the green design & build

WHEN CHOOSING A DESIGN-AND-BUILD COMPANY, CONSUMERS CAN FIND SOME THAT ARE A DEEP SHADE OF GREEN

WORDS **BETTE FLAGLER**

Big and small

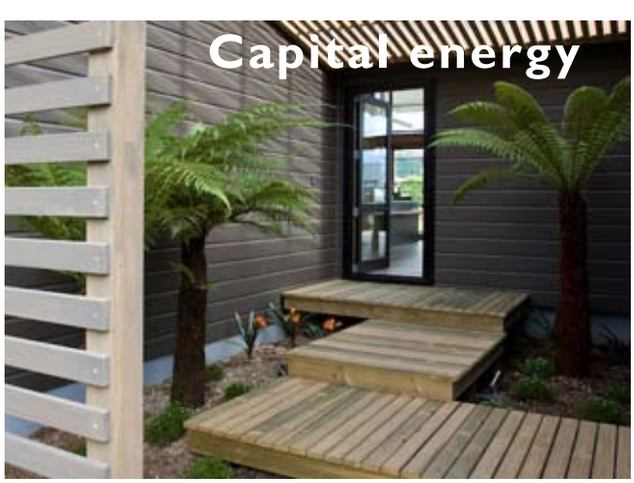
Both ends of the size and age spectrum are represented among the companies taking the task of building environmentally friendly homes seriously. Lockwood has been building homes in New Zealand since 1951 when founder Joe La Grouw Senior developed the patented system that locks walls together in place of nailing. Last year the company launched its EcoSmart range as a way to reduce the environmental impact of building and construction and to meet the needs of environmentally aware consumers. The company, a member of the Sustainable Business Network, is in the process of implementing measures to reduce its energy use and greenhouse gas emissions.

Ebode is a young company which was founded in 2007 by Niel and Jette de Jong with the aim of creating mainstream sustainable homes. The de Jongs aren't new to house design and construction or sustainability. They launched Heritage Design Group in 1999 to focus on sustainable additions, alterations and restorations. Through Heritage, Niel, who studied architecture at Unitec, and Jette, who has a background in interior design and project management, learned a lot about poorly sited, poorly insulated homes and the couple, committed to sustainability in their personal as well as professional lives, recognized the need for a design-based architecture practice that took a whole-life-cycle approach to building.

Green, not green wash

It's good news that consumers are increasingly taking the environment into account when building new homes. On the face of it, many design-and-build companies offer green options to suit clients' needs. But building a sustainable or environmentally friendly home takes more than installing building-code levels of insulation, slapping on a coat of eco-paint and orienting windows towards the north. Consumers who are truly eco-wise will look for companies that share their values.

"we are greenies and designers who have developed a housing company rather than a housing company that has suddenly turned green," says niel de jong



Capital energy

"A lot of people design energy-efficient houses and fit them out with solar heating and energy-efficient lighting. But many of those houses are made of steel, aluminium, plastic and concrete," says Lockwood's chief executive Bryce Heard. "Lockwood goes to great pains to make the house as much as it possibly can of solid wood." The theory behind using wood – and other natural products – lies in capital or embodied energy. If, for example, the house is filled with steel and plastic, the day you take possession of that house, says Heard, the amount of energy that has been expended to mine, smelt, fabricate and build it is already out in the atmosphere causing climate change, whereas a wooden house starts with a carbon credit. While traditional Lockwood homes used aluminium cladding, the EcoSmart range is made with wood cladding and incorporates a new wall system developed by the company that has higher insulation qualities.

Material world

For a building company to be truly sustainable, the products it uses to build and outfit its homes should be chosen through a rigorous selection process. Ebode, for example, employs two environmental scientists who research variables such as geographic source (preference is given to local products), method of production and the impact a product will have on the occupants of the house. While products and materials are selected that will function well over a long period of time, ebode also takes into account what happens at the product's end of life – whether its disposal has toxic consequences or it can be reused or recycled. Ebode believes a healthy or sustainable home does not contain materials that require the installer to wear protective clothing. Consequently, wool insulation is used in all homes and you won't find any fibreboard or PVC. Homes come with a refrigerator/freezer, cooker, range hood, dishwasher and washing machine selected for energy and water efficiency. Building contractors must have an established reputation for quality building and must have an interest in – and record of – eco-building.

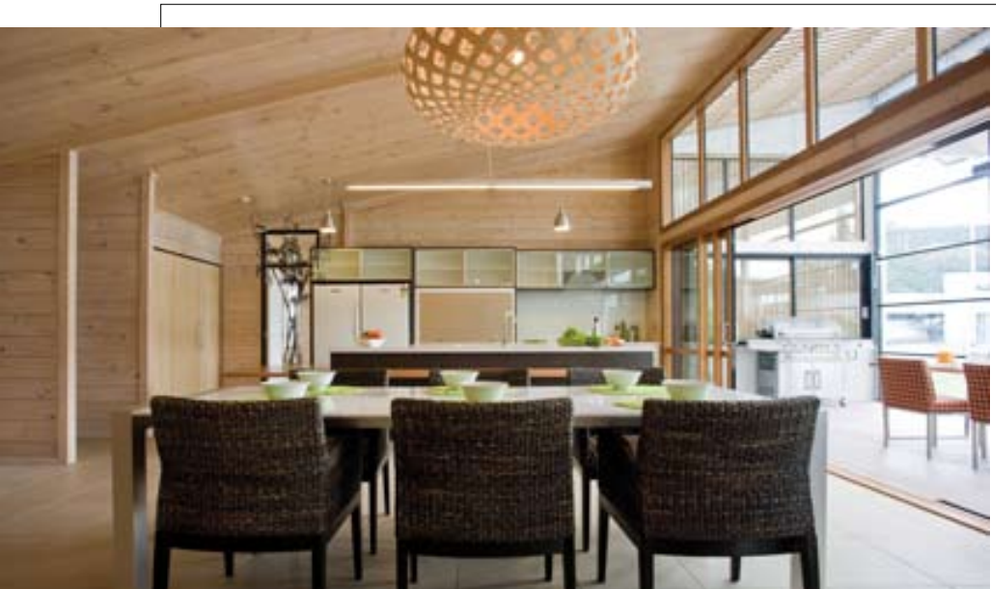
"people come to us with a social conscience," says lockwood's bryce heard. "they want an eco-house. they want to do the right thing. they are quite enthused about the whole concept"

There is a price

Buyers can expect to pay roughly **15** percent more for homes that are truly sustainable. However, ebode has analysed various scenarios and estimates that within **12** years the premium will be paid back.

The must-haves

All ebode homes are designed and sited to make the maximum use of passive solar heating and natural ventilation. In addition, solar water heating, rainwater collection, grey water diversion and photovoltaic electricity generation are non-negotiable. Ebode has put a flag in the sand: "We feel that you can call a house sustainable only if it contributes to its energy use," says Jette. "Can we make people generate their own power? Yes. If they don't want to generate power or collect rainwater, ebode isn't the right company for them."



Give and take

During Lockwood's design process, each client is given a menu from which to choose options for their home. Each option, such as solar-heating photovoltaic solar power cells or wood pellet stoves, has a mathematical value assigned to it that represents factors such as its energy efficiency or greenhouse gas emissions. These figures are used to calculate an overall value for the home; in order to be classified as EcoSmart a home must achieve a certain threshold. This system allows the client to meet their budgetary needs while achieving an energy-efficient home and allows maximum flexibility but with a strict minimum standard. One client may choose higher-efficiency windows but not be interested in extra-thick walls whereas another may choose the thicker walls but give a miss to solar heating.