



HEATING CONTROL

In Our Experience: what's possible & effective

In 2009 water & central heating accounted for 79% of the energy usage of the average UK home. Recent research says that 50% of this usage is controlled by the thermostat which we fiddle with up to 1500 times per year.

Part L regulations and government initiatives in the architectural design stage currently ignore this second fact: we can fit all the ground source heat pumps, Celotex & energy efficient glass we like but control is more than half the battle when it comes to designing an efficient home.

Here at FFD we have been researching & testing heating control systems that can be designed in during rebuild or retro-fitted and they make a massive, on-going difference to both the homeowner's quality of life and energy expenditure.

Some Fundamentals:

- **Ease of use:** the simplest improvement is to make a thermostat more simple to operate, i.e. when you wish to turn down the heating for the weekend it should be a one-touch operation. Equally, to boost the heat in a room should be a twist of a dial and ideally it will then tell you when you can expect to feel the difference (to avoid over & under-shooting). This ease of use should also allow for remote control when outside the home so that energy is only used to heat the home during the periods when it is needed.
- **Zoning:** for best results heating systems should monitor and react to the temperature in each individual room. During the day rooms in a house are used in different patterns and the main bedroom, for instance, could be allowed to drop by 2 or 3 degrees after 9am, whilst the kitchen may need to stay warm. This room-by-room monitoring is of particular value when the control system is coupled with relatively slow-reacting heating surfaces like under-floor systems and optimises the benefits of other energy efficient investments such as ground source heating.
- **Lifestyles:** with the press of a button or the click of a mouse you can switch the control system to "entertaining" mode where it will bring the guest bedrooms up to heat, and then back to "family" mode where rooms that are not in the core family areas are allowed to cool down so that they are damp-protected but are not putting an unnecessary load on the boiler. There can be many lifestyles programmed to the client's requirements in any configuration of rooms so that presets can be activated remotely or within the house to tailor the heating demand to ideal comfort levels in all occupancy scenarios.

Things to bear in mind when evaluating this technology

- retro-fit or rebuild often = wireless or wired
- is the plumbing arranged into zones
- is it a rad-based system that can use digital TRVs
- can the boiler(s) be made to run more efficiently through optimised start/stop
- should compensation be applied to take account of external weather conditions
- will integration to a BMS be needed
- what level of remote operation is required & will it be integrated with a home control system
- what is the return on investment given the cost of the control system versus its potential savings
- are heat pump systems being used
- will HVAC need to be integrated as well