

Energy Statement

Proposed Development

Southern Green Farm, Rushden, Hertfordshire, SG9 0SX

Demolition of Existing Agricultural Barn and Construction of 4 No. New Dwellings

1. Introduction

This Energy Statement has been prepared in support of the proposed development at Southern Green Farm, Rushden, Hertfordshire, SG9 0SX. The proposals comprise the demolition of the existing agricultural barn and the construction of four new residential dwellings.

The development has been designed with sustainability and energy efficiency as key considerations. The proposed dwellings will be constructed to comply with the current requirements of the Building Regulations, with particular regard to energy efficiency, carbon emissions, water consumption, ventilation and overheating.

2. Energy Efficiency and Building Fabric

The proposed dwellings will incorporate a high standard of thermal performance in accordance with the current Building Regulations.

The external walls, roofs, floors, windows and doors will be designed and constructed to achieve appropriate levels of insulation and air tightness, thereby reducing heat loss and minimising the overall energy demand of each dwelling.

Attention will also be given to limiting thermal bridging at junctions and openings, with appropriate construction details used throughout the development.

The detailed energy performance of each dwelling will be confirmed at the Building Regulations stage through the appropriate energy assessment and compliance calculations.

3. Low Carbon Heating

Each of the four dwellings will be provided with an **air source heat pump** as the principal source of space heating and domestic hot water.

M Scott Architectural Design Ltd

Bancroft House, 34 Bancroft, Hitchin, Herts SG5 1LA

01462 422440 www.msad.uk

Registered Office - Global House, 303 Ballards Lane, London N6 5UG

Company Registration number - 14893661

M Scott / Architectural Design

Air source heat pumps provide an efficient, low-carbon alternative to conventional fossil-fuel heating systems and are particularly suitable for new-build dwellings constructed to high standards of thermal efficiency.

The heating systems will be appropriately designed and sized to suit the calculated heating and hot water requirements of each dwelling.

4. Renewable Energy – Solar Photovoltaic Panels

Solar photovoltaic (PV) panels will be incorporated onto the roofs of the proposed dwellings.

The PV installations will generate renewable electricity on site and will contribute towards reducing the amount of electricity imported from the grid and the associated operational carbon emissions of the development.

The final size, orientation and specification of the photovoltaic arrays will be developed alongside the detailed design of the dwellings, taking account of roof orientation, available roof area, shading and Building Regulations energy requirements.

5. Overheating and Solar Gain

The potential for excessive solar gain and summertime overheating has been considered as part of the design of the proposed dwellings.

The positioning and extent of glazing will be considered in relation to orientation and solar exposure so that the benefits of natural daylight and passive solar gain can be achieved without creating an unacceptable risk of overheating.

Where appropriate, the design will utilise measures such as appropriately sized window openings, building orientation and effective natural ventilation to assist in maintaining comfortable internal temperatures during warmer periods.

The dwellings will be designed to comply with the applicable Building Regulations requirements relating to overheating.

6. Ventilation

The dwellings will principally utilise **natural ventilation**, with openable windows positioned to enable effective ventilation of the internal accommodation.

The internal layouts and window arrangements will, where practicable, provide opportunities for **cross ventilation through the dwellings**, allowing air to move between opposing elevations and assisting with both indoor air quality and summertime cooling.

M Scott Architectural Design Ltd

Bancroft House, 34 Bancroft, Hitchin, Herts SG5 1LA

01462 422440 www.msad.uk

Registered Office - Global House, 303 Ballards Lane, London N6 5UG
Company Registration number - 14893661

M Scott / Architectural Design

Background and extract ventilation will be provided as required to kitchens, bathrooms and other relevant spaces in accordance with the current Building Regulations.

7. Water Efficiency

The development will incorporate water-efficient fittings and appliances in order to minimise potable water consumption.

Each dwelling will be designed to achieve a calculated internal potable water consumption of **no more than 110 litres per person per day**, in accordance with the applicable requirements of the Building Regulations.

This will be achieved through the specification of suitable low-flow taps and showers, efficient sanitary fittings, dual-flush WCs and water-efficient appliances where appropriate.

8. Sustainable Design Approach

The overall approach to the development follows the principle of reducing energy demand before meeting the remaining demand through efficient and low-carbon technologies.

The principal sustainability measures incorporated within the scheme will therefore include:

- High levels of thermal insulation and an energy-efficient building fabric;
- Construction in accordance with current Building Regulations;
- Air source heat pumps for space heating and domestic hot water;
- Roof-mounted solar photovoltaic panels providing on-site renewable electricity;
- Consideration of building orientation, glazing and solar gain to reduce the risk of overheating;
- Natural ventilation with opportunities for cross ventilation through the dwellings; and
- Water-efficient fittings designed to restrict consumption to no more than 110 litres per person per day.

9. Conclusion

The proposed four dwellings at Southern Green Farm have been designed to provide modern, energy-efficient homes incorporating low-carbon heating and renewable energy generation.

The combination of an efficient building envelope, air source heat pumps, solar photovoltaic panels, controlled solar gain, natural cross ventilation and water-efficient fittings will reduce the energy and resource requirements of the development while providing comfortable and sustainable accommodation for future occupants.

Detailed specifications and calculations will be developed as the scheme progresses and will demonstrate compliance with the relevant requirements of the current Building Regulations.

M Scott Architectural Design Ltd

Bancroft House, 34 Bancroft, Hitchin, Herts SG5 1LA

01462 422440 www.msad.uk

Registered Office - Global House, 303 Ballards Lane, London N6 5UG
Company Registration number - 14893661