

Homes greener, but impact has doubled

Lisa Carapiet

The man behind the "ecological footprint" concept says although houses are now twice as efficient as they were 50 years ago, they are having more environmental impact.

Speaking at the World Sustainable Building (SB) Conference series in Melbourne yesterday, Bill Rees, from the University of British Columbia, said that over the past half-century, the average size of a North American house had increased by 150 per cent. At the same time, the size of the average family had decreased from 3.7 people to 2.6.

"So the actual floor space per person has increased 300 per cent in 50 years. Even though the house may be twice as efficient, we're still having a much larger impact on the environment," Professor Rees said. His studies showed we were beyond "carrying capacity" and science told us we needed to reduce energy and material consumption by about 90 per cent.

"If everyone was like the average Australian or Canadian, we'd need four additional planet Earths. Each of us has such a huge level of

consumption. So we're growing more sustainably, but that doesn't solve the problem. If your ship is already full and you keep loading it up with efficiently-produced goods, it's going to sink. And it's going to sink even faster than if you were filling it up with inefficiently produced goods."

Professor Rees, who came up with the ecological footprint concept in 1992, is particularly concerned about developing countries.

"China accounts for half of all new construction on Earth. Eighty per cent of that is residential construction, which is the most material and energy-intensive form of construction. We're doomed no matter what we do [in the developing world]. We should be assisting the Chinese, Indians and other developing countries to be as green as possible and we should be concentrating on retrofitting or replacing our existing stock, rather than being so concerned here with new construction," he said.

According to a new report by Total Environment Centre, Australia's commercial buildings are clearly exposed to climate change but the sector is also best placed to manage its climate-



Peter Garrett launched a new building efficiency calculator.

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related exposures. To be released today, the report, *Commercial Property & Climate Change – Exposures and Opportunities*, says dealing with existing building stock is imperative but Australia is gradually hopping on board.

"Commercial property has a strong interest in upgrading the energy efficiency of existing buildings. Energy efficiency upgrades

will safeguard existing margins against rising costs and will ensure that individual buildings remain attractive to tenants," the report's author, Cameron Eren, said.

"Emissions reduction projects also offer building owners above-market rates of return that, despite their profitability, are eligible for subsidies. Reducing emissions from existing buildings is a risk management exer-

cise that is ultimately profitable for the sector," Mr Eren said.

He said that while short-term emissions reductions would offer groups competitive advantages, they would simply become a defensive strategy against climate change effects in the medium term.

Calculating building efficiencies has long been a hurdle for the construction industry, but a new program launched at the conference yesterday by the federal Environment Minister, Peter Garrett, may help the sector.

LCA Design, the world's first real-time environmental impact calculator for commercial property, would assist the growing momentum in the market for greener buildings, Mr Garrett said. "It is the first calculator that works directly from the building designer's model, allowing architects and engineers to optimise the best environmental outcome in real time or 'on the fly'."

The new software allows users to measure and compare changes to new and refurbished designs, and see the impact of design improvements across human health, ecosystem damage, resource depletion, carbon impacts and dollar cost.