

# Tiddybrook House

Brook Lane, Tavistock, PL19 9DP



GROUND SOURCE HEAT PUMP (RIVER BASED), INSULATION, HEAT MANAGEMENT

Jeremy Davies has taken a hands on approach to developing Tiddybrook House into an energy efficient home, combining an old barn restoration with an architect designed new build.

The project has taken four years to complete from start to finish.

Work has included a high level of insulation and maximization of solar gain and natural daylighting.

Space heating is provided by a ground source heat pump utilising the river.



## Energy conservation and reduction

### Insulation

Jeremy has invested in insulation throughout to reduce the heat load of the property.

There is argon filled double glazing throughout. The building is externally clad with 90mm insulation and the roof and sub-floor also enjoy 90mm insulating material.

**Ventilation and heat recovery** is achieved through convection via the central rooflight.

### Solar Gain

Large glazed areas downstairs and via a roof panel in the barn area provide for solar gain and maximize natural daylight.

### Heating and hot water control management

This is computer controlled in conjunction with the room thermostats and an exterior temperature monitor.

### Lighting and appliances

Low energy lighting has been installed throughout and efficient household appliances have been installed



## Energy generation

### Ground source heat pump

The property has a floor area of 250 m<sup>2</sup> with an estimated maximum demand of 15kw.

An 11kw open loop ground source heat pump has been installed utilising the river

Requires 1.25l per second throughput of water

GSHP was supplied by IVR Swiden – Ice Energy

### Costs and benefits

Heat pump installation:

Heat pump     £6200

Electrician    £1700

Plumber       £1500

Less government grant of £1200

Total cost £8200

Compared to oil or gas an estimated 50% reduction in heating costs.

Estimated annual savings between £500-1000

Pay back time estimated at about 6 years.

## Advice was sought from:

- Architect and architectural technician
- Heat pump supplier
- Pilkingtons (glass supplier)

## Additional information

See 'How a heat pump works' and pictures showing insulation detailing at [www.transition.tavistock.org.uk](http://www.transition.tavistock.org.uk)

## Contact details

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