

House type: period terraced tenement cottage, ca. 1790's; comprises 4 floors, with the lower 3 floors are built into the hillside; only windows at the back on the top floor; front walls of thick stone.

Rather cave-like: cool in summer, mild in winter.

Heating: originally a gas boiler which also heated the hot water

25 years ago very little in the way of energy reduction measures had been taken, only a little loft insulation.



Secondary glazed front window.



Chimney sheep: blocks unused chimneys.

Since then we have taken the following measures in roughly the following order:

1. **secondary glazing** on the large ground floor windows (not original, so easy retrofit);
2. **solar thermal** and **photovoltaic panels** (only room for 9) installed, the latter was part of the Climate Friendly BoA 'bulk buy' scheme;
3. **loft insulation** added after an **energy survey** which assured us no damp problem
4. **secondary glazing** in the old sash windows at the front ;
5. '**chimney sheep**' in the large open chimney;
6. **going gas-free:** the gas boiler needed changing as parts were no longer available. Difficult to install a condensing boiler or air source heat pump, so decided on **electric radiators**. *These work well in our house though might not be suitable everywhere.* Water heated by electric immersion heater, fueled largely by solar thermal. Gas stove replaced with **electric induction**. Now totally gas-free so no connection fee.