

## **Heating Replacement Ideas for Cedar Chase**

The original heating is based on a Lennox gas-fired warm-air heater in the under-stairs cupboard. Hot air is delivered into a large duct under the floor and is distributed to all rooms apart from the bathroom and the downstairs cloakroom.

The original heaters were installed in 1966 and are very inefficient by modern standards. They use 20kW of gas when firing but probably deliver about 12kW of usable heat. Safety regulations require large vents and air-bricks, which cause significant draughts.

Domestic hot water is provided by an electric immersion heater in the hot-water cylinder. Even with a modern well-insulated cylinder and Economy-7 electricity, this is more expensive to run than a gas-fired system would be.

### **Direct Replacement of the warm-air heater**

Suitable heaters are made by Lennox and also by Johnson & Starley. Current models are very efficient condensing units so they will cost much less to run than the old ones. They also have balanced flues, so there is no need for large air-bricks and vents in the under-stairs cupboard. This does create a problem though, as new flue pipes must be routed to the outside of the house.

The existing flue is constructed from 'TrueFlue' blocks built into the wall on the bathroom side of the staircase. The flue cavity itself is about 120mm wide and 100mm deep, so one option would be to cut out the front of the blocks and install a concentric balanced-flue pipe into the old flue space. It would be necessary to provide an inspection hatch for each joint in the flue pipe, and to re-decorate the wall.

This should save you at least 20% of your yearly gas bill.

### **Warm-Air Heater with built-in water heating**

Johnson & Starley now have a range of heaters that provide both warm air and domestic hot water. The C10DW or C16DW should fit in the existing space if the ductwork is re-organised. Pipes could run to the cylinder in the airing cupboard via the existing air-intake route and under the bathroom floor.

You will need a new hot-water cylinder to take advantage of this system.

This has the same problem with routing the flue as the direct replacement described above.

This scheme should save you money on both gas and electricity.

### **Combi Boiler with heat exchangers**

Modern combi boilers are very efficient at producing both domestic hot water and also running the heating system. Hot water is produced on demand rather than being stored in a cylinder, so the losses are smaller and you never run out of hot water. Water flow is slower than with a tank, so combi boilers are less good if you use a bath rather than a shower.

You will need one or more water-to-air heat exchangers (sometimes called coils or fan-coil units) to drive the warm-air ducts. At number 2 we put the boiler in the airing cupboard where the cylinder used to be, and put one heat-exchanger under the airing cupboard and the other under the stairs. This allows us to control upstairs and downstairs heating independently. We also added a radiator in the downstairs cloakroom and under-floor heating in the bathroom (this really is very nice in winter!).

This is a very flexible and efficient system. It probably costs more to install than a replacement warm-air heater, but it does deliver heat to the cloakroom and bathroom, and it also provides unlimited high-pressure hot water for showers.

## **Combi/System Boiler with tank and heat exchangers**

Several houses now have this system (#10, #19, #23). The boiler is installed in the airing cupboard along with a new hot-water tank. A single heat-exchanger in the under-stairs cupboard drives the hot air ducts. Pipes are routed up through the air intake duct, under the bathroom floor and across the landing. Most people also have under-floor heating put into the bathroom at the same time. It is also possible to take a hot water feed to the downstairs cloakroom and to provide a radiator there.

This is a very efficient system that can fill baths very quickly as there is a large volume of hot water available at mains pressure.

## **Under-floor heating with a combi boiler**

If you need a constant level of heat throughout the day then under-floor heating can be very good. It is not good if you only want heat briefly in the morning and late evening, as it warms up very slowly.

To do this you would need to dig up the ground floor to put in insulation and to run the heating pipes. You would also need to lift all the upstairs floors.

It would probably be best to put the boiler in the airing cupboard.

This would deliver efficient heating and unlimited high-pressure hot water,

## **Radiators**

The houses were not designed for radiators so it is difficult to do this without compromising the appearance and flexibility of your rooms. Some ideas to consider:

1. Use trench heaters on the ground floor: these are long thin radiators set into trenches in front of the big windows.
2. Consider using vertical radiators rather than horizontal ones. They are less effective for a given size, but might fit the rooms better, Make a feature of them by choosing interesting designs rather than just using the cheap and boring ones.
3. Consider heated ceiling panels. This is a fairly new thing in the UK but there are a few suppliers around.

4. You may be able to route heating pipes through the air ducts. Failing that, cut ducts into the surface of the concrete floors. Don't allow the plumbers to run pipes across the surface of walls or in visible boxes: this just looks tacky.

## General Notes

Whatever replacement you choose, you should first have the Asbestos Insulation Board removed from the under-stairs cupboard. This is a medium-risk material so the job must be done by a properly licensed contractor. Expect to pay about £2500 for this job. It takes about 2 days.

It may be worth getting your gas-fitter to tidy up the pipes around the meter. The pipe from the meter to the boiler and to the kitchen is just under the surface of the floor, laid in the screed. You may find that the jointing compound has dried out and modern safety testers might detect small leaks around some of the joints.

If your main gas-valve is hard to operate then you should get it replaced. National Grid will do this free of charge.

Please *don't* allow the gas-meter to be moved to a box on the front wall of the house. These look really ugly. If it must be moved then ask for a ground-level box in an unobtrusive place. Point out that this is a Conservation Area and that there are strong legal covenants preventing external changes.

If you run new pipes under the upstairs floors, make sure that the holes are drilled in the right places! It is important not to weaken the beams that hold up the internal walls.

Please *don't* allow any pipes or cables to be run on the outside of the house.

## Tradesmen

For asbestos removal most people have used GP Asbestos:

**Telephone:** 0330 555 0105 **Email:** enquiries@gpasbestos.com

For heating replacement the most popular choice is Pawel Ratajczak of Goldmedallion Ltd: **Email:** goldmedallion@yahoo.co.uk

**Telephone:** 01628 669342 or 07852 340289 or (more reliably) via Ilona: 07809 458108. Pawel also fits bathrooms.

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