

Build Back Smarter Info Sheet

Heat transfer systems

The opportunity to build back smarter

Disaster repairs: Replacement of heaters (older wood burners, heat pumps) and ceiling linings

Opportunity to upgrade: When main heat sources are replaced, select options with excess heat which can be transferred to bedrooms. While linings are being replaced and work is underway in ceilings, install ducting and outlets for a heat transfer system to warm up cold bedrooms.

Why warm up your bedrooms?

The World Health Organisation has recommended a minimum overnight temperature for good health of 16°C in bedrooms with 2-3°C warmer temperatures recommended for the very young and the very old.

Temperatures below 16°C, particularly in the presence of high humidity, can bring a range of health problems such as asthma and respiratory issues, and temperatures below 12°C are a health risk for vulnerable groups.

Surveys of New Zealand households, and particularly low income households, show that the majority do not heat their bedrooms. Research undertaken by Beacon prior to the Canterbury earthquakes showed that less than 5% of homes had healthy temperatures overnight in their bedrooms. 96% of Christchurch homes had winter average bedroom temperatures of below 16°C.

Build Back Smarter recommendations

In a well-insulated house, you will need less heating than in a poorly-insulated house, so prioritise ensuring insulation levels throughout the house are good.

Heating your bedrooms is the best opportunity to use heat transfer from your main heat source, and other areas where you may need additional heating.



Things to consider

Heat transfer systems are ducting installed into your ceiling, or between floors, which moves heat from one room to another. They are not a ventilation system or a heating system – they move the heat that is produced by your main heater – e.g. your wood or pellet burner. Heat transfer systems are most commonly used to move heat from the living spaces to the bedrooms. You can buy DIY installation kits from your local hardware store, or get them professionally installed.



Excess heat

Heat transfer systems only work well if there is spare heat to move around. If you are under-heating your living area, there won't be spare heat to move to the bedrooms.

Size your main heat source so there is excess heat to transfer to the bedrooms.

Design

Hot air rises, so you can only transfer heat from downstairs to upstairs, or between rooms on the same level.

Shorter distances are easier to transfer the heat. As the air moves through the ducting from one room to the next, it cools down - if it has to go too far, it won't be very warm when it arrives. Sometimes a through wall duct (eg from a living room to an adjacent bedroom) can be a very easy and effective option.

Transfer the heat to where you want it. If you want to warm your bedroom, make sure that the outlet is in the bedroom – preferably in the middle of the room. Don't transfer heat to a hallway outside a number of bedrooms – it won't make much difference to how warm your bedrooms are if you do.

Fewer outlets are better than a lot. Transfer the heat to only one or two rooms. If you want to warm more rooms than that, you will probably need to consider having a second heating device.

Selecting your system

Get a heat transfer system with a thermostat – that way you can set the temperature at which you want it to start transferring heat and it will siphon off the excess heat without you needing to think about it.

Make sure the fan size is sufficient. If you have several outlets, you might need a bigger fan than if you only have one.

Make sure your heat transfer system has insulated ducting so that it doesn't lose heat.

