

NZ HOUSE & GARDEN

OCTOBER
2005

Sir Edmund Hillary's
favourite room

wander through Woodbridge

come to bed

at home in Herne Bay

just desserts



a fabulous

Lally

\$8.95
ISSUE 031



THIS PAGE: The north-facing wall clad in lawson cypress is curved to make the most of the sun.

FACING PAGE: The curved wall creates interesting spaces and effective solar heating flow inside.



SAVING GRACE

Jacquetta Bell feels the heat in a house attracting attention for its energy-efficient design flair PHOTOGRAPHS: PAUL McCREDIE



Helen Richards lives in Nelson in an energy-efficient house she designed herself. If there were no photos with this story, odds are you'd be visualizing Helen, clad in tie-dyed layers, gracing a charming mud-brick house, crystals hanging in the windows and a few chooks in the garden.

The young smart-casual British architect believes more than ninety per cent of people think a house designed on environmental principles will be an earth building with solar panels and a composting toilet. Her house is here to tell a very different story: it too is smart-casual, modern, sleek, somewhat minimalist and has a few surprises up its concrete sleeves.

Helen spent ten years in architectural training in London then had five years of study and five years in practice in London and Kuala Lumpur. Her design thesis had an environmental focus but her practice years included projects as diverse as a sports stadium, office developments, government housing and London mansions. She acknowledges that architecture is still a relatively unusual career choice for a woman but can't quite put her finger on what attracted her to it.

"I just know retrospectively that it was the right decision for me," she says. "I have a good feel for three-dimensional thinking and for putting things together so they work." ▷



In 2000 Helen was ready for a change and came to New Zealand intending to stay for a year. Nelson appealed as big enough to find work but small enough to feel comfortable.

The hoped-for job with a group of like-minded people didn't come up, however, and Helen once again began to look at environmental factors around housing. She came up with an idea for a pre-designed house template that would look good, be easy to build and energy efficient and would compare well for cost with group-designed homes.

"My parents lent me the money so I could put the theory into practice – my own house is a show home," she says. "It is very

powerful – people find it pretty impressive that I didn't need to use a heater right through winter."

Helen describes her house, in a small subdivision on Nelson's Port Hills, as a long box with big windows facing the sun and a concrete floor to absorb heat. The northern aspect is curved to catch the maximum rays as the sun takes its daily path across the sky. Big bifold doors let the heat through in winter and can be opened to the sea breeze in summer.

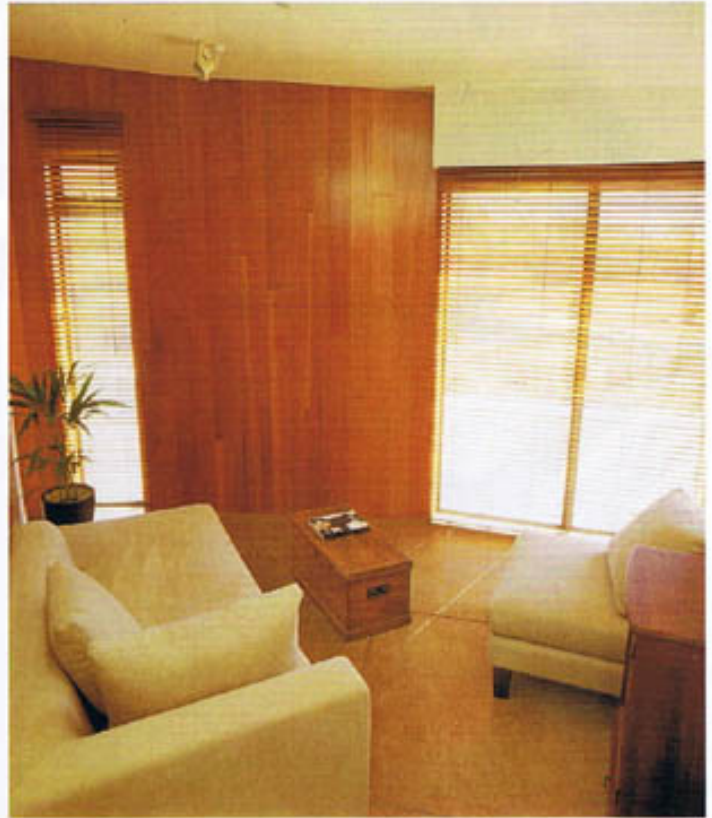
"The doors are aluminium – double glazing in this size would be too heavy for wood," she says. "It was a compromise – most of the decisions in a house like this are a balancing act." ▽

FACING PAGE: A change of levels and indoor plants define the living space. Polished concrete floors have been textured to create a look of old leather.

THIS PAGE: The kitchen cupboards are finished to look similar to the stainless steel benchtops. The dining area flows out on to the deck. A snug corner in the living area. Helen Richards.



"I have a good feel for three-dimensional thinking and for putting things together so they work"



"Most of the decisions in a house like this are a balancing act"



THIS PAGE: Big bifold doors can be pushed right back to make the most of the cooling sea breeze in summer.

FACING PAGE: The bedroom and bathroom at the back of the house stay warm with heat released from concrete slab internal walls.



For example there is wood in the house – lawson cyprus outside and interior cladding of native beech – and Helen hopes it was from sustainably logged forests. She wouldn't use wood from the tropics and would like to be able to access information more easily about building products. But she points out that getting the building materials right is not as important as energy use over the whole life of the house. "Buildings are fifty per cent responsible for climate change," she says.

Concrete is the key to heat storage. The bifold doors open on to the concrete-floored open-plan living room and kitchen. The floor is marked into squares like big tile pavers, coloured ochre and finished with a textile look.

"It feels like leather to walk on and you'd think there was under-floor heating but it's just the stored warmth from the sun," says Helen.

The kitchen is simple and stylish featuring MDF cupboards finished to look similar to the stainless steel benchtops. The bench dividing it from the dining area has a naturally coloured polished concrete surface that's surprisingly pleasing to the eye.

Passive solar heating works best when the house is open-plan and Helen has maintained airflow but created separate spaces without using walls. There is a drop down to the living area (somewhat retro like a big conversation pit) and a free-standing steel-framed screen of translucent glass defines a room at the back of the house that she uses as an office. The glass lets light through and clerestory windows above it admit sun and heat.

You may be thinking there's nothing too innovative about a house in sunny Nelson with a concrete floor and big doors. The real challenge with passive solar design is to store the heat and transport it to parts of the house that don't get the sun. Helen has achieved this with concrete walls constructed as tilt panels – just like those more commonly used in high-rise buildings. The panels have been ground back to expose the aggregate and the pebbled surface is polished smooth. On the reverse side, in bedrooms and bathrooms, they are simply painted white which looks good and works well. Though the main bathroom gets no direct sun – its exterior wall offers just a tiny window to the south – it is warm all winter. The temperature is kept up by the two interior walls of concrete which slowly release their heat.

Other design features include eaves built to let in maximum winter sun and small windows to the south to avoid heat loss and to the west where the low evening sun can overheat a room.

Helen has also sunk a water tank into the rock-chip low-maintenance garden – another aspect of self-sufficiency that she was keen to try out.

Her house is attracting attention from people interested in environmentally sound buildings and also from those who just like comfort. Its stylish look proves that design and conservation principles can work together. If Helen's concepts are picked up in mainstream building she will have struck a significant blow on behalf of the planet. ■

Find out more about Helen's house at www.poweredliving.co.nz