

Building a new home? 4 things you can do to help save the planet



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CONSTRUCTION & PROJECT SOLUTIONS

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Building a home is the perfect time to utilise, as much as budget allows, the energy-efficient technology that drives the building industry today. With the many critical environmental issues now facing our planet, in particular global warming and pollution, homeowners want to ensure their new home is going to be as energy-efficient as possible within their budget.

*What elements in a house-build affect energy efficiency?
What can you do to maximise efficiency?*

Building practices and technology are the key areas that directly impact a home's energy efficiency. If you are thinking of building your own home, here are some things you can do to maximise energy efficiency. If you are totally committed to constructing a 'zero energy' home, check out [this link](#) for a 12-step process.

Tip #1: Use thermally-broken double-glazed windows, argon gas filled & with low E glass

All new homes built in New Zealand must have double-glazing. This is the standard since 2004 under the New Zealand Building Code. The advantage with *thermally-broken* double-glazed windows is the aluminium on the inside is separated from the aluminium on the outside, stopping heat transfer from inside to outside. The average house has approximately 2 to 3 square metres of aluminium framing, as measured over the surface area. Aluminium is a very good heat conductor and is often used as a heat sink* in computers and electronic equipment. So, it's like having a large heat transfer unit in your house sucking heat from the inside to the outside. The thermal barrier in the aluminium stops that heat sink effect.

Low E glass is a higher performance glass that reflects heat back into your building and stops it escaping. It has no impact on the transparency of the glass.

Argon gas is an inert gas that is a good insulator and reduces heat transfer from one pane of glass to the other.

Here's a [link](#) that may provide further information on thermally broken windows' thermal insulation performance.

(*Heat sink is a device or substance for absorbing excessive or unwanted heat)

Tip #2: Insulation

Another way to maximise energy efficiency is to use higher levels of insulation significantly above the Building Code requirements. And it's not just *what* to use, it's also *where* to use it. Insulation needs to be in the ceilings, walls and under floors. The key types of insulation available are glass-fibre, wool and polyester, as well as polystyrene for underfloor insulation.

The critical factor is using the highest 'R' value insulation you can fit within the space available.

BRANZ have a factsheet on various options [here](#).

Tip #3: Solar panels

Most solar panels convert around 15% of the sun's energy into electricity. They are a good way of reducing your power bill and, correctly sized, should give you a return on investment of around 10%-12%. More information on solar energy can be found on the [Sustainable Energy Association of New Zealand's website](#).

Tip #4: The house's orientation

In days of yore, almost every house in New Zealand was orientated to face the road, irrespective of where north was. Orientation to maximise sun requires windows on the north side of the house and minimal windows on the south side (in the Southern Hemisphere, anyway!).

Want to ask more questions? We invite you to talk to Alisdair at Daines Consulting. Feel free to give him a call on 027 446 8702, or visit his website at www.dainesconsulting.co.nz.