Charlie Luxton Design

Sustainability Statement

Sustainable design has been central to all aspects of the submitted proposal.
The proposed extension, the retro-fit of the cottage and the conversion of the garage into a home office and bin and bike store have all been designed to standards of low energy demand, reducing the operational energy of the cottage and improving thermal comfort.

The key sustainable design moves of the projects correlate with the sustainability standards checklist. They are as follows:-

- Replacing single and double glazed windows with thermally improved double glazing to reduce heat loss.
- Reducing heat loss will also be achieved through low u-values which surpasses Part L of the building regulations.
- Overheating mitigation measures have been designed into the proposal through a concealed retractable awning on the south facing glazing of the extension.
- Minimising waste in construction has been considered through careful design to sheet material dimensions.
- Using natural materials where possible; local stone and timber cladding are our primary building materials, both are low in embodied CO_2.
- A whole building approach has been take to sensitively retro-fit the cottage for improved thermal comfort and reduced energy demands.
- Underfloor heating, internal insulation, improved glazing, an air source heat pump and solar PV are all proposed to reduce energy demand and provide efficient renewable energy and heating sources.
- Safe and convenient access to waste and recyclable storage has been considered with the proposed bin store.
- Home working has been supported through the conversation of the garage into a home office to reduce travel demands.
- Active travel has been prioritised with a bike store.
- Electric vehicle provision has been proposed in the car port with renewable energy supplied from the proposed Solar PV.

Care and attention will be taken in the detailing phase of the project to ensure the proposal is an example of low operational and low embodied energy design.

<u>Energy Performance Statement</u>
Working in collaboration with a certified energy consultant the thermal upgrade of the cottage and proposed extensions has been thermally modelled and proven to pass the following energy performance requirements.

	Proposed		**Notional**		
DPER	**260.86**	kWh/m2/yr	**276.73**	kWh/m2/yr	**PASS**
DER	**36.3**	KgCO2/yr/m2	**38.84**	KgCO2/yr/m2	**PASS**
DFEE	**96.01**	kWh/m2/yr	**105.77**	kWh/m2/yr	**PASS**

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