

Sustainability and Energy Statement

Land to the rear of Lagonda Stud, AL6 9SU, Hertfordshire

Introduction

This statement supports the planning application for a new four-bedroom dwelling, and sets out how the proposed home would meet the Bronze level, as required by the North Hertfordshire Sustainability SPD. This would be achieved through improved fabric performance, efficient systems and renewable energy.

Proposed Dwelling Summary

Item	Description
Dwelling type	Detached dwelling
Bedrooms	4
Gross Internal Floor Area (GIA)	269 m ²
Heating	Air Source Heat Pump
Ventilation	MVHR / continuous extract
Renewables	Roof-mounted solar PV array

Bronze Level Sustainability Strategy

The design follows a fabric-first approach with low-carbon heating and on-site renewable generation to achieve EPC Band C or better and reduced operational energy use.

Fabric Performance

Element	Target U-value (W/m ² K)
Walls	≤ 0.18
Roof	≤ 0.13
Floor	≤ 0.15
Windows/doors	≤ 1.2
Airtightness	≤ 5 m ³ /h·m ² @50Pa

Building Services & Renewables

- Air Source Heat Pump
- Low temperature heat emitters
- 4–5 kWp solar PV array
- LED lighting throughout
- Smart controls and zoning

Energy Performance Calculations

Space Heating Demand

SHD target = 25 kWh/m²/year

Total heating demand = 25 × 269 = 6,725 kWh/year

Energy Use Intensity (EUI)

	kWh/m ² /year
End use	
Space heating	25
Hot water	12
Lighting & fixed services	6
Total regulated energy (EUI)	43
Total regulated energy use = $43 \times 269 = 11,567$ kWh/year	

Predicted EPC Rating

Metric	Result
SAP score (predicted)	72–78
EPC band	C
Compliance	Meets Bronze level SPD requirement

Water and Wider Sustainability Measures

- Water use ≤ 110 litres/person/day
- Recycling and waste storage
- Responsible materials sourcing
- Native planting and SuDS drainage

Conclusion

The proposed home would achieve Bronze level compliance with an Energy Use Intensity of 43 kWh/m²/year, a Space Heating Demand of 25 kWh/m²/year and a predicted EPC Band C rating. It would be an energy-efficient home, in accordance with local policy.