Sustainability and Energy Statement

Application
AWDM/001/25

Proposal
New Build Bungalow
12–14 Valley Road, Sompting, West Sussex BN15 0JR

nh architects
"sustainable design for contemporary living"

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Introduction

This Sustainability and Energy Statement has been prepared in support of the planning application AWDM/001/25 for the construction of a new single-storey dwelling on a currently vacant plot at 12–14 Valley Road, Sompting, West Sussex, BN15 0JR.

The purpose of this statement is to demonstrate how the proposed development has been carefully designed to meet contemporary sustainable development and energy efficiency standards. It also illustrates how the proposal aligns with local and national planning policies, including the NPPF, the Adur and District Local Plan (adopted 2017), and Part L of the Building Regulations 2021.

The primary objectives of this statement are to outline the energy-efficient design measures, sustainable construction practices, water conservation strategies, biodiversity enhancements, and transport considerations that have been incorporated into the proposed dwelling. In doing so, the statement demonstrates the commitment to reducing carbon emissions, minimising environmental impact, and providing a low-energy, cost-effective home for future occupants.

Energy Efficiency

The proposed dwelling has been designed to achieve a high level of energy efficiency, ensuring that operational energy demand is minimised and heating, cooling, and electrical energy requirements are optimised. Key measures include:

Building Fabric

The walls, roof, and floors have been designed with enhanced insulation levels to reduce heat loss. High-performance external wall insulation, insulated floor slabs, and a thermally efficient roof structure will help maintain consistent indoor temperatures throughout the year.

Windows and Doors

Energy-efficient, double- or triple-glazed windows with low-emissivity coatings will be installed, providing excellent thermal performance. The airtightness of the building envelope will be maximised to reduce uncontrolled heat loss while maintaining adequate ventilation.

Heating and Hot Water Systems

The dwelling will utilise a low-energy heating system, such as an air-source heat pump or a highly efficient condensing boiler. The system will be complemented by energy-efficient hot water storage solutions. This approach reduces fossil fuel consumption and carbon emissions.

Lighting and Electrical Appliances

All internal and external lighting will use LED technology, significantly reducing electricity consumption. Energy-efficient appliances will be specified throughout the dwelling, further lowering operational energy use.

Renewable Energy

The proposal has been designed to accommodate an ASHP.
This allows for the potential generation of renewable electricity on-site, reducing reliance on grid-supplied energy and supporting the decarbonisation of the household energy supply.

By implementing these measures, the proposed bungalow will achieve high-energy performance standards, contributing to lower energy bills and reduced carbon emissions, while enhancing occupant comfort throughout the year.

Water Efficiency

The dwelling incorporates a range of measures aimed at reducing water consumption, promoting sustainable water management, and mitigating flood risk through effective surface water control:

Water-Saving Fittings

Low-flow taps, dual-flush toilets, and water-efficient appliances, such as dishwashers and washing machines, will be installed to minimise potable water use.

Sustainable Drainage Systems (SuDS)

Sustainable drainage techniques, including permeable paving, rain gardens, and attenuation measures, will be implemented to manage surface water run-off. These systems help reduce the risk of localised flooding, enhance groundwater recharge, and protect water quality.

These measures collectively contribute to sustainable water management and the responsible use of natural resources.

Materials and Waste Management

The selection of construction materials and the management of waste are central to the sustainable design of the proposed development:

Sustainable Materials

Environmentally responsible and locally sourced materials will be prioritised where feasible. This reduces the environmental impact associated with transportation and supports the local economy. Materials will be selected based on their durability, low embodied energy, and minimal environmental impact.

Waste Management

Construction waste will be carefully managed in line with best practice guidance. On-site segregation of waste streams, along with reuse and recycling strategies, will ensure that waste is minimised and diverted from landfill wherever possible.

By prioritising sustainable materials and effective waste management, the proposed development contributes to the reduction of environmental impacts during the construction phase.

Biodiversity and Landscaping

The proposed dwelling has been designed to support local biodiversity and enhance the ecological value of the site.

Native Planting

Landscaping will incorporate native plant species to provide food, shelter, and breeding habitats for local wildlife. Native species are resilient and support local biodiversity.

Ecological Enhancements

Features such as bird and bat boxes, insect hotels, and hedgehog-friendly habitats will be included to increase ecological connectivity and promote a thriving urban ecosystem.

Landscape Design

The landscaping plan will mitigate the urban heat island effect, enhance air quality, and provide amenity space for residents. The design complements the surrounding area and creates a pleasant and sustainable outdoor environment.

Through thoughtful landscaping and ecological measures, the proposed development will contribute positively to the local environment.

Sustainable Transport

The site benefits from excellent connectivity to public transport, local amenities, and active travel routes, promoting sustainable modes of travel:

Public Transport Accessibility

The site is located within walking distance of bus stops and train services, reducing dependency on private vehicles.

Active Travel

Safe pedestrian and cycling routes in the vicinity encourage walking and cycling for short trips.

Cycle Storage

Secure and convenient cycle storage will be provided on-site to support residents who choose to cycle, further reducing the carbon footprint associated with travel.

These measures support sustainable transport initiatives and help reduce greenhouse gas emissions associated with daily travel.

SAP Assessment and Target EPC

A Standard Assessment Procedure (SAP 10) prediction has been provided to estimate the energy performance of the proposed dwelling. The assessment takes into account:

* Fabric energy efficiency, including walls, roof, floor, and windows.
* Heating and hot water system efficiency.
* Renewable energy contributions, such as the potential PV array.
* Ventilation and lighting efficiency.

Predicted SAP Rating

The SAP assessment predicts that the dwelling will achieve a SAP rating of +92, equating to an Energy Efficiency Rating of Band A under the EPC framework. This indicates a highly energy-efficient home with significantly reduced carbon emissions and low running costs for future occupants.

Target EPC

Upon completion, a Target Energy Performance Certificate (EPC) will be produced. The predicted EPC rating is A, (92–100), demonstrating compliance with Part L of the Building Regulations 2021 and supporting national and local targets for energy efficiency and carbon reduction.

Sustainability & Energy Summary

The new bungalow has been designed to minimise environmental impact, achieve very high-energy efficiency, and provide a future-proof low-carbon home.
Aligned with NPPF (2023), Part L (2021), Adur Local Plan (2017), and West Sussex Climate Change Strategy

Energy & Carbon

- Fabric-First Approach:
    - Walls ≤ 0.18 W/m²K
    - Roof ≤ 0.13 W/m²K
    - Floor ≤ 0.15 W/m²K
    - Glazing ≤ 1.2 W/m²K
    - Air permeability ≤ 3 m³/hr/m² at 50Pa
- Low-Carbon Systems:
    - Air Source Heat Pump (ASHP)
    - 2.5–3.0 kWp Solar PV array
    - Electric Vehicle Charging Point (EVCP)
- Predicted Performance (SAP / EPC):
    - EPC Rating: Band A (92–95)
    - Carbon Emissions: 30–35% below Part L 2021 baseline
    - Primary Energy Demand: ~90–100 kWh/m²/yr

Water & Resources

- ≤ 105 litres per person per day (Part G compliant)
- Low-flow taps & showers, dual-flush WCs
- Water-efficient appliances

Climate & Ecology

- Sustainable Drainage (SuDS): permeable paving + soakaway
- Native planting, bird/bat boxes, hedgehog highways
- Overheating mitigation: shading, natural ventilation

Key Benefits

- Highly energy-efficient, near-zero carbon home
- Low running costs for occupants
- Future-proof heating & renewable energy
- Positive contribution to local biodiversity

Conclusion

The proposed new-build bungalow at 12–14 Valley Road, Lancing, demonstrates a strong commitment to sustainability and energy efficiency. The development incorporates best practice in building fabric design, low-energy heating and lighting systems, water efficiency, biodiversity enhancements, sustainable material selection, and waste management.

The SAP assessment and predicted EPC confirm that the dwelling will achieve exceptional energy performance, minimising operational carbon emissions and providing a cost-effective, low-energy home. In addition, the integration of sustainable transport options and ecological landscaping measures further underlines the development's alignment with national and local policy objectives.

By adopting these sustainable design principles, the proposed dwelling contributes positively to environmental conservation, enhances the quality of life for its occupants, and serves as a responsible example of low-carbon, energy-efficient residential development.