Home Heating

Space heating accounts for 2/3 of our home energy use. If you want to reduce your energy use this is an area you can't ignore. If you have central heating you will need to set your controls to get heat where you want it, when you want.

What heating controls should I have?
As a minimum you should have
- a programmer (for controlling the times when you want heating)
- a wall thermostat (to set the temperature)
- thermostatic valves on the radiators for per-room control
- a thermostat on the boiler controlling the temperature for the water that goes around the radiators

All homes now being built also have at least two independent heating zones.

What are zones? How many should I have?
Heating zones allow you to set different heating patterns in different parts of the house. Each zone has its own wall thermostat and timer. For example with 2 zones, for bedrooms and living room, you can heat the bedrooms first thing and again before bedtime, while the living rooms warm up later in the morning and earlier in the evening.

Zoned heating can be installed by organising the plumbing with a separate radiator circuit for each zone or electronically using radiator valve actuators which are turned on and off from a controller. To save wiring this can be by wireless control and the actuators can be battery powered though the batteries only last a couple of years.

As for how many you should have, it depends on how big your house is, and what are your usage patterns.

You can also have programmable controls on each radiator, which gives you a zone per room, except that the boiler will still turn on and off dependent on the wall thermostat.

Is it easy to add a timer or a thermostat to my heating system?
Yes if you already have a boiler interlock which allows the timer to turn the boiler off when it isn’t needed. If not you will need to have one fitted.

What is the best place for my radiators?
You want air to be able to circulate in front of your radiators and into the room
- If you have a radiator under a window, make sure there is a shelf above that deflects the warm air away from the window surface. Also do not allow curtains to hang in front of the radiator - you want to heat in front of the curtains not behind them.
- For radiators on an outside wall, especially a solid wall, you should have a reflector panel behind them to minimise heat loss through the wall.
- If the radiators are behind furniture the warm air may not circulate freely.
- Warm air rises but you notice the cold most at ankle level so ideally you want the heat to be delivered low down - you can even get radiators that fit into your skirting board. However, if your house is draught free and has normal ceiling height you should find that any shape, tall or wide, will do.

Where should I put my wall thermostat?
Your thermostat should be in a room which is central in the house, on an internal wall, and away from direct heat sources such as radiators, TVs or computer monitors. It is usual to put thermostats at about head level. If you put them lower then you should set the temperature a little lower than you would have done because the air is usually cooler at lower levels (especially in draughty houses).

At what temperature should I set the boiler thermostat?
The boiler thermostat sets the temperature of the water that circulates through the radiators. This must be warmer than the room temperature you want to achieve and the hotter the radiators the quicker the rooms will heat up. However, condensing boilers are much more efficient at lower temperatures. Condensing boilers are normally balanced to give you a 20C temperature drop from 70C down to 50C. That
means the boiler thermostat is set to 70C and the water returning from the radiators is 50C which is low enough to give good condensation.

If you have a non-condensing boiler, it is normally balanced to run at 80C with a drop of 10C. This is hot enough to avoid condensation, which would cause lots of problems.

If you have a hot water tank it should maintain water at a minimum of 60C to avoid growth of bacteria such as Legionnaires’ disease. Your boiler probably has a separate control for the hot water heating circuit and this needs to run at more than 60C.

How can I warm the house up more quickly?

Adjusting the thermostat won’t help – this is either off or on. You can adjust the boiler thermostat to increase the temperature of the radiators. However this will affect your boiler efficiency. Or you can fit a control with a load compensator.

It takes a long time to warm up this house – won’t I save by leaving the heat on all the time?

For most people it is much better to let the house go cold when you don’t need the warmth. When the house is warm it loses more heat than when it is cold so if it is warmer than it needs to be it is losing more heat too. However, if your heating system takes a long time to heat the house then you might like to use a delayed start system which automatically adjusts the start up time depending on the temperature.

How long should a condensing boiler last?

Boilers should last at least 10-15 years - longer if maintained well. You can get guarantees for 5, 7 or even 10 years from reputable manufacturers.

My condensing boiler keeps freezing up in cold weather

Here is some good advice from Which.

• Install the drain inside if possible, otherwise have as short a length of outside pipe as you can
• The outside piping should be at least 32mm wide and it should be lagged and as steep as possible.
• Get a boiler with a siphon system so the condensate comes out in pulses, rather than dribbling out slowly

What is delayed start/optimum start?

Normally you set the program times for when you want the heating to come on and turn off. With optimum start/delayed start you set the program times for when you want to be warm and the system decides when it needs to turn on. When the house is cold it turns on early but in mild weather it will switch the boiler on later because it doesn’t take very long to warm the house up.

What is a load compensator/ weather compensator?

A load compensator adjusts the radiator temperature to be hotter when the house is cold. The weather compensator does the same depending on the weather (measured using an outside thermometer). This means you can run the radiators cooler when less heating is needed. This is a good thing because condensing boilers are more efficient at lower temperatures.

What is a boiler interlock?

This is the system which allows your thermostat and programmer to tell the boiler when to turn on and off.

What are smart heating controls?

Smart heating controls can mean a lot of different things. For example, load compensation and optimum start are smart controls. Smart controls can also:

• Turn the radiators off when the front door is open or windows are open
• Turn the radiators down 1 or 2 degrees when there is no-one in a room
• Prioritise flow through radiators where there is heat demand and adjust the radiator flow temperature when necessary
• Give you remote control through your smart phone.

European standard (EN 15232) describes the services which can be provided and estimates the savings. For a residential property with full automation these will be around 20% (over standard heating controls).

How can I find a good heating engineer?

Both the Institute of Domestic Heating and Environmental Engineers and the Chartered Institute of Plumbing and Heating Engineering have registers of members you can look up by postcode.

If you have gas central heating then you must use a Gas Safe registered engineer.

For more information go to http://www.transitioncambridge.org/energy and look for the Home Heating FAQ. Last updated 27/09/2012 18:17