



HOMEBUILDING & RENOVATING

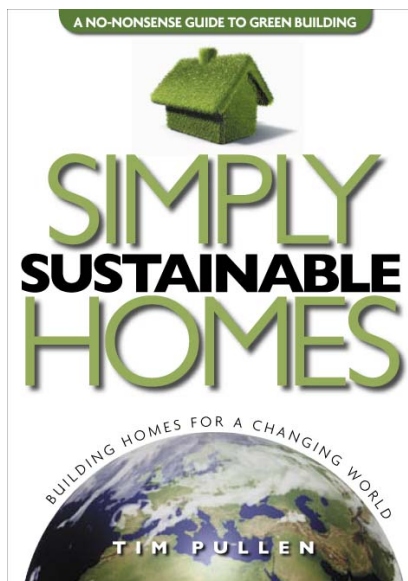
The UK's no 1 Selling Self-Build & Renovation Magazine



Heat Your Home for

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Sustainable Building Consultant



Cost of Heating Your Home

Space heating for a 200m² house

Built to current Building Regs Part L standard

50kWh /m² = 10,000 kWh p.a

Using oil-fired boiler = £650 p.a. (with 85% efficiency)

Predicted annual price rises of 12%

Cost of heating the same house in 5 years = £1,300 p.a.



Government predicts £2,000 p.a. fuel bill for average (120m²) house in 10 years

Passivhaus cost analysis

Passivhaus = $<15\text{kWh}/\text{m}^2 = 3,000\text{kWh p.a.}$

Using heat pump = £95 p.a.

12% year-on-year price rise = £170 p.a. in 5 years

Cost of heating Part L house = £1,300 p.a. in 5 years

**How much energy will you want to buy in
10 years time?**

Insulation is King

Current Building Regs:

- Loft - 270mm quilt
- Walls - 70mm cavity batts
- Floor - 100mm EPS



Passivhaus Insulation:

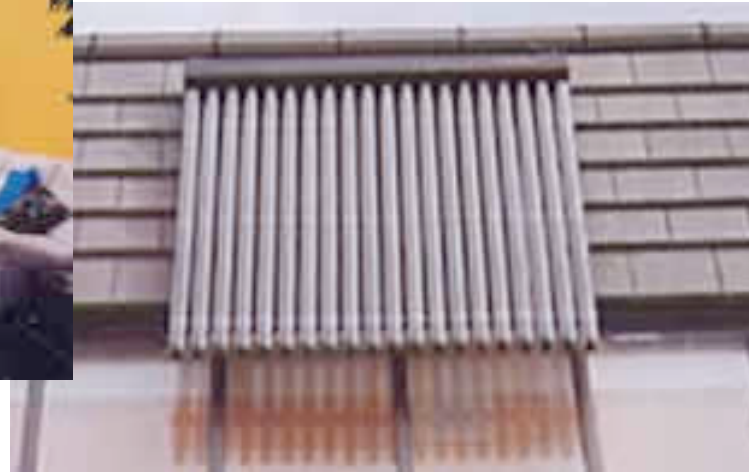
- Loft - 450mm quilt
- Walls - 450mm quilt
- Floor - 200mm EPS

**Extra cost of insulation likely to be
less than £2,500**

The Solar House



Mike Grigg's Solar House – Cornwall



Passive Solar

Solar Thermal

Solar PV

Annual Running Cost = £50 p.a.

Solar House Examples



Solar House - Oxford

Solar House - Dublin



Passivhaus Example



Achievable by
everyone

And it doesn't need
a big budget



Energy Demand

- Insulate to near Passivhaus standard – space heating = 4,000kWh p.a.
- Hot water for 4 people = 3,000kWh p.a.

Heat pump at COP 4 = 1,000kWh p.a.

Solar panels for hot water = 1,000kWh p.a.

Need to generate 2,000kWh per year.

Generating Electricity

Solar PV – need 2.5kWp

Produce 2,000 kWh p.a.

Cost £12,000

FiT payment = £722



Kestrel 1kW wind turbine

Produce 2,200 kWh at 5m/s

Cost C.£5,000

Fit payment = £759

Biomass

A wood-burning stove with HRV will heat the home.

Cost = £75 to £100 p.a.



2 Million tonnes of wood goes to landfill each year

HEATING YOUR HOME FOR FREE?

Its an achievable target

The Solar House has been done

NEEDS INSULATION & MORE INSULATION

Thoughtful design

FEED-IN TARIFF CAN GENERATE PROFIT

Needs the right technology

More Information

The Association of Environment Conscious Building –
www.aecb.net

The Energy Saving Trust –
www.energysavingtrust.org.uk

**Simply Sustainable
Homes** - Tim Pullen, Ovolo Books,

