



ENERGY STATEMENT

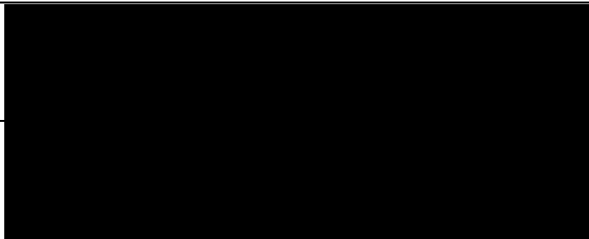
WEST WALBERTON LANE, WALBERTON

JSP SUSTAINABILITY LTD
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EXECUTIVE SUMMARY

- The proposed residential development off West Walberton Lane, Walberton includes the construction of 30 no. homes.
- Policy ECC SP2 of the Arun Local Plan requires the provision of renewable energy technologies capable of generating 10% of the site's predicted energy requirement.
- PV arrays capable of generating 15,905.44kWh/year will be installed on the front facing roof slopes of plots 8-12



1 INTRODUCTION

JSP Sustainability Ltd has been commissioned by Macra Limited to prepare an Energy Statement to accompany the planning application for the proposed residential development off West Walberton Lane, Walberton. The application proposes the construction of 30 no. homes, landscaping, public open space and associated highway and drainage works.

This statement will detail the energy efficiency and renewable energy measures proposed by the developer to deliver a sustainable development with 10% of its energy requirement sourced from renewable technologies. A number of documents have been used to complete this report. 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.

Arun Local Plan includes policy ECC SP2 which requires all new major development to produce 10% of the energy requirement onsite from renewable and low carbon energy sources. The policy notes that energy efficiency measures will be taken into account when establishing the total energy requirement.



2 ENERGY STRATEGY

2.1 Proposed Strategy

Macra Limited proposes to construct each home to an efficient construction specification and install photovoltaic arrays on the roof slopes of a number of properties, such that 10% of the energy requirement of the development will be sourced from renewable energy sources.

2.2 Part L Baseline

Before expanding on the energy strategy, it is first necessary to calculate the site's Part L1A compliant target emission rate and associated energy requirement. The table below summarises the output of SAP calculations carried out on the proposed house types at the West Walberton Lane site.

Table 1 – West Walberton Lane Part L1A Baseline

House Type	No	Target Emission Rate (kg/year)	Energy Requirement (kWh/year)
4 Bedrooms	4	9,638.34	37,460.30
3 Bedrooms	12	19,473.00	73,060.09
2 Bedrooms	5	6,570.95	24,329.85
Bungalow	1	1,793.55	6,882.71
Flats	8	9,707.04	36,179.21
TOTAL	30	47,182.87	177,912.16

The calculations confirm the site has a target emission rate of 47,182.87kg/year and associated energy requirement of 177,912.16kWh/year.



2.3 Energy Efficiency Measures

In line with best practice, Macra Limited, proposes to adopt a strategy compliant with the principles of the Energy Hierarchy. Each home at the application site will be energy efficient, thereby lessening the energy demand of the development and energy will be consumed efficiently within each home via the specification of efficient heating, lighting and ventilation systems. 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.
- ✱ Each of the house types elevations has sufficient glazing provision to the principal living rooms to allow each home to benefit from solar gain. This reduces the space heating and lighting requirement of each home.
- ✱ The site plan confirms that a majority of homes have a favourable southerly elevation to maximise passive solar heating.
- ✱ The detailed house type designs will incorporate the thermal bridging guidance, thereby reducing a significant source of heat loss.
- ✱ An efficient 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. Occupants will have the ability to ventilate their home via openable windows during summer homes to prevent overheating (purge ventilation). As part of the Building Regulations assessment all of the proposed house types will show a low risk of summer overheating.
- ✱ 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 table overleaf provides a summary of the energy efficiency standards to be achieved in the design and construction of each home;



Table 2 – Specification Summary

Element	Part L	Specification
Wall	0.30W/m ² K	0.24W/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	0.12W/m ² K
Glazing	2.00W/m ² K	1.30W/m ² K
Door	2.00W/m ² K	1.00W/m ² K
Air Permeability	10 m ³ /(h.m ²) @ 50 Pa	5.0 m ³ /(h.m ²) @ 50 Pa



2.4 Performance of the Energy Efficiency Measures

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

Table 3 – West Walberton Lane Emission Rate

House Type	No	Calculated Emission Rate (kg/year)	Energy Requirement (kWh/year)
4 Bedrooms	4	9,160.33	35,247.30
3 Bedrooms	12	17,750.30	65,084.65
2 Bedrooms	5	5,911.80	21,278.24
Bungalow	1	1,589.35	5,937.35
Flats	8	8,697.81	31,506.88
TOTAL	30	43,109.60	159,054.42

The calculations confirm that the proposed energy efficiency measures will shrink energy consumption by 10.60% and associated CO₂ emissions by 8.63%.



2.5 Renewable Technologies

Macra Limited intends to install PV arrays on the roof slopes of a number of properties sufficient to generate 15,905.44kWh/year, this representing 10% of the site's forecasted energy requirement. To generate 15,905.44kWh/year, the SAP Appendix M methodology estimates that arrays totalling 21.5kWp installed on the westerly facing roof slopes of plots 8-12 will meet this target. Note however, that the Microgeneration Certification method of calculation will determine a lower kWp figure for the same level of generation. The installed arrays will offset a further 8,254.92kg/year of CO₂.



3 EVALUATION

This Statement accompanies the planning application for the proposed residential development off West Walberton Lane, Walberton. Policy SP2 of the Arun Local Plan the developer to install renewable technologies capable of generating 10% of the site's predicted energy requirement. JSP Sustainability was instructed by the developer to review their proposed strategy and confirm compliance with policy SP2. Following a review and detailed calculation we can confirm;

- ✦ Each home will be constructed to an efficient fabric and building services specification.
- ✦ PV arrays capable of generating 15,905.44kWh/year of electricity will be installed on the front roof slopes of plots 8-12
- ✦ The installed arrays will offset 8,254.92kg/year of CO₂.
- ✦ The constructed development will have a net emission rate 26.13% better than Part L of the Building Regulations.

In conclusion the strategy advanced by Macra Limited will comply with policy ECC SP2 of the Arun Local Plan. We therefore recommend the approval of these measures by Arun District Council.