

HOME^{NZ}

2010 BUILDING
& RENOVATION
GUIDE.

HOW TO

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HOW TO HEAT AND INSULATE YOUR HOME

A key part of any renovation or building project is getting the comfort level right with heating and insulation. Text Andy Kenworthy

INSULATION

If your house was built before 2000, the Energywise scheme will give you a third of the cost up to \$1,300 including GST for ceiling and under-floor insulation up the required standard. That rises to 60 percent if the people living in the house have Community Services Cards. And once you have decent insulation you can apply for another \$500 towards an approved clean-heat device. You can even get more cash to help install a hot water cylinder wrap, pipe-lagging, draught-stopping, and a ground moisture barrier if you need one.

If you are insulating, you're required to meet insulation standards relevant to your area (check eeca.co.nz for more details). Some insulation materials come in a variety of 'weights'. It is sometimes possible to

combine materials to achieve the desired effect. Eco-savvy choices include: 80 percent recycled glass Pink Batts Ultra, accredited by Environmental Choice New Zealand; 100 percent recycled paper by The Natural Insulation Company; or 100 percent recycled sheep wool from companies such as Latitude Insulation. If you're trying to choose which part of your house to insulate, the roof is the priority – that's where most heat is lost. Then walls. Then check ventilation, windows, and the floor. A well-designed double-glazed window with a wooden frame (or thermally broken aluminium frame) can halve energy loss through the window and reduce condensation. Remember that your insulation is only as good as its installation; even small gaps will undermine its performance.

What is the best way for people to approach creating a warm home? Insulate, insulate, insulate. This is the key. When we have insulation we reduce the capital cost of heating and we minimise ongoing running costs.

Do you need to spend a lot of money to get it right? Roof insulating an average home of about 120 square metres costs about \$1,500-\$1,900, de-

HEATING

Once you have insulated, you can heat effectively. The World Health Organisation recommends at least 18°C in any rooms you're using (or at least 20°C if you have vulnerable people in the home, like children, the elderly or the ill), and at least 16°C in bedrooms overnight. If you're starting from scratch, it's well worth considering underfloor and central heating – they can often be the most efficient and the radiant heat they provide offers some of the best overall comfort. And avoid unflued gas heaters: they emit water vapour, nitrogen dioxide and carbon monoxide that make your house damp and harm your health if there is insufficient ventilation.

If you have a sustainable firewood source, consider a cast-iron log furnace with a wetback that regulates itself to produce a preset

pending on where you are, how your house is built and how much insulation you have already. Floor insulation is also important – it costs about \$2,000. Wall insulation is best considered when doing substantial remodelling work. Windows should be replaced with double glazing when the existing frames wear out. Thermal drapes help, especially if you

water temperature to run the radiators. You can also consider having a thermostat in each room to control the temperature individually to avoid heating rooms you aren't using. Solar hot water systems are an extremely efficient and cost-effective option, but you will need some sort of back-up (electric and gas are common solutions). A good heat pump costs two-thirds less to run than the equivalent electric heater, but not all are created equal – the best are about twice as efficient as the worst. There are government agencies to help navigate all the heating information out there, particularly when it comes to heat pumps. Look for the Energy Star mark, which also shows if a heat pump will work in all temperatures. Also remember to get the correct size, otherwise it will be less efficient.

don't have double-glazing yet.

What are my main heating options?

There are four main clean-heat options: Energy Star-rated heat pumps, clean-burning wood burners, pellet burners and flued gas heaters with at least four stars in the Australian Gas Association rating system. They all have fairly low running costs and are efficient.



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DESIGN FIRM.

What are the key things that make an eco-home different from a normal build?

It's all about good design. Houses primarily should be designed to be passive solar. How much specialist expertise is required these days to design in this way?

I would like to think not a great deal, but it seems that there is some. I am alarmed at how so many of my contemporaries are not about to design something like a passive solar house. It's important, too, that the people actually doing the building work know the value of sustainable design.

If people are considering hiring a firm like yours to do the work, what should they have prepared and do first?

We are there to help guide you, but we like people to come with their own ideas. We look for a high level of engagement. We want to know how people live now, how they want to live, what works and what doesn't. We sometimes joke that the process is 80 percent design and 20 percent marriage guidance! Ultimately our role as architects it is all about promoting harmony, happiness and tranquility.



Q+A Robert Tromp, Energy and Efficiency Conservation Authority