

Traditionally Built Homes: Handy Guide to Energy Saving

Introduction

South West Devon has a significant proportion of older homes, many of which are off mains gas and are damp, cold and expensive to heat. This Guide outlines the measures householders in such homes can take to improve their comfort and save money. It also highlights those measures where, due to the nature of old building construction, care is needed if problems of damp are not to be made worse.

Do I live in a traditionally built house?

This Guide uses the word “traditional” to describe solid-walled, lime mortar construction which typically doesn’t include a damp course. Generally, most houses built before the end of the First World War are of this type and are typically found in the old centres of towns and villages as well as more isolated locations. They were built using local materials, mostly rough stone held together with a lime based mortar and built straight onto the ground. Homes built with solid brick walls up to the 1940s have similar characteristics. The key feature of such buildings is that they were “breathable”, meaning that moisture could permeate in and out of the structure without causing problems.

What is the problem now?

If you look up at the roofs of houses that line the oldest parts of our towns and villages you will see a multitude of chimneys. Traditional houses were heated with an open hearth in every room. With the arrival of the railway came relatively cheap coal, enabling this form of heating to be used, despite its inefficiency. But it also meant a high throughput of air – coming in through gaps around doors and windows and then out, after being heated, along with smoke from the fires. But this high volume of air flow had the benefit of carrying away moisture from inside. Permeable internal wall finishes (plaster, paint and wallpaper) released moisture from within the walls, the house would be dry and the walls would remain structurally sound.

Central heating became popular in the mid 20th Century, which removed the everyday burden of carrying coal to fireplaces. Gas, electricity and oil central heating systems, with radiators in every room, raised expectations of warm houses. Through most of the 20th Century these fuels were relatively inexpensive. Unfortunately, as fuel prices eventually started to rise, inappropriate insulation measures were applied to many older houses which inhibited their ability to “breathe”. This exasperated any underlying problems of damp, leaving a legacy of hard-to-heat and hard-to-treat homes.

Solutions

Most of the basic measures outlined below could be undertaken by a competent homeowner or local tradesman, and most also apply to modern houses. We have indicated (in italics) **Caution:** *where more thought is required to preserve the need for traditional buildings to breathe.*

Measures

Basic maintenance: Fix problems before they make things worse, especially keep on top of repairs to the roof, gutters, downpipes, doors and windows. **Caution:** *Repair is preferable to replacement – for example permission may be needed to replace a window, but not to repair it, if your house is listed on in a conservation area.*

Lag: Hot water pipes and check your hot water tank is insulated

Loft insulation: Top up to about 270mm (10") **Caution:** *Make sure roof vents are not blocked – it is important to allow ventilation of the roof space. Do not cover electric cables with insulation – they may overheat. Halogen down lights can also get very hot and should not be covered. Whilst in the loft consider switching to LED down lights. Don’t compress the insulation as this stops it working effectively – fit racks to keep your “stuff” off the insulation!*

Lighting: Switch to low energy lamps (first those that are on most, such as kitchen and hallway, and progressively those used less such as bedrooms). Switch off when not required.

Appliances: Fridge, TV, washing machine, dryer, etc, etc). When they need replacing, buy the most energy efficient models. And remember "**Negawatts**" switch off when not in use - standby is wasteful.

Boiler Upgrades: If you have an oil or gas boiler more than 10 years old, a modern boiler will probably give you 10 – 20% savings on heating and hot water costs. **Caution:** *If your house is listed you may need permission to radically update your heating system. A boiler-only replacement should be straight forward.*

Draught Busting: Use draught proof around windows, under doors, and through letter boxes.

Caution: *Some care is needed not to overdo this, particularly in older homes that need to breathe to remove moisture and prevent damp walls. As a rule of thumb, if you can feel a cold draught round your legs when sitting in your favourite chair you need to take action, but if you can just feel a gentle waft of air near a window that should be OK. Do not block trickle vents or air bricks into old chimneys. Any kind of boiler or wood stove requires air, as specified by building regulations, so do not block up vents designed for this purpose. Always have a carbon monoxide alarm installed.*

DIY Secondary glazing: Caution: *As with draught busting, it is important not to overdo this – make sure you can still open some windows for a few minutes a day to let some fresh air in (and stale, damp air out).*

Behaviour changes: Make good use of boiler controls and thermostats Only heat rooms when they are used and at the lowest temperature that is comfortable when wearing suitable clothing.

Larger Scale Alterations

More ambitious energy saving measures involving major alterations to the fabric of the building and will require professional installation.

- Advanced roof insulation – “warm roof”, flat roof and Mansard roof insulation techniques
- Double and Secondary glazing – professional
- Floor insulation and under floor heating
- Wall insulation - internal or external

For Traditional Homes **English Heritage** publications (available free on line) provide comprehensive technical advice on such measures with detailed guidance on each type of construction.

See **Traditional Homes Energy Efficiency: Information Sources** for a detailed listing of these and other reference sources, on the next page.

Local Authority Permits

For most traditional houses you will need to check whether Planning Permission is required, particularly in a conservation area or area of historic interest.

Listed homes will require ‘Listed Building Consents’ from Local Authority Conservation Officers.

Guidance on alteration permit requirements and procedures are available on:

- UK Government Planning Portal: www.planningportal.gov.uk
- Local Planning Authority websites
 - West Devon Borough Council: www.westdevon.gov.uk
 - Dartmoor National Park Authority: www.dartmoor-npa.gov.uk

It is advisable to contact the local authority officers when first considering alterations to obtain their guidance on what aspects of the work will require permits.

Building Control: Some works will require approval by the local Building Control Officer that they meet current Building Regulations. The Devon Building Control Partnership covers; West Devon, South Hams, Teignbridge & Dartmoor National Park. It is based in Teignbridge offices in Newton Abbott

www.teignbridge.gov.uk/dbcp/buildingcontrol

Building Regulations, Approved Document Part L: ‘Conservation of Fuel & Power’ can be downloaded from: www.planningportal.gov.uk/buildingregulations/approveddocuments/downloads

Traditional Homes Energy Efficiency: Information Sources

English Heritage is the Government's statutory adviser on the historic environment and its conservation department promotes standards and provides specialist technical services.

Simple Measures: 'How to save energy in older homes' (Assess Your Home & Quick Fixes) see: www.english-heritage.org.uk/your-home/saving-energy/older-houses/

Larger Scale Alterations: download booklets from: www.english-heritage.org.uk/your-home/saving-energy/guidance

Main reference:

Energy Efficiency and Historic Buildings David Pickles, Ian Brocklebank and Chris Wood
Application of Part L of the Building Regulations to historic and traditionally constructed buildings published by English Heritage 2011
Product Code: PC 51693 Pages: pp 63

More detailed supporting information: comprehensive technical advice and guidance on each type of construction

Roofs

- Insulating pitched roofs at rafter level/warm roofs PC 51590 pp 29
- Insulating pitched roofs at ceiling level/cold roofs PC 51590 pp 27
- Insulating flat roofs PC 51588 pp 28
- Insulating thatched roofs PC 51587 pp 19
- Open fires, chimneys and flues PC 51586 pp 22
- Insulating dormer windows PC 51583 pp 17

Walls

- Insulating timber frames walls PC 51584 pp 24
- Insulating solid walls PC 51585 pp 25
- Early cavity walls PC 51678 pp 23

Windows and Doors

- Draught-proofing windows and doors PC 51680 pp 22
- Secondary glazing PC 51679 pp 24

Floors

- Insulation of suspended ground floors PC 51582 pp 21
- Insulating solid ground floors PC 51581 pp 19

Other Reference Sources:

Comprehensive detailed information on simple measures

- Energy Savings Trust
- Centre for Sustainable Energy

www.energysavingtrust.org.uk/
www.cse.org.uk/

Dartmoor National Park Design Guide

Dartmoor National Park Authority
2011 www.dartmoor-npa.gov.uk download or
ISBN: 978-0-9059-8168-1 (hardback) pp 104

Old House Eco Handbook - a practical guide to retrofitting for energy efficiency and sustainability

Marianne Suhr & Roger Hunt published by The Society for the Protection of Ancient Buildings 2013
ISBN: 978-0-7112-3278-5 (hardback) pp 191

Sustainable Home Refurbishment - expert guide to retrofitting homes for efficiency

David Thorpe published by Earthscan 2010
ISBN: 978-1-84407-876-9 (hardback) pp 172

Period Property Manual

Ian Rock, published by Haynes Books 2012
ISBN 978-0-8573-3071-0 (hardback) pp 242

Home Insulation Manual

Ian Rock, published by Haynes Books 2013
ISBN 978-0-8573-3275-2 (hardback) pp 140