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Cutting our Carbon Footprint - Retrofitting our Houses to Use Less Energy

With energy prices souring and our weather becoming more extreme, we all need to cut our energy use. The previous article in this series described how we can change some of our habits in our homes to save energy: now we are going to look at how we can change our houses to help us use less.

Insulating our homes is perhaps more important than you imagine; 40% of the heat in a home can be lost through doors, windows and floor and 25% through the roof. Draught proofing be relatively cheap, costing around £225 but saving £45 or 610kwh of gas per year. DIY draught proofing can be even cheaper, but do make sure the air still flows where it is meant to through extractor fans, airbricks or trickle vents to make sure your house doesn't get damp. For bigger jobs, contractors can use hydrothermal modelling through a WUFI software system to make sure any work carried out will give beneficial results and not lead to problems. Back To Earth advocate natural insulation materials for their vapour permeable and hydroscopic properties, helping moisture to escape. Natural materials will also store carbon in your home, a form of carbon capture. Energy companies have an Energy Company Obligation target (ECO) and can help you with money for cavity wall or loft insulation.

Windows: Double or triple glazing helps save heat loss through your glass, however, draft proofing fills the gaps around the edges where air can escape. You can apply self adhesive foam or metal and plastic brush strips yourself.

Doors; a metal disk over your keyhole, a quality letterbox, draught excluder under the door or similar strips to windows for

around the edges, will all improve insulation of external doors. Insulating internal doors will enable you to only heat rooms you are using.

Floor; You can fill gaps in floorboards with a flexible filler that can tolerate movement, or you can look into adding insulation underneath if you have a cavity beneath the floor, which can save you about £75 or 1017kwh of gas per year. If you cannot take up your floorboards, rugs and carpets will do a good job of insulating too!

Roof; Loft insulation is the easiest and cheapest way of reducing the loss of heat through your roof. Since 2003 at least 270mm thickness is recommended, but use this as a starting point rather than a finishing line to see larger savings.

Chimney; Draught proofing your chimney can save around £65 or 882kwh of gas per year! A profession is needed to fit a cap on your chimney, but chimney draught excluders can be bought to fit around them when they are not in use.

Walls; Cavity wall insulation is the most common, however you can also insulate solid walls with internal or external insulation.

Heating water another high use of energy, and some home modifications can save here too! An aerator tap reduces the amount of hot water that flows from your kitchen tap, and simply attach to the spout - a cheap and easy way to save you £25 per year. Low flow shower heads can be fitted too. If you have a hot water tank make sure it's insulated in a 80mm thick jacket; compared to a loose 25mm jacket this could save you £35/year, and costs only £17! Pipe insulation consists of a foam tube to cover exposed pipes, costing around £1.75/ meter. You can even get radiator reflector panels to fit behind your radiator to reflect the heat back into the room, rather than it being lost through the external wall.

Lighting is another big area where we can save on money and carbon! Compact fluorescent lamps (CFLs) were the first energy efficient bulbs on the market, but have a delay as they warm up. LED's save more electricity than CFL's, plus LEDs come on instantly. A clear white light can be very bright, however if you'd like a cosy feel at home, then "dim to warm" lights are great. They produce a bright light undimmed but as you dim they create an amber glow. This change may involve new light switches suitable for dimming LEDs. Adding motion sensors to any external lights is another good way to save electric, but also protects the breeding cycles and feeding patterns of nighttime insects, which is also highly important as we are also currently seeing a worrying crash in their numbers.

If a household appliance breaks it is still saves more carbon to fix it, however if you do need to replace it, choose the most energy efficient model; any added initial outlay will be recouped in time, especially in the case of fridges and freezers which are on constantly.

These are all relatively inexpensive and quick ways to retrofit your home. The next article will give an overview of home power generation; one of the more expensive retrofits for your house, but also some of the grants that are available to help. Average energy prices were sourced from www.britishgas.co.uk and based on July 2022 prices, and many of the facts and figures for this article were sourced from www.energysavingtrust.org.uk where you can find more detailed advice.