On Behalf of AB InBev UK ltd




Land at Llandevenny, Magor, Monmouthshire

Desk Based Agricultural Land Classification

March 2024

ADAS

ADAS GENERAL NOTES

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EXECUTIVE SUMMARY

ADAS have been instructed by Gerald Eve LLP on behalf of AB InBev UK Limited to undertake a desk based agricultural land classification (ALC) of about 14ha of land at Llandevenny, Magor, Monmouthshire.

The published soil and geological information available for the area show the site to be covered by two key soil associations with distinct soil types. The soil in the northwest corner is described as clayey and seasonally waterlogged and limited by wetness to ALC Subgrade 3a or 3b quality. The remaining soils are described as light topsoils over free-draining subsoils with occasional slowly permeable layers and thus limited by wetness to ALC Grade 2.

Due to the limitations of this data, assumptions have been made for the purpose of agricultural land classification and the grading must be treated as provisional.

CONTENTS

1 INTRODUCTION

ADAS have been instructed by Gerald Eve LLP on behalf of AB InBev UK Limited to undertake a desk based agricultural land classification based on the published soil and geological information available for the area. This report provides information on the soils and the best estimate of agricultural quality of about 14 ha of land at Llandevenny, Magor, Monmouthshire.

1.1 Site Environment

The site of about 20.2ha, of which about 14ha is agricultural land, lies south of the M4 by Wilcrick and west of Magor. The desk study spans multiple agricultural fields and some existing buildings in the north. The site borders train tracks to the south and the A4810 to the east. The west of the site borders more agricultural land and the north the existing brewery complexes. A paved road, which serves two properties, runs through the southeastern corner. The land slopes from 12m AOD in the south to 25m AOD in the north with an average elevation of approximately 18m AOD and is not limited by slope.

1.2 Agricultural Use

Satellite imagery shows the site to be in use as grassland and arable land, as well as some built up or paved areas.

1.3 Published Information

1.3.1 Geology

1:50,000 scale BGS information[1] records the basal geology of the site as mostly of the Tintern sandstone formation with a small area of Mercia mudstone group to the northwest.

No superficial geological information is available.

1.3.2 Soils

The national soils map, published at 1:250,000 scale, records the site as belonging to two soils associations: the Escrick 2 association and the Worcester association. The Escrick 2 association covers the majority of the site, while Worcester only covers the northwest corner in accordance with the bedrock geology.

Escrick 2 is described deep well drained (Wetness Class I) often reddish coarse loamy soils with occasional less permeable subsoils and waterlogging (Wetness Class II). Worcester is described as slowly permeable non-calcareous and calcareous reddish clayey soils over mudstone with seasonal waterlogging (Wetness Class III).

[1] British Geological Survey, 2019. *Geology of Britain viewer*. Online resource: http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html

1.3.3 Predictive Agricultural Land Classification

The available predictive agricultural land classification map for this area classes it as mainly Grade 2 with an area to the northwest as being Subgrade 3b[2]. The existing buildings fall under Urban.

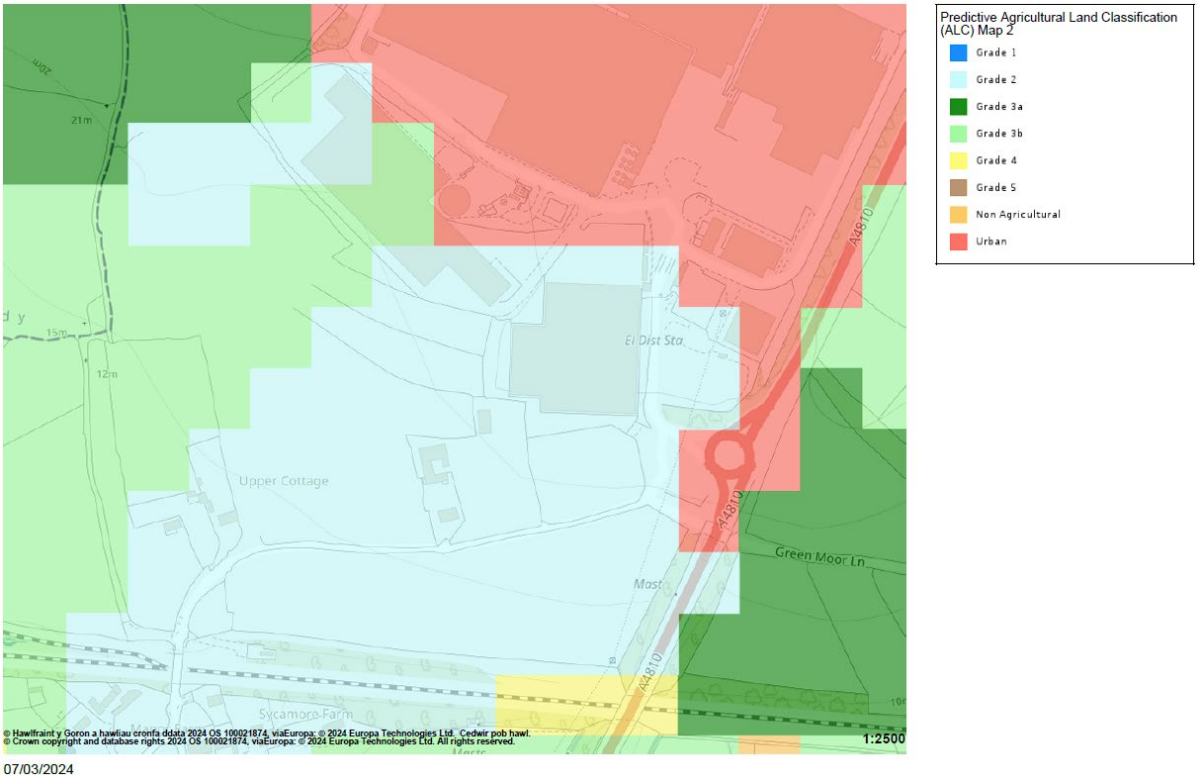


Figure 1: predictive ALC map

[2] Welsh Government, 2024. DataMapWales. Online resource: https://datamap.gov.wales/maps/new?layer=inspire-wg:wg_predictive_alc2#/

1.3.4 Flood Risk

The site borders low flood risk zones from rivers and the sea and includes some risk zones from surface watercourses[3]. The site is not limited by flood risk.

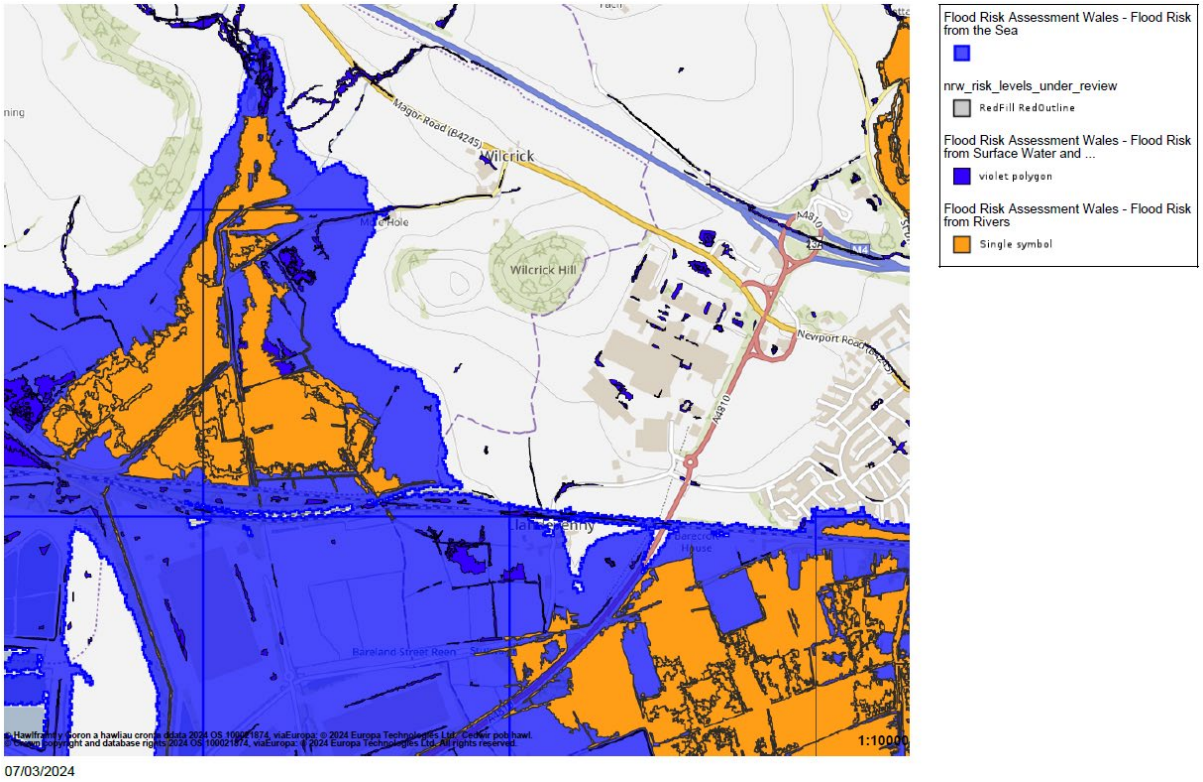


Figure 2: Flood risk map from rivers, surface watercourses, and from the sea

[3] Welsh Government, 2024. DataMapWales. Online resource: https://datamap.gov.wales/maps/new?layer=inspire-nrw:FloodRiskAssessmentWales#/

2 SOILS

2.1 Soil Types

Within Escrick 2 association there are three soil series, most commonly Escrick with 60%. This series is characterised by a dark brown, slightly stony, sandy loam or a sandy silt loam topsoil over slightly stony, sandy loam or sandy silt loam upper subsoil over reddish brown, slightly stony sandy loam or clay loam lower subsoil. The soils show no prominent mottling or indications of gleying above 40cm and are developed mainly on permeable material, therefore having no or few wetness limitations, but can be limited by drought, stoniness, or other factors. Only the Bishampton series within Escrick 2 association shows occasional waterlogging due to less permeable subsoil and is limited by Wetness (Grade II).

The Worcester association contains three soil series with the Worcester series being the most prominent (45%) followed by Whimple (20%) and Clayworth (15%). Worcester association is characterised by clayey soils, which crack when dry, but are slowly permeable when wet, over reddish mudstone. These soils can have Wetness Classes from II-III and can be wetness limited.

3 AGRICULTURAL LAND CLASSIFICATION

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 agricultural use for food production. The limitations can operate in one or more of four principal ways; they may affect the range of crops which can be grown, the level of crop yield, the consistency of crop yield, and the cost of obtaining a crop.

The classification system gives considerable weight to flexibility of cropping, whether actual or potential, however the ability of some land to produce consistently high yields of a narrower range of crops is also taken into account.

The Agricultural Land Classification (ALC) system classifies land into five grades numbered 1 (excellent quality) to 5 (very poor quality), with grade 3 divided into two subgrades (3a and 3b). The system was devised and introduced by the Ministry of Agriculture, Fisheries and Food (MAFF now Defra) in the 1960s and revised in 1988. A description of the grades used in the ALC system is attached to this report as Appendix 3.

3.1 Climate

The agricultural climate is an important factor in assessing the agricultural quality of land, and the agricultural climate of this site has been calculated using the Climatological Data for Agricultural Land Classification[4]. The relevant site data for an elevation of 18m AOD is given below.

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

Table 3.1: Agro-climatic variables

Grid Reference Location	ST 413 871
Average Annual Rainfall (AAR)	947 mm
January-June Accumulated Temperature (AT0)	1527 day °C
Field Capacity Days (FCD)	197
Field Capacity Period	Mid October - early May
Moisture Deficit Wheat (MDW)	93 mm
Moisture Deficit Potatoes (MWP)	83 mm
Climate (upper grade limit)	1

There is no agro-climatic limitation to the grade of this land.

3.2 Results

The published soil and geological information described in section 2 for the area were used in conjunction with the agro-climatic data to classify the land according to the revised guidelines for Agricultural Land Classification issued in 1988 by the Ministry of Agriculture, Fisheries and Food (now Defra)[5].

This report has identified agricultural land of grade 2 and subgrade 3b quality. Due to the wet climatic conditions of the site, there is no limitation on drought. The available published data does not suggest any limitations based on stoniness or soil depth. The two soil associations at this site have different soil properties, with parts of the northwestern corner being described as a seasonally waterlogged soil with a Wetness Class II to III and therefore wetness limiting Subgrade 3a or 3b, depending on topsoil texture. The other soil association, Escrick 2, which makes up the rest of the site, could be limited by wetness to Grade 2. See table below.

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

Table 3.2: ALC grades according to wetness class and 0-25cm soil texture

Soil Association	Wetness Class	Texture of the top 25cm	Grade for 197 FCD
Escrick 2	I	Sandy loam/ sandy silt loam	1
		Medium clay loam	2
	II	Sandy loam/ sandy silt loam	2
		Medium clay loam	3a
Worcester	II	Medium clay loam	3a
		Heavy clay loam	3a
	III	Medium clay loam	3a
		Heavy clay loam	3b

The predictive ALC map correlates with the description of these two soil associations and assigns some of the land to Subgrade 3b, while the rest of the agricultural area is mapped as Grade 2. As the predictive ALC map draws soil data from more detailed mapping information and includes soil series phases, soil series mapping, and available survey work, more weight has been given to the predictive ALC map when drawing the distinct grade boundaries.

It should be noted that the map is a modelled prediction based on best available data and does not replace ALC survey work. Accurate assessment of soil texture would require on site hand texturing with confirmation by laboratory particle size distribution analysis.

These results are preliminary only as insufficient detail on land drainage, soil texture, soil structure, porosity and stone content are available in the published data to draw definitive conclusions about the quality of the land.

Grade 1

No land of this quality has been mapped.

Grade 2

There are 10.6ha of Grade 2 land preliminarily mapped at this site. The principal limitation to agriculture is wetness. This land is found both in the Escrick 2 and Worcester soil association.

Subgrade 3a

No land of this quality has been mapped.

Subgrade 3b

There are 4ha of Subgrade 3b land preliminarily mapped at this site. The principal limitation to agriculture is soil wetness. This land is found both in the Escrick 2 and Worcester soil association.

Grade 4

No land of this quality has been mapped.

Grade 5

No land of this quality has been mapped.

Non-agricultural

No land of this type has been mapped.

Urban

There is 5.6ha of land mapped as urban to the north of the site where the existing brewery buildings are present.

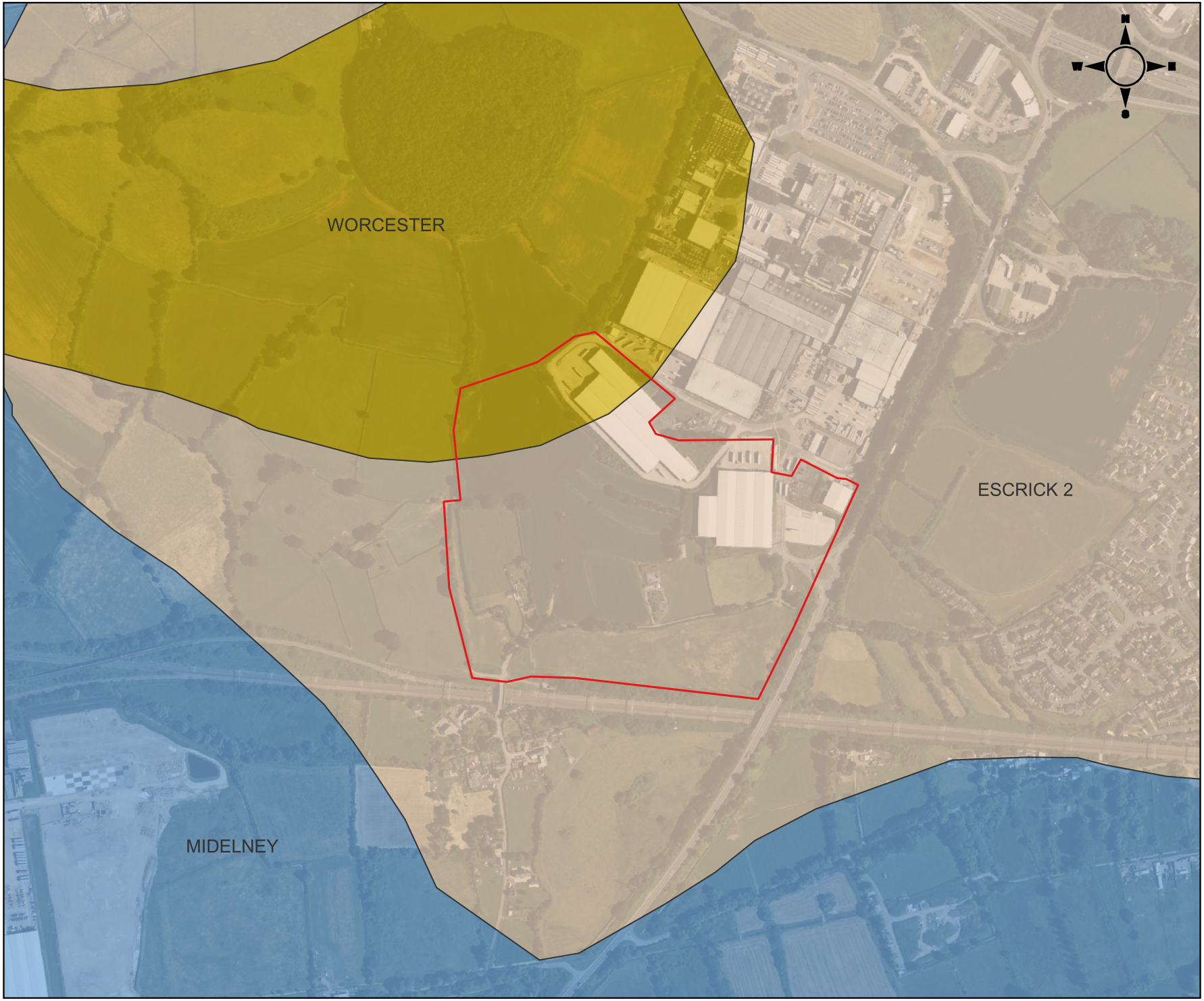
3.3 Summary of grade areas

The boundaries between the different grades of land are shown on Appendix 2, Map 2. The predicted area occupied by each grade is shown below.

Table 3.3: Grade areas

Grade / subgrade	Area (ha)	Area (%)
Grade 1	-	-
Grade 2	10.6	52
Subgrade 3a	-	-
Subgrade 3b	4	20
Grade 4	-	-
Grade 5	-	-
Non-agricultural	-	-
Urban	5.6	28
Total	**20.2**	**100**

APPENDIX 1 – SOIL ASSOCIATIONS



Title

Appendix 1: Map 1
Soil Assocations

Project

Land at Llandevenny

Client

Gerald Eve LLP

Key

Red Line Boundary

Soil Associations

Worcester

Escrick 2

Midelney

0 100 200 m

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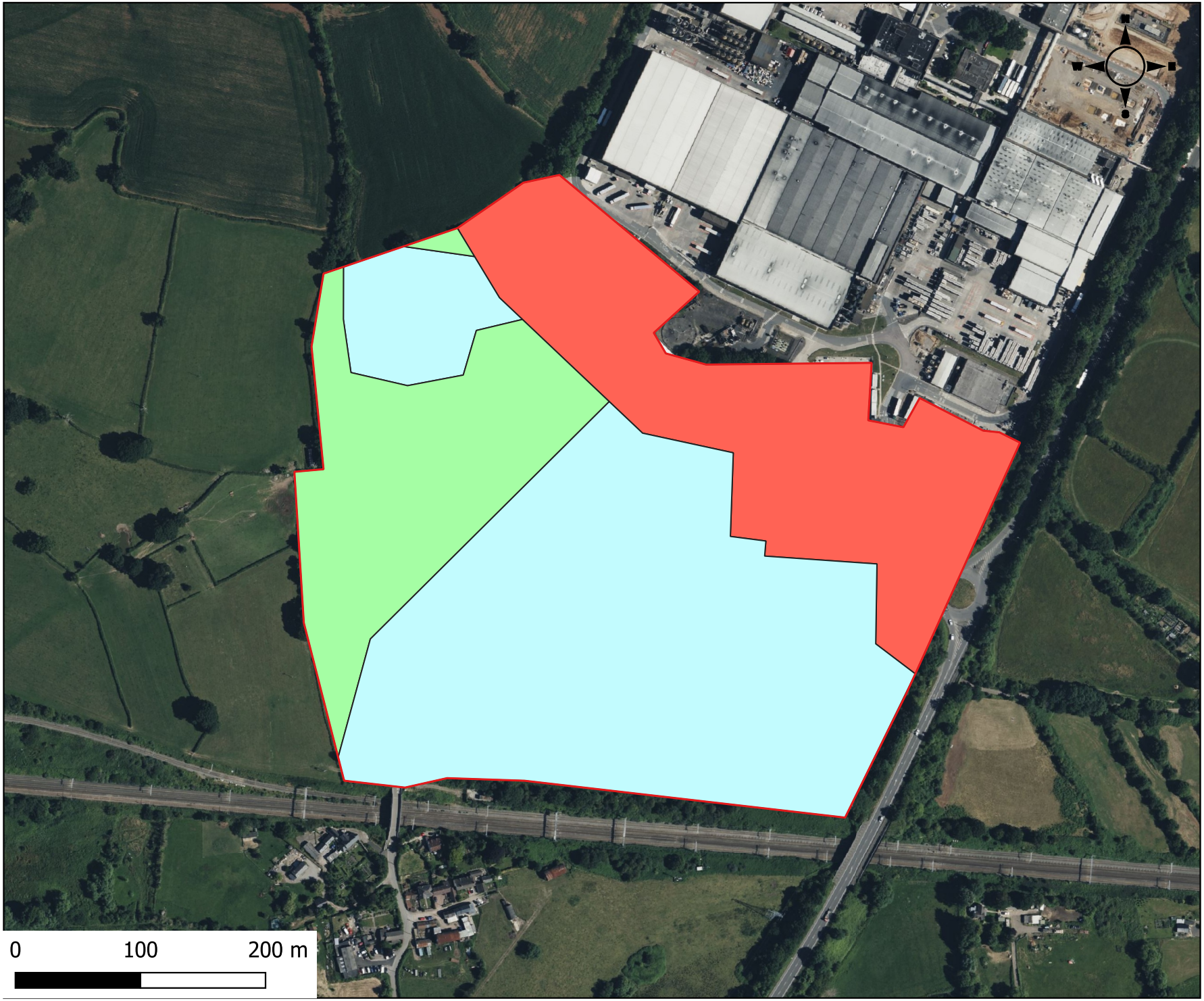
APPENDIX 2 – PRELIMINARY AGRICULTURAL LAND CLASSIFICATION



Title

Appendix 2: Map 2
Preliminary ALC Grades

Project

Land at Llandevenny

Client

Gerald Eve LLP

Key

Red Line Boundary

ALC Grades

1
2
3a
3b
4
5
Non agricultural
Urban

Date: 08 / 03 / 2024

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APPENDIX 3 – DESCRIPTION OF ALC GRADES

The ALC grades and subgrades are described below in terms of the types of limitation which can occur, typical cropping range and the expected level and consistency of yield. The *'best and most versatile agricultural land'* falls into grades 1, 2 and subgrade 3a – which collectively comprises about one-third of the agricultural land in England and Wales. About half the land in England and Wales is either of moderate quality (subgrade 3b) or poor quality (grade 4). Although less significant on a national scale, such land can be locally valuable to agriculture and the rural economy where poorer farmland predominates. The remainder is very poor quality land in grade 5, which mostly occurs in the uplands.

Grade 1 – excellent quality agricultural land

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

Grade 2 – very good quality agricultural land

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

Grade 3 – good to moderate quality land

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

Subgrade 3a – good quality agricultural land

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

Subgrade 3b – moderate quality agricultural land

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

Grade 4 – poor quality agricultural land

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

Grade 5 – very poor quality agriculture land

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