

ENERGY, SUSTAINABILITY AND WATER MANAGEMENT STATEMENT

Land off Ashley Coombe, Warminster
Prepared On behalf of Rubix Land Limited

December 2025

Energy, Sustainability and Water Management Statement

Land off Ashley Coombe, Warminster

“Outline planning application for the erection of up to 77 dwellings, public open space, landscaping and sustainable urban drainage system, with vehicular access off Ashley Coombe. All matters reserved except for means of access.”

Prepared

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Reference: RL102ENERGY

Date: 23 December 2025

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1. INTRODUCTION

- 1.1. This Energy, Sustainability and Water Management Statement relates to the proposed development of up to 77 residential dwellings on land off Ashley Coombe, Warminster.
- 1.2 The development is subject to the planning requirements of Wiltshire Council. This report addresses policies relevant to the energy and sustainability strategy as set out in National and Local planning policy.
- 1.3 This report also provides detail on the proposed approach to meet specific targets relating to those policies, Building Regulations and energy and water use on site.

2 PLANNING POLICY

Background

- 2.1 The energy and sustainability strategy for the proposed development on land off Ashley Coombe, Warminster has been developed in line with the following relevant planning policies.

National Policy

- 2.2 The revised National Planning Policy Framework, updated in December 24, promotes sustainable development (comprising three pillars: economic; social; and environmental) and has a section specifically regarding sustainability in relation to energy and water consumption.
- Section 14: **Meeting the challenge of climate change, flooding and coastal change** places emphasis on, and sets out guidelines for local planning authorities, for local mitigation and adaptation measures for current and future climate change and for the support of the delivery of renewable and low carbon energy and associated infrastructure where viable.
- 2.3 The NPPF also promotes biodiversity provision and air quality protection in relation to development proposals.

Local Policy

- 2.4 Wiltshire Council acknowledged a climate emergency in February 2019 and committed to becoming carbon neutral as an organisation by 2030. The Wiltshire Council Climate Strategy was adopted by full council in February 2022, this sets out objectives and 'areas of focus' to decrease greenhouse gas emissions and increase resilience to climate change for the county of Wiltshire for the period 2022-2027.

The Climate Strategy sets out the next five years of the council's journey to becoming a carbon neutral county, covering seven delivery themes:

- **Transport** Achieving zero emissions surface transport in Wiltshire is a challenge which will require action across all areas, with a significant role played by zero emissions vehicles, in conjunction with reducing trips and shifting modes. Zero emissions transport is a necessary priority, since transport produces the largest proportion of emissions in the county.
- **Homes and the Built Environment** New buildings need to be net zero carbon as soon as possible, using less energy and running on low carbon sources of electricity and heat. Existing buildings need to be retrofitted along the same principles. All buildings also need to be able to cope with the impacts of climate change.
- **Natural Environment, food and farming** A healthy natural environment is crucial to achieving net zero, and providing ways for people and wildlife to adapt to the stresses of climate change. Central to our challenge is the efficient and sensitive use of land for all our needs – local food production, preserving habitats, generating energy, absorbing carbon dioxide and providing homes.
- **Energy** We need to reduce the energy we use, as well as using low carbon forms of energy, including from microgeneration. There are also opportunities to explore in

terms of 'smart' and digital solutions that help to smooth demand and ensure fair distribution of energy and new technologies.

- **Green Economy** We want to grow a net zero, climate resilient economy in Wiltshire. This includes opportunities for training and more jobs in green sectors, as well as building up supply chains to enable objectives in our other delivery themes.
- **Resources and waste** Using the waste hierarchy 'reduce, reuse, recycle, recover energy' helps reduce the energy and emissions associated with extracting, manufacturing, transporting and storing all the products we use.
- **Carbon Neutral Council** This section sets out the areas of work that will help Wiltshire Council become a carbon neutral organisation. The councils role also extends to providing leadership and opportunities to share knowledge and learn from one another.

Building Regulations

- 2.5 Building Regulations Part L 'Conservation of Fuel and Power' came into force on the 6th of April 2014 in England with the next step forward to Zero Carbon in new buildings. The 2023 updates now require new dwellings to improve by a further 31% reduction in CO₂ emissions over the 2013 Part L baselines. Dwellings are also required to meet a minimum levels of Fabric Energy Efficiency Standard (FEES). FEES will give a value in terms of mass of CO₂ emitted per square metre of floor area per year. FEES have been included as a mechanism to ensure "fabric first" efficiencies are built into the main envelope of a dwelling.

Conclusions

- 2.7 Following consideration of the National and Local policies that relate to the proposed scheme, the targets for the development at Land off Ashley Coombe, Warminster are to;
- Meet Building Regulations Part L 2023 requirements in terms of water consumption and reduction in CO₂ emissions; and
 - Incorporate facilities to enable the charging of plug-in or ultra-low emission vehicles.
- 2.8 The calculation of predicted annual energy demand and associated annual Carbon Dioxide (CO₂) emissions for this development can only be achieved and confirmed at detailed design stage.

3 ENERGY & WATER STRATEGY

3.1 Proposals

3.1.1 The proposed scheme will follow the latest guidance to reduce CO₂ emissions by providing a “fabric first” approach. The following techniques will be considered;

- Increase insulation
- Reduce the effects of thermal bridging
- Effective air tightness
- Mechanical controlled ventilation with the consideration to heat recovery input ventilation.

3.1.2 As per the Energy Savings Trust Guide “Fabric First”, October 2010, these methods alone can achieve the target reduction in CO₂ emissions as required for Regulations Part L 2021 edition.

3.1.3 To achieve the additional 31% reduction in CO₂ emissions to meet the 2023 Part L Regulations, further improvements in fabric first insulation performances, window and door U values, and increased air tightness can achieve this requirement, however there may also be a consideration for on-site renewable or low carbon technology as an alternative approach.

3.2 Fabric First Techniques

To achieve a reduction in CO₂ emissions the following techniques will be used. We note that the total reduction in CO₂ emissions cannot be calculated until detailed design stage.

3.3 Walls

Enhanced U Values to be achieved by increasing the size of the cavity walls and increasing the insulation thickness, or alternatively using timber framed construction with the use of high levels of insulation with the timber stud work.

3.4 Roof

Enhanced U Values to be achieved through increasing the thickness of the insulation.

3.5 Floors

Installation of high-performance insulated ground floors will provide enhanced U values.

3.6 Windows & Doors

Utilisation of high-performance glazing will provide improved U values.

3.7 Thermal Bridging

By employing enhanced construction details heat losses can be reduced.

3.8 Air Tightness

By following Passive house principles air leakage rates can be significantly improved.

3.9 Ventilation

With modern air tightness principles adopted, appropriate ventilation will need to be installed in line with Building Regulations to provide fresh tempered air.

3.10 Energy Demand & Energy Generation

3.10.1 The most cost-effective solution is always specific to the development in question, i.e. the energy profile of what is being built and its location. At the outline design stage there is not enough design information available (i.e. dimensions, layout, orientation, fabric type etc) to precisely predict the baseline energy demand for the dwellings and what will be required to provide at least 10% to 15% of the scheme's expected energy requirements from decentralised and renewable or low-carbon energy generation technology. It is therefore proposed that this element is determined at detailed design stage.

3.10.2 The final strategy for the site will be based on a combination of fabric first techniques and the installation of renewable energy technologies and will be required to be amended slightly to suit individual building design. This would involve the inclusion or exclusion of energy efficient measures, or an increased or decreased capacity of renewable energy technologies, as applicable.

3.11 Low and zero carbon technologies

3.11.1 This section reviews the feasibility of a range of Low and Zero Carbon (LZC) technologies that could be used to achieve a reduction in CO₂ emissions' and on-site energy generation.

3.11.2 The LZC technologies that could be considered for use at Ashley Coombe are:

- Photovoltaics
- Solar thermal panels
- Ground & air source heat pumps
- Biomass Boiler

3.11.3 This development would not be suitable for a Combined Heat and Power (CHP) plant. This type of technology is best suited to developments which have a high and constant demand for thermal energy allowing the CHP engines to operate at maximum efficiency for as long as possible throughout the year. Ideal situations include mixed development sites with over 400 domestic dwellings and those including leisure centres with swimming pools, hospitals or hotels.

3.11.4 Small scale, roof mounted turbines are not proposed for a number of reasons. The visual impact of several turbines across the development would be significant and unlikely to be acceptable. More significantly, studies by independent bodies such as Energy Saving Trust have shown that these turbines are not effective in generating power at domestic scale.

3.11.5 An alternative solution could be the installation of a single, medium to large scale turbine. Wind speed from the DTI Wind Speed Database for the site indicates an average wind speed at 10m above ground level of 5.4m/s. This would realistically be the height for domestic scale turbines and for this type of technology to be effective, an average wind speed of at least 6.0m/s is required. It would therefore appear not to be a possible solution. For this to be a viable option a location for a larger scale turbine would need to be identified so at this stage it is proposed

that the energy targets for these domestic properties be met through the use of less intrusive technology.

3.12 Photovoltaic

3.12.1 Photovoltaic (PV) panels use sunlight to produce electricity; the cells convert the sunlight into electricity which can be used to run household appliances and lighting. PV cells don't need direct sunlight to function and some electricity will be generated on a cloudy day.

3.12.2 Further advantages of PV systems are in their low maintenance requirements and reliability.

3.12.3 Full modelling of the Ashley Coombe scheme can only be completed at detailed design stage, but this type of technology would be suitable to assist in providing 15% of the estimated energy required across the site.

3.13 Solar Thermal

3.13.1 An alternative use of solar energy would be the installation of solar thermal panels for the generation of hot water; solar water heating systems use heat from the sun to warm domestic hot water. A conventional boiler or immersion heater is then used to make the water hotter or to provide hot water when solar energy is unavailable. Solar thermal panels are a tried and tested technology that offers good paybacks. However, for optimum performance they need to be located on roofs with an orientation of $\pm 40^\circ$ of south.

3.13.2 Again, full modelling of the Ashley Coombe scheme can only be completed at detailed design stage and the practicalities of this proposal would need to be reviewed given the number of systems required and the orientation of the houses.

3.13.3 The downside of this technology is that their contribution to carbon reduction can be less than other LZC technologies as they negate a gas demand instead of an electrical one. (The carbon emissions from gas are approximately 3 times lower than those associated with electricity.) However, this technology could help provide 15% of the estimated energy requirement across the site.

3.14 Ground Source Heat Pump

3.14.1 Ground source heat pumps (GSHP) circulate a mixture of water and antifreeze around a loop of a pipe which is buried externally. Heat from the ground is absorbed into this fluid and is pumped through a heat exchanger in the heat pump. Low grade heat passes through the heat pump compressor and is concentrated into a higher temperature; this useful heat is capable of heating water for the heating and hot water circuits of the house. However, the pumps do use electricity to distribute this heat around the home; therefore, they can result in higher carbon emissions than the use of gas heating in an efficiently designed home.

3.14.2 In addition, although relatively low, the density of the proposed layout is unlikely to allow for pipework to be laid in trenches and would require the more costly approach of using boreholes. Feasibility work would be required to determine whether the site is suitable for the use of the boreholes, and whether the ground conditions would be adversely affected by the number of boreholes required.

3.15 Air Source Heat Pump

- 3.15.1 Air source heat pumps reclaim the heat available in ambient air and convert it to higher temperatures to heat the home. As with ground source heat pumps, they use electricity to distribute heat. Air source systems do not require ground works and are therefore less costly than ground source systems; however, this also means they are less efficient as the temperature of the air varies significantly more than the temperature of the ground throughout the year. Although this system is an efficient way of providing heating and hot water using electricity, the carbon emissions will still be significantly higher than if gas were used.
- 3.15.2 The Energy Saving Trust does not recommend heat pumps for properties supplied by an existing gas network. Given that the Ashley Coombe scheme can be fed by a connection to a mains gas network, and due to the availability of less costly options, at this stage it is not proposed that heat pumps are used at this development. The developers may reconsider this option at the detailed design phase of the project.

3.16 Biomass Boilers

- 3.16.1 Biomass fuelled heating systems generally burn wood pellets, chips or logs to power central heating and hot water boilers or to provide warmth in a single room. Other fuel types are available, but the energy density of wood chips or pellets means it is typically the most appropriate solution for applications within the built environment. Although savings on carbon emissions are significant, other implications need to be considered, especially the requirement for regular deliveries of fuel which would result in unacceptable volumes of traffic around the site. Also, for most urban UK dwellings built with a high thermal performance level, the output of even the smallest high-performance boiler on the market (5-10kW) is completely excessive, making both the capital costs and ongoing running costs uneconomic.
- 3.16.2 An alternative approach would be the provision of a centralised boiler system with a district heating system, linked to each home via a network of underground pipework providing space and water heating. However similar disadvantages relating to traffic requirements would need to be considered together with on-site plant and storage capacity and location, and issues relating to ownership and stewardship of a communal system.
- 3.16.3 Given that the other technologies present fewer operational, environmental and practical concerns, the use of biomass heating has not been considered further. However, the developers may reconsider this option at the detailed design phase of the project.

3.17 Summary of Low and Zero Carbon Feasibility

- 3.17.1 At this stage of the design process it is not possible to determine the energy demand for the site and therefore the amount of renewable energy generation technology that may need to be installed to produce 10% to 15% of the predicted energy requirement. However, consideration has been given to the options available to the developer that will be investigated further at detailed design stage.
- 3.17.2 The most suitable at this stage would appear to be the installation of some solar photovoltaic systems within the development. However, there may be a considerable cost implication which would need to be reviewed at detailed design stage.

- 3.17.3 Alternatively, installation of solar thermal panels could potentially be a more cost-effective option but the practicalities of this proposal would need to be reviewed at detailed design stage with an assessment of the orientation of the properties and the level of energy generation required.

3.18 Water Consumption

- 3.18.1 At this stage of the planning process it is not possible to confirm how the developer will achieve the Building Regs water consumption target of 125 litres per person per day, however the developer could consider the following options.

- 149 litre capacity baths
- Aerated flow control fitted to all taps (5 litres/min and 10 litres/m in the kitchen and utility
- Dual Flush W/C's with 4/2.6 litre flush
- Showers fitted with 9 litre/sec flow limiters
- Water efficient appliances where applicable

- 3.18.2 The options for rainwater and grey water harvesting will also be considered to ensure the sustainable use of water is maximised where possible together with measures to promote water conservation by residents.

- 3.18.3 Water conservation during construction will be based on WRAP (Waste and Resources Action Programme) principals and will be considered further at detailed design stage. A number of areas can be considered and outlined below.

- Fixing leaks quickly
- Turning off taps
- Considering options for more efficient dust suppression
- Controlled urinal flushing devices & low flush cisterns in WC's
- Plan for commissioning activities considering water recirculation and minimisation
- Fit trigger guns to hoses
- Consider more efficient wheel washing systems
- Use high pressure low volume washout sprays for concrete lorries

- 3.18.4 WRAP principals will also be employed to reduce energy consumption on site where possible.

4 CONCLUSIONS

- 4.1.1 The application proposes residential development at Land off Ashley Coombe, Warminster. This report has addressed National and Local policies relevant to the energy, sustainability and water use strategy for the proposed development.
- 4.1.2 The proposed strategy is based on an improvement in standard energy efficiency to meet Part L of the Building Regulations 2023 in terms of reduction in CO₂ emissions. Full details of how the scheme will fully achieve any Part L Building Regulation targets can only be confirmed at detailed design stage but will encompass a 'Fabric First' approach and will include the following;
- Increase insulation
 - Reduce the effects of thermal bridging
 - Effective air tightness
 - Improved controlled ventilation
 - Energy efficient lighting
- 4.1.3 Additional renewable energy generation technology may be installed within the development to provide some of the development's energy requirements from decentralised and renewable or low-carbon energy generation technology. This can only be developed in more detail as further design and layout information becomes available.
- 4.1.4 The development can incorporate measures to limit water use. It is anticipated that this aim can be accommodated within the water use strategy for the site and confirmed at detailed design stage. The developer can consider several options to ensure that the average water consumption level meets the Building Regulations target.
- 4.1.5 During construction WRAP principals will be employed to reduce energy and water consumption levels.
- 4.1.6 It is anticipated that the detailed proposals would be designed to enable the installation of plug-in or ultra-low emissions vehicle charging points in safe, convenient locations. The precise location and number of charging points to be provided will be confirmed at the detailed design stage, once the final layout for the site has been determined.