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WALSINGHAM PLANNING

SPECIALIST PLANNING & DEVELOPMENT CONSULTANTS

Local Plan Partial Update Regulation 19 Consultation

Land at Radstock

Representations on behalf of Vistry Group

October 2021

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APPENDICES

1 INTRODUCTION

1.1 These representations have been prepared by Walsingham Planning on behalf of Vistry Group PLC (comprising Bovis Homes, Linden Homes and Vistry Partnerships) (Vistry) and relate to the Regulation 19 consultation on the Core Strategy and Placemaking Plan Partial Update (herein referred to as the Consultation). The Consultation has been prepared by the Council as part of its partial review of the Core Strategy (2014) and Placemaking Plan (2017).

1.2 Vistry has an interest in Land at Radstock, as shown on the accompanying Plan at **Appendix 1**. The site comprises a parcel of land to the east of the Old Bath Road and a parcel of land to the west of the Old Bath Road. Vistry is promoting the land for residential development. The land has been assessed within the Council's Housing and Economic Land Availability Assessment 2021 (HELAA 21) published alongside the consultation. Within the HELAA 21, Vistry's land interests at Radstock are referred to as RAD16g, RAD16h, RAD16c and RAD16b.

1.3 The Partial Local Plan Review is being prepared to update the Core Strategy and Placemaking Plan to respond to the Council's Climate Emergency and Ecological Emergency, and to identify and allocate sites to deliver around 1,200 new homes, in order to effectively fulfil the housing requirement outlined in the Core Strategy before the end of the Plan period (2029).

1.4 Vistry is committed to tackling climate change through its developments, which it considers to be a moral imperative. Vistry have committed to ambitious carbon reduction targets with some of the actions being taken summarised below:

- A commitment to ambitious carbon emission targets consistent with reductions required to keep warming to 1.5°C;
- Vistry's first net zero regulated carbon emission homes about to be handed over;
- Vistry are working with the University of Exeter to develop future climate scenarios to respond to the requirements of the Taskforce for Climate Related Financial Disclosure;
- Meaningful and measurable sustainability criteria will be incorporated into executive remuneration from 2022;
- Vistry is making good progress across all areas of the Group's sustainability strategy Vistry Group's purpose is to deliver sustainable homes and communities across all sectors of the UK housing market. Key to this purpose is a successful and ambitious sustainability strategy, which was launched earlier this year and is focussed on the three priority areas of (i) Operations; (ii) Homes & Communities; and (iii) People.

1.5 With regards to the delivery of homes, it is widely acknowledged that England is suffering a housing crisis. A failure to plan for, and build, sufficient homes across England has led to severe affordability issues. There are few places outside of London where affordability issues are felt more keenly than in B&NES. Research on the Council's own website suggests that, on average,

full-time workers could expect to pay an estimated 10.84 times their annual workplace-based earnings on purchasing a home in B&NES in 2018, compared to 7.8 times annual earnings in England and Wales. The causes of this housing crisis are complex and there is not one simple solution. Whilst the starting point is to build more homes full-stop, it is also important to ensure delivery of affordable housing as defined by the NPPF. Based on figures within the Council's Annual Monitoring Report 2019, only 27% of houses built in 2018/19 financial year were affordable.

1.6 It is against this context that Vistry comments on the Consultation including the amendments to the district wide policies and the proposed site allocations for replenishing the supply of housing.

1.7 The structure of these representations is as follows:

- **Section 1:** Introduction
- **Section 2:** Districtwide Policies
- **Section 3:** Replenishing Housing Supply
- **Section 4:** Land at Radstock

2 DEVELOPMENT MANAGEMENT POLICIES

2.1 In this section, Vistry provides its comments on the proposed amendments to the Districtwide policies. At Para 29a of the Composite reference is made to Para 21 of the NPPF and the

requirement to make explicit which policies are strategic policies. The Consultation states that it is considered all policies in the Core Strategy and Placemaking Plan are 'strategic' policies. However, Para 21 of the NPPF specifically states that *"strategic policies should not extend to detailed matters that are more appropriately dealt with through neighbourhood plans or other non-strategic policies."* Clearly many of the district wide policies relate to detailed matters and so should not be considered strategic policy. As such we do not consider that the Composite Plan has satisfied the requirement of Para 21 of the NPPF.

SCR6 SUSTAINABLE CONSTRUCTION POLICY FOR NEW BUILD RESIDENTIAL DEVELOPMENT

2.2 Policy SCR6 states that new build residential development will aim to achieve zero operational emissions by reducing heat and power demand then supplying all energy demand through onsite renewables. Where the use of onsite renewables to match total energy consumption is demonstrated to be not technically feasible or economically viable, renewable energy generation should be maximised and the residual carbon must be offset by a financial contribution.

2.3 The impact of the above policy on viability has been assessed in the Bath and North East Somerset: Local Plan Partial Update Viability Study prepared by BNP Paribas and published alongside the Consultation. It models 3 different scenarios based upon a cost uplift of 3%, 5% and 6%. It states that most schemes remain viable in all three scenarios. However, the Council has confirmed that net zero carbon can be achieved in residential developments through a cost equivalent of 3% build costs and this has been used to assess the cumulative impact of the emerging policies.

2.4 No evidence is provided to substantiate the Council's claim that net zero carbon can be achieved in residential developments as a cost equivalent of 3% uplift. A feasibility study conducted by UKGBC[1] estimated build costs uplifts of 3.5% for flatted residential development. However, the design changes available to deliver net zero in flatted development (e.g. swapping concrete structure for timber and air source heat pumps) are not as effective for individual dwelling houses. Analysis by Currie Brown & Etude dated February 2021[2] concluded that to achieve net zero regulated carbon emissions from a combination of energy efficiency on site carbon reductions and allowable solutions, the additional capital cost is between 5 - 7% for homes.

2.5 Whilst the BNPP Viability Study states that most of the modelled schemes remain viable with a 5% and 6% cost uplift, these higher uplifts have not been used to assess the cumulative impact of emerging policies. It is essential that the Viability Study does not just as assess the cumulative impact of emerging policy based on the best case and most optimistic assumptions. Further

[1] 'Building the Case for Net Zero: A feasibility study into the design, delivery and cost of new net zero carbon buildings' by UKGBC dated September 2020

[2] 'Cornwall Climate Emergency DPD – Energy review and modelling' by Currie Brown & Etude dated February 2021

testing should be carried out to assess the cumulative impact of emerging policies based on the likely scenario that the build cost impact of Policy SCR6 will exceed 3%.

SCR8 EMBODIED CARBON

2.6 Policy SCR8 requires large scale new-build developments (a minimum of 50 dwellings or a minimum of 5000m2 of commercial floor space) to submit an Embodied Carbon Assessment that demonstrates a score of less than 900kg/sqm of carbon can be achieved within the development for the substructure, superstructure and finishes. As noted in our response to the previous Options Consultation, Vistry is working to make its entire building process as efficient as possible and supports the principle of driving whole life carbon reductions. However, Vistry is concerned about the practical implications of providing Whole Life Cycle Carbon Assessments at the planning stage.

2.7 Since May 2018, it has been mandatory for RICS members to assess the Whole Life Carbon of new infrastructure projects. They are expected to conduct at least two WLC assessments: one at a project's technical design stage, which is mandatory; and another after practical completion, which is recommended best practice. Both of these stages would come after the grant of detailed planning permission. Whilst we welcome the decision to exclude smaller sites from the requirement, we remain of the view that carrying out Embodied Carbon Assessments at the planning stage risks being a tick box exercise that does not add value.

2.8 Furthermore, the requirement will have an impact upon build costs and therefore viability, but this does not appear to have been explicitly tested by the BNPP Viability Study. The BNPP Viability Study lists the requirements of carbon offset and climate change policies tested as relating to space heating demand, total energy use and on-site renewable energy generation but not embodied carbon. The Viability Study should assess the impact on build costs that specifying materials with low embodied carbon costs will have on build costs.

POLICY SCR9 ELECTRIC VEHICLE CHARGING INFRASTRUCTURE

2.9 Vistry supports the provision of electric vehicle charging infrastructure as part of its developments and is working towards providing passive charging infrastructure for all of its new homes. In Vistry's experience, the provision of passive infrastructure is more effective and less wasteful than providing active charging points.

2.10 Vistry do not consider that all new residential buildings should have all cabling and a chargepoint installation, providing a 7kW outlet to each dwelling with an associated parking space. Vistry would support however, that the cabling route to be provided to residential buildings with more than 10 parking spaces in line with the minimum EPBD requirements.

2.11 There must be a set minimum requirement that the sector must comply to. It is then within the gift of the tenant/building owner to decide to go above and beyond that requirement.

Allowing Authorities to set individual levels generates additional and unnecessary cost, causes delays and creates confusion.

2.12 It is imperative that there are universal standards applied to the charging apparatus to ensure that any car can be charged in a uniform way across all makes of car and charging network/energy supplier. This provides the customer freedom of choice and removes the potential of meter providers locking customers into solus type arrangements for certain types of apparatus which inevitably generates negative feedback.

2.13 The proposed policy should be in-line with the minimum EPBD and for the regulations to stipulate for the provision of cable routes only and for the developer to support the client/customer in the installation of either a chargepoint at the point of purchase if required, or alternatively within the customer handover information. This would support easier take up of the structured cabling and for the property to be EV ready. This is further supported by the electric vehicle car market and their different connectors used by both the European and Asian manufacturers. The car manufacturers would then be best placed to provide their customers with the correct information and installation support to their EV ready home

NE3a BIODIVERSITY NET GAIN

2.14 Vistry supports the principle of providing biodiversity enhancements through its developments and welcomes the alignment of Policy NE3a with the requirements of the emerging Environment Bill. However, the Council's policy approach should also reflect the Government's proposals for a transition period of two years as set out in the Environment Bill. The Government proposes to work with stakeholders on the specifics of this transition period, including accounting for sites with outline planning permission, in order to provide clear and timely guidance on understanding what will be required and when. Before the BANES LPPU is submitted for examination, Policy NE3a should be modified to included transitional arrangements.

NE1 GREEN INFRASTRUCTURE

2.15 It is proposed to amend Policy NE1 to ensure that new development makes a positive contribution to the green infrastructure (GI) network and to require that major development proposals be accompanied by a proposed network of GI. Vistry recognises the importance of enhancing the natural environment and the contribution that development can make towards the provision of accessible GI. Vistry therefore supports the amendments to Policy NE1.

3 REPLENISHING HOUSING SUPPLY

INTRODUCTION

3.1 Vistry has significant concerns regarding the Council's spatial strategy approach and its identification of potential site allocations to address the shortfall in the required number of homes in the District. The Consultation confirms that the Partial Review needs to identify and allocate sites to deliver around 1,100 new homes in order to effectively fulfil the housing requirement outlined in the Core Strategy before the end of the Plan period (2029).

3.2 In the sub-sections below, we provide our formal comments in relation to the suitability and deliverability of some of the potential site allocations that have been identified to meet the Council's housing shortfall.

SITE ALLOCATION: POLICY SB8 BATH RIVERSIDE

3.3 The Bath Riverside site was first allocated for residential-led development in the B&NES Local Plan, which was adopted in October 2007. The original allocation includes the current extent of the allocation, defined at Policy SB8, and land to the east which has witnessed the development of around 800 dwellings over the past 10 years. These were completed following the Council's decision to grant outline consent (LPA reference: 06/01733/EOUT) for the development of up to 2,281 dwellings and other uses across the original extent of the allocation.

3.4 The Council effectively 'reallocated' the current extent of the allocation for Bath Riverside in July 2017 under Policy SB8 of its Placemaking Plan. The Policy identifies that the site could deliver around 1,500 new dwellings before the end of the Plan period (2029). However, since July 2017, only a single reserved matters or full application has come forward proposing the redevelopment of only part of the allocation to provide 176 dwellings (LPA reference: 19/05471/ERES).

3.5 In addressing its supply of housing land, it is proposed by the Council to increase the overall dwelling capacity of the current allocation site by 250 dwellings. This will sit on top of the 928 dwellings that are expected to be delivered during the current Plan period and so, in total, it is envisaged that 1,178 dwellings will be completed on the site by 2029.

3.6 In the 14 years that the land has been allocated for residential-led development, there is little evidence of progress in building the current allocation out. Approximately 800 dwellings have been built on the former allocated land to the east over the past 10 years, equating to an average completion rate of circa 80 dwellings per annum (dpa). With this in mind, and the current economic climate in relation to Coronavirus, we consider it somewhat optimistic to expect 1,178 dwellings to be completed in the next eight-years, equivalent to 147 dpa. By virtue of its previous rates of housing delivery, the allocation is evidently constrained and so

the availability, suitable and deliverability of the site to provide an additional 250 dwellings must be questioned.

3.7 The outline consent (LPA reference: 06/01733/EOUT) which covers the allocation site – under which future housing is expected to be permitted by – is conditioned by a scheme which requires 25% on-site affordable housing provision. The reserved matters applications that have come forward as part of the first phase of development, on land to the east of the current allocation, have made provision for this, but only on a 'subject to being viable' basis. The conditioned requirement for 25% on-site provision dates back to the early 2010's and does not therefore reflect the present day or the requirements of the Core Strategy (2014), which would require 30% on-site provision (Policy CP9).

3.8 By supporting the development of an extra 250 units on the allocation, the Council would be falling short of what could theoretically be yielded in terms of on-site affordable housing, due to the outline consent and the affordable housing scheme conditioned upon it. This should not be entertained, we believe, given the known housing affordability crisis in the B&NES area. Instead, the Council should be looking to maximise its chances to secure policy compliant levels of affordable housing on truly deliverable sites in accordance with the aims of the Core Strategy and Placemaking Plan.

SITE ALLOCATION: POLICY SB14 TWERTON PARK

3.9 It is proposed by the Council to increase the dwelling capacity of the allocated Twerton Park site by around 80 dwellings. The football ground site is owned by Bath City Football Club and was earmarked as a site allocation in the Placemaking Plan. However, at the time the Plan was adopted in July 2017, no indicative capacity figure was set for housing and other potential uses due to the high level of uncertainty surrounding the delivery of such uses on the site.

3.10 In March 2020, the Council refused a full planning application for the mixed-use redevelopment of the site to provide 55 dwellings including main town centre uses and alterations to the football ground (LPA reference: 19/02276/FUL). It was refused on the grounds of poor design, harm to the conservation area, harm to residential amenity and lack of car parking and in the Planning Officer's Report to the Committee, the proposals were found to be *"overdeveloped"* and *"discordant and visually incongruous"*. The site is heavily constrained by way of its scale, location in the Bath Conservation Area, proximity to the Grade II listed Rose Cottage and other surrounding buildings.

3.11 Given the constraints of the site and the Officer's appraisal of the planning application for 55 dwellings alongside main town centres and upgrades to the football ground, it is difficult to envisage how 80 dwellings on the site could be concluded to be acceptable by the LPA, let alone be completed before the end of the Plan period (2029), as envisaged. Indeed, it is understood that pre-planning discussions between the Football Club and the LPA are likely to

take place in 2021, with a view to the latter pursuing a smaller and more deliverable scheme for redevelopment.

3.12 The Council's proposal to increase the dwelling capacity of the site to 80 dwellings, to assist in remedying its housing shortfall between now and 2029, should therefore be considered overly ambitious and unrealistic.

3.13 It is also notable that the refused application made provision for 23% on-site affordable housing provision, citing viability as the reason why a financial contribution in-lieu could not be proposed to plug the shortfall. This is below the Council's requirement for 30% on-site affordable provision in locations such as Twerton Park, and therefore surely raises question marks surrounding the viability of the site for a policy compliant number of affordable dwellings.

3.14 There is a housing affordability crisis in Bath and the Council should be choosing to allocate deliverable sites for housing that are truly capable of delivering a policy compliant level of on-site affordable housing.

SUMMARY IN RELATION TO POTENTIAL SITE ALLOCATIONS

3.15 Approximately 1,100 new homes need to be planned for and delivered before the end of 2029. This is essential to ensure a continuity in housing delivery, that the Council can demonstrate a five year deliverable supply of housing land beyond the current five year period, and that the Core Strategy housing requirement is delivered during the remainder of the Plan period to 2029.

3.16 Vistry has concerns regarding the delivery of the anticipated number of homes on some of the potential site allocations identified by the Council. For the reasons that we have outlined above, the anticipated number of housing completions at the sites at Bath Riverside, Twerton Park are not considered to be truly deliverable with the timeframe required.

3.17 Besides failing to fulfil the requirements of the Core Strategy, failure to earmark deliverable sites will have serious implications on the Council's ability to demonstrate a five year supply of housing land. The Council's latest Housing Land Trajectory (2020) indicates that the five year supply will fall into deficit from 2025 / 2026, with the situation expected to worsen as the Plan advances to 2029. Given that in the future both the Housing Delivery Test will be failed and the five year housing land supply is diminishing, there is a need to identify truly deliverable housing sites in the most sustainable locations. Available, suitable and viable alternatives that can deliver the required number of homes in the required timeframe must be considered.

3.18 It is also clear from some of the identified sites that affordable housing is likely to come forward beneath the current policy requirement for at least 30% on-site provision, for various reasons. This is particularly relevant for the Bath Riverside and Twerton Park sites, and by considering these for additional housing, the Council will be effectively holding back on what is an opportune moment to maximise the number of affordable housing completions in the District.

This is particularly relevant given the known housing affordability crisis in Bath and the surrounding area.

3.19 Edge of settlement greenfield sites often yield higher levels of affordable housing than the constrained brownfield opportunities identified above. Greenfield sites are generally considered to be more viable and it is for this, and other possible reasons, that they have recently been the subject of policy compliant levels of affordable housing. The greenfield site off Greenlands Road in Peasedown St. John is a recent notable example, being the subject of a reserved matters approval granted in 2018 providing 35% affordable housing on site (LPA reference: 16/03829/RES). Vistry is therefore of the opinion that sustainable greenfield sites should be considered by the Council in its Partial Review in addressing the supply of housing land and the affordable housing crisis that the District is currently blighted with.

3.20 It is for the reasons outlined above that we consider the Local Plan to be unsound. In order to address this the Council should identify deliverable sites to replenish housing supply.

4 LAND AT RADSTOCK

4.1 As previously noted, Vistry has an interest in Land at Radstock, defined on the accompanying Plan at **Appendix 1**.

4.2 Vistry is promoting the residential development of the site for approximately 500 dwellings, green infrastructure and other associated works. In addition, there is capacity to provide non-residential uses to provide services, amenities or employment space subject to the needs of the town.

4.3 Given our doubts regarding the deliverability of the homes across the potential site allocations that we have commented on and their potential for delivering affordable housing, Vistry believes that further consideration should be given to its land interests at Radstock. Preliminary assessment work carried out to date has indicated that the site is available, suitable and deliverable for a comprehensive residential development.

4.4 Radstock is constrained by its topography and the many ecological networks and Sites of Nature Conservation Interest (SNCI) which surround the periphery of the settlement. This, combined with the form of historic development to the north of the River Somer, means that Vistry's land interest represents a logical location for future expansion. Whilst currently providing a landscape setting to Radstock, akin to most greenfield sites surrounding the settlement, the site is not within an AONB or Green Belt, nor does it form part of an ecological network or SNCI.

4.5 The land has been assessed within the Council's Housing and Economic Land Availability Assessment 2021 (HELAA 21) published alongside the consultation. Within the HELAA 21, Vistry's land interests at Radstock are referred to as RAD16g, RAD16h, RAD16c and RAD16b. We note that this land is assessed as not having proven availability. We would like to take this opportunity to confirm that the land is available and is being promoted solely by Vistry.

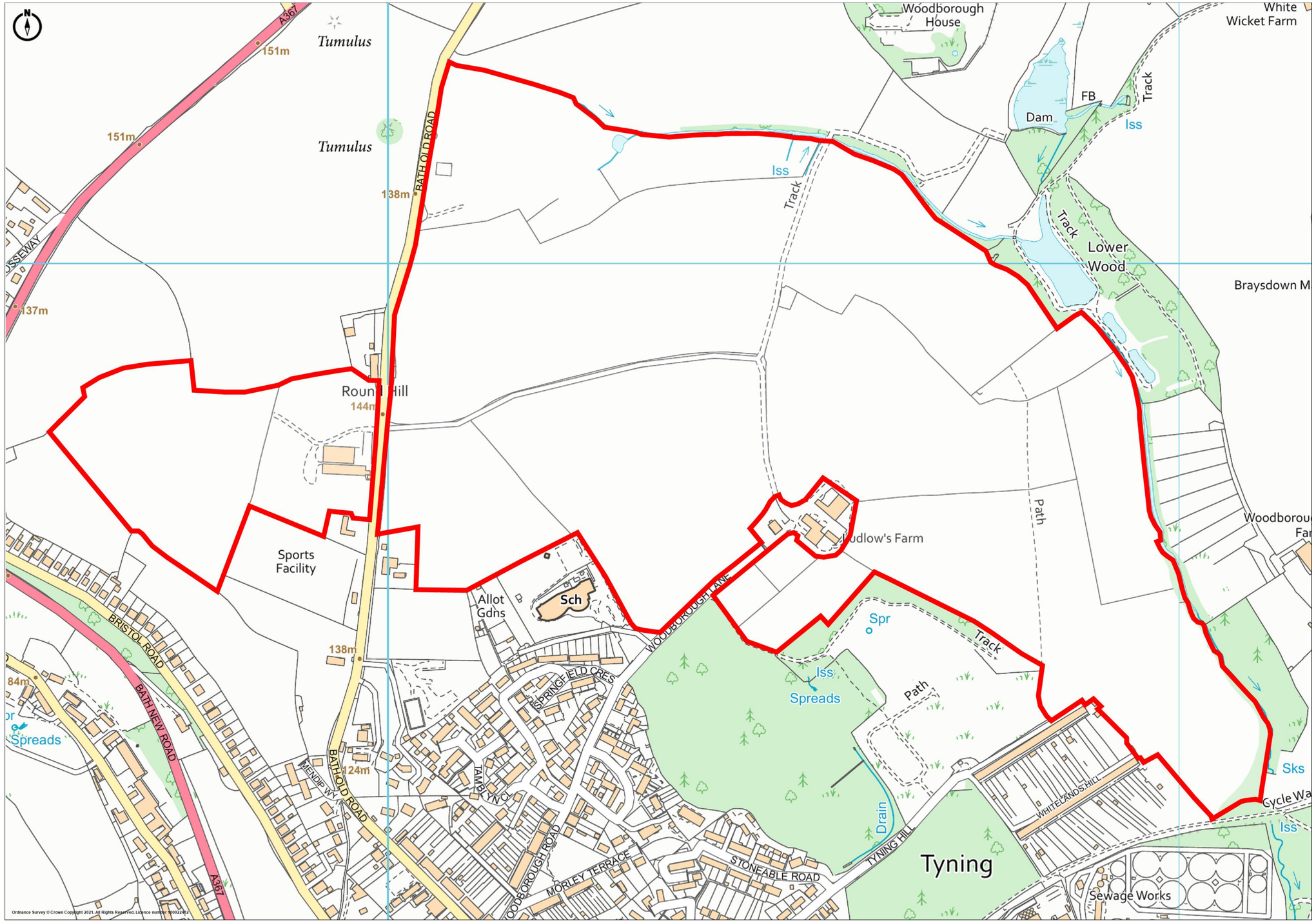
4.6 We note that the assessment of RAD16h lists constraints as including a Site of Nature Conservation Importance, which we assume relates to the adjacent Lower Wood. However for the avoidance of doubt we would like to clarify that the SNCI is not within the site boundary. The assessment also lists Conservation Area as a constraint in relation to RAD16h, which we assume relates to the nearby Radstock Conservation Area and again should clarify is not within the site boundary.

4.7 We also note that the assessment of RAD16c lists Agricultural Land Classification (ALC) 2 and 3 as a constraint, whilst ALC 3 is listed as a constraint in relation to RAD16g and RAD16b.

However, an Agricultural Land Classification Survey previously carried out in December 2015 shows the site to be Grade 3b and 4 (see **Appendix II**).

4.8 Overall, we consider that subject to further assessment work, Vistry's land interest at Radstock should be considered as an appropriate and suitable option for the delivery of new homes in the District. The site has the potential to provide much-needed affordable housing in a logical location for future development, alongside green infrastructure, recreational and biodiversity net gain improvements

APPENDIX I



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Site Location Plan

Land at Radstock

APPENDIX II

Soil Environment Services Ltd

AGRICULTURAL LAND CLASSIFICATION

Linden Homes Strategic Land

Land at Camerton Farm
Radstock

Celebrating 20 years delivering SOIL SURVEY

Soil Environment Services Ltd
December 2015

Our Ref: SES/LHSL/CF/#1 **Date: 18th December 2015**

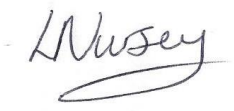
Client:

Linden Homes Strategic Land
PO Box 7440
Hinckley
Leicestershire
LE10 1YL

AGRICULTURAL LAND CLASSIFICATION

Land at Camerton Farm
Radstock

A report prepared on behalf of ***Soil Environment Services*** by:



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1. INTRODUCTION

An Agricultural Land Classification (ALC)[1,2] has been carried out on 70.5 ha of land at Camerton Farm, Old Bath Road, Radstock (Drawing ALC/1). The site is centred on Grid Ref. 369409, 155958.

Agricultural land is classified into the following grades according to the 1988 guidelines[1] and the 1996 draft guidelines[2]:

Grade	Description
1	**Excellent quality agricultural land** with no or very minor limitations to agricultural use.
2	**Very good quality agricultural land** with minor limitations which affect crop yield, cultivation or harvesting.
3a	**Good quality agricultural land** capable of producing moderate to high yields of a narrow range of arable crops or moderate yields of a wider range of crops.
3b	**Moderate quality agricultural land** capable of producing moderate yields of a narrow range of crops or lower yields of a wider range of crops.
4	**Poor quality agricultural land** with severe limitations which significantly restrict the range of crops and/or level of yields.
5	**Very poor quality agricultural land** with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

The survey was conducted in accordance with the current guidelines on the 1st December 2015 and classifies the land into one or more of the above grades.

2. METHODOLOGY

The classification includes an initial desktop investigation to examine previously mapped soil types and to note the drift and solid geology. This included consultation from:

Soil Survey of England and Wales 1:250 000
British Geological Survey 1:50 000 solid and drift map.

The field survey consisted of a number of hand auger borings to a depth of 1.2 m (where possible) to examine soil profiles, using standard soil survey methods[3]. Pit excavations were conducted to determine sub soil structure where necessary. This data was used to map the principal soil types for determining the ALC. The soil removed during augering and pit excavations was examined in accordance with:

Soil Survey Field Handbook
Describing and Sampling Soil Profiles
Soil Survey of England and Wales, Technical Monograph No. 5, 1976

Soil Classification for Soil Survey
Monographs on Soil Survey
Butler, B E (1980) Clarendon Press, Oxford

Climatological data[4] was used to determine the overriding site limitation and for interaction with soil parameters (Appendix A). The above information was cross referenced with geological surveys[8], previous soil surveys[6] and the national 1:250 000 series ALC survey[7] relevant for this site to substantiate the findings. The ALC grade was then determined for this site and for the current survey, and is detailed on Drawing ALC/2.

Other factors used for ALC grading, but which give no limitation at this site, are not discussed.

3. BASELINE CONDITIONS

3.1. Climate and flooding

The climatological data (Table 1) indicates slightly below average temperature, average rainfall and a slightly above average number of field capacity days for the region.

Table 1
Climatological information[4]

Factor	Units	Value
Altitude AOD	m	136.5
Accumulated temperature	day°C (Jan-June)	1399.1
Average Annual Rainfall	mm	1010.5
Field Capacity Days	days	213.5
Moisture Deficit Wheat	mm	76.9
Moisture Deficit Potatoes	mm	62.2

The site is assessed not to have any significant flood risk which would affect the ALC grade[9].

3.2. Soils, geology and topography

The site has previously been mapped as having soils of the *Evesham 1 and Sherborne Associations*[5,6].

In the north of the site is an historic landfill: Messers Wells, Bath Old Road Landfill Site (Permit ref: EAEPR\EA/EPR/WP3390FQ/A001[10]).

This survey has identified the soils to be clay loams or silty clay loams. These overlay limestone and mudstone bedrock.

Three general soil types were noted for the purposes of ALC grading. The soils across the north west and south east of the site are soils analogous to the Sherborne Series of the Sherborne Association (Type 1). Soils across the centre and east of the site are analogous to soils of the Evesham Series of the Evesham 1 Association (Types 2 and 3), with differing water regimes. Soil Wetness Class was determined as below (Table 2).

Table 2. Determination of soil Wetness Class (WC)			
Soil Type	**Method**	**Parameters Results**	**WC**
Type 1	Literature	Soils and their Use in South West England[6]	I
Type 2	Literature	Soils and their Use in South West England[6]	IV
Type 3	Literature	Soils and their Use in South East England[6]	IV

***Geology (1:50 000)*[8]**

Superficial geology:
No superficial geology has been recorded.

Bedrock Geology
Centre:
Inferior Oolite Group - Limestone, Ooidal. Sedimentary Bedrock formed approximately 165 to 176 million years ago in the Jurassic Period. Local environment previously dominated by shallow carbonate seas.

South, east and west:
Charmouth Mudstone Formation - Mudstone. Sedimentary Bedrock formed approximately 183 to 197 million years ago in the Jurassic Period. Local environment previously dominated by shallow seas.

Far south and east:
Langport Member and Blue Lias Formation (undifferentiated) - Mudstone and Limestone, Interbedded. Sedimentary Bedrock formed approximately 190 to 204 million years ago in the Jurassic and Triassic Periods. Local environment previously dominated by shallow lime-mud seas.

The topography on the northern and eastern boundaries has been calculated at boreholes 60 and 61 and boreholes 1-5 as being 10° and 12° respectively. A slope of 10° limits the site to no greater than ALC Grade 3b and a slope of 12° limits the site to no greater than ALC Grade 4.

The remainder of the site was determined to be of slopes less than 7°, therefore slope would not be a limiting factor for ALC grading.

A summary of the features of the soil type/s are listed in Table 3.

Table 3. Soil Type descriptions

Profile Description	Soil types		
	Type 1	**Type 2**	**Type 3**
Horizon 1 (topsoil)	0-15 cm Dark yellowish brown (10YR 4/4) slightly stony medium clay loam, no mottles; weak fine subangular blocky structure	0-30 cm Brown (10YR 4/3) very slightly stony heavy silty clay loam, no mottles; moderate medium subangular blocky structure	0-20 cm Light olive brown (2.5Y 5/3) very slightly stony medium silty clay loam, no mottles; moderate medium subangular blocky structure
Horizon 2 (subsoil 1)	15-23 cm Dark yellowish brown (10YR 4/4) moderately stony clay, few fine faint ochreous mottles; moderate medium subangular blocky structure; soft limestone pieces	30-120 cm Strong brown (7.5YR 5/6) slightly stony silty clay, few fine faint ochreous mottles; moderate coarse prismatic structure	20-35 cm Light yellowish brown (2.5Y 6/3) stoneless heavy silty clay loam, few fine faint ochreous mottles; moderate medium subangular blocky structure
Horizon 3 (subsoil 2)	At 23 cm Limestone		35-120 cm Olive (5Y 5/3) slightly stony silty clay, numerous medium ochreous and greyish mottles; strong coarse prismatic structure
Survey points (Drawing ALC/1) and soil types: BHs Type 1 soil = 1-5, 9-14, 31-35, 43-56, 60-68 Type 2 soil = 6-8, 15-19, 26-30, 36-42, 57-59 Type 3 soil = 20-25			

Photo 1. Borehole location 44 – Soil Type 1

Photo 2. Borehole location 29 – Soil Type 2

Photo 3. Borehole location 23 – Soil Type 3

NB Photographs are included for an illustration of horizons, to verify profile depth and provide an indication of colour but are not intended to verify any structure.

3.3. Agriculture

On the survey date the site was recently sown with either oilseed rape, winter wheat or grass for pasture.

4. AGRICULTURAL LAND CLASSIFICATION

4.1. National 1:250 000 map grading

Grading on the MAFF (1983) 1: 250 000 map[7] indicated **ALC Grades 3 and 4** across the site.

4.2. Current grading

This survey has resulted in an Agricultural Land Classification of the following grades (Drawing ALC/2):

Table 4. ALC gradings and limitations

Grade	Area (ha)	Limitation
1		
2		
3a	30.8	Droughtiness – Type 1 soil
3b	6.5	Wetness – Type 3 soils Slope – Boreholes 60 and 61
4	31.1	Wetness – Type 2 soils Slope – Boreholes 1-5
5		
Non-agricultural land	2.1	Landfill/Horse training field

Type 1 soils – Droughtiness limitation

The combination of the soil textures and shallow depth to rock, together with climatic factors results in **ALC Grade 3a** for Type 1 soils.

Type 2 soils – Wetness limitation

The combination of the topsoil texture (heavy silty clay loam), Wetness Class (IV), the number of Field Capacity Days (213.5) results in **ALC Grade 4** for Type 2 soils.

Type 3 soils – Wetness limitation

The combination of the topsoil texture (medium silty clay loam), Wetness Class (IV), the number of Field Capacity Days (213.5) results in **ALC Grade 3b** for Type 3 soils.

Slope limitation

BHs 60 and 61 – A slope of 10° at BHs 60 and 61 results in **ALC Grade 3b** for this area of the site.

BHs 1-5

A slope of 12° at BHs 1-5 results in **ALC Grade 4** for this area of the site.

INFORMATION SOURCES

1. ***Agricultural Land Classification of England and Wales***. Guidance and criteria for grading the quality of agricultural land. MAFF. 1988.

2. ***Agricultural Land Classification of England and Wales***. Guidance and criteria for grading the quality of agricultural land. Second Revision MAFF. DRAFT May 1996.

3. ***Soil Survey Field Handbook.*** Technical Monograph No.5. Soil Survey of England and Wales.1976.

4. ***Climatological Data for Agricultural Land Classification***, The Met. Office 1989.

5. ***Soil Map of England and Wales: 1:250 000***. Soil Survey of England and Wales, Harpenden.

6. ***Soils and Their Use in South West England.*** Soil Survey of England and Wales, Harpenden.

7. ***Agricultural Land Classification Map*** 1:250 000. MAFF 1983.

8. ***British Geological Survey*** 1:50 000 national map.

9. ***Risk of Flooding from Rivers and Sea: 1:15 000.*** Environment Agency

10. ***Landfills: 1:15 000.*** Environment Agency

DRAWING ALC/1

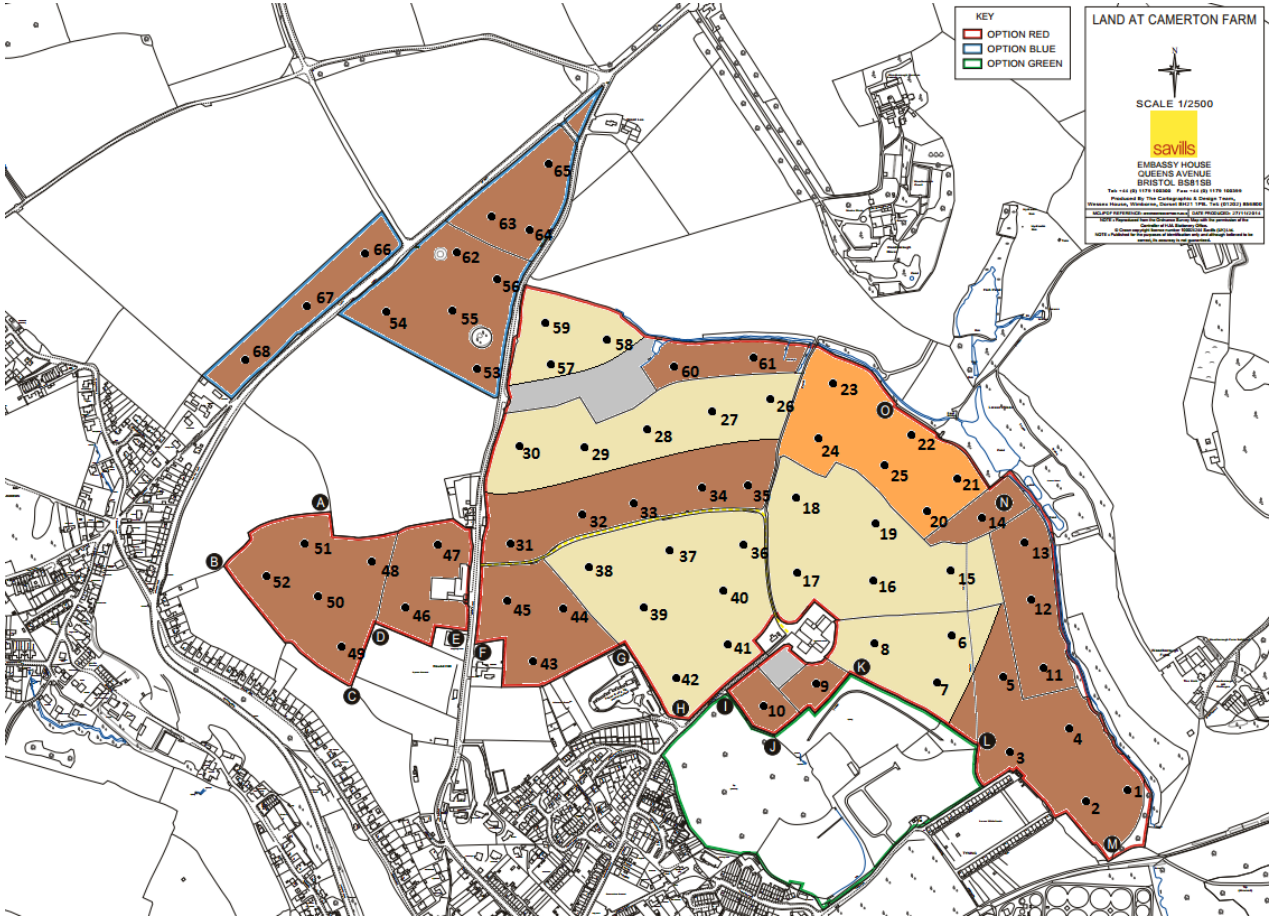
Borehole locations and soil type

Soil Type

- Type 1 soil
- Type 2 soil
- Type 3 soil
- Non-agricultural land

Soil Environment Services

Drawing Title: Borehole locations and soil type	Drawing No.: ALC/1
Scale: 1:11000	Date: 18/12/2015



DRAWING ALC/2

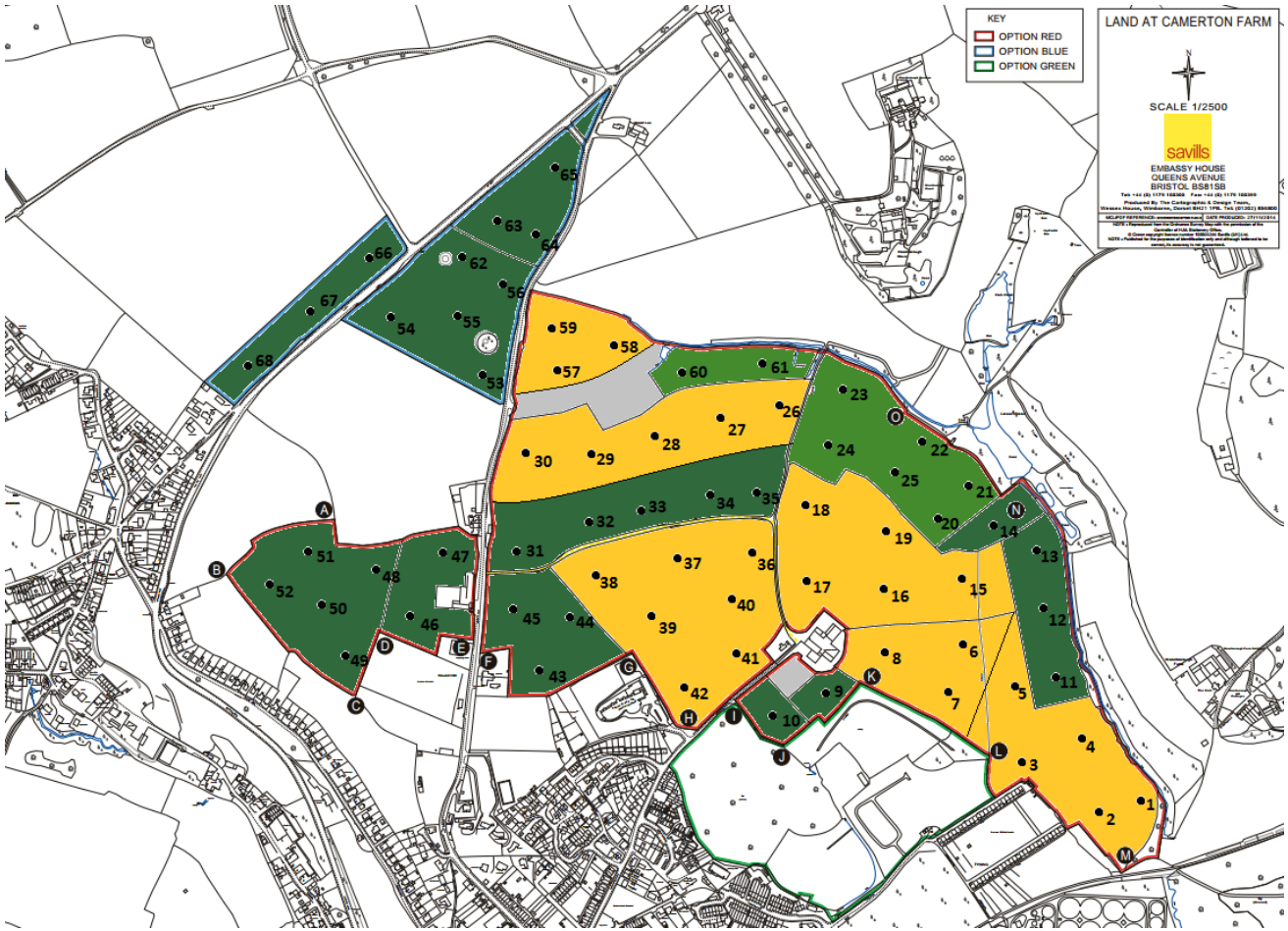
ALC grade

ALC Grade

- 3a – Good quality
- 3b – Moderate quality
- 4 – Poor quality
- Non-agricultural land

Soil Environment Services

Drawing Title: ALC grade	Drawing No.: ALC/2
Scale: 1:11000	Date: 18/12/2015



APPENDIX A

Climatological data for

Agricultural Land Classification

Agricultural Land Classification - Met. Information & droughtiness

Data and adjustment calculations from: The Met. Office, *Climatological Data for Agricultural Land Classification* 1989.
Input data in box cells only, results in shaded cells.

Site name	Camerton Farm	
Site altitude =	136.5	m
Site GR	3694	1559

Meteorological information for surrounding national grid reference points

	Easting	Northing	ALT	AAR	LR_AAR	ATO	MDMWHT	MDMPOT	FCD
NW	3650	1600	142	942	0.7	1392	78	63	199
NE	3700	1600	133	870	1.1	1401	83	69	192
SW	3650	1550	103	1006	0.8	1438	82	68	211
SE	3700	1550	92	963	1.3	1450	85	73	207

Altitude adjustment of surrounding meteorological information with respect to site.

Adjusted surounding points

	AAR	ATO	FCD
NW	938.2	1398.3	198.4
NE	873.9	1397.0	192.6
SW	1032.8	1399.8	214.9
SE	1020.9	1399.3	215.4

Site adjusted meteorological information

	1 Dsg	2 Wg	Wp
NW	60.1415	0.000276	0.027922
NE	41.4367	0.000582	0.058819
SW	44.91102	0.000496	0.050071
SE	10.81665	0.008547	0.863188
Sum		0.009902	

Site	**AAR**	**ATO**	**FCD**
	1010.5	1399.1	213.5

ALC according to climate

Grade **2**

Soil wetness class (drained)

Type 1	**I**
Type 2	**IV**
Type 3	**IV**

ALC according to wetness/climate/ texture

Type 1	**2**
Type 2	**4**
Type 3	**3b**

Soil moisture deficit of surrounding points

	Cw	Cp	Adjusted	
NW	-5.3131	-6.9948	76.6869	61.01
NE	-0.629	-0.8253	82.3714	68.17
SW	0.834	1.099	78.8338	64.10
SE	-8.6152	-11.2941	76.3848	61.71

Site results for soil moisture deficit

MDMW	MDMPOT
76.9	62.2

Adjustment data for stone type and content

	Soil Type 1			Soil Type 2			Soil Type 3		
	Top	Sub1	Sub2	Top	Sub1	Sub2	Top	Sub1	Sub2
% volume	15	35	100	5	15	na	5	0	15
TAv for stone type	3	4	4	1	4	na	1	0	3
EAv for stone type	2	3	3	0.5	3	na	0.5	0	2
	Sub 3			Sub 3			Sub 3		
% volume	na	na	na	na	na	na	na	na	na
TAv for stone type	na	na	na	na	na	na	na	na	na
EAv for stone type	na	na	na	na	na	na	na	na	na

Droughtiness (moisture balance) determination for each soil type and restored profile

Moisture availability data for each texture from MAFF ALC Guidelines 1988

Moisture Balance (MB) = AP - MD for wheat and potatoes (adjusted for stones)

Horizon		Type 1 texture	Type 1 water	Type 2 texture	Type 2 water	Type 3 texture	Type 3 water
TAvt - Topsoil water available (mm)		MCL	15.75	HZCL	18.10	MZCL	18.10
LTt - Topsoil thickness (cm)		0	15.00	0	30.00	0	20.00
TAvs - Subsoil total available	1	C	11.80	ZC	13.35	HZCL	17.00
	2	R	4.00	0	0.00	ZC	13.20
	3	0	0.00	0	0.00	0	0.00
EAvs -	1	C	6.25	ZC	7.25	HZCL	10.00
Subsoil (SS) easily available	2	R	3.00	0	0.00	ZC	7.10
	3	0	0.00	0	0.00	0	0.00
LT50 -	1	C	8.00	ZC	20.00	HZCL	15.00
Thickness ss layers to 50cm	2	R	27.00	0	0.00	ZC	15.00
	3	0	0.00	0	0.00	0	0.00
LT120 -	1	C	0.00	ZC	70.00	HZCL	0.00
Thickness ss layers 50 to 120cm	2	R	70.00	0	0.00	ZC	70.00
	3	0	0.00	0	0.00	0	0.00
LT0 -	1	C	8.00	ZC	40.00	HZCL	15.00
Thickness ss layers to 70cm	2	R	47.00	0	0.00	ZC	35.00
	3	0	0.00	0	0.00	0	0.00
Total profile thickness for soil type cm		0	120		120	0	120

SOIL Droughtiness (moisture balance) results

Type 1

Results		Grade
AP wheat =	64.9	
Moisture balance wheat =	-12.0	3a
AP potatoes =	88.5	
Moisture balance potatoes =	26.3	1

Type 2

Results		
AP wheat =	131.8	
Moisture balance wheat =	54.9	1
AP potatoes =	107.7	
Moisture balance potatoes =	45.5	1

Type 3

Results		
AP wheat =	131.2	
Moisture balance wheat =	54.3	1
AP potatoes =	121.2	
Moisture balance potatoes =	59.0	1

Notes

ALC Grade	Moisture Balance Limits wheat	potatoes
1	30	10
2	5	-10
3a	-20	-30
3b	-50	-55
4	<-50	<-55

APPENDIX B

Site Survey Field Notes

Soil Environment Services Ltd **Tel 0191 243 0686**

ALC Survey Profile Data Sheet **Site: Land at Camerton Farm**

	Topsoil						Subsoil 1						Subsoil 2					
BH no.	Depth (cm)	Texture	Colour (Munsell)	Stoniness (%)	Mottles	Structure	Depth (cm)	Texture	Colour (Munsell)	Stoniness (%)	Mottles	Structure	Depth (cm)	Texture	Colour (Munsell)	Stoniness (%)	Mottles	Structure
1	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
2	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
3	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
4	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
5	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
6	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
7	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
8	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
9	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
10	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
11	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
12	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
13	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
14	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
15	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
16	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
17	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
18	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
19	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
20	0-20	MZCL	2.5Y 5/3	5	No	MSAB	20-35	HZCL	2.5Y 6/3	0	FFFO	MSAB	35-120	ZC	5Y 5/3	15	NMOG	CP
21	0-20	MZCL	2.5Y 5/3	5	No	MSAB	20-35	HZCL	2.5Y 6/3	0	FFFO	MSAB	35-120	ZC	5Y 5/3	15	NMOG	CP
22	0-20	MZCL	2.5Y 5/3	5	No	MSAB	20-35	HZCL	2.5Y 6/3	0	FFFO	MSAB	35-120	ZC	5Y 5/3	15	NMOG	CP
23	0-20	MZCL	2.5Y 5/3	5	No	MSAB	20-35	HZCL	2.5Y 6/3	0	FFFO	MSAB	35-120	ZC	5Y 5/3	15	NMOG	CP
24	0-20	MZCL	2.5Y 5/3	5	No	MSAB	20-35	HZCL	2.5Y 6/3	0	FFFO	MSAB	35-120	ZC	5Y 5/3	15	NMOG	CP
25	0-20	MZCL	2.5Y 5/3	5	No	MSAB	20-35	HZCL	2.5Y 6/3	0	FFFO	MSAB	35-120	ZC	5Y 5/3	15	NMOG	CP
26	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
27	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
28	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
29	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
30	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
31	0-20	MCL	10YR 4/4	15	No	FSAB	20-30	C	10YR 4/4	45	FFFO	MSAB	30-120	R	N/A	100	N/A	N/A
32	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
33	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A

34	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
35	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
36	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
37	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
38	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
39	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
40	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
41	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
42	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
43	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
44	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
45	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
46	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
47	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
48	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
49	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
50	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
51	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
52	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
53	0-30	MCL	10YR 4/4	15	No	FSAB	30-40	C	10YR 4/4	35	FFFO	MSAB	40-120	R	N/A	100	N/A	N/A
54	0-30	MCL	10YR 4/4	15	No	FSAB	30-40	C	10YR 4/4	35	FFFO	MSAB	40-120	R	N/A	100	N/A	N/A
55	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
56	0-30	MCL	10YR 4/4	15	No	FSAB	30-40	C	10YR 4/4	35	FFFO	MSAB	40-120	R	N/A	100	N/A	N/A
57	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
58	0-30	HZCL	10YR 4/3	5	No	MSAB	30-120	ZC	7.5YR 5/6	15	FFFO	CP						
59	0-30	MCL	10YR 4/4	15	No	FSAB	30-40	C	10YR 4/4	35	FFFO	MSAB	40-120	R	N/A	100	N/A	N/A
60	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
61	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
62	0-30	MCL	10YR 4/4	15	No	FSAB	30-40	C	10YR 4/4	35	FFFO	MSAB	40-120	R	N/A	100	N/A	N/A
63	0-30	MCL	10YR 4/4	15	No	FSAB	30-40	C	10YR 4/4	35	FFFO	MSAB	40-120	R	N/A	100	N/A	N/A
64	0-15	MCL	10YR 4/4	15	No	FSAB	15-23	C	10YR 4/4	35	FFFO	MSAB	23-120	R	N/A	100	N/A	N/A
65	0-30	MCL	10YR 4/4	15	No	FSAB	30-40	C	10YR 4/4	35	FFFO	MSAB	40-120	R	N/A	100	N/A	N/A
66	0-25	MCL	10YR 4/4	15	No	FSAB	25-35	C	10YR 4/4	35	FFFO	MSAB	35-120	R	N/A	100	N/A	N/A
67	0-25	MCL	10YR 4/4	15	No	FSAB	25-35	C	10YR 4/4	35	FFFO	MSAB	35-120	R	N/A	100	N/A	N/A
68	0-25	MCL	10YR 4/4	15	No	FSAB	25-35	C	10YR 4/4	35	FFFO	MSAB	35-120	R	N/A	100	N/A	N/A

Key:

MCL = medium clay loam
MZCL = medium silty clay loam
HZCL = heavy silty clay loam
C = clay
ZC = silty clay

FFFO = few fine faint ochreous
NMOG = numerous medium ochreous and greyish

FSAB = fine subangular blocky
MSAB = medium subangular blocky
CP = coarse prismatic

N/A = not applicable