



ENERGY STATEMENT

STANHORN GROVE, FELPHAM

JSP SUSTAINABILITY LTD
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EXECUTIVE SUMMARY

- The proposed residential development off Stanhorn Grove, Flepham includes the construction of 18 no. homes.
- Hampshire Homes Group proposes the adoption of a strategy which incorporates energy efficiency measures into the construction of every home and renewable technologies.
- The installation of photovoltaic arrays capable of generating 10,029.12kWh/year of electricity will ensure 10% of the site's energy demand is sourced from on-site renewable energy sources.



1 INTRODUCTION

JSP Sustainability Ltd has been commissioned by Hampshire Homes Group to prepare an Energy Statement in response to condition 7 of the planning permission for the residential development off Stanhorn Grove, Felpham. The development includes the construction of 18 no. homes, landscaping and associated highway works. For completeness the condition is included below;

“At least 10% of the energy supply of the development shall be secured from decentralised and renewable or low carbon energy sources (as described in the glossary at Annex 2 of the national planning policy framework) details and a timetable of how this is to be achieved for each phase or sub phase of development, including details of physical works on site shall be submitted to and approved in writing by the local planning authority before any development in that phase or sub phase begins. The development shall be implemented in accordance with the approved details and timetable and retained as operational thereafter unless otherwise agreed.”

Condition 7, FP/171/18/PL

This statement details the renewable energy measures to be incorporated into the development such that 10% of its energy requirement will be sourced from renewable energy. A number of documents have been used to complete this statement. These include;

National Planning Policy Framework (NPPF) includes a presumption in favour of sustainable development. The Framework expands upon the guiding principles and objectives of a successful planning system. These include the building of a strong and competitive economy, delivering high quality housing, requiring good design and meeting the challenges of climate change.

Approved Document L1A sets fabric efficiency standards and together with SAP, establishes a maximum CO₂ emission rate for new build residential properties. The Approved Document is the Government's sustainable design benchmark in England and was most recently amended in April 2014.

Arun Local Plan 2011-2031 includes policy ECC SP2 which requires major developments to provide 10% of the total predicted energy requirement from renewable or low carbon energy generation on site.



2 ENERGY STRATEGY

2.1 Proposed Strategy

In response condition 7 Hampshire Homes Group proposes to build each home to an efficient construction and building services specification and install roof mounted photovoltaic arrays on the roof slopes of a number of properties capable of generating 10% of the site's energy requirement.

2.2 Energy Efficiency Measures

Hampshire Homes Group's exposure to the marketplace has confirmed that purchasers demand energy efficient homes with low operating costs and familiar user-friendly technologies. As such the proposed construction specification for Stanhorn Grove has been tailored to these demands and incorporates many of the lean and clean measures of the Energy Hierarchy. Listed below are some of the measures that will be incorporated into the detailed design of the scheme;

- The construction specification of every home will include high levels of insulation in the ground floor, external walls and roof spaces.
- The detailed house type designs will incorporate the thermal bridging guidance produced by the Government, thereby reducing a significant source of heat loss.
- An efficient gas condensing boiler will be installed in each property. The heating designs of each house type will include dual zone controls with delayed start thermostats.
- Energy efficient lamps will be installed in every light fitting.
- Each property will be naturally ventilated using efficient decentralised extract fans to ensure the internal living environment will be healthy and comfortable.
- Each entrance will be illuminated with an energy efficient external light or provision will be made for a purchaser to install such a fixture.
- The white goods installed in each property or offered to purchasers will be energy efficient with an A+/A rating.
- 3 no. Rolec car charging points will be installed adjacent to the visitor parking bays to enable residents and visitors to charge their cars.



The table overleaf provides a summary of the likely energy efficiency standards targeted in the design and construction of each home;

Table 1 – Specification Summary

Element	Part L	Enhanced Specification
Wall	0.30W/m ² K	0.17W/m ² K
Party Walls	0.20W/m ² K	0.00W/m ² K
Cold Roof	0.20W/m ² K	0.11W/m ² K
Floor	0.25W/m ² K	0.10W/m ² K
Glazing	2.00W/m ² K	1.40W/m ² K
Door	2.00W/m ² K	1.30W/m ² K
Air Permeability	10 m ³ /(h.m ²) @ 50 Pa	5.0 m ³ /(h.m ²) @ 50 Pa

The targeted u-values go significantly beyond the minimum standards of Part L. This will ensure the thermal envelope of every home will be energy efficient, thereby reducing energy consumption and CO₂ emissions.

Photo 1 – Example of a car charging point





2.3 Performance of the Energy Efficiency Measures

The specification summarised overleaf was modelled in SAP to determine the anticipated emission rate and energy requirement of the development. The table below summarises the results calculated.

Table 2 – Stanhorn Grove Emission Rate

House Type	No	Emission Rate (kg/year)	Energy Requirement (kWh/year)
Turner	3	4,536.24	18,995.41
Lincoln	6	8,738.50	36,386.61
Windom	7	8,387.68	34,819.57
Flat	2	2,065.15	8,618.58
TOTAL	18	23,727.57	98,820.37

The calculations confirm that the constructed site will have a forecasted energy requirement of 98,820.37kWh/year and corresponding emission rate of 23,727.57kg/year of CO₂.



2.4 Renewable Technologies

Hampshire Homes Group intends to install roof mounted PV arrays on a number of properties sufficient to generate 9,882.04kWh/year of electricity. This representing 10% of the site's energy requirement.

Photovoltaic panels convert sunlight into electricity for use within a property. A PV cell usually consists of 1 or 2 layers of a semi-conducting material such as silicon. PV systems can come in different forms. The most popular are modules which can either sit on the roof or be integrated into it. The technology is most efficient when oriented due south. However, panels orientated south of east or west are suitable.



The installation of 4 no. 2.48kWp PV arrays to plots 2, 6, 7 & 9 is proposed. These installations will have the potential to generate 10,029.12kWh/year or 10.15% of the site's energy requirement. The installed arrays will offset 5,205.11kg/year of CO₂.



3 EVALUATION

Hampshire Homes Group is required by condition 7 of the planning permission for the residential development off Stanhorn Grove, Flepham to install renewable technologies capable of generating 10% of the site's energy requirement. In response to the condition Hampshire Homes Group intends to construct each home to an efficient specification and install roof mounted PV arrays on the rear facing roof slopes of a number of properties. [JSP Sustainability](#) was instructed by the developer to confirm that these proposals comply with condition 7. Following a review and detailed calculation we can confirm;

- Each property will be constructed to an energy efficient specification ensuring each home is thermally efficient with efficient internal building services.
- The site has a forecasted energy requirement of 98,820.37kWh/year.
- The installation of PV arrays capable of generating 10,029.12kWh/year of electricity will ensure 10.15% of the site's energy requirement is sourced from renewable resources.

In conclusion the strategy advanced by Hampshire Homes Group complies with local policy and condition 7. We therefore recommend the adoption of the strategy by Hampshire Homes Group and its approval by Arun District Council.