

Energy Statement

Proposal: Conversion of Redundant Garage/Workshop to Form One 1-Bedroom Dwelling

Site: 122 Nightingale Road, Hitchin, SG5 1RG

1. Introduction

This Energy Statement has been prepared in support of the planning application for the conversion of a redundant garage/workshop building to form one 1-bedroom dwelling at 122 Nightingale Road, Hitchin, SG5 1RG. The proposal includes alterations to fenestration, insertion of a dormer window and rooflight, external render, provision of parking and cycle storage, and partial demolition of three existing garages.

The development seeks to make effective use of an existing building and previously developed land, reducing the need for new-build construction and associated embodied carbon. The proposed dwelling will be designed to achieve a high level of energy efficiency through a fabric-first approach, efficient services, and the use of a low-carbon air source heating system.

2. Planning Policy Context

The proposal has been designed with regard to relevant national and local planning policy objectives relating to sustainable development, energy efficiency and climate change mitigation. These include the National Planning Policy Framework, Building Regulations requirements, the North Hertfordshire Local Plan 2011–2031 and the North Hertfordshire Sustainability Supplementary Planning Document.

The development will support sustainable construction principles by reducing operational energy demand, avoiding fossil-fuel heating, improving the thermal performance of the existing structure, and incorporating measures to promote sustainable transport, including cycle storage.

3. Energy Strategy

The proposed energy strategy is based on the following hierarchy:

1. Reduce energy demand through improved insulation, airtightness and efficient building fabric.
2. Use efficient building services and controls.

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3. Provide low-carbon heating through an air source heat pump system.
4. Support sustainable travel through provision of cycle storage and on-site parking.

This approach is appropriate for a small-scale residential conversion and will help minimise the carbon emissions associated with the occupation of the dwelling.

4. Fabric-First Measures

The converted dwelling will be upgraded to provide improved thermal performance in accordance with current Building Regulations requirements. The existing structure will be enhanced where necessary to reduce heat loss and improve energy efficiency.

The following fabric improvements are proposed:

- Upgrading external walls, roof and floor elements with insulation to meet or exceed applicable Building Regulations standards where technically feasible.
- Installation of high-performance double or triple glazed windows and doors.
- Careful detailing around new openings, the dormer window and rooflight to minimise thermal bridging.
- Improved airtightness through appropriate sealing of junctions, penetrations and service routes.
- Use of insulated external render where suitable to improve the thermal performance and appearance of the building.

These measures will reduce the overall heating demand of the dwelling and improve comfort for future occupants.

5. Heating and Hot Water

The dwelling will be served by an air source heat pump system, providing low-carbon space heating and domestic hot water. No new gas-fired heating system is proposed.

The air source heat pump will be appropriately sized for the 1-bedroom dwelling and installed in accordance with manufacturer requirements and relevant standards. The system will be designed to operate efficiently with suitable internal heat emitters, controls and hot water storage.

The use of an air source heat pump will significantly reduce reliance on fossil fuels and support the transition to low-carbon heating. The final specification, location of external equipment and acoustic treatment, if required, will be confirmed at detailed design stage to ensure that the system operates efficiently and without unacceptable impact on neighbouring occupiers.

6. Ventilation and Overheating

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The dwelling will be provided with appropriate ventilation in accordance with Building Regulations. The design will seek to balance energy efficiency with good indoor air quality.

The proposed new fenestration, dormer window and rooflight will improve daylight and natural ventilation. Opening windows will assist with purge ventilation during warmer periods. The building fabric, glazing specification and internal layout will be considered to reduce the risk of overheating, particularly in relation to the roof accommodation and dormer/rooflight arrangement.

Where necessary, glazing specification, shading, ventilation strategy and insulation detailing will be refined at Building Regulations stage to ensure comfortable internal conditions.

7. Lighting, Appliances and Controls

The dwelling will incorporate low-energy lighting throughout, expected to comprise LED fittings. Heating and hot water will be controlled by modern programmable controls to allow future occupants to manage energy use effectively.

The dwelling will be fitted with energy-efficient fixtures and systems where practicable, helping to reduce overall electricity demand and running costs.

8. Water Efficiency

The development will incorporate water-efficient sanitary fittings, taps and appliances where practicable. The final specification will be developed to meet Building Regulations requirements and to reduce potable water consumption.

9. Sustainable Transport

The proposal includes provision for parking and cycle storage. Secure cycle storage will encourage sustainable travel by future occupants and reduce reliance on private car use for short journeys within Hitchin.

The site is located within an established residential area, where local services and public transport connections are accessible. Reusing the existing building in this location supports sustainable patterns of development.

10. Materials and Waste

The proposal involves conversion and adaptation of an existing redundant garage/workshop building, which will reduce the need for new construction materials compared with a wholly new dwelling. Partial demolition of existing garages will be managed responsibly, with opportunities taken to reuse or recycle materials where practicable.

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New materials will be selected for durability, thermal performance and suitability for the existing building. The proposed external render will improve the appearance and weather protection of the converted building while contributing to the upgraded thermal envelope where insulation is incorporated.

11. Conclusion

The proposed development will deliver a small, energy-efficient 1-bedroom dwelling through the reuse of a redundant garage/workshop building. The scheme adopts a fabric-first approach, improves the thermal performance of the existing structure and avoids fossil-fuel heating through the use of an air source heat pump system.

The proposal will provide a low-carbon, efficient and sustainable dwelling appropriate to its residential setting. It is considered that the development accords with relevant national and local planning objectives relating to sustainable development, energy efficiency and climate change mitigation.

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