



Hillworth Road, Devizes, Wiltshire
Reserved Matters Planning Application

Sustainable Energy Strategy
Edenstone Homes Ltd

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Revision	Date	Comments	Prepared by	Approved by
-	08.10.26	First Issue	Matt Jessop	Freya Rideout

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1.0 Introduction

This Sustainable Energy Strategy has been prepared in support of a reserved matters Planning Application which seeks approval for 59 new build dwellings at land off Hillworth Road, Devizes, Wiltshire.

The scheme was granted Outline planning permission on the 13th of October 2023, reference PL/2022/00867, appeal Ref: APP/Y3940/W/23/3317362.

This document sets out the proposed approach to sustainable energy for the design proposals and demonstrates that through a combination of fabric measures, the use of low-carbon heating systems and renewable energy, the development will deliver

a level of energy performance beyond current regulatory standards.

A range of additional sustainable design considerations will be addressed including resource efficiency, waste reduction, overheating, electric car infrastructure and water efficiency.

Proposed Layout



2.0 Policy Context

The planning process has been identified as a system to support the transition to a low carbon future in response to climate change by assisting in the reduction of greenhouse gas emissions and supporting renewable and low carbon energy.

The Government proposes that the Building Regulations are the appropriate mechanism to drive future standards with respect to energy consumption, with local authorities able to apply the optional requirements of the national technical standards with respect to water consumption and space.

As an acknowledgement of the challenge to the built environment in meeting future 'net-zero' targets, the Government published the next revision to the Building Regulations Approved Document L (Part L) in December 2021.

In 2019, the UK Government committed to making significant changes to the energy and emission targets required by Building Regulations for all new residential development.

Local policy – Wiltshire Core Strategy

Core Policy 41: Sustainable Construction and Low Carbon Energy.

Climate change adaptation

“New development, building conversions, refurbishments and extensions will be encouraged to incorporate design measures to reduce energy demand. Development will be well insulated and designed to take advantage of natural light and heat from the sun and use natural air movement for ventilation, whilst maximising cooling in the summer.”

Renewable and low-carbon energy

“All proposals for major development will be required to submit a Sustainable Energy Strategy alongside the planning application outlining the low-carbon strategy for the proposal...”

“...In all cases the impact of these requirements on the viability of development will be taken into consideration.”

Compliance with energy standards is ultimately a Building Regulations matter, however Wiltshire’s Core Strategy for major residential development includes the submission of a Sustainable Energy Strategy setting out measures to reduce energy demand and contribute to climate change mitigation

3.0 Climate Change Resistance

Buildings constructed today will need to perform effectively in a changing climate throughout their lifespan. The development has therefore been designed with future climate conditions in mind, including potential increases in temperature, rainfall intensity, wind events and other extreme weather conditions.

Passive design measures have been incorporated, where appropriate, to help mitigate the effects of future climate change.

- Consideration of layout and orientation to limit excessive solar gain, where possible.
- A relatively low-density form of development, helping to minimise any localised urban heat island effect.
- Modest glazing ratios, reducing unwanted solar gain while maintaining good levels of natural daylight.
- Mechanical ventilation systems to support effective ventilation.
- Dual-aspect layouts throughout the development, enabling cross-ventilation and the purging of excess heat during cooler night-time periods.

Low-Carbon Heating and Energy Strategy

While the Future Homes Standard has not yet been implemented, the Applicant is proposing an all-electric approach from the outset, with electricity used to meet heating, hot water and cooking demands across the development.

This ensures the homes are designed to align with the direction of future energy policy and can benefit from the continued decarbonisation of the electricity grid without requiring significant future alterations.

4.0 Energy Consumption and CO2 Emissions

The CO2 standards contained within Part L were increased in 2010 and 2013, reducing the Target Emission Rate by approximately 25% and a further 6% (9% for non-residential) respectively.

Part L 2021 became mandatory from June 2023, which constitutes a much larger step change of a 31% reduction in emissions.

The proposed construction specification and sustainable design measures will ensure that the development achieves the carbon reductions required by Part L of the Building Regulations through a highly efficient building fabric.

The design approach follows the principles of the energy hierarchy by focusing on reducing energy demand at source. Priority has been given to improving the thermal performance of the buildings to minimise energy consumption before the introduction of renewable or low-carbon technologies.

Energy Hierarchy

Be Lean (use less energy)

- Building placement, orientation and form factor
- Landscaping
- Design, minimise energy demand through careful fabric specification

Be Clean (supply energy efficiently)

- Ventilation systems (with heat recovery where necessary)
- Low energy lighting
- High efficiency appliances and ancillary equipment

Be Green

- Low Carbon energy systems
- Heat pump technologies
- Renewable energy if needed to offset any excessive demand.

Proposed Fabric Specification

The Dwellings will be designed to minimise heat loss through the fabric wherever possible. The table below highlights the improvements delivered by the proposed indicative specification over the Part L limiting fabric parameters.

Element	Part L Limiting Fabric Parameters	Proposed Specification
External Wall u-value	0.26W/m ² K	0.18-0.21 W/m ² K
Party Wall u-value	0.20W/m ² K	0.00 W/m ² K
Roof u-value	0.16W/m ² K	0.09-0.16 W/m ² K
Ground Floor u-value	0.18W/m ² K	0.10-0.13 W/m ² K
Windows u-value	1.60W/m ² K	1.40 W/m ² K
French doors u-value	1.60W/m ² K	1.40 W/m ² K
Doors u-value	1.60W/m ² K	1.20W/m ² K
Air Permeability	8.0 m ³ /h.m ² at 50 Pa	4-5 m ³ /h.m ² at 50 Pa
Ventilation	Natural Ventilation with Intermittent extract fans	Vent Axia Lo Carbon DMEV O.S.A.
Thermal Bridging	Y=0.20 (default)	Y ≤ 0.090 (approx.)

Indicative construction specification - main elements – Dwellings

Provisions for Energy-Efficient Operation of the Dwelling

Occupiers will be provided with appropriate guidance on the efficient operation of the home's energy systems. The development is expected to utilise air source heat pumps, insulated pipework and zoned heating controls to improve efficiency and avoid unnecessary heating of unoccupied spaces, helping to reduce both energy use and household costs.

5.0 Resource Efficiency

The development will be designed and constructed with resource efficiency in mind, both during construction and throughout its operational life. Materials will be specified with consideration given to their environmental impact, durability and long-term performance.

Waste and Recycling

Construction waste will be managed in accordance with the waste hierarchy, prioritising waste prevention, reduction, reuse and recycling wherever practicable. Appropriate measures will be implemented during construction to monitor waste generation and promote efficient use of materials.

The proposed dwellings will incorporate appropriate storage provision for refuse and recyclable materials in accordance with the Council's requirements. Future occupiers will have access to local waste and recycling collection services, supporting sustainable waste management throughout the lifetime of the development.

6.0 Water Conservation

Water efficiency will be considered throughout the design of the development, with measures incorporated to reduce potable water consumption and minimise environmental impact.

The proposed dwellings will be designed to achieve the enhanced water efficiency standard of 110 litres per person per day, in accordance with the optional requirements of Approved Document Part G of the Building Regulations.

Water-saving fixtures and fittings, including low-flow taps, showers and dual-flush WCs, will be incorporated where appropriate to reduce water consumption and support the sustainable use of natural resources.

7.0 Overheating Mitigation

The development has been designed with consideration given to future climate change and the potential for higher summer temperatures. A range of passive design measures will be incorporated to reduce the risk of overheating and maintain comfortable internal living conditions.

In accordance with the cooling hierarchy, priority will be given to minimising heat gains through building design before considering mechanical solutions.

Measures incorporated within the development to reduce overheating risk include:

- Careful consideration of dwelling orientation and layout.
- Appropriate glazing ratios to limit excessive solar gain.
- Opportunities for natural cross-ventilation where practicable.
- Mechanical ventilation systems to support internal comfort.
- Consideration of thermal mass and building fabric performance.

A detailed overheating assessment will be undertaken as part of the Building Regulations process to demonstrate compliance with Approved Document Part O. Any additional mitigation measures identified through the assessment will be incorporated into the final design.

8.0 Conclusions

This Sustainable Energy Strategy has been prepared in support of the reserved matters application for 59 dwellings at Hillworth Road, Devizes. The document demonstrates how the proposed development has been designed to support national and local objectives relating to sustainable construction, energy efficiency and climate change mitigation.

The development adopts a fabric-first approach, focusing on high levels of insulation and thermal performance to minimise energy demand and reduce associated carbon emissions. This approach aligns with the standards established by Approved Document Part L 2021.

The proposed dwellings will benefit from improved thermal performance, air source heat pump technology, efficient ventilation systems and an all-electric energy strategy that aligns with the direction of future energy policy.

In addition to reducing operational carbon emissions, the development incorporates wider sustainability measures including enhanced water efficiency, responsible management of construction materials and waste, provision for recycling, and measures to mitigate the risk of overheating. These features will contribute to the long-term environmental performance, resilience and comfort of the homes.

Overall, the proposed development represents a sustainable form of residential development that responds positively to the requirements of Wiltshire Core Policy 41. The scheme will deliver energy-efficient, future-ready homes which minimise resource consumption, reduce carbon emissions and support the transition to a lower-carbon built environment.