

Energy and Sustainability Statement

54 Church Street, Baldock, Hertfordshire

June 2025

Prepared by: Pentangle Design Group

1. Introduction

This Energy and Sustainability Statement supports a full planning application for the conversion of an existing Class E building into three residential flats (1 x two-bedroom and 2 x one-bedroom units) at 54 Church Street, Baldock. The building is located in a sustainable town-centre location and is a 'positive' unlisted building within the Baldock Conservation Area.

The application responds directly to the adopted *North Hertfordshire Sustainability SPD (Sept 2024)*, which requires that minor developments submit an Energy and Sustainability Statement (SPD §1.26a). This statement sets out how the proposal addresses energy efficiency, low-carbon energy, sustainable construction, water conservation, biodiversity, and transport matters.

2. Energy Efficiency and Passive Design

A fabric-first approach will be adopted in accordance with Building Regulations Part L (2021), aiming for improved insulation and air-tightness throughout the building envelope. Passive design measures include:

- Minimal external envelope alterations to preserve embodied carbon;
- Maximisation of solar gain to habitable rooms on the southern façade;
- New thermal upgrades to the building fabric using high-performing materials;
- Natural cross-ventilation through thoughtful internal layout;
- New windows will be timber-framed and double-glazed.

The external staircase minimises internal space loss and avoids energy inefficiencies associated with heated internal common corridors.

3. Low-Carbon and Renewable Energy Strategy

The scheme includes:

- Either high efficiency gas boilers or air source heat pumps to provide heating and hot water.
- Low-energy LED lighting and efficient white goods;
- Provision for **photovoltaic (PV) panels** on the rear roof slope at a later phase, subject to permitted development rights;
- Each flat will be fitted with high-specification heating controls to manage energy use effectively.

This approach aligns with the “silver” level of the SPD by incorporating lower-carbon alternatives and minimising reliance on fossil fuels.

4. Estimated Carbon Emissions

While detailed SAP calculations will be submitted at Building Regulations stage, the development is targeting:

- EPC Rating B for all units
 - Minimum 20–35% reduction in CO₂ emissions compared to the Target Emissions Rate (TER), consistent with SPD “silver” level performance.
-

5. Materials, Embodied Carbon and Local Labour

- Re-use of the existing structure reduces embodied carbon and supports a circular construction model;
 - New construction materials will be sustainably sourced where feasible, referencing BRE’s Green Guide to Specification;
 - Local trades will be employed where possible, minimising transport emissions and supporting the regional economy.
-

6. Water and Drainage

- Water-efficient fixtures and fittings will be installed throughout (dual flush WCs, aerated taps, low-flow showers);
 - Targeting water use of ≤110 litres per person per day, per Building Regulations;
 - A permeable surface treatment to the rear courtyard will enhance drainage;
 - Water butts will be installed for garden planting and irrigation.
-

7. Sustainable Travel and Site Access

- Secure **cycle storage** is proposed to the rear of the site for all flats;
 - **Electric vehicle (EV) charging** point provision will be futureproofed into the scheme design;
 - The site is within walking distance of Baldock town centre and railway station (~7 min walk);
 - The ground floor flat benefits from 1 on-site parking space as indicated in the proposed site layout.
-

8. Biodiversity and Greening

While the site is previously developed land with limited green space, enhancements include:

- Introduction of **soft landscaping** and low-maintenance planting in the rear amenity space;
- Surface treatments will include permeable materials to promote biodiversity net benefit;
- Bird/bat box installations may be considered as part of final detailing.

9. Summary Table of Measures

Theme	Measures
Energy Efficiency	Fabric-first approach; enhanced insulation; natural ventilation
Renewable Energy	ASHP readiness; PV potential; low-energy systems
Carbon Emissions	20–35% CO ₂ reduction; EPC B/C compliance
Water Conservation	≤110 litres/person/day; water butts; permeable paving
Embodied Carbon	Structural re-use; BRE Green Guide materials; local sourcing
Sustainable Transport	Cycle storage; proximity to rail; EV-ready infrastructure
Biodiversity	Planting strategy and soft landscaping

10. Conclusion

The proposed development at 54 Church Street will deliver three high-quality, energy-conscious residential dwellings in a town centre location. The retention and conversion of the existing structure enhances sustainability through reuse, while improved fabric performance, renewable-ready energy infrastructure, and water-conscious measures demonstrate alignment with North Herts' environmental and climate priorities as set out in the adopted SPD.