



Futureproofing your home

understanding the role of insulation and renewable energy in domestic properties

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Understand the Energy Hierarchy



1

USE LESS

- Turn it off!
- Turn down your thermostat
- Don't use standby

2

BE EFFICIENT

- Understand your consumption
- Insulate

3

GO LOW CARBON

- Renewable technologies

Educate yourself

- When do you use energy at home?
- Which appliances are energy hungry?
- Which ones take a small but constant draw?



Smart meters

- Usually free – ask your supplier if they are installing
- Still some issues with Economy7 meters
- **Use your in-home display**

Smart Thermostats

- Track your heating – Nest, Hive & others



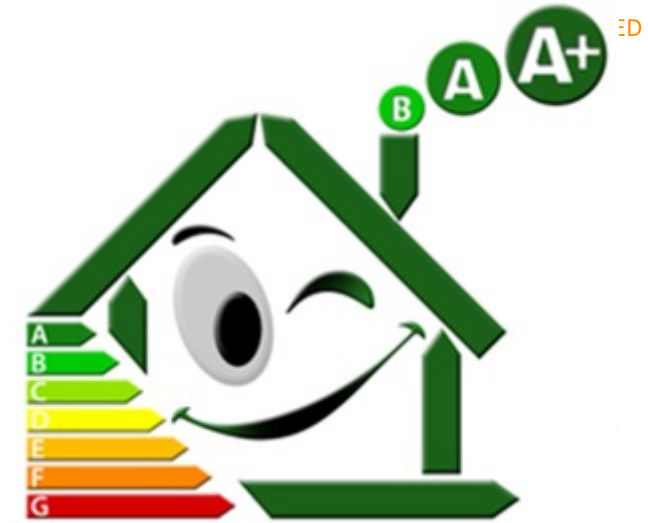
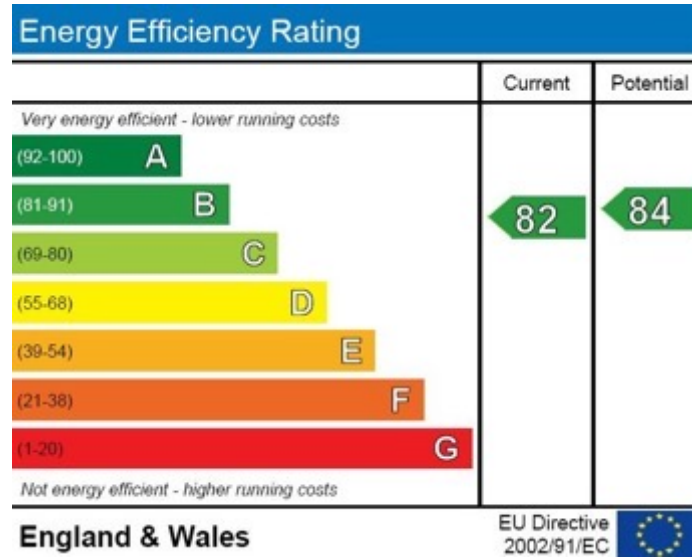
Thermal imaging

- Where does your home leak heat?
- Some community energy groups have thermal cameras and will do surveys



Understand your home's ENERGY PERFORMANCE

Do you have an EPC? www.gov.uk/find-energy-certificate

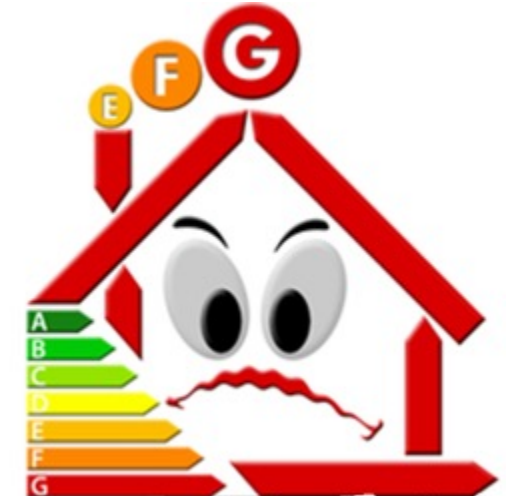


An EPC is **INDICATIVE** – use it as a guide

Need an EPC to sell a property; if privately renting, needs to be \geq **EPC E**

A Domestic Energy Assessor will produce one for you; cost about £50-60

www.gov.uk/get-new-energy-certificate

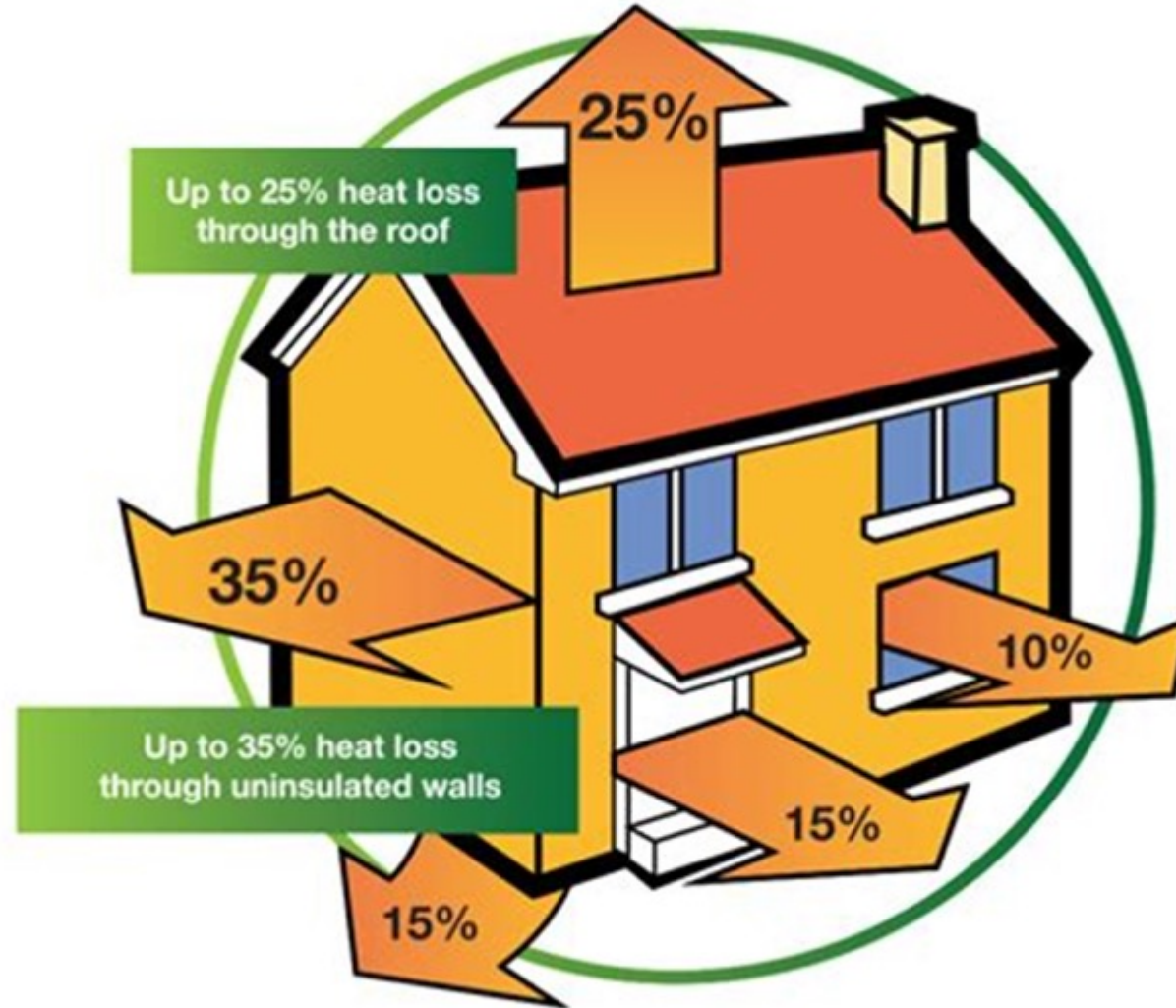


- Insulate

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Take a FABRIC FIRST approach

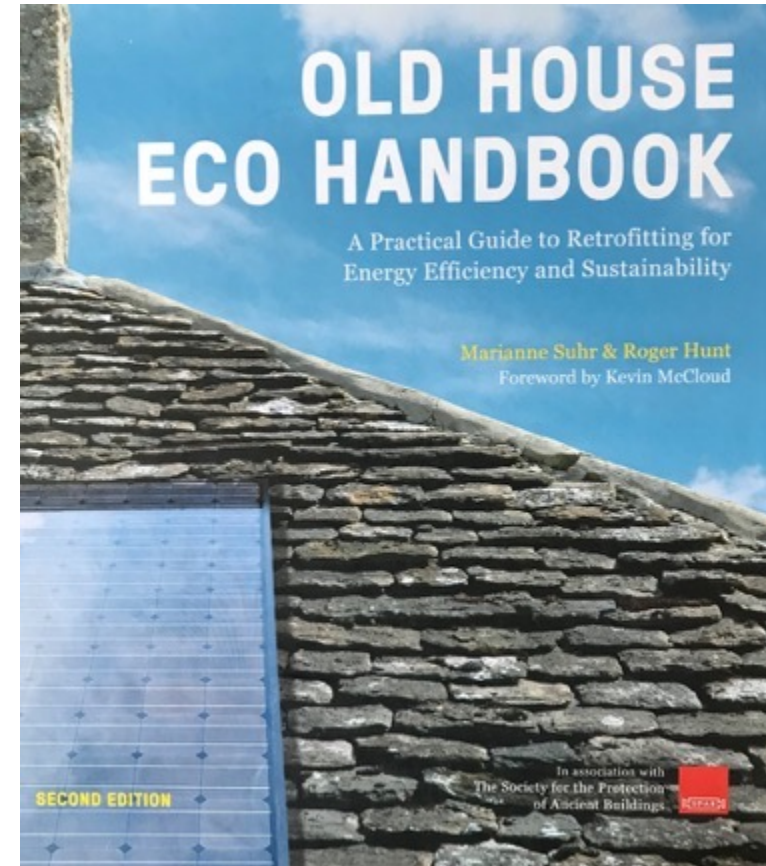
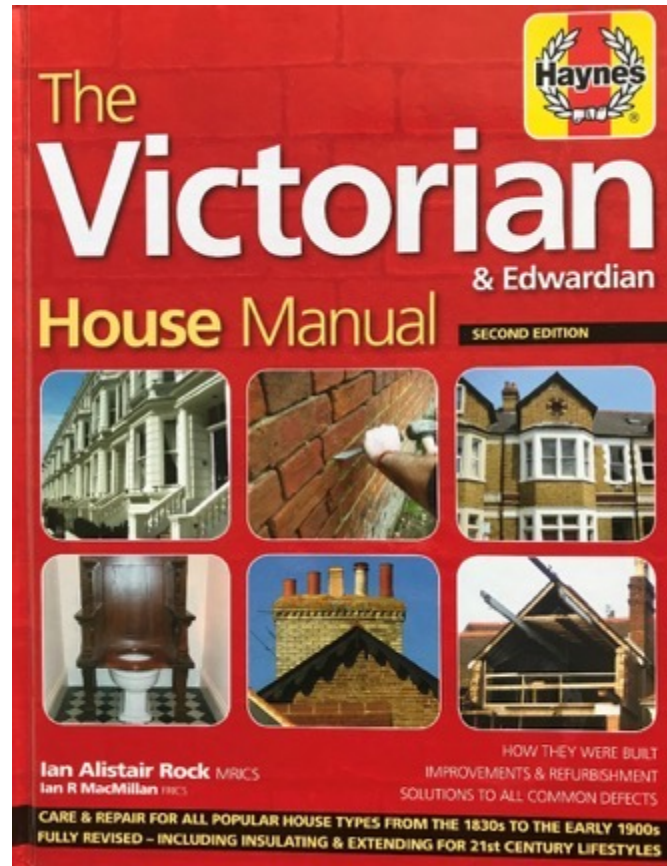


- **Loft spaces**
 - Mineral wool rolls
 - Recommend 270mm deep
 - will be above roof joists
 - don't compact
- **Windows, doors**
 - Draught proofing
 - Double/Triple Glazing
 - Older UPVc DG does deteriorate
- **Walls**
 - Cavity walls
 - Be careful if prevailing rain is an issue
 - damp
 - Solid Walls
 - External or internal insulation
- **Floors**
 - Suspended
 - Sheet or fibre roll insulation
- **Solid floors – flat roof – room-in-roof**



If your property is more than 100 years old, built before 1925, take care and get specialist advice

Note:
for both,
go for the
2nd Edition



Society for the Protection of Ancient Buildings: www.spab.org.uk
Heritage House: www.heritage-house.org

Decarbonising heat

Lots of change in the next 10 years:

- Heat Pumps
- Green Gas
- Biofuels
- HVO to replace Heating Oil
- Hydrogen

What about gas boilers?

What about wood burners?



Heat Pumps

Ground source (GSHP)

- Bore hole or 'slinky' pipework
- Expensive (>£25k) but efficient all year round
- Need heat load calculations to size correctly

Air source (ASHP)

- **Air to Water**
- Cheaper than GSHP (£12-15k typically)
- Has to work harder than GSHPs in colder months

- **Air to Air** (similar to air conditioning units)
- Cheaper – from £3-5k
- Can be used to provide cooling and dehumidifier
- Don't usually qualify for grants

Conventional 'wet system' heat pumps distribute at a lower temp than gas boilers – hence radiators usually need to be larger, and suits underfloor heating

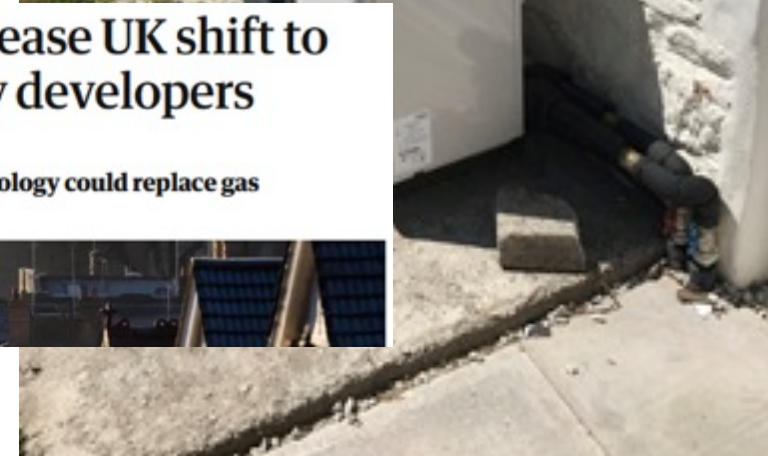
Hybrid & High Temperature heat pumps

www.energysavingtrust.org.uk/advice/hybrid-heat-pumps



New heat pump could ease UK shift to low-carbon homes, say developers

Swedish and Dutch firms claim their technology could replace gas and oil boilers without added insulation





Storing energy

Electricity or Heat or both?



Electric Batteries

Still emerging for domestic properties – still relatively expensive: Depending on kW capacity: (approx.)
Tesla £5,500, Sonnen £4,500, Powervault £2,400, plus fitting

- Attractive to pair with Solar PV – consumption?
- Can be charged from the grid – night time/off peak tariffs
- Promise of **time of use** tariffs to come
 - watch what **Octopus** are doing
- Vehicle to Grid – using the EV parked outside, as battery storage

Heat storage

Electric storage heaters

- High heat retention heaters – Dimplex Quantum
- Still a role for Economy 7 tariff

Thermal stores

- Again, **time of use tariffs** will encourage growth of tech
- Look for Phase Change Materials technology
- For example: Sunamp

Diverterers

For solar PV with hot water storage

Divert electricity to hot water tanks – immersion diverter

- Immersum, iBoost, eddi

Check out: www.energysavingtrust.org.uk/advice/storing-energy

Help to change – grants and finance

Domestic Renewable Heat Incentive ends 31st March

- **Boiler Upgrade Grant**
(initially called Clean Heat Grant)
- £5,000 contribution to install a ASHP or GSHP
- Likely available from April '22
 - Talk to your MCS accredited installer
- **Home Upgrade Grant (HUGs)** round 1
 - Cornwall Council programme
 - Off-gas, low income homes
 - Jan 22 - Mar 23
- Green Homes Grant Local Authority Delivery (LADS2)
 - Support via Happy Energy
 - www.heatcornwall.com

Constantly changing – get advice before acting



SUSTAINABLE HOMES ADVICE SERVICE

Advice and support for
homeowners in Cornwall
looking to make the transition
to low carbon energy



To find out more,
contact our specialist
renewables team

 Freephone 0800 954 1956

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 www.cep.org.uk

