

Complete Guide to Renovating a House

PART EIGHT: UPDATING HEATING & ELECTRICS

Old houses bring quirks — great for interiors; not so good in the heating and electrical systems.

Natasha Brinsmead explains how to sort it



Aside from buckets of charm, quirky features and lots of potential, most renovation projects also come complete with some pretty dubious heating systems — not to mention the outdated electrics. Although a complete rewire and new heating system can seem like a daunting — and possibly expensive — prospect, armed with the right information and advice it is actually a great opportunity to make your home more energy efficient, both from an environmental point of view but also one that cuts the cost of your bills in the long term.

MAIN IMAGE: JEREMY PHILLIPS

WHAT TO EXPECT

NO CENTRAL HEATING AT ALL

Do not be at all surprised if the old home you have just taken on has no central heating system — it is not as uncommon as you might think. On the plus side, you have the opportunity to install a system specifically tailored to your lifestyle, your energy usage and designed around any future plans you may have for the house — and this is a job which will significantly add to the end value of the property. On the downside, this is going to eat into your budget. To install a wet radiator, gas central heating system, will cost from around £3,000 to £5,500 for a typical three bedroom terraced house — and you can expect it to take a plumber around eight to ten days to complete.

WARM AIR HEATING

There are many houses out there that use warm air central heating. This is a system not dissimilar to air conditioning units, in that they blow air around ducts within the walls and then out through grilles or vents throughout the house. The air is usually heated by means of a gas burner and is controlled by room thermostats and timer switches. There are many modern systems still available that work far more

efficiently than those installed during the 1960s and 1970s, and some people choose to simply keep this type of system and have it overhauled. And, although few and far between, there are companies out there that will repair or replace existing systems. Try Status Heating (statusheating.co.uk) who service and replace this type of heating and who estimate that replacement units cost from around £1,750.

cost

Budget at least £3,000 for a new central heating system and the same for a new whole-house rewiring job. However, a heating kit in particular can cost £10,000s (for renewables etc.)

DATED ELECTRICS

A house that is in need of updated electrics will usually have an old-fashioned fuse box rather than a modern consumer unit, traditional, old round light switches (sometimes Bakelite), round pin plugs and/or cloth-covered wiring. Rewiring a typical terraced house will cost around £3,000 and will take five to seven days to complete. This price will be in addition to the replastering and decoration that will be required afterwards. ▶



FITTING UNDERFLOOR HEATING IN OLD HOMES

It is a great option, but to get underfloor heating (UFH) right in retrofit situations does take a little more thought and planning. You could connect just a single zone of UFH to your existing heating system, but this does not offer as much control over your heating — the UFH can only be on when the rest of the central heating is on. UFH takes longer to heat up than radiators, so the area with UFH will remain cold whilst the rest of the house warms up. For a retrofit, UFH should ideally operate on a separate zone system with direct boiler control. To do this, you could ‘tee-off’ from your boiler primaries so that one set of flow and return goes towards your radiators and the other to your UFH system. An alternative would be to choose a system such as OneZone from Nu-Heat (0800 731 1976) which can be individually controlled.

Your floor type also needs to be taken into consideration. In new builds, pipes are usually fitted into screed floors which are being laid at the time anyway. In older homes, on the other hand, unless you were planning on taking up the whole floor and starting again, adding a floating floor over your existing structure to accommodate the UFH pipes is the best option — but will also add to your floor height. Existing skirting boards will have to be removed and it will affect your doors, too, which may need to be re-hung to open smoothly over the new floor, or have some of their height taken off. This aside, a floating floor is easy to install in the first instance.

If you are working with a suspended timber floor, and do not want to add to your floor height by adding a floating floor on top, it will have to be removed and the pipes laid underneath, usually between joists on top of insulation, in order to ensure the maximum efficiency. Some systems can also be installed from below.

Luckily, there are now a number of companies offering systems specifically for retrofit situations. These are

designed to be fitted with minimum disruption and to raise the existing floor height as little as possible — usually around 30mm. Take a look at Nu-Heat’s systems for floating floors and its LoPro product, which adds just 15mm to existing floor levels. Their OneZone is an underfloor heating pack which has been designed to integrate with existing radiator systems and to provide underfloor heating in single rooms, extensions and conservatories. Floor areas of up to 60m² can be controlled by a single programmable thermostat, and packs start from £515. It can be installed on a DIY basis, too.

Other systems designed for retrofit situations include Ipecc’s Pexatherm Thin System, the Schlüter-Bekotec-Therm, Polypipe’s Overlay™ Lite and Robbins Systems’ Single Room Underfloor Heating Pack, which is great for extensions. It is also worth taking a look at UFH systems from Warmafloor.

Electric UFH kits are good solutions for single rooms (usually bathrooms or conservatories) and are popular as they minimise disruption, have minimal impact on floor levels and do not require changes to the heating system. However, they are less efficient than warm water systems.



UFH: AN EXPERT VIEW

Roy Pooley, Senior Technical Advisor at The Underfloor Heating Store, shares his tips:

- You can fit electric UFH on a DIY basis, as long as you have it thoroughly tested by a NICEIC-qualified electrician;
- Wet systems are always better in bigger areas — in any room less than 10m² it is not worth the disruption and cost;
- In order to work well as a primary heat source, 80-90 per cent of the total floor area of a room must be clear;
- If you are fitting folding sliding doors, place UFH pipes closer together in front of the doors than everywhere else to counteract any heat loss.

Retrofit Solutions

The Schlüter-Bekotec-Therm UFH system allows for a thin screed, making it perfect for retrofitting (01530 813396)

DOES THE BOILER NEED REPLACING?

Of course, some renovation projects will have a boiler and radiators in place — but this does not necessarily mean you can sit back and forget all about it. In fact, boiler technology has moved on so much in recent years that it might well make sense to consider replacing any boiler more than 10 years old. According to the Energy Saving Trust, replacing an old gas boiler with an A-rated high-efficiency condensing boiler, as well as updating your heating controls will not only cut your home's carbon dioxide emissions but could save you £310 a year (based on an old boiler with an energy rating of G). Considering a straightforward replacement of a gas boiler will only cost around

£2,300 (including labour costs) in just a few years you will be enjoying the benefits.

The main advantage of a new boiler is that it will be a condensing boiler. This type of boiler has a large heat exchanger, meaning it can recover more heat, sending cooler gases up the flue — occasionally the flue gases get so cool that the water vapour contained within the gas condenses out, and so more energy is recovered from the condensing vapour.



Efficiency Built-in
Viessmann's Vitdens 200 is a classic replacement boiler, operating at up to 98% efficiency. It costs around £1,100 (viessmann.co.uk)

BOILERS: EXPERT VIEW

Christian Engelke, Technical Director at Viessmann, answers our questions on replacing boilers



How much will it cost to remove an old boiler and fit a new one?

When replacing an old boiler, Viessmann always recommends flushing the system throughout first to clean the pipes and radiators. The cost of labour for flushing and installation, as well as purchasing the boiler itself, will be approximately £1,600. For a complete new system, including radiators, the cost will be between £2,000 and £3,000.

How much work – and cost – is involved in moving the location of the boiler?

Several factors must be considered when moving a heating system. Increasing the gas pipe size and relocating the flue and heating pipework will result in considerable time and cost. It's best to allow a time frame of up to half a day on average, and a budget of around £200 for a near relocation, and to double this for a move across storeys.

What are the off mains gas options?

Options are subject to budget and application. From oil-condensing boilers with solar thermal, to a heat pump and biomass application; there are many possible options. Before going ahead with any installation, correct on site service checks have to be made and end-users aspiration has to be considered (e.g. budget, space).

ELECTRIC BOILERS: WHAT'S THE DEAL?

Many old homes that are off the mains gas have electric boilers and many people consider them as an option over oil, which is perceived to be expensive, and putting you at the mercy of volatile future rises. Electricity is in itself, however, a pretty expensive way to heat a home as its per kWh pricing is relatively high — and far from stable in terms of future forecasting. Jon Cockburn from Heatrae Sadia, who supply electric boilers, says: “The wet central heating electric flow boiler really revolutionised the electric heating sector. Used in conjunction with radiators or underfloor heating, electric boilers work in a similar way to gas-fired boilers, providing controllable heating when it's required.

“They are usually compact and wall hung, and very efficient — Heatrae Sadia's Amptec, for example, is 99.8% efficient. To provide water heating, electric boilers can be coupled with an unvented hot water cylinder, such as the Megaflo Eco. A direct model with an immersion heater will be required. Our Electromax

provides full wet central heating and unvented domestic hot water from one compact unit. We also offer solar thermal versions of our Megaflo Eco unvented cylinder and Electromax, which can be used alongside solar flat plate collectors or evacuated tubes.

“Installation and choosing a location for the boiler is relatively easy, as there aren't any flueing or condensate drainage issues to consider,” Cockburn continues.

“Electric systems are generally more expensive to run than mains gas-based ones, due to the fact that electricity is more expensive than gas. As with any heating system, cost savings can be achieved with cavity wall and loft insulation and the use of controls. The homeowner should speak to their electricity provider to check they are on the most appropriate tariff too. An Economy 10 tariff will provide off-peak tariffs at different times of the day, rather than just overnight.”

The Slim Option

Heatrae Sadia's Amptec electric boiler costs around £450 (01603 420220)





ELECTRICS: WHAT CAN I DO MYSELF?

Those jobs that require Building Regulations approval (see below for the ones you can do) should be carried out by a 'competent person'. This means an electrician who is registered by an organisation authorised by the Secretary of State (e.g. NICEIC) and is able to certify the work carried out is safe, without you having to notify Building Control. Once works are complete, the electrician will arrange for you to receive a Building Regulations compliance certificate within 30 days of the completion of the work. Your local authority will then also be notified about the work by the electrician.

The competent person should also provide you with a completed Electrical Installation Certificate which shows that the work was successfully tested for safety.

There are, however, certain jobs that are allowed under the Build-

ing Regs as 'non-notifiable' or 'minor work' — indeed the scope was recently widened. These can be carried out without having to notify Building Control or using a registered electrician. Such work includes:

- Replacing any electrical fitting (for example, socket outlets, light fittings, control switches);
- Adding a fused spur (which is a socket that has a fuse and a switch connected to an appliance e.g. a heater) to an existing circuit (but not in a kitchen, bathroom or outdoors);
- Any repair or maintenance work;
- Installing cabling at extra low voltage for signalling, cabling or communication purposes (e.g. burglar alarm systems).

The details of what is and isn't notifiable are pretty complex: you can download Part P, which includes full wording, through planningportal.gov.uk.



BURNING WOOD

Biomass systems can run off wood pellets, chips or logs and can provide heat and hot water from a boiler or stove. They provide a feasible option for renovators off mains gas. The initial installation costs are high,

but running costs are low.

A pellet stove costs around £4,300 including installation, whilst a log stove costs around £2,000, including a new flue or chimney lining.

An automatically fed pellet boiler (such as that from Windhager, ABOVE LEFT) costs around £11,500+ including installation, flue, fuel store and VAT. However, according to the Energy Saving Trust, replacing electric heating with one could save up to £580 per year. The fuel cost of running a wood-burning system is around £480-700 a year.

New Electrics

Rehauling an electrical wiring system requires taking off plaster and as such is best done at the same time as major building work. It also allows you to design a whole new system rather than extending off what's there already

SIMPLE UPGRADES

Sometimes all that will be required will be something as simple and inexpensive as **new radiators**. In addition, old radiators can suffer from cold spots, caused when sludge builds up inside — having them **power-flushed** will be a big help in improving their performance. Include **insulation, repairing rotten windows**, and a **wood-burning stove** in your plans for particularly cold rooms — all of these things will play a big role in improving the heat efficiency of your home overall. ■