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CLEAN LIVING

Auckland architects Lisa Day and Scott Donnell have built a sustainable home for their family using a smart passive design – one that is shrewdly saving them money.

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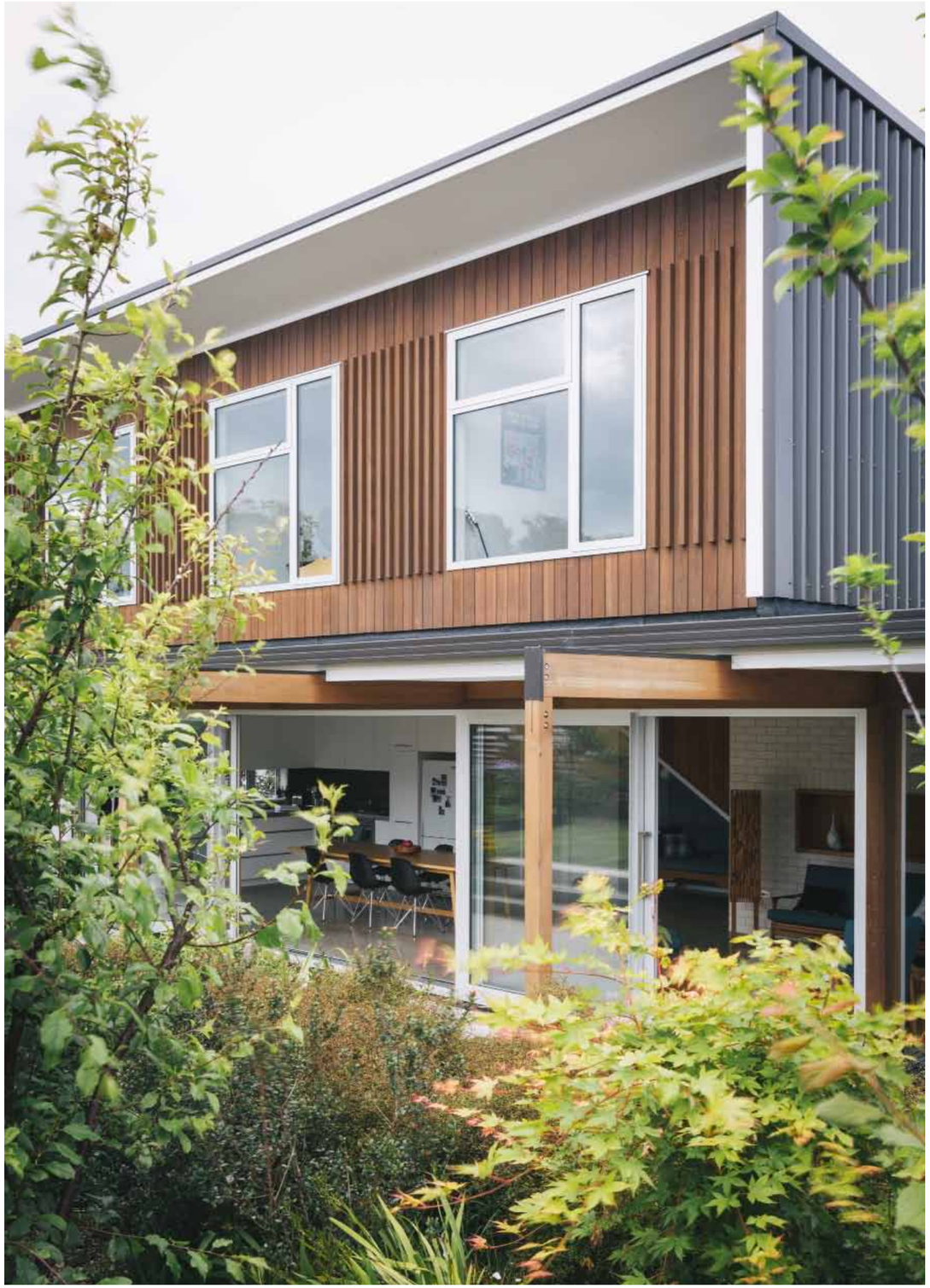
Photography **Duncan Innes**



EXTERIOR The foundations of this architecturally designed home were built up so that the family could maximise the outdoor living space.

WHEN YOU RUN AN ARCHITECTURE FIRM, THERE will come a time when you want to put your expertise into practice for yourself. Scott Donnell and Lisa Day, of Donnell and Day Architecture, had a clear idea about what they wanted to create: something that was affordable and responded to the environment. It also needed to endure the knocks of everyday family life gracefully, with the ability to extend as their needs changed and finances allowed. The result is a comfortable open-plan home in East Auckland that is full of light and life – often serving as an indoor playground to the neighbourhood children.

"Having a home that is sustainable and leaves only a small environmental footprint was of paramount importance to us," Lisa says. "One of the key features of the house is that it stays cool in the summer and holds the heat in winter."

They incorporated several design principles to achieve this, including custom dimension eaves that allow the warm winter sun in but keep the hot summer sun out, and appropriately sized windows with good cross-ventilation to help maintain a cool environment during the warm weather. In the colder months, double-glazed windows, thermally broken joinery, extensive insulation, plus carefully oriented concrete floors and brick walls keep the heat in. Although they do have a fireplace, they tend to use it mainly to create ambience, using it during those rare winter evenings when no sunlight has been absorbed by the concrete slabs.

When selecting materials, they were careful to choose things that could be recycled in the future. They used low-VOC paints, timbers with natural oils and, where possible, reused materials from other buildings, like the demolition rimu that had once been part of the old joists from Middlemore Hospital.

Sticking to these design principles, and installing LED light fittings, solar panels to provide hot water and choosing low-energy appliances have made a significant difference to their ▷

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HOMES

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LIVING The palette of this home was inspired by the natural world: timber, sand, sea and sky. The cedar TV and wall cabinets were designed by Scott and custom-built by a boat builder. Scott also designed and built the cedar floor lamp himself.

DINING The huge 10-seater Resident dining table, that hosts a lot of client meetings and shared meals with friends, is also the central hub of family life.
BELOW Blue is carried in different tones throughout the soft furnishings of the home, "like the way the sea changes from one minute to the next," Lisa says.

power bills. "Quite often, ours are a quarter of what our friends are paying," Lisa said. "People think building a sustainable home is more expensive, but it doesn't have to be if you think carefully about the initial design and tailor it to the site. When you add in something, like additional insulation or high quality windows, you remove the need for heat pumps and ventilation systems. The costs are offset nicely, so that it really becomes a logical choice."

There are other perks to living here. The interior of the house flows seamlessly outside into a well-established garden, where the family spends a lot of time together. It includes a thriving seasonal vegetable patch and a number of fruit trees that mingle with the native plants and feed the local bird population. "We have all of the vegetables and herbs that I know we will eat, plus apple, pear, plum, quince, damson, lemon and raspberries. I do find myself working with the cropping cycle and preserving so that we can enjoy them all year round," Lisa says.

Lisa and Scott have ensured that their home's environmental footprint extends beyond their 500m² block and blends well with its surrounds. The driveway is made with a combination of gravel, natural oioi reeds and flaxes, which help minimise and filter runoffs into Auckland's stormwater system, reducing the pollution of local beaches and waterways. Water for the garden, WCs and laundry is captured in a slimline urban rainwater tank. They even have plans to add a drinking water tank as soon as the local council changes the regulations. "We thought about how we could give something back to the ecosystem we live in, so it can continue to function as a life-supporting environment for future generations," Lisa says.

Using that forethought, Lisa and Scott have created an architectural home that both serves their family well and is a joy to live in. The fact that it will continue to save them money on running costs, through its smart passive design, doesn't hurt either.

AT A GLANCE

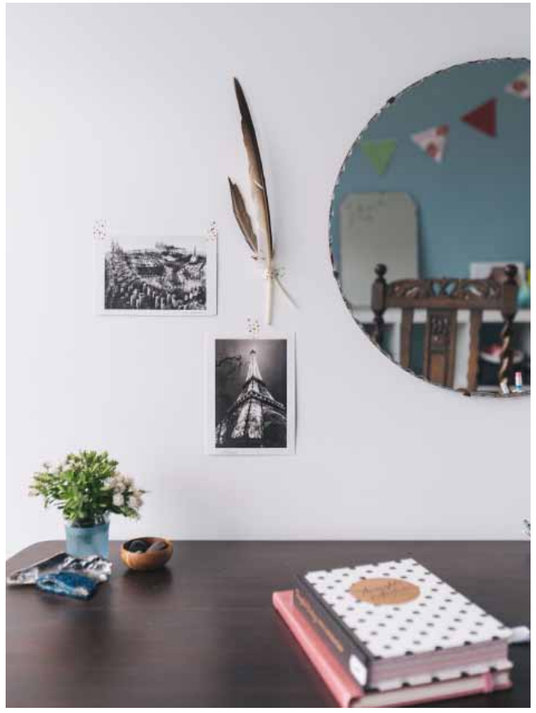
The project: Scott Donnell and Lisa Day of Donnell and Day Architects created a new eco home for themselves and their two children Thomas (10) and Kate (7), on an 495m² site in East Auckland's Cockle Bay.

How does your home serve your family? We considered the site as a series of spaces that can shelter our family affordably, help feed us and keep the bills low, while responding to its setting. It was important to us to keep in mind the big picture of how compact suburban homes can be designed to a tight budget, yet be comfortable and sustainable. We love the way the outside spaces have become so integral to the rooms – it is a great way of making a small house feel spacious.

Are there any special features that you're particularly proud of? The building was designed to passively heat and cool itself – it has been wonderful to see how well this works through all the seasons. The roof overhangs were designed to keep the hot summer sun out while letting in the warmth of the winter sunlight. This heat is then stored using a fully insulated concrete slab and interior brick walls. Cooling uses the 'stack effect' where hot air is drawn up the light well and taken out the upper windows. We always get comments on how warm the house is in winter – in fact, the fireplace has ended up more of an ambient feature rather than a necessity!

What are your long-term plans for the house? We future-proofed the house by adding an extra long carport out the back, which can be easily enclosed when we need to expand our architecture studio. While we already have solar panels to heat our hot water, with the addition of just a few photovoltaic panels we will be able to offset our already small power bill and start to generate our own energy. It is relatively inexpensive to allow for future modifications at the design stage; much more difficult after a house is built.

FLOORPLAN



CHOOSING MATERIALS When selecting materials for the build, they were careful in choosing what could be recycled in the future – or where possible, re-used materials from other buildings, like the demolition rimu balustrade that had once been part of the old joists from Middlemore Hospital.

ABOVE Vases by Peter Collis and Graham Ambrose and Heath ceramics make this custom-built cedar wall cabinet even more of a thing of beauty.

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DESIGN DETAILS

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