

Sustainability Statement

Site: WILTSHIRE COTTAGE, BROOK, BRAMSHAW, LYNDHURST, HANTS SO43 7HE

Proposal: INSTALLATION OF AIR SOURCE HEAT PUMP.

Date: 07/01/22

Details of how the Proposal reduces carbon emissions and incorporates measures to reduce its contribution to climate change:

1. Making the most efficient use of land, buildings and natural resources including site layout and building design.

Guidance: Energy consumption can be significantly reduced through the location of development, site layout and building design, the type of materials used, the use of existing and new resources and the efficient management of the construction process.

The location of the heat pump is close to the house, replacing 2 Torpedo gas bottles. Use of heat pump reduces carbon emissions of burning gas and wood in the wood burners. The close proximity to the house reduces use of pipework - shortest route to the ~~the~~ central heating system, inc electrical cables. The Daikin Heat pump is a high tech, high efficiency unit, significantly reducing carbon emissions.

2. Energy Hierarchy*

Guidance: Level 1 – Reduce the need for energy; Level 2 – Using energy more efficiently; Level 3 – Supplying energy efficiently; Level 4 – Use low carbon and renewable energy. There are opportunities in all types of development to use low carbon and renewable energy sources, however what is appropriate will depend on the physical nature of the building, its site characteristics and the surrounding landscape.

This system would be level 2. Replacing high energy use and low efficiency of LPG and wood with high levels of carbon emissions. The heat pump has a lower energy usage and lower carbon footprint, so overall is more energy efficient. The system includes more efficient radiators, and heating controls.
+ level 4 as using renewable electric methods to run the heat pump system.

3. Minimising Flood Risk**

Guidance: Directing development away from flood risk areas, reducing overall risk from flooding within the National Park and areas outside it, upstream and downstream.

The system will have no impact positively or negatively on flood risk.

4. Carbon Reductions

Guidance: Consideration of means of reducing carbon emissions for the development. Seeking to take every opportunity to reduce carbon and build sustainably.

The heat pump system replacing LPG or wood burning for heating the house, will significantly reduce carbon and particulate emissions. And be more energy efficient in the process

5. Water Efficiency.

Guidance: Water conservation methods include ensuring that the design of buildings and their surrounding landscape maximises water efficiency and minimises water wastage; identifying opportunities to use water more efficiently during the construction of the development; designing surface water drainage systems to take into account future changes in rainfall.

The system will have no impact positively or negatively on water usage.

*Energy Hierarchy

Level 1 – Reduce the need for energy

The energy hierarchy places great emphasis on Integrated Passive Design. Key methods include:

- *Orientation* – making best use of high summer sun angles & low winter sun angles on southern exposures;
- *Thermal mass* – to store heat in the winter and act as a heat sink for cooling in the summer;
- *Natural ventilation* – designing controlled flows through buildings for cooling;
- *Zoning* – to allow different thermal requirements to be compartmentalised.

Level 2 – Using energy more efficiently

Using energy more efficiently means not wasting energy or using more than is required. The following potential energy efficiency measures should be considered:

- High levels of insulation.
- Utilising appropriate forms of glazing
- Installing heating controls.
- Using energy efficient heating and heat recovery systems.
- Adding draught strips on doors, windows & letter boxes.
- Fitting chimney balloons.
- Installing zoned low energy lighting and presence sensors.
- Replacing doors in existing buildings.
- Upgrading to a high efficiency condensing boiler
- Adding a sun pipe/tunnel

Level 3 – Supplying energy efficiently

Supplying energy efficiently refers to connecting to existing low carbon heat networks. Connection to, or development of, a mini district heating network can be a carbon efficient means of energy supply.

Level 4 – Use low carbon and renewable energy

Once the energy needs of a new building have been minimised through design, consideration needs to be given as to how the remaining energy needs can be met through:

- Heat pumps: ground source heat pumps and air source heat pumps.
- Wood burning stoves/biomass boilers.
- Solar thermal/hot water panels.
- Solar photovoltaic/electric panels.
- Hydro power, small scale water turbines.
- Anaerobic digesters.

**Minimising Flood Risk

Sustainable Urban Drainage Systems (SuDS) remove water quickly and efficiently and should be included in the original design and layout of a proposal wherever possible. The approach used will differ with each application and the circumstances of each site.