

Willow Tree Cottage - Environmental Impact

In addition to its accessibility we have also built Willow Tree Cottage to be as kind to the environment as possible.

The foundations are piled so that the adjacent trees can be preserved and the use of concrete kept to an absolute minimum. The timber frame and cladding were provided by a local manufacturer, from sustainable sources, and minimise embodied energy.

The shallow roof design provides the maximum internal area while minimising heat loss through the walls and roof. Windows to the north and east have been kept as small as possible consistent with emergency exit requirements. Large double doors and windows in the sitting room maximise solar gain from the south. All glazing is argon filled with low e glass. Sun pipes have been used for the bathrooms and corridor to provide additional natural lighting with minimum heat loss. Latest technology high reflectance paint was used on the ceilings to make the most of the low energy lighting that has been used throughout; with A rated appliances used in the kitchen.

Very high levels of insulation have been installed, far in excess of building regulations requirements. The materials used include recycled plastic bottles in the roof space and formaldehyde free wool in the walls. CFC free foam has been used under the floor where space is restricted.

Attention to detail during construction resulted in an air leakage of 1.4, which is very close to the best European PassivHaus standards and far below the Building Regulations requirement of 10. Construction waste was minimised and recycled with only one skip required for the whole project.

Solar panels are used to pre heat the hot water, with no extra heating required on sunny days. An exhaust air heat pump extracts the heat from the ventilation air taken from the kitchen and bathrooms and uses it to provide further heat to the hot water (when required), and for the radiators; which are oversized to operate at the lowest possible temperature. This helps to heat pump to work as efficiently as possible and also minimises any risk of burns.

All the water comes from our own borehole and after treatment is returned to the ground via soak-aways.

Please help us to keep the environmental impact low by efficient use of the dishwasher, setting the washing machine to run at night and avoiding use of the tumble dryer unless absolutely necessary.

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