

**LAND OFF
BASINGSTOKE ROAD,
SPENCERS WOOD**

**AGRICULTURAL LAND
CLASSIFICATION AND
CONSIDERATIONS**

February 2026





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SPENCERS WOOD**

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1 INTRODUCTION

1.1 This report considers the agricultural land quality of a parcel of land extending to approximately 38.3 ha south of Basingstoke Road, Spencers Wood (the 'Site').

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 has been classified as Subgrade 3a agricultural land. Therefore, the Site contains best and most versatile (BMV) agricultural land, as defined in the National Planning Policy Framework (NPPF, 2024).

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 conclusions 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.

2 PLANNING POLICY OF RELEVANCE

National Planning Policy Framework

- 2.1 The National Planning Policy Framework (NPPF) (2024), paragraph 187 notes that planning policies and decisions should contribute to and 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 and Neighbourhood Plan

- 2.5 The Wokingham Borough Core Strategy (adopted 29 January 2010) is not in conformity with the NPPF. Policy CP1 ‘Sustainable Development’ is positively worded, but notes that **“planning permission will be granted for development proposals that ... 7) avoid areas of best and most versatile agricultural land”**. The NPPF requires that the economic and other benefits of BMV be recognised. It does not require development to avoid land of BMV.
- 2.6 The emerging replacement document Local Plan Update 2023 – 2040 Proposed Submission Plan (undated) sets out in SS1 that development proposals will be expected to **“j) avoid the unplanned loss of best and most versatile agricultural land, except in exceptional circumstances”**. This is not adopted policy, and may be subject to change through examination.

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 described 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, updated in December 2025. The Update provides clarity within the ALC guidelines, as such ALC results completed under the 1988 guidelines remain valid.
- 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

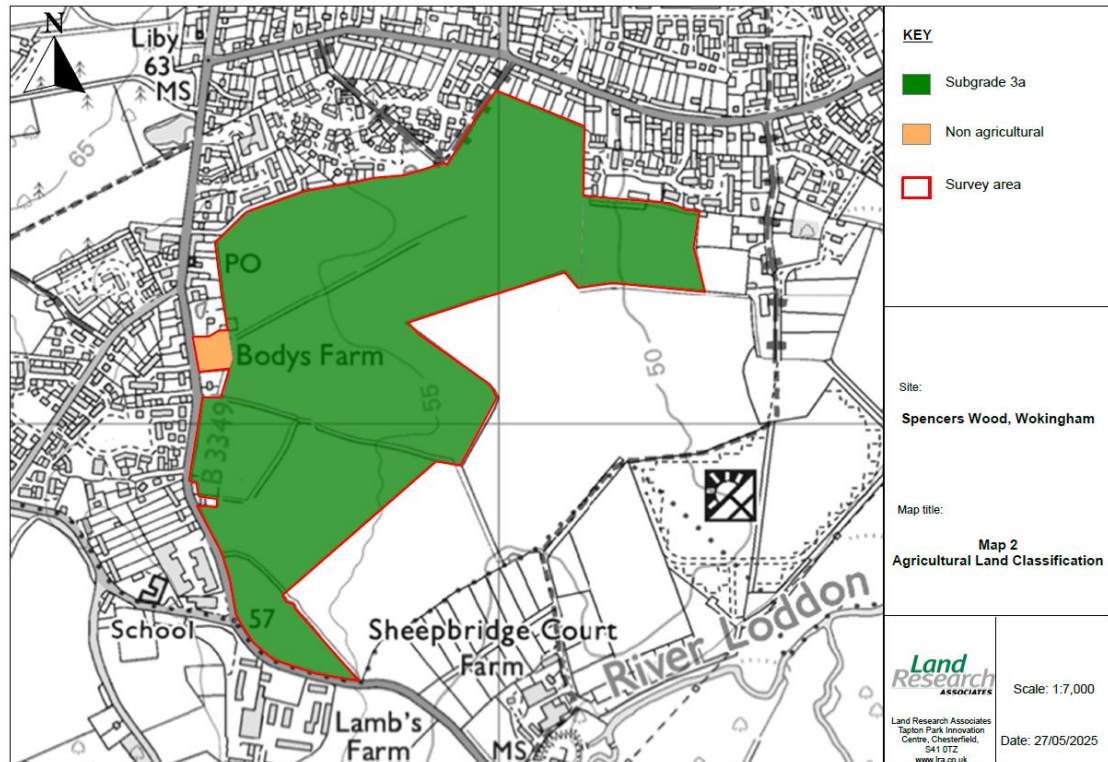
- 3.3 Part of the Site was surveyed by MAFF in 1997 (ref ALCR 05597) and found to comprise Subgrade 3a land. As that survey was carried out under the current methodology it remains valid.
- 3.4 A detailed ALC survey of the rest of the Site was carried out in May 2025 by Land Research Associates (LRA). 13 auger point inspection sites were examined on a regular 100m grid, using a spade and soil auger to a maximum depth of 100cm where possible. One soil pit was dug to measure the stoniness and to better describe the soil profiles.
- 3.5 A detailed ALC report is set out in **Appendix KCC2** which combines the MAFF and LRA survey results.
- 3.6 The results of the survey are detailed in the table below.

Table 1. ALC Results (MAFF and LRA Combined)

ALC Grade	Description	Area (Ha)	Proportion (%)
Subgrade 3a	Good	37.9	99
Non-agricultural land	-	0.4	1
Total	-	38.8	100

- 3.7 The distribution of grading is shown on the extract from the ALC plan below. The full plan can be found at the back of the report in **Appendix KCC2**.

Insert 2: Distribution of Grading ALC Map



- 3.8 With the exception of a small area of non-agricultural land, the Site is wholly Subgrade 3a and therefore within the definition of BMV agricultural land.

4 POLICY ASSESSMENT

- 4.1 The NPPF (2024) requires 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 budgeting textbooks, such as the 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)	8.2t/ha	9.4t/ha	3.5t/ha	4.0t/ha
Output (£)	£1,667/ha	£1,889/ha	£1,435/ha	£1,640/ha
Gross Margin (£)	£988/ha	£1,210/ha	£825/ha	£1,030/ha
Uplift (£)	-	£222/ha	-	£205/ha

John Nix Pocketbook for Farm Management, September 2025

- 4.6 Based on the above assumptions, the economic benefits of the 38.3 ha of BMV land to non-BMV land would be around £8,500 per annum (£8,502.60 - £7,851.50 based on 2026 budgets). Hence the economic benefits of a land parcel of this size are modest.
- 4.7 In terms of “other benefits” of BMV, one could be food production. If Subgrade 3a BMV land achieved the uplift of 1.2t/ha of winter wheat shown in Table 2, the 38.3 ha would result in a benefit of 46 tonnes per annum if all the Site was in winter wheat. This should

be seen in the context of UK cereal production of circa 20 million tonnes in 2025 (Cereal and Oilseed Production in the United Kingdom 2025, Defra (20 January 2026)).

- 4.8 Therefore, for development management purposes, the economic and other benefits of BMV land have been recognised and quantified, and these will need to be considered in the overall planning balance.

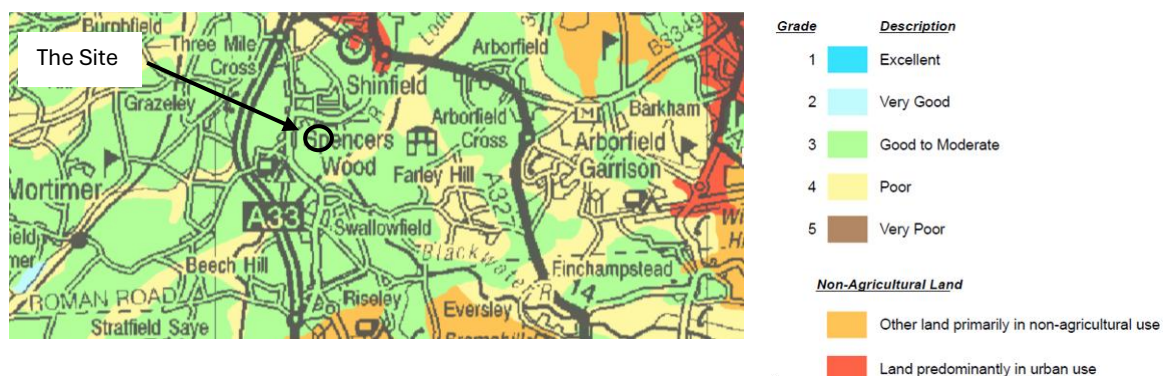
Whether this is “Significant” Development

- 4.9 This proposal can be considered as “**significant development**” in the context of footnote 65 because it exceeds the threshold for consultation with Natural England. The threshold is of 20 ha. This has been the threshold for consultation with MAFF since 1987.
- 4.10 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 whether poorer quality land is available is that the proposal involves “**significant development of agricultural land**”. “**Significant Development**” is not defined in the NPPF.

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

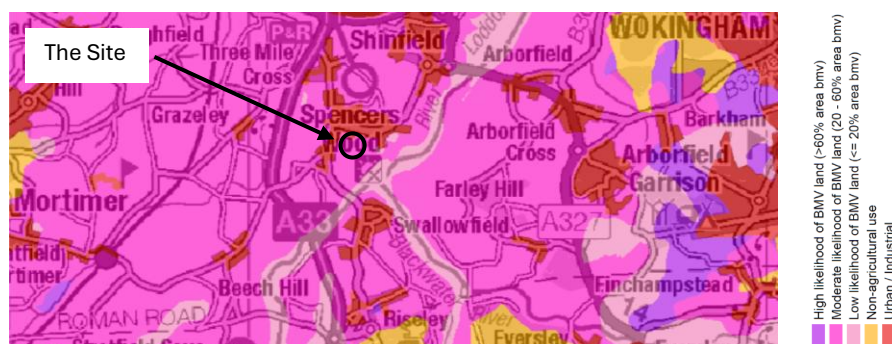
- 4.11 On the provisional ALC maps published in the 1970s, the areas surrounding Spencers Wood are mainly made up of Grade 3 land with some Grade 4. This is shown on the provisional ALC maps from the 1970s.

Insert 3: Provisional ALC Map



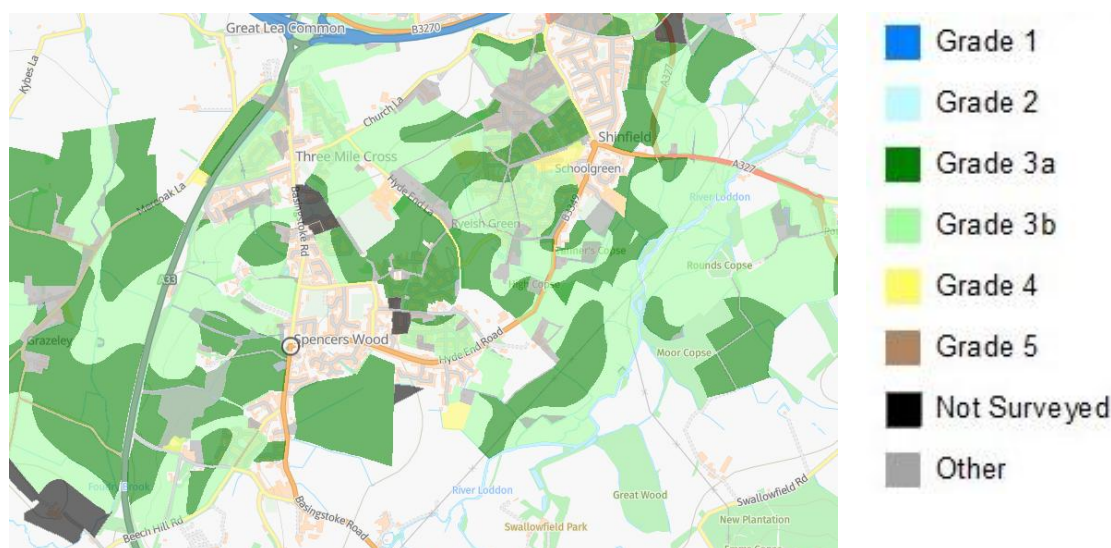
- 4.12 When looking at the predictive BMV maps the land surrounding the proposed development is shown as moderate likelihood of being BMV land. A moderate likelihood is a likelihood of 20% - 60% of areas being BMV. Almost all of the land in the area is similarly 20 – 60% area BMV.

Insert 4: Predictive ALC Map



- 4.13 Whilst there are some areas on the predictive maps that show a poor likelihood of being BMV land, these areas are situated along the banks of watercourses. Land likely to be suitable for development in the locality of the proposed site has a moderate likelihood of being BMV.
- 4.14 Large parts of the local area have been surveyed in the past by MAFF or its agencies and the available information is shown below, taken from www.magic.gov.uk.

Insert 5: Extracts from www.magic.gov.uk



5 SUMMARY AND CONCLUSION

- 5.1 The Proposed Development Site extends to approximately 38.3ha.
- 5.2 The land has been classified as comprising of 37.9ha (99%) Subgrade 3a. 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 modest at around £8,500 per annum over the BMV land.
- 5.4 In terms of the plan making footnote 65 of the NPPF, this can be considered a significant development of agricultural land. In plan making terms, poorer quality land should be considered in preference. However analysis shows that, around Spencers Wood, there is very little poorer land that is available for development.

Appendix KCC1
Natural England's Technical
Information Note TIN049

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.

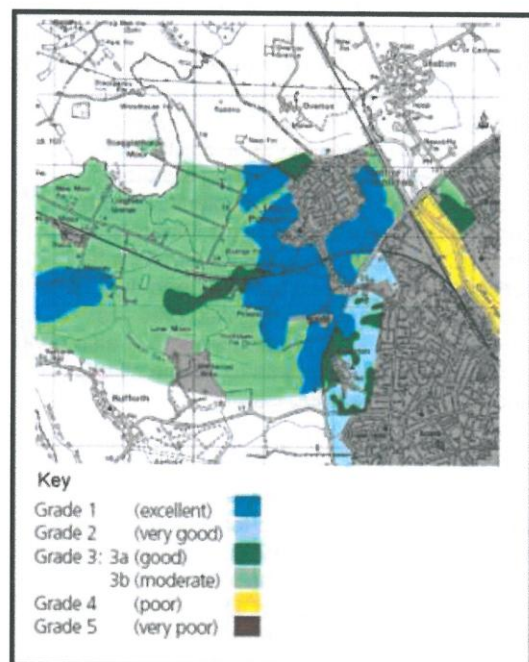
Policy to protect agricultural land

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

Second edition 19 December 2012

www.naturalengland.org.uk



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.

For further information contact the Natural England Enquiry Service on 0300 060 0863 or e-mail enquiries@naturalengland.org.uk.

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Appendix KCC2
Agricultural Land Classification

**AGRICULTURAL QUALITY
OF LAND AT SPENCERS WOOD
WOKINGHAM**

Report 2604/1

27th May 2025

Land
Research
ASSOCIATES
www.lra.co.uk

**AGRICULTURAL QUALITY
OF LAND AT SPENCERS WOOD, WOKINGHAM**

R E Leverton PhD, MRSB, FISOilSci

Report 2604/1
Land Research Associates Ltd
Tapton Park Innovation Centre
Brimington Road
Chesterfield
S41 0TZ
www.lra.co.uk

27th May 2025

SUMMARY

An agricultural land quality survey has been undertaken of 38.3 ha of land at the village of Spencers Wood, Wokingham, Berkshire during May 2025.

The soils comprise sandy clay loams with slowly permeable clay lower subsoil. Wetness limits all of the land to Subgrade 3a quality. In places droughtiness is an equally limiting factor.

1.0 Introduction

- 1.1 This report provides information on the soils and agricultural quality of 38.3 ha of land at the village of Spencers Wood, Wokingham, Berkshire. The report is based on a survey of the land during May 2025. Part of the site has been previously assessed in a report prepared for the Ministry of Agriculture, Fisheries and Food (MAFF) in 1997 (ref: ALCR05597).

SITE ENVIRONMENT

- 1.2 The site comprises six agricultural fields. The area is bounded to the north by housing, to the west and south by the Basingstoke Road and to the east by further agricultural land.
- 1.3 At the time of the survey the whole of the agricultural area was grassland.

PUBLISHED INFORMATION

- 1.4 British Geological Survey 1:50,000 scale information records the bedrock geology of the as London Clay Formation (clay, silt and sand). No superficial deposits are recorded for the majority of the survey area, with the exception of the north-east where River Terrace Deposits 3 (sand and gravel) are recorded.
- 1.5 The National Soil Map (published at 1:250,000 scale)¹ records most of the land as Hurst Association, described as coarse and fine loamy permeable soils mainly over gravel, variably affected by groundwater. In the south and north Wickham 4 Association soils are mapped, typically comprising slowly permeable seasonally waterlogged fine loamy over clayey and fine silty over clayey soils, also clayey soils with brown subsoils.
- 1.6 Part of the site has been surveyed to current Agricultural Land Classification guidelines.² The survey shows 24.4 ha of the site (64%) to be of Subgrade 3a agricultural quality.

¹Jarvis., et al., (1984). *Soils and their Use in South East England*, Soil Survey of England and Wales Bulletin No. 15, Harpenden.

² MAFF, (1988). *Agricultural Land Classification for England and Wales: Guidelines and Criteria for Grading the Quality of Agricultural Land*.

2.0 Soils

- 2.1 A detailed soils and agricultural quality survey was carried out in May 2025 in accordance with MAFF (1988) guidelines³. It was based on observations at intersects of a 100 m grid giving a density of one observation per hectare. During the survey, soils were examined by a combination of pits and augerings to a maximum depth of 1.2 m. A log of the sampling points and a map (Map 1) showing their locations are in an appendix to this report.
- 2.2 The results of the previous MAFF survey have been incorporated to produce a single grading for the site.
- 2.3 Soils within the survey area generally comprise a slightly stony sandy clay loam topsoil and upper subsoil, that overlies a slightly to moderately stony clay lower subsoil. Frequently the lower subsoil became stonier with depth (small to medium sized flints) and sampling was prevented. The upper subsoil is gleyed and mottled but permeable. The lower clay subsoil is also gleyed and mottled but weakly structured and constitutes a slowly permeable layer. These soil profiles are therefore judged as imperfectly-drained and assessed as Soil Wetness Class III.
- 2.4 A soil pit was dug in a representative soil profile and the results are presented in an appendix to this report.

³MAFF, (1988). *Agricultural Land Classification for England and Wales: Guidelines and Criteria for Grading the Quality of Agricultural Land*.

3.0 Agricultural land quality

- 3.1 To assist in assessing land quality, the Ministry of Agriculture, Fisheries and Food (MAFF) developed a method for classifying agricultural land by grade according to the extent to which physical or chemical characteristics impose long-term limitations on agricultural use for food production. The MAFF ALC system classifies land into five grades numbered 1 to 5, with grade 3 divided into two subgrades (3a and 3b). The system was devised and introduced in the 1960s and revised in 1988.
- 3.2 The agricultural climate is an important factor in assessing the agricultural quality of land and has been calculated using the Climatological Data for Agricultural Land Classification⁴. The relevant site data for the main survey area centred on Grid Reference SU 716,659 at an average elevation of 55 m AOD is given below.

- Average annual rainfall: 667 mm
- January-June accumulated temperature >0°C 1463 day°
- Field capacity period (when the soils are fully replete with water) 139 days
- Summer moisture deficits for: wheat: 113 mm
potatoes: 107 mm

The site data for the smaller northern area centred on Grid Reference SU 722,663 at an average elevation of 50 m AOD is given below.

- Average annual rainfall: 667 mm
- January-June accumulated temperature >0°C 1469 day°
- Field capacity period (when the soils are fully replete with water) 139 days
- Summer moisture deficits for: wheat: 114 mm
potatoes: 108 mm

- 3.3 The survey described in the previous section was used in conjunction with the agro-climatic data above to classify the site using the revised guidelines for ALC issued in 1988 by MAFF⁵. There are no climatic limitations at this locality.

⁴Meteorological Office, (1989). *Climatological Data for Agricultural Land Classification*.

⁵MAFF, (1988). *Agricultural Land Classification for England and Wales: Guidelines and Criteria for Grading the Quality of Agricultural Land*.

SURVEY RESULTS

- 3.4 The agricultural quality of the land is determined by a wetness limitation and in places by droughtiness. Other factors have been assessed but do not affect the land grade. Land of Grade 3 has been identified.

Subgrade 3a

- 3.5 The moderately high topsoil clay content combined with the imperfect drainage (Soil Wetness Class III) means that land is limited by wetness. The land will be too wet to access in winter and early spring with machinery in most years, although late spring and autumn cultivation is usually possible.
- 3.6 Soil profiles with relatively high subsoil stone contents have a restricted supply of moisture to supply growing crops and hence are equally limited by moderate droughtiness to Subgrade 3a.

Non-agricultural Land

- 3.7 A small area in the west comprising tracks and hard standing has been mapped as non-agricultural land (Map 2).

Grade areas

- 3.8 The land grades are shown on Map 2 and the areas occupied shown below.

Table 1: Areas occupied by the different land grades

<i>Grade/subgrade</i>	<i>Area (ha)</i>	<i>% of the land</i>
Subgrade 3a	37.9	99
Non-agricultural land	0.4	1
Total	38.3	100

APPENDIX
DETAILS OF OBSERVATIONS
MAPS

Land at Spencers Wood, Wokingham, Berkshire: Soils and ALC survey – Details of observations at each sampling point

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope	Wetness	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling	(°)	Class	Grade	Main limitation
1	0-28	SCL	5	28-53	SCL vsl st	xxx	53-80 80+	C sl st Stopped on stones	xxx	0	III	3a	W/D
2	0-28	SCL	5	28-48	SCL sl st	xxx	48-70 70+	C m st Stopped on stones	xxx	0	III	3a	W/D
3	0-29	SCL	5	29-45	SCL sl st	xxx	45-65 65-80 80+	C sl st C m st Stopped on stones	xxx xxx	0	III	3a	W/D
4	0-28	SCL	5	28-55	SCL sl st	xxx	55-80 80+	C m st Stopped on stones	xxx	0	III	3a	W/D
5	0-30	SCL	4	30-50	SCL fmn	xxx	50-120	C vsl st	xxx	0	III	3b	W
6	0-29	SCL	3	29-44	SCL vsl st	xxx	44-75 75+	C sl st Stopped on stones	xxx	0	III	3a	W/D
7	0-30	SCL	8	30-65	SCL m st	xxx	65-80 80+	C m st Stopped on stones	xxx	0	III	3a	W/D
8	0-30	SCL	10	30-60	SCL m st	xxx	60-80 80+	C m st Stopped on stones	xxx	0	III	3a	W/D
9	0-30	SCL	6	30-55	SCL vsl st	xxx	55-80 80+	C m st Stopped on stones	xxx	0	III	3a	W/D
10	0-29	SCL	7	29-55	SCL sl st	xxx	55-78 78+	C sl st Stopped on stones	xxx	0	III	3a	W/D
11	0-28	SCL	3	28-48	SCL vsl st	xxx	48-77 77-120	C fmn vsl st C fmn vsl st	xxx xxx	0	III	3a	W
12	0-30	SCL	3	30-55	SCL fmn vsl st	xxx	55-85 85-120	C vsl st C vsl st	xxx xxx	0	III	3a	W
13	0-27	SCL	3	27-53	SCL vsl st	xxx	53-80 80-120	C vsl st C vsl st	xxx xxx	0	III	3a	W

Soil log key

Gley indicators¹

o	unmottled
x	1-2% ochreous mottles and brownish matrix (or a few to common root mottles (topsoils)) ³
xx	>2% ochreous mottles and brownish matrix and/or dull structure faces (slightly gleyed horizon)
xxx	>2% ochreous mottles and greyish or pale matrix (gleyed horizon) or reddish matrix and >2% greyish, brownish or ochreous mottles and pale ped faces
xxxx	mottles or f-m concentrations (gleyed horizon) dominantly blueish/greenish matrix, often with some reddish mottles (gleyed horizon)

Slowly permeable layers⁴

a depth underlined (e.g. 50) indicates the top of a slowly permeable layer

A wavy underline (e.g. 50) indicates the top of a layer borderline to slowly permeable

Texture²

C	clay
ZC	silty clay
SC	sandy clay
CL	clay loam (H-heavy, M-medium)
ZCL	silty clay loam (H-heavy, M-medium)
SZL	sandy silt loam (F-fine, M-medium, C-coarse)
LS	loamy sand (F-fine, M-medium, C-coarse)
SL	sandy loam (F-fine, M-medium, C-coarse)
S	sand (F-fine, M-medium, C-coarse)
SCL	sandy clay loam
P	peat (H-humified, SF-semi-fibrous, F-fibrous)
LP	loamy peat; PL - peaty loam

Wetness Class⁵

I (freely drained) to VI (very poorly drained)

Limitations:

W	wetness/workability
D	droughtiness
De	depth
F	flooding
St	stoniness
G	gradient
T	topography/microrelief
C	Climate

Suffixes & prefixes:

o - organic

(vsl, sl, m, v, x)st – (very slightly, slightly, moderately, very, extremely) **stony**⁶

(vsl, sl, m, v, x)ca

(very slightly, slightly, moderately, very, extremely) **calcareous**⁷

Other abbreviations

fmn	ferri-manganiferous concentrations
dist	disturbed soil layer; chky - chalky
R	bedrock (CH – chalk, SST – sandstone)
LST	limestone, MST – Mudstone)
r-reddish, gn	greenish

¹Gley indicators in accordance with Hodgson, J.M., 1997. Soil Survey Field Handbook (third edition). Soil survey technical monograph No. 5

²Texture in accordance with particle size classes in Hodgson (1997)

³ Occasionally recorded in the texture box

⁴Permeability is estimated for auger borings and must be confirmed by full pit observations in accordance with the definitions in: Revised Guidelines for grading the quality of Agricultural Land (Maff 1988)

⁵Soil Wetness Classes are defined in Hodgson (1997)

⁶stoniness classes as defined in Hodgson (1997)

⁷calcareous classes as defined in Hodgson (1997)

Grades shown as intergrade e.g. 3a/3b are close to the grade boundary. The estimate of which side of the boundary the grading falls is the shown first (in bold here) grades in brackets eg. (3a) raised by one grade due to calcareous topsoil

Land at Spencers Wood, Wokingham, Berkshire

Soil Pit Data

Pit 1 (AB9): Slope – Level

Land use – Grass

Depth (cm)	Texture	Colour	Mottles	Stone Content	Structure	Pores	Consistence	Structural Condition	Roots	Calcium Carbonate	Ferri-manganese	Horizon Boundary
0 – 30	Sandy clay loam	10YR4/3 (Brown)	None	6% small to medium sub-angular flint	Weakly developed medium sub-angular blocky	-	-	-	Many very fine to fine	Non-calcareous	-	Clear, smooth
30 – 55	Sandy clay loam	10YR5/3, 5/6 (Brown, yellowish brown)	Many prominent ochreous mottles	5% small to medium sub-angular flint	Moderately developed medium to coarse sub-angular blocky	>0.5% biopores	Firm	Moderate	Common very fine to fine	Non-calcareous	-	Clear, smooth
55 – 100	Clay	10YR5/3, 5/6 (Brown, yellowish brown)	Very many prominent ochreous mottles	15% increasing to 30 % from 80 cm small to medium sub-angular flint	Weakly developed very coarse angular blocky	<0.5% biopores	Firm	Poor	Few very fine to fine	Non-calcareous	-	

Wetness Class: III

Wetness Grade: 3a

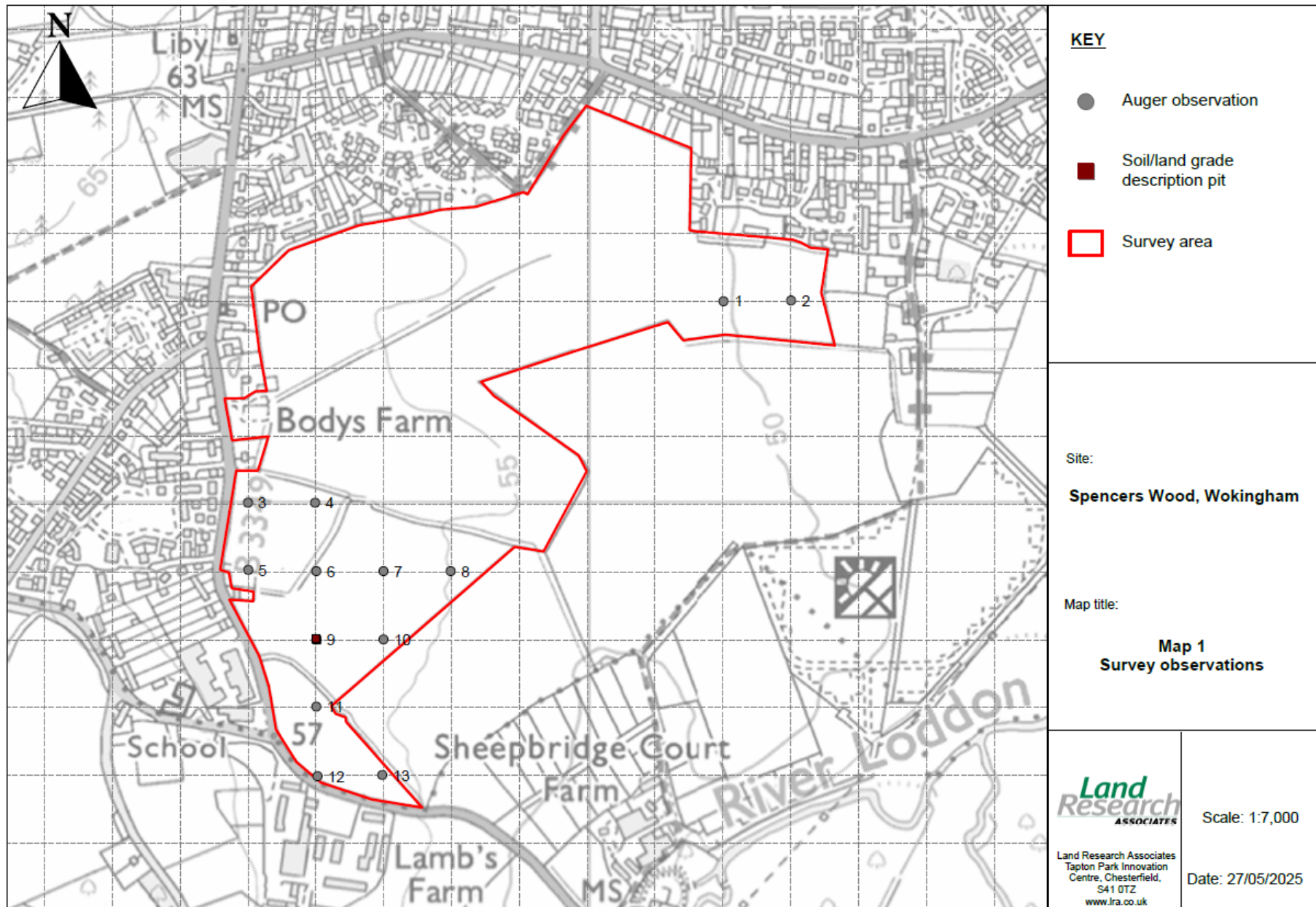
MB (Wheat) = AP (Wheat) 116.7 - MD (Wheat) 113 = 3.7 mm

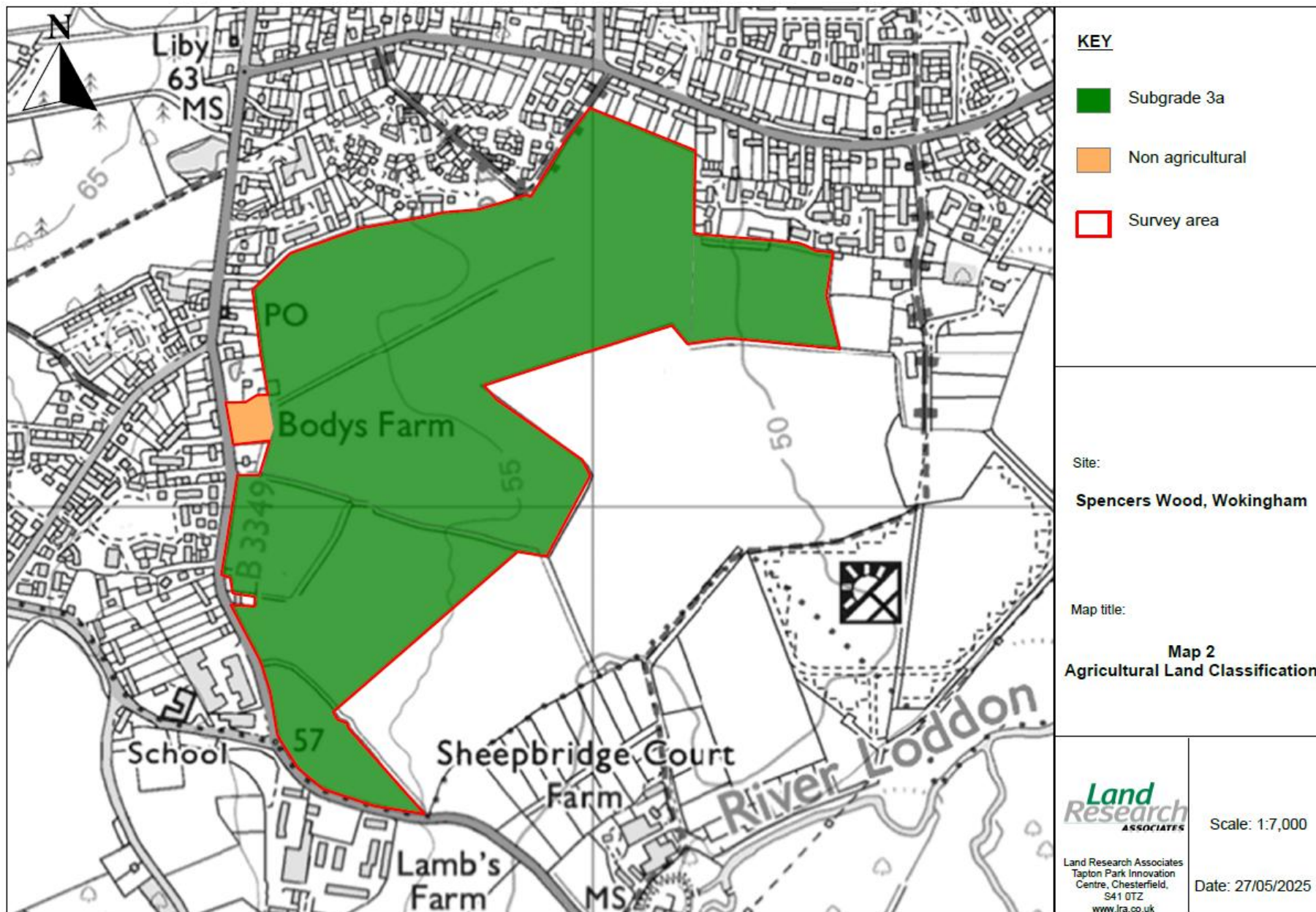
MB (Potatoes) = AP (Potatoes) 100.7 - MD (Potatoes) 107 = -6.3 mm

Droughtiness Grade: 3a

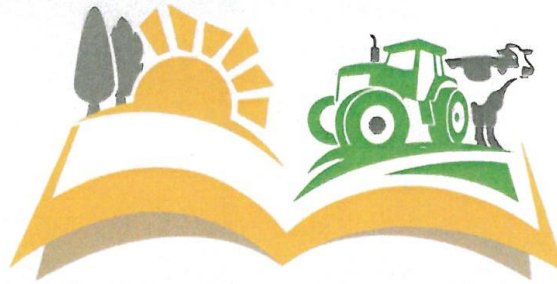
ALC Grade: 3a

Main limiting factor: Wetness and workability and droughtiness

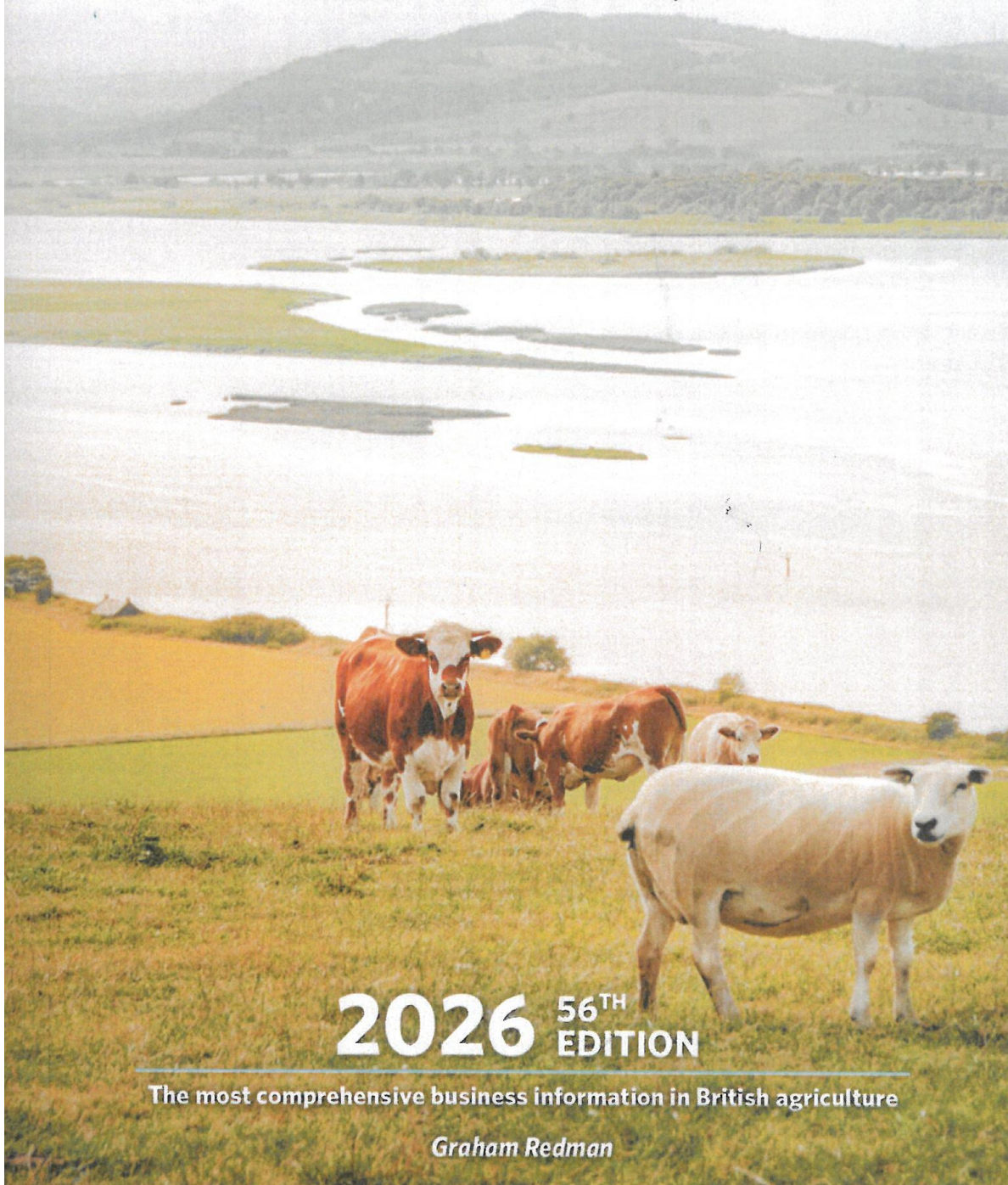




Appendix KCC3
John Nix Pocketbook for Farm
Management (55th Ed) Extracts



NIX FARM MANAGEMENT POCKETBOOK



2026 56TH
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)	7.0 (2.8)	8.2 (3.3)	9.4 (3.8)	
	£/ha (ac)	£/ha (ac)	£/ha (ac)	£/t
Grain at £185/t	1,295 (524)	1,517 (614)	1,739 (704)	
Straw in Swath	150 (61)	150 (61)	150 (61)	
Total Output	1,445 (585)	1,667 (675)	1,889 (765)	203
Variable Costs £/ha (£/ac):				
Seed.....		81 (33)		10
Fertiliser.....		297 (120)		36
Sprays.....		301 (122)		37
Total Variable Costs		679 (275)		83
Gross Margin £/ha (ac)	766 (310)	988 (400)	1,210 (490)	120

Fertiliser Basis 8.2t/ha				Seed:	Sprays £/ha:	
Nutrient	Kg/t	Kg/Ha	£/Ha	£/t C2	£510	Herbicides £131
N	23	190	£187	Kg/Ha	175	Fungicides £115
P	7.0	57	£60	% HSS	30%	Insecticides £4
K	10.5	86	£49	£/t HSS	£353	PGRs £19
						Other £33

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 whole wheat yield including feed and milling, winter and spring crops is 8.06t/ha (10-year average Defra). The table below offers a weighted estimate of yield variations according to wheat type based on a national 10-year average yield of 8.06t/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%	8.14	8.27	7.49		8.06
Feed	101%	8.22	8.35	7.57		8.14
Bread	93%	7.57	7.69	6.97	5.92	7.49
Biscuit	99%	8.06	8.19	7.42		7.98

2. *Straw* is sold in the swath. Assume half the baled value is swath value £70/tonne at 4.2t/Ha winter and 3.8t/ha spring wheat (rounded up).
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 £175/t of seed (£31/ha) or more. 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 £200/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)	
	£/ha (ac)	£/ha (ac)	£/ha (ac)	£/t
Output at £410/t	1230 (498)	1,435 (581)	1,640 (664)	410
Variable Costs £/ha (£/ac):				
Seed.....		73 (29)		21
Fertiliser.....		261 (106)		75
Sprays.....		277 (112)		79
Total Variable Costs		610 (247)		174
Gross Margin £/ha (ac)	620 (251)	825 (334)	1,030 (417)	236

Fertiliser Basis 3.5t/ha				Seed:		Sprays £/ha:	
Nutrient	Kg/t	Kg/Ha	£/Ha	£/Ha C	43	Herbicides	£135
N	54	190	£187	£/Ha Hy	88	Fungicides	£71
P	14	49	£52	£/Ha HSS	29	Insecticides	£18
K	11	39	£22	C:Hy:HSS	20:20:60	PGRs	£0
	Seed write-off	8%		Kg/Ha	5.5	Other	£53

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)	
	£/ha (ac)	£/ha (ac)	£/ha (ac)	£/t
Output at £410/t	779 (315)	923 (374)	1,066 (432)	410
Variable Costs £/ha (£/ac):				
Seed.....		69 (28)		31
Fertiliser.....		117 (47)		52
Sprays.....		145 (59)		64
Total Variable Costs		331 (134)		147
Gross Margin £/ha (ac)	448 (181)	592 (240)	735 (298)	263

1. **Prices.** The price used is £390/t plus oil bonuses at 44% oil content making £410/. 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. £55, Fungicides, £43, Insecticides £14, and Others £33/ha
3. **Winter Versus Spring:** As little as 6,000 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.



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