly suited to grass with occasional arable crops (for example 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 using the land. The grade also includes arable land that is very dry because of drought.

4.7 Grade 5 – very poor quality agricultural land

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

5. LPAs: carry out ALC assessments to support your planning decisions

For an overview of ALC use:

- [1:250,000 scale regional ALC maps](http://publications.naturalengland.org.uk/category/5954148537204736) (<http://publications.naturalengland.org.uk/category/5954148537204736>) (grade 3 land is not divided into subgrades 3a and 3b)
- [1:250,000 scale regional maps predicting the likelihood of BMV agricultural land](http://publications.naturalengland.org.uk/category/5208993007403008) (<http://publications.naturalengland.org.uk/category/5208993007403008>)

These maps are not at a scale suitable or accurate for assessment of individual fields or sites.

You can assess if a development proposal is likely to affect BMV agricultural land by using the [post 1988 ALC Magic map](http://magic.defra.gov.uk/MagicMap.aspx?chosenLayers=dudleystampIndex,backdropDIndex,backdropIndex,europaIndex,vmlBWIndex,25kBWIndex,50kBWIndex,250kBWIndex,miniscaleBWIndex,baseIndex&box=449447:459357:467834:470294&useDefaultbackgroundMapping=false) (<http://magic.defra.gov.uk/MagicMap.aspx?chosenLayers=dudleystampIndex,backdropDIndex,backdropIndex,europaIndex,vmlBWIndex,25kBWIndex,50kBWIndex,250kBWIndex,miniscaleBWIndex,baseIndex&box=449447:459357:467834:470294&useDefaultbackgroundMapping=false>) and [detailed site survey reports](http://publications.naturalengland.org.uk/category/6249382855835648) (<http://publications.naturalengland.org.uk/category/6249382855835648>).

If no site survey reports are available, a [new detailed survey](#) may be necessary.

6. Use ALC to support your planning decisions

Use ALC survey data to assess the loss of land or quality of land from a proposed development. You should take account of smaller losses (under 20ha) if they're significant when making your decision. Your decision should avoid unnecessary loss of BMV land.

6.1 Protect soil

You should make sure development proposals include plans to:

- [manage soils in a sustainable way during construction](https://www.gov.uk/government/publications/code-of-practice-for-the-sustainable-use-of-soils-on-construction-sites) (<https://www.gov.uk/government/publications/code-of-practice-for-the-sustainable-use-of-soils-on-construction-sites>)

- avoid peat extraction
- protect soils from contamination
- [reclaim land after mineral working or landfilling](https://www.gov.uk/government/publications/reclaim-minerals-extraction-and-landfill-sites-to-agriculture)
(<https://www.gov.uk/government/publications/reclaim-minerals-extraction-and-landfill-sites-to-agriculture>)

6.2 Carry out new surveys

If there's not enough information from previous data, you may need to have a new field survey to plan for development or to inform a planning decision. You should use soil scientists or experienced soil specialists to carry out new surveys. They should be:

- members of the British Society of Soil Science, the British Institute of Agricultural Consultants or similar professional body
- knowledgeable about the [ALC 1988 guidelines](http://publications.naturalengland.org.uk/publication/6257050620264448)
(<http://publications.naturalengland.org.uk/publication/6257050620264448>)
- experienced in soil description and ALC assessments

6.3 Survey requirements

For a detailed ALC assessment, a soil specialist should normally make boreholes:

- every hectare on a regular grid on agricultural land in the proposed development area
- up to 1.2m deep using a hand-held auger

They should:

- dig small inspection pits by hand to a minimum depth of 1m to add supporting evidence to the borehole data
- dig pits where there's a change in main soil type and ALC grade to provide a good depiction of the site
- combine the survey results with local climate and site data to plot on an Ordnance Survey (OS) base map
- use a base map at an appropriate scale for detailed work, such as 1:10,000 scale

7. Developers: check if your proposal affects agricultural land

Use the [post 1988 ALC Magic map](http://magic.defra.gov.uk/MagicMap.aspx?chosenLayers=dudleystampIndex,backdropDIndex,backdropIndex,europaIndex,vmlBWIndex,25kBWIndex,50kBWIndex,250kBWIndex,miniscaleBWIndex,baseIndex&box=449447:459357:467834:470294&useDefaultbackgroundMapping=false) (<http://magic.defra.gov.uk/MagicMap.aspx?chosenLayers=dudleystampIndex,backdropDIndex,backdropIndex,europaIndex,vmlBWIndex,25kBWIndex,50kBWIndex,250kBWIndex,miniscaleBWIndex,baseIndex&box=449447:459357:467834:470294&useDefaultbackgroundMapping=false>) and [detailed site survey reports](http://publications.naturalengland.org.uk/category/6249382855835648) (<http://publications.naturalengland.org.uk/category/6249382855835648>) to help you assess whether a development proposal is likely to affect BMV agricultural land. If no suitable data exists, you may need to carry out a [detailed survey](#) to support your planning application.

7.1 Free and chargeable advice

Natural England offers advice for proposals. Some initial advice is free. More [detailed advice is chargeable](https://www.gov.uk/guidance/developers-get-environmental-advice-on-your-planning-proposals#when-you-can-pay-for-agency-advice) (<https://www.gov.uk/guidance/developers-get-environmental-advice-on-your-planning-proposals#when-you-can-pay-for-agency-advice>), for example if your proposal is 20ha or more and requires more detailed advice.

Email: consultations@naturalengland.org.uk

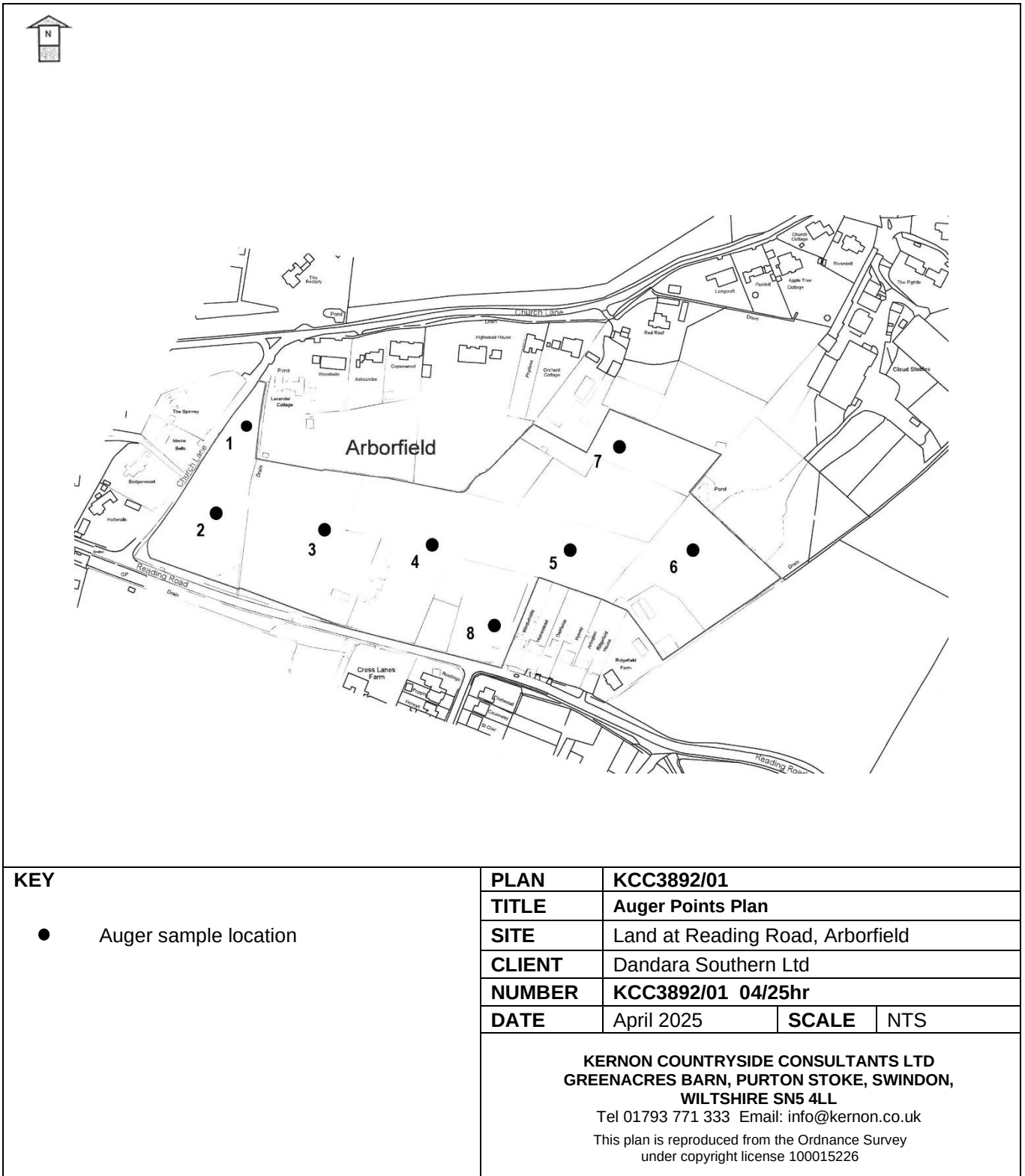
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Plan KCC3897/01
Auger Point Plan



Plan KCC3897/02
Agricultural Land Classification Plan



KEY		Ha	%	PLAN	KCC3897/02			
	Grade 1			TITLE	Agricultural Land Classification Plan			
	Grade 2			SITE	Land at Reading Road, Arborfield			
	Grade 3a	0.7	11	CLIENT	Dandara Southern Ltd			
	Grade 3b	1.7	27	NUMBER	KCC3897/02 04/25hr			
	Grade 4	1.9	30	DATE	April 2025	SCALE	NTS	
	Grade 5			KERNON COUNTRYSIDE CONSULTANTS LTD GREENACRES BARN, PURTON STOKE, SWINDON, WILTSHIRE, SN5 4LL Tel 01793 771 333 Email: info@kernon.co.uk This plan is reproduced from the Ordnance Survey under copyright license 100015226				
	Non-agricultural	2.1	32					
	Urban							
	Not surveyed							



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