

# From cradle to grave

A long-term project is under way in Australia to develop a single, uniform system for product lifecycle analysis – the most comprehensive approach to measuring the environmental impact of products and materials. Jonathan Green reports.

**S**ustainable, environmentally sensitive, recycled, recyclable, renewable ... the list goes on.

The construction industry has been at the forefront of environmentally responsible practice, so most products and materials are now promoted with environmental credentials.

But on what basis are these claims being made? Is there a consistent model? Are all factors being included?

If you don't know – and let's face it, most of us wouldn't – how can you possibly know the best product to use, or recommend to clients, from an environmental point of view?

In Australia, there is no agreed national approach to 'green credentials'. As such, manufacturers are able to assess their products against differing sets of environmental criteria.

That is not to suggest that environmental claims are being fabricated, but rather that a focus on single issues can often be misleading and don't provide a complete picture.

Countering these global concerns of 'greenwashing' is the increasing use of lifecycle analysis (LCA) tools, widely considered the most thorough and consistent assessment tool available.

Nigel Howard is managing director of Edge Environment, with extensive experience in developing LCA tools through Europe and America.



**With so many environmental claims being made from differing sets of criteria, it is difficult to properly measure the environmental credentials of individual products.**

He is undertaking an extensive project in conjunction with the Building Products Innovation Council (BPIC) and BRANZ to establish the foundations for LCA tools for Australia.

"In general terms, an LCA is the most comprehensive way of assessing the environmental impact of just about anything," Nigel says.

"It traces the impact of a material, product, service, system assembly or building right back to its origins in the earth or water through its life – including its use – to the end of its productive life, disposal and possible recycling."

Although this may sound complicated, it is regarded as the only realistic way of comparing the environmental impact of different products. It considers every aspect – composition, manufacture, use and disposal – from 'cradle to grave'.

Nigel says it is common to see claims based on inappropriate comparisons, such as the environmental comparison between a tonne of concrete and a tonne of steel.

"But if it takes a fraction of the amount of steel compared with concrete for the

same performance then the comparison is misleading.

"In other words, the amount of material required for the same function needs to be factored into the rating."

Equally, a building product may be promoted on the basis that it is made of recycled materials. However, its manufacturing process may cause environmental damage.

Or a 'green' product may require extensive maintenance and have a short life expectancy, thereby increasing its environmental impact. The examples are endless.

Nigel brings personal knowledge to the project from work with the Centre for Sustainable Construction.

That organisation developed the Building Research Establishment Environmental Assessment Method (BREEAM) series of rating tools as well as the *Green Guide to Specification*, a practical way of delivering LCA for the UK construction and the construction material sector.

The project took almost 10 years,

working to establish a consistent methodology with the consensus of 23 trade associations in the materials sector.

It has been so well accepted in the UK that it is now included by reference in the official Code for Sustainable Homes. Furthermore, the UK Government has made a commitment to extend the BREEAM approach to regulation for every building sector by 2016.

"It was a really tough project, because we had to reconcile all sectors of the industry to get consensus – and that is why it took 10 years," Nigel says.

"LCA has traditionally been done sector by sector, and although it is very difficult and complex work there are also different approaches to methodology.

"This means that the data collected by one sector may not be compatible with another to provide an appropriate comparison.



**Nigel Howard has extensive knowledge in lifecycle analysis tools through major projects in Europe and America.**

"In construction we draw materials and products from every industrial sector, and they compete commercially for different applications. People now recognise that the methodology used in the steel industry should be the same as that used in the concrete and timber industries. If not, it won't provide a level playing field for comparison."

After completing work with the Centre for Sustainable Construction, Nigel spent five years as vice-president of the US Green Building Council.

He was responsible for taking Leadership in Energy and Environmental Design (LEED) from pilot to five versions, comprehensively adopted across the US and licensed in Canada and India.

In the US he also participated in the national lifecycle inventory project and

initiated LCA into the LEED project.

"I suppose this project is essentially the third time round for me.

"I had started some discussion with BPIC a few years ago to encourage them to support initiatives for a lifecycle approach for products, to which they were very receptive. And the reason they were very receptive was that members of BPIC were suffering from 'greenwash' claims from competing products.

"In this sense, I believe we have the support of manufacturers to make this work."

But as much as a builder may be interested in finding the best green product, Nigel is aware that the final result needs to be practical in application.

"At the end of the day, a builder doesn't need to see an LCA. The builder needs to see an eco-label that says the product will have superior environmental performance for the intended use.

"People who purchase building materials rely on labels and ratings schemes to ensure they are getting the best possible product. So we plan to assist in producing an eco-label that uses these principles and is complementary to a set of design tools – all of which implement lifecycle assessment in a practical way.

"This project is the initial groundwork and the real value is what flows from it – which we hope will be a suite of design tools and eco-labels that touch the market and provide the most benefit."

Naturally, it is hoped that a uniform product rating system could then lead to a uniform approach to the value of products in various State-based building regulations and ratings systems for construction.

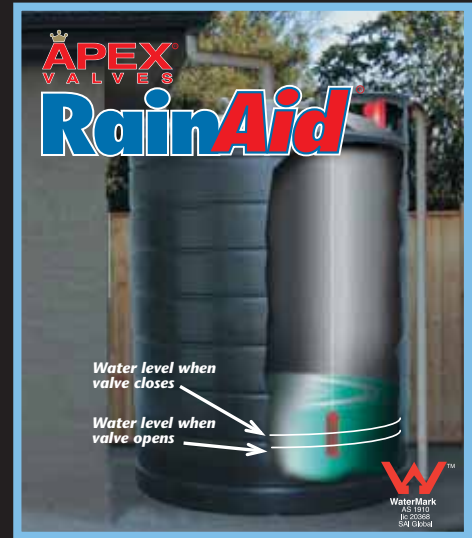
Even at this early stage, Nigel says government bodies have been in touch and are keeping a close eye on the progress of the project. ■

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