May 2025

GLADMAN

SUSTAINABILITY STATEMENT

LAND AT CARISBROOK ROAD, MITCHELDEAN

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1 INTRODUCTION

1.1 Scope of the Statement

1.1.1 This Sustainability Statement (Statement) is submitted by Gladman Developments Ltd (Gladman) in support of an outline planning application (all matters reserved except for access) for the erection of up to 180 residential dwellings (including affordable housing), public open space, sustainable drainage, landscaping, and associated works, on land at Carisbrook Road, Mitcheldean (the Site).

1.1.2 Sustainability and climate change have been leading considerations in the preparation of this outline planning application. Further detail on the Site and the proposed development is available in the Design and Access Statement and Planning Statement submitted as part of this planning application.

1.1.3 This Statement establishes a framework of principles and measures that can be developed further at the detailed design stage to ensure a residential development that is sustainable, energy efficient, and resilient to climate change. It also demonstrates that the proposals are a positive response to the requirements of the Development Plan, including Policy CSP.2 – Climate Change and Policy CSP.3 – Sustainable Energy use within Development Proposals of the Forest of Dean Core Strategy (2012), Policy LP.1 – Sustainable Development, LP.3 – Climate Adaption and LP.14 – Renewable Energy of the Forest of Dean Draft Local Plan 2041, and the requirements of the National Planning Policy Framework (Framework) (2024)

2 POLICY AND REGULATORY CONTEXT

2.1 National Policy

2.1.1 Sustainability, energy efficiency and climate change are matters addressed within policy and regulation at a national and local level.

2.1.2 At the national level, the Climate Change Act 2008 sets legally binding targets to reduce the UK's greenhouse gas emissions. In 2019, the Climate Change Act 2008 was amended to target net zero carbon emissions by 2050.

2.1.3 The Building Regulations set out rules and standards that govern the design, construction and alteration of buildings. Key Approved Documents of relevance to the proposals include Part G (Sanitation, hot water safety and water efficiency), Part L (Conservation of fuel and power), Part F (Ventilation), Part O (Overheating) and Part S (Infrastructure for charging electric vehicles).

2.1.4 In January 2021, the government published the outcome of the Future Homes Standard consultation – later renamed the Future Homes and Building Standard at the end of 2021. The Future Homes Standard will require new build homes to be future-proofed with low carbon hearting and high levels of energy efficiency. It aims to ensure that new homes built from 2025 will produce 75-80% less carbon emissions than homes built under previous Building Regulations. To meet this aim, updated Parts F and L of the Building Regulations were introduced at the end of 2021. The updated Part F introduced new standards for ventilation, while Part L set out minimum energy efficiency performance targets for buildings, airtightness requirements and improved minimum insulation standards. These updated Building Regulation standard have applied to new homes built since 2022.

2.1.5 Paragraph 7 of the NPPF states:

"The purpose of the planning system is to contribute to the achievement of sustainable development. Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):

- **An economic objective** – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;

- **A social objective** – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and

- **An environmental objective** – to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

2.2 Local Policy

2.2.1 At a local level, Forest of Dean District Council declared a Climate Emergency in December 2018. As a result of this, the Council adopted the 'Climate Emergency

Strategy and Action Plan 2022-25' in January 2023. The document details multiple actions to enable the district to become carbon neutral by 2030.

2.2.2 Similarly, at a county level, Gloucester County Council produced a Climate Change Strategy in 2019 that has subsequently been reviewed and updated twice to ensure there is progression towards a carbon neutral 2030.

2.2.3 Policies CSP. 2, CSP. 3, AP 1, AP 4, BE2, BE3 and TT1 of the development plan reflect sustainability aspirations and detail requirements and measures to achieve sustainable development.

3 ENERGY AND SUSTAINABILITY STRATEGY

3.1 Background

3.1.1 A framework of sustainability and energy efficiency principles and measures to be developed further at the detailed design stage is outlined below. As already referred to earlier in this Statement, this application is submitted in outline and matters relating to appearance, design, layout and landscaping, among others, are reserved for subsequent consideration. The exact specifications of energy and sustainability measures to be incorporated into the development will be provided at the detailed design (reserved matters) stage.

3.2 Accessibility and location

3.2.1 The Site is located on the northern edge of Mitcheldean. The Site is not covered by any statutory or non-statutory designations for landscape, heritage or ecological conservation. The ecological and environmental reports submitted as part of this application confirm that there are no constraints that would preclude development on the Site for residential uses.

3.2.2 In terms of accessibility, the Site is sustainably located. It is not isolated in the countryside and is well connected to existing residential development and local facilities and services.

3.2.3 A Transport Assessment (TA) has been submitted as part of this planning application. In addition, a Travel Plan, informed by the TA, has also been submitted. The Travel Plan sets out measures to reduce car travel by future occupiers of the Site and alternative modal choices that are more sustainable (such as walking, cycling, public transport, and car share). It is expected that the measures contained in the Travel Plan will be developed further at the detailed design stage.

3.2.4 The TA confirms that the Site is sustainably located in respect of facilities and service provision, including public transport, with methods of travelling other than private car a viable option for future occupiers. There is good walking and cycling infrastructure between the Site and nearby amenities, with the location of the Site providing a good context for journeys on foot and cycle. The Site has good public transport accessibility, with nearby bus stops on Carisbrook Road within a short walk of the Site access. Bus stops on Carisbrook Road provide frequent and convenient access Gloucester City Centre. The Site thus offers the opportunity to foster a sustainable community.

3.2.5 The proposals include a package of measures to encourage walk and cycle trips. A new pedestrian and cycle path will be provided at the Site access connecting to the existing footway along Ross Road. A recreational route links to an additional pedestrian/cycle access in the southern corner of the Site onto Carisbrook Road.

3.2.6 The access arrangements for the Site show a new priority-controlled T junction at the western boundary of the Site onto Ross Road. While serving as the primary vehicular access for the development, the main Site access from Ross Road will also provide for cyclists (on-road) and pedestrians via a new 2m wide footway on both sides of the access road. The new footways will connect to the existing Ross Road footway, with the introduction of an uncontrolled crossing consisting of dropped kerbs and tactile paving across Ross Road. Additionally, a dedicated pedestrian and cyclist entrance can be created near the site's southern corner. The TA demonstrates that the proposed points of access offer safe and appropriate access / egress to the proposed development, satisfying all geometric and visibility requirements and offering appropriate provision for all users.

3.2.7 Overall, the Site is an appropriate and sustainable location for residential development which would bring benefits to the local area and wider District.

3.3 Design and Construction

3.3.1 The submitted Design and Access Statement demonstrates how the proposals have been shaped by a sustainable, landscape-led approach. Due regard and appreciation have been had to the local context, character, vernacular and setting of the area. The use of planning conditions at the outline planning stage can be used to secure the implementation of good environmental and design practices.

3.3.2 It is expected that all dwellings will meet Building Regulations requirements for carbon emission and fabric efficiency, and incorporate water and energy efficiency measures, modern standards of insultation, and other measures designed to minimise natural resource usage and greenhouse gas emissions. All dwellings will be also expected to comply with the adopted Nationally Described Space Standards.

3.3.3 Other measures that can be implemented during the development of the detail design of the proposals and the construction process are:

- Minimising materials;
- Using locally sourced or recycled materials where possible;
- Using materials with low embodied carbon content;
- Reducing energy and water during construction;
- Reducing waste and recycling; and
- Enabling low energy and water demand once properties are occupied

3.3.4 It is expected that the construction of the development will not take place until a Construction and Environmental Management Plan (CEMP), or similar, has been submitted to and approved by the local planning authority. The CEMP will be implemented during the construction of the proposed development, which will include measures to manage risks associated with the production of pollution and potential risks this may post to water, soils, air and human health. It is anticipated that that the CEMP will incorporate a series of management plans which will include, but not be limited to, a water management plan, site waste management plan, traffic management plan, noise management plan, bird protection plan, and habitat management plan.

3.3.5 In terms of flood risk, the proposed drainage scheme comprises the use of a sustainable urban drainage system to manage surface water in a sustainable manner. A surface water detention basin located in the southern area of the Site will form the main attenuation feature within the development. Surface water will be directed to the onsite detention basin, which will be positioned to achieve a gravity fed connection to a receiving ditch on the Site boundary. This will provide a betterment in runoff when compared to existing undeveloped conditions, where runoff is uncontrolled across all return periods. The development will be safe and will not increase flood risk elsewhere.

3.3.6 New homes should be designed to limit the amount of water used in the property. Approved Document G of the Building Regulations provides guidance on the supply of water to a property, including water safety, hot water supply, sanitation and water efficiency. In essence, the aim is to ensure that all properties have an easily accessible water supply that does not incur wastage. Part G2 limits water consumption within new dwellings to 125 litres per person per day.

3.3.7 At the outline planning stage, the exact specification of water fittings within the residential properties cannot be determined. It is expected, however, that water efficiency technologies, such as water efficiency taps, low flush toilets, and low output showers, will be incorporated into the properties. Such technologies will contribute to achieving a water efficient development. Further, it is proposed that the development will achieve a water usage of no more than 110 litres per person per day. Gladman will work with the Council to ensure appropriate planning conditions relating to water efficiency and usage are applied to the outline planning permission.

3.4 Tackling Climate Change

3.4.1 The causes and effects of climate change are complex, nuanced and difficult to predict. One key consequence of climate change for existing and future residential dwellings is expected to be an increase in the risk of overheating in homes. Homes typically overheat when heat gains from the outdoors and/or generated indoors exceed the heat lost over a prolonged period.

3.4.2 A summary of measures that could be employed to reduce overheating is provided below:

- Minimisation of internal heat generation through energy efficient design, including:
    - Minimising heat gain from lighting by using energy-efficient lighting design solutions.
    - Maximising the availability of natural light by optimising the light transmittance of the façade's glass elements.
    - Utilisation of air source heat pumps for heating and hot water.

- Reducing the amount of heat entering the building in the summer, including:
    - Limiting the amount of glazing on the dwellings' facades to mitigate solar hat gain while optimising daylight penetration.
    - Specifying glazing with a low g-value to minimise the amount of solar heat transferred through the facades' glazed elements.

- Using exposed thermal mass and high ceilings within the dwellings to manage heat, including:
    - Designing dwellings to have high ceilings to encourage stack ventilation.
- Passive ventilation, including:
    - Openable windows on multiple aspect spaces to provide passive ventilation and crossflow ventilation to maximise the potential for natural ventilation within the dwellings.

3.5 Energy Efficiency

3.5.1 The approach taken to achieving energy efficiency and emission savings across the proposed development is expected to accord with the standard practice and application of the energy hierarchy. This is a tiered approach with reductions from using less energy being sought as the first step followed by measures to use energy more efficiently and finally using renewable and low-carbon energy to displace more carbon-intensive energy supply.

3.5.2 The tiers of the Energy Hierarchy are:

- Be Lean – Use Less Energy
- Be Clean – Supply Energy Efficiently
- Be Green – Use Renewable Energy

3.5.3 Use of the energy hierarchy is widely accepted, and it is increasingly seen as a sensible and pragmatic approach to achieving tangible energy improvements across new development.

3.6 Be Lean – Use Less Energy

3.6.1 The first tier of the Energy Hierarchy is "Be Lean". This encompasses measures intended to reduce emissions that are inherent in a building's design, specification, construction and operation.

3.6.2 As the planning application is submitted in outline only, with all matters expect for access reserved for future consideration, the final design and construction arrangements for the scheme are not yet fixed.

3.6.3 It is expected, however, that the use of modern methods of construction on the Site will be fully explored and, where possible and appropriate to do so, will be used. Modern methods of construction are widely regarded as being important in assisting with improving construction efficiency and overall energy performance of dwellings, while reducing material wastage associated with the construction process.

3.6.4 The orientation of the dwellings and overall site layout is also anticipated to be optimised at the detailed design stage to optimise passive gains and meet design criteria for overheating and cooling. Achieving an optimised design will aid in reducing requirements for artificial lighting, and active heating and cooling, thereby minimising emissions.

3.6.5 Natural ventilation will also be promoted throughout the development through the provision of opening windows on the dwellings' facades. Where possible, dwellings will be designed to incorporate dual aspect provision to facilitate natural cross ventilation. Opportunities to provide higher floor to ceiling heights and high-level vents will similarly be explored to aid natural cross ventilation.

3.6.6 The thermal performance of the dwellings' fabric will also be key part of ensuring an energy efficient scheme. High performance materials with a low U-value will be utilised wherever possible. The U-values proposed for this development will meet or exceed those specifies in the Building Regulations applicable at the commencement of construction.

3.6.7 Emission reductions associated with the proposed development are not considered in detail as part of the submission as the detailed design is not yet fixed. It is anticipated that this will be explored in greater detail at the reserved matters stage.

3.6.8 It is expected that all dwellings will incorporate 100% low energy lighting. This will reduce the energy required to light the dwellings, thereby reducing emissions and aiding overheating provision by lowering additional sources of heat from the development. While the provision of domestic appliances and white goods will likely be the responsibility of the individual homeowners or tenants, and note the developer, a preference for energy efficiency technology will be assumed. Steps will be taken to provide information to new residents on the advantages of energy efficient appliances.

3.6.9 Smart meters for electricity and heating will be presumably installed in every dwelling. Such devices will aid residents in reducing their energy consumption.

3.7 Be Clean – Supply Energy Efficiently

3.7.1 The potential for the proposed development to incorporate a low carbon heating system will be explored at the reserved matters stage.

3.8 Be Green – Use Renewable Energy

3.8.1 Opportunities to install renewable energy technologies into the development will be explored at the reserved matters stage.

3.8.2 Below is a list of low carbon and renewable technologies that, where possible and appropriate to do so, may be installed to supply a proportion of the energy demand of the proposed development, thus reducing its operational emissions.

- Solar Photovoltaic – the use of solar photovoltaic panels can displace and reduce requirements for grid electricity and can be used for lighting, electric vehicle charging and other electrical appliances.

- Solar Thermal – solar thermal devices can be used to generate hot water.

- Ground Source Heat Pumps – ground source heat pumps can be used to meet space heating requirements. Heat pumps operate by moving heat from location to another.

- Air Source Heat Pumps – air source heat pumps operate in a similar way to ground source heat pumps. They extract low grade heat from the outside air around a dwelling and can be used to meet space heating requirements.

- Waste Water Heat Recovery – a waste water heat recovery system extracts heat typically from waste water, such as showers or sinks, to heat warm incoming mains water, thus reducing heating demands.

3.8.3 In addition, to the above, and in line with Part S of the Building Regulations, an electric vehicle charging point will be provided for all dwellings with an associated car parking space.

4 SUMMARY

4.1.1 This Sustainability Statement has been prepared in support of an outline planning application for up to 180 dwellings at Land at Carisbrook Road, Mitcheldean as allocated within the Forest of Dean Draft Local Plan 2041.

4.1.2 The application is submitted in outline only, with all matters reserved for future determination except for access. As such, at this outline stage there is no fixed sustainability and/or energy strategy for the development. The final strategy will be determined at the reserved matters stage.

4.1.3 A key challenge in tackling and responding to climate change in the design and construction of dwellings is combatting the increased risk of overheating. A number of proposed measures have been outlined in this Statement that could be utilised to aid in ensuring that the future dwellings do not overheat. Such measures will also contribute to reducing the energy demands and emissions of the dwellings.

4.1.4 The Energy Hierarchy demands that consideration is provided to reducing from using less energy being sought as the first stage, followed by measures to use energy more efficiently, and then finally to use renewable and low carbon energy to displace more carbon-intensive energy supply.

4.1.5 Opportunities to reduce energy consumption and utilise robust renewable and / or low carbon heat technologies will be fully considered at the reserved matters stage. Where possible and appropriate to do so, it is expected that low carbon heating technologies and renewable energy technologies will be installed throughout the development.

4.1.6 The outline planning application aligns with the principles of sustainable development as well as the policy requirements of the Forest of Dean Core

Strategy, Draft Local Plan 2041 and the Framework. Providing a development that promotes these principles in construction and operation.

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SUSTAINABILITY STATEMENT

CARISBROOK ROAD, MITCHELDEAL