

## Improving and decorating your home

## ▶ Heating systems



**Heating our homes**, including the heating of hot water, accounts for the vast majority of energy that is used domestically and **wastes a great deal of energy**. Many of us have outdated, oversized and inefficient systems. If you are considering replacing your heating system there are a number of crucial issues that you should consider.

- ▶ First of all make sure you have insulated your home – especially your loft and any cavity walls – before putting in a new heating system. A well insulated home will need a smaller heating system. Why spend more money than you need on fuel bills?
- ▶ Our heating appliances are not the only sources of heat within our homes. Other sources of heat are lights, cookers, refrigerators, hot water and appliances. If your home is well insulated all this heat can be conserved and these additional sources then begin to provide a larger contribution to heating your home.

- ▶ Boilers that are over 12 years old are likely to be losing 35p of every £1 spent on fuel, leaving less than two thirds in useful heat. It may be more economic to replace your old boiler.

### Water heating systems: your options

There are two types of water heating system: **instant water heating system** and **storage water heating system**. The best heating system for your home will depend on the characteristics of the building and your lifestyle. Think about the size of the building, the number of people using the system, how frequently the system is used, and how uneven the usage is.

### Instantaneous water systems

Instant systems heat the water as it passes through producing hot water on demand. The heating is switched on or ignited when water begins to flow through the unit. These systems are usually powered through a combination or combi-boiler. There is no need for a storage cylinder and only the water that is required is heated. They will be most efficient if:

- ▶ The house is small
- ▶ The number of people using the system is small
- ▶ The system is used unevenly
- ▶ There is little requirement for multiple use i.e. when 2 or 3 people want to use hot water at the same time
- ▶ There is no space for a water tank

## ▶ CORGI

**All gas heating systems should be installed by a CORGI (Council for Registered Gas Installers) registered professional installer or inspected by a Council Building Control officer.**

**CORGI is an independent body appointed by the Health and Safety Executive to register gas installer businesses and maintain safety standards throughout the industry. It keeps a database listing all registered gas installers on mainland Britain and Northern Ireland.**



Tel: 01256 708133

Web: [www.corgi-group.com](http://www.corgi-group.com)

### Community heating schemes

**Woking Borough Council is a pioneer in using CHP and Community Heating. For information about CHP possibilities, contact the Energy Conservation and Solar Centre (ECSC).**



**Energy Conservation and Solar Centre (ECSC)**

Tel: 020 7922 0267

Email: [info@ecsc.org.uk](mailto:info@ecsc.org.uk)

Web: [www.ecsc.org.uk](http://www.ecsc.org.uk)

## Heating |

### Condensing boilers

By typically converting 88% of fuel into heat compared to 72% for a new conventional boiler, the **condensing boiler is the most efficient** variety, wasting the least energy. Condensing boilers can be wall-mounted or floor standing. Building regulations apply to both boilers and flues.

Condensing boilers are established products, and can be fitted to most new and old heating systems. They are easy to install and can be bought for oil and gas-fuelled homes. Condensing boilers are normally no bigger than conventional boilers.

Spend a bit more on an efficient boiler, such as a condensing boiler as you will recoup your money with lower fuel bills.



The table shows the effect of variation in boiler efficiency on annual running costs for typical domestic properties in the UK with central heating and a gas boiler, although there will be wide variations in individual cases due to climate, exposure, occupancy patterns, heating controls and insulation.

## Improving and decorating your home

### Stored water systems

Stored water systems depend on keeping water hot in a tank or cylinder. They allow multiple usage at the same time and can be used for heat recovery technology. They will be most efficient if:

- ▣ Your house is large or many people use the hot water system
- ▣ You have an efficient boiler that can also be used to heat a storage cylinder
- ▣ There are plans to install a solar panel or a heat recovery system with a heat pump

### Boilers

Condensing boilers are more efficient than the conventional type, and are available in standard and combi models. Better efficiency means that your heating bills will be reduced. From April 2005, Part L of the building regulations requires all new and replacement gas boilers to be condensing, if this is “appropriate for your property”. The vast majority of homes are suitable for a condensing boiler.

All gas boilers must be installed by a CORGI registered installer who will advise you on suitable options (see page 25).

Boilers traditionally fall into the ‘If it ain’t broke don’t fix it’ category. But this leaves you open to problems – particularly if the boiler then fails in winter or at a busy time such as the Christmas holidays. If your existing boiler is 15 years old or more or needs major repair then it may be best to replace it altogether to avoid waste and expensive emergency call outs. Similarly, if you are refitting the kitchen or bathroom why not minimise cost and disruption by fitting a new boiler? Today’s boilers not only look better than their predecessors, but they use less fuel to produce the same amount of heat. Don’t forget, replacing your old boiler with a new condensing boiler with appropriate heat output for your property size will save you around a third on your heating bills straight away, and up to 40% if you upgrade to modern controls.

### Typical annual fuel costs

	Seasonal efficiency	Flat	Bungalow	Terraced	Semi-detached	Detached
Old boiler heavy weight	55%	£247	£324	£337	£381	£541
Old boiler light weight	65%	£209	£274	£285	£323	£458
New boiler non-condensing	75%	£181	£237	£247	£260	£397
New boiler condensing	88%	£155	£202	£211	£329	£338

Source: [www.energy-efficiency.gov.uk](http://www.energy-efficiency.gov.uk)

### Monetary savings from heating and hot water systems\*

Heating controls	Savings of £80-£90 per year
Most efficient boilers	Savings of £100-£120 per year

\*Annual savings for a 2-bed, semi-detached house

Source: Energy Saving Trust

## Improving and decorating your home

## | Heating

There are three main types of modern boilers using gas, LPG (Liquefied Petroleum Gas) or oil.

### Boiler ratings

As with other appliances, boilers are given an average seasonal efficiency rating from A to G, which tells you how efficiently your boiler performs over the year. Before choosing a boiler, check its average seasonal efficiency – this information will be included in the manual.

There is a special rating scheme, called SEDBUK (Seasonal Efficiency of Domestic Boilers in the UK). Be sure to look for boilers that are Energy Efficiency Recommended and to compare the efficiency of different boilers (old and new) via the SEDBUK Boiler Efficiency Database ([www.sedbuk.com](http://www.sedbuk.com)). You can also ask your Energy Efficiency Installer for advice.

The best available A rated boilers have over 90% efficiency. New building regulations that came into force in England and Wales in 2002 means that as a result all new gas boilers are likely to have to be at least 78% efficient.

Whether you upgrade your heating system or not, remember that **regular annual servicing** will prolong the useful and efficient life of your boiler and can prevent any disasters.

### Making efficient use of heat and hot water systems

▶ Install **heating controls** that allow you to control the temperature in different parts of your home. These could include an electronic

timer control for the boiler, room thermostats for your main living area and thermostatic valves on all your radiators.

- ▶ You can cut heat loss from your hot water **tank** by up to 75% by fitting a thick **insulating jacket**. If the existing jacket that is less than 75mm thick, you will save money by adding another one or by replacing it with a thicker one.
- ▶ **Insulate** your hot water **pipes** wherever you can, especially those between the boiler and the hot water cylinder.
- ▶ **Reduce the temperature** at which the hot water is stored by using a water tank thermostat and setting at the lowest temperature that will give you the hot water that you need. 60°C is ideal for a household.
- ▶ Save on the actual amount of water used by having **spray fittings** on taps and an adjustable showerhead.
- ▶ **Insulate** your **bathroom** to reduce heat loss when bathing.
- ▶ Recycle the waste hot water through a heat pump to extract the heat before it is lost down the drain. For more information about suitable systems, costs and installation considerations, contact the **Water Regulations Advisory Scheme** (WRAS).
  - ✚ **Water Regulations Advisory Scheme (WRAS)**  
Tel: 01495 248454  
Email: [info@wras.co.uk](mailto:info@wras.co.uk)  
Web: [www.wras.co.uk](http://www.wras.co.uk)
- ▶ Turn off your storage heater, hot water and heating systems if you are going away.

### Fuel sources

Not all types of fuel for space and water heating are the same when it comes to carbon dioxide emissions. For example, a unit of energy derived from electricity produces more than double the emissions of the same unit of energy derived from natural gas. This is because, in the process of generating electricity centrally and getting it from the power-station to your home, about two thirds of the energy is wasted. This makes natural gas preferable as a source of space and water heating.

In homes with gas, space heating and hot water for domestic use are usually both provided by the central heating system. However, not all homes are on the gas network, and in homes that use electricity rather than gas, space and hot water heating are often separate: they may use, electric storage heaters on an Economy 7 electricity tariff for space heating and an electric immersion heater for hot water. Good general insulation is even more important where gas is not available, and you may want to consider a wood-fuelled boilers and solar hot water heating.

Community heating and combined heat and power (CHP) **Community heating schemes** are used, in place of small individual boilers for individuals homes: instead, there is one large one to provide heat for a group of houses or blocks of flats. CHP generates electricity locally and uses the waste heat for space and hot water heating. When CHP is combined with a community heating scheme this is one of the most efficient and environmentally friendly ways providing energy.