

CASE STUDY

Cosy Two Storey Home, Christchurch



This home features radiators and an outdoor diesel boiler.

Much like a lot of Kiwi homes, this 1985 home was only being heated by a log burner which over heated the living area and left other areas of the home cold. Fortunately, Kate the owner was the lucky winner of our Star Home Show prize, a Central Heating System to the value of \$25000.

Two options were considered for heating Kate's home, either a radiator - heat pump system or a radiator - diesel boiler system. With the cost of diesel being favorable in the Canterbury region, the efficient diesel boiler system was the best choice of central heating system for this home.

System Description

- 26kW Firebird Enviromax Condensing Boiler supplying warm water to radiators in each room.
- 12 DeLonghi PHD radiators; total 24.15kW.
- Wireless 2 Channel Programmable Thermostat controlling the diesel boiler and thermostatic valves on each radiator.

Benefits

Heating this home proved to be an impossible task for the existing log burner. With their new central heating system, every area in the home is heated to the ideal comfort temperature set by Kate and her family. Within a short time of having the central heating system installed, the family were thrilled about the difference the system has made to the comfort of their home.

House Details

- 230m² floor area
- Built in 1985
- Single glazed, aluminium framed windows
- Existing log burner
- Two stories

Before and After

Below are some photos taken before and after the central heating system installation. This shows the radiators positioned out of the way and taking up very little space around the house.

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It has been brilliant, such a difference. I feel quite spoilt really.

-Kate, Homeowner

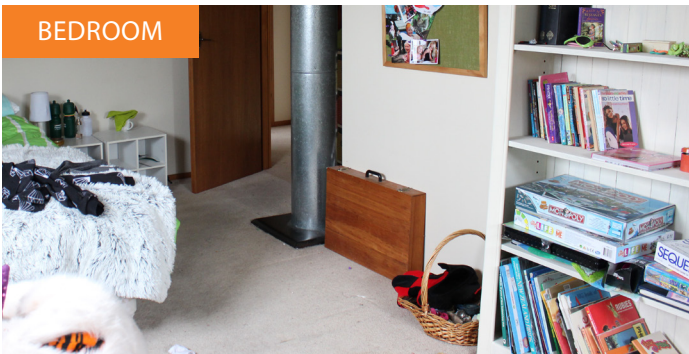
HALLWAY



KITCHEN



BEDROOM



GAMES ROOM



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What to expect during a radiator installation

With any home renovations a certain amount of disruption is caused and when installing a central heating system in an existing home the level of disruption will vary depending on how your home has been designed and the type of central heating system you are having installed.

As Kate installed a radiator system in her home which has a slab and two levels, the pipes will need to be fed in between the two levels and on to the radiators in each room. Cupboards and ceiling spaces are used where possible to keep piping out of sight and minimise cutting into walls or floors but that is not always possible.

As the ceiling of the lower floor in Kate's house contains asbestos (which is toxic when disturbed) the only option for installing the pipes was to cut through the floor boards on the upper level (see images below).



With the main feed pipes running through the ceiling of the lower level, pipes needed to be dropped down through the walls to the bottom of each radiator. Areas of Gib needed to be cut out from the walls in order to drill through the horizontal framing timber for the pipes to be fed to the bottom of the wall (see image below). The Gib cutouts are carefully put back into place afterwards (see image below), then plastered and painted with no trace of damage to the wall.

Radiators are positioned back to back on walls where possible in order to reduce the amount of walls needing to be cut. Pipes are fed through the two drilled holes in the Gib and connected to the bottom of the radiators (see image below).

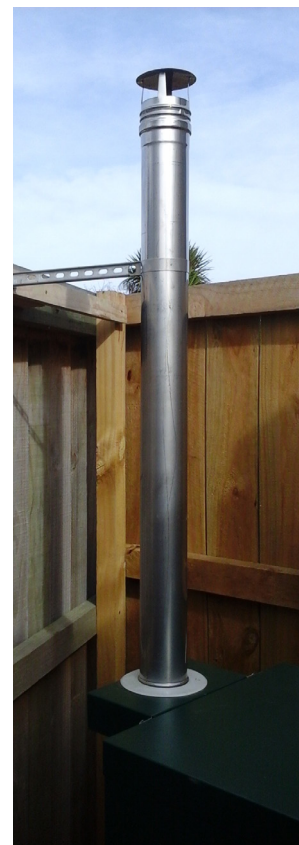


What to expect during a diesel boiler installation

Diesel boilers are just one option available for heating the water that flows through a central heating system. They often have a misconception that they are noisy and smelly, but Firebird diesel powered boilers are quite the opposite. They are very quiet (the quietest on the market), compact and are a cost-efficient heating option for many homeowners because they are very energy efficient and have relatively low running costs.

When installing a diesel boiler, two concrete pads will need to be constructed, one for the boiler and the other for the fuel tank used to store diesel for the boiler. At Kate's house the concrete pads have been installed out of sight in the garden. The one for the boiler is near her house. The pad for the fuel tank is located near to her driveway (not far from the diesel boiler) in order for the fuel tanker to have easy access for refuelling the tank when needed (see images below). Typically Kate will only need to fill her fuel tank once during the winter months.

As with any fuel powered engines, an outlet pipe is required on diesel boilers called a flue. For indoor diesel boilers these either exit through the roof or out the wall and up above house the roof. As Kate has an outdoor diesel boiler that is positioned slightly away from the house, her boiler only requires a small flue that extends slightly above her fence (see image below).



In Conclusion

There were a few challenges while installing the central heating system into Kate's house but it turned out to be a great result. Kate and her family are thrilled with the system and the house looks great.