

Sustainability Statement

Site: Tanglewood, Beechwood Lane, Burley, BH24 4AS

Proposal: One & two storey extensions; porch; extension to outbuilding; creation of covered areas; extension and alterations to existing boundary wall (partial demolition of dwelling)

Date: 15/11/2021

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 new alterations largely consist of replacing some poorly constructed extension to the original dwelling. The walls will be constructed as cavity walls with high levels of insulation. The roofs will be well insulated and constructed as warm roofs rather than the existing cold pitched. Glazing where appropriate has been positioned to maximise solar gain whilst respecting the character of the area.

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.

The new warm roof will increase the thermal performance of the dwelling therefore reducing the need for constant heating during the winter which the current building requires. The kitchen dining/family area will have underfloor heating offering a uniform distribution of heat into the space. The development will refurbish the entire central heating system offering multiple zone controls where they can be individually changed so energy is not waster in rooms that are not being used. All

the existing external windows/doors are proposed to be replaced with modern day thermal efficient double/triple glazing. Windows will provide natural ventilation throughout the summer with double aspect rooms allowing for cross ventilation.

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 new roof downpipes will be connected to existing and new soakaways within the residential curtilage. Where appropriate the use of water butts will be utilised to be used around the domestic garden. The development would offer no increase to flood risk anywhere on site or to neighbouring dwellings.

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.

Where appropriate existing materials from the demolition will be re-used/recycled within the development. Where not possible recycled materials from reclamation may be appropriate provided they match in with the character of the dwelling.

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.

All W.C/bathroom/en-suites will be fitted with a dual flush w.c and low flow taps. To reduce water usage. Downpipes will be connected to water butts where appropriate for water to be reused around the domestic garden.

*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.