

# Planning Energy Strategy

Site Address: Orchard End, Sill Bridge Lane, Waltham, St Lawrence

RG10 0NT

## 1.0 Energy

1.1 All Development proposals (except householder residential extensions and non-residential development with a floorspace of below 100sq.m) should make the fullest contribution to minimising carbon dioxide emissions in accordance with the following energy hierarchy:

1. Be lean: use less energy.

The development has been designed to ensure energy consumption is minimized. Primarily this achieved through very high-performance fabric elements that ensure the use of energy is minimized.

2. Be clean: supply energy efficiently

Please refer to the SAP Report.

3. Be green: use renewable energy

The development utilises an Air Source Heat Pump as its primary energy source, this gives generally with provide over 2.5 times the amount of heat that it consumes in energy.

1.2 All developments (except householder residential extensions and non- residential development with a floorspace of below 100sq.m) should be net-zero carbon unless it is demonstrated this would not be feasible.

Please refer to the SAP calculations.

1.3 All development proposals except householder residential extensions and non-residential development with a floorspace of below 100sq.m) should include a detailed energy assessment and a completed Carbon Reporting Spreadsheet to demonstrate how the net-zero target will be met.

Please refer to the detailed SAP report.

1.4 As a minimum, energy assessments should include the following details:

A. A calculation of the energy demand and carbon dioxide emissions covered by Building Regulations and, separately, the energy demand and carbon dioxide emissions from any

other part of the development, including plant or equipment, that are not covered by the Building Regulations (see paragraph 5.22) at each stage of the energy hierarchy.

Please refer to the detailed SAP report. (Summary for Input Data)

B. A calculation of the estimated annual energy costs to the occupants of the development.

Please refer to the detailed SAP report.

C. Proposals to reduce carbon dioxide emissions through the energy efficient design of the site, buildings, and services (including heat recovery solutions)

The building utilises south facing windows to provide useful solar energy gains and thermal mass to limit summer overheating. We have included for an ASHP and Mechanical heat recovery.

D. proposals to further reduce carbon dioxide emissions through the use of on-site renewable energy technologies. There is an expectation that developments maximise renewable energy generation regardless of whether minimum standards are met through other measures, as such there is an expectation 12% of the total energy demand will be met by on-site renewables, unless this is demonstrated to be unfeasible.

We have included for an ASHP.

E. Proposals for the storage and use or export of excess energy arising from renewable energy technologies. Excess energy will be exported to the grid.

The client will ensure that their energy tariff allows export of energy to the grid through reverse metering.

1.5 The net-zero carbon outcome should be achieved on-site where feasible.

Please refer to SAP report.

**2.0 Major development proposals should reduce potential overheating, and reliance on air-conditioning systems and demonstrate this in accordance with the following cooling hierarchy:**

The scheme is not a Major development; however, the following has been considered:

2.1 Minimise internal heat generation through energy efficient design.

We have incorporated traditional thermal mass to ensure summer overheating is limited. The rear summer glazing is not excessive and the deep plan areas will be comfortable. The glazing will have low thermal transmittance values (g values) with high transmittance to ensure the thermal radiation transfer is minimised.

2.2 Reduce the amount of heat entering a building in summer through orientation, shading, albedo, fenestration, and insulation.

We have limited the east/ west glazing (susceptible to morning and evening overheating). We have incorporated traditional thermal mass to ensure summer overheating is limited.

2.3 Manage the heat within the building through exposed internal thermal mass and high ceilings.

The height of the ceilings is set at 2.5m.

2.4 Passive ventilation

Passive ventilation is provided through traditional opening windows and openable roof lights above the stair . Other ventilation will be provided in accordance with Part F of the Building Regulations.

2.5 Mechanical ventilation

Mechanical ventilation with heat recovery is proposed.

2.6 Active cooling systems (ensuring they are the lowest carbon options).

If proposed they will be lowest carbon options.

**3.0 Planning Applications which propose to implement a recognised quality regime such as Passivhaus or Home Quality Mark that ensures the 'as built' performance (energy use, carbon emissions, indoor air quality, and overheating risk) matches the calculated design performance of dwellings will be looked on favourably.**

Where such measures are proposed compliance will be secured by the Local Planning Authority.

3.1 The scheme will be required to prove its energy efficiency producing an EPC. This EPC will require that the house achieves the air leakage rate set out in the SAP calculations.

**4.0 New build homes will be supplied via a three-phase power supply unless this is not viable.**

4.1 3 phase power is not viable at this stage.

However, due to the relatively small scale of the proposal and the limited energy demand and on-site energy production, 100amp single phase electricity would be a reasonable requirement. Should 3 phases be required in the future (multiple car charging), then the owner would make that case to the power network.

**5.0 20% of new car parking spaces will be provided with active EV charging facilities – and passive provision (the ducting, cabling, and capacity within the Mechanical and Engineering Services) for the remaining 80% of spaces will be provided.**

5.1 Onsite car charging will be provided.

**6.0 New build homes will be supplied with high-speed internet connection to facilitate home working.**

6.1 As per part R of the Building Regulations, the dwelling will be served by high-speed internet.

**7.0 Development should minimise the use of mains water by:**

7.1 Incorporating water saving measures and equipment.

The proposals will incorporate low water consumption technologies such as low flow taps and low-capacity cisterns.

7.2 Designing residential development so that mains water consumption would meet a target of 105 litres or less per head per day (excluding an allowance of 5 litres or less per head per day for external water consumption.)

The proposed development will be designed to consume a target of 110 litres per person a day or less in accordance with part G2 of the building regulations.