

# ecologic

CREATING A SUSTAINABLE FUTURE



## Design for the environment

### What is it?

In its booklet *Product innovation: the green advantage*, Environment Australia defines design for the environment or ecodesign, as it is also known as

‘... an approach to design that encourages businesses to give greater thought to the design of products so as to minimise their environmental impacts, while increasing market advantage and fostering innovation.’

Many factors come into play in this process and all must be juggled against cost, availability, customer support and likely use of the product, aesthetic requirements, and so on.

### How is it used?

A whole new approach to design is taking place. Design for the environment is no longer regarded as an exotic or faddish offshoot of design. Increasingly it is an integral approach to design.

This approach has revealed that:

#### 1. Good design is more than skin deep.

Designers are looking beyond what is superficially ‘green’. If a product is to have an environmentally sound design, all processes that occur during its life cycle must be taken into account, from ‘cradle’ to ‘grave’ or better, from ‘cradle’ to ‘cradle’.

## **2. Natural materials are not always the best option.**

It is often thought that 'natural' materials are better for the environment than 'artificial' materials but this depends on the product.

For example, producing 1 kg of wood causes less greenhouse gas emissions than producing 1 kg of plastic, but there are other factors to consider such as wasted off cuts, paint finishes used and whether the end product can be reused or recycled. In some instances, plastic might be a better choice of material than wood.

## **3. Energy consumption is often underestimated.**

There are two ways to evaluate energy consumption: the energy used in making a product and the energy used during a product's life. People often underestimate the latter and it can have a greater impact on the environment in the long run.

For example, it takes up to 5 kg of oil to make the 2 kg of plastic required to make a domestic coffee maker. During its lifetime, the coffee maker will use around 300 kWh of electricity, equal to 60 kg of oil.

## **4. Product lifetimes can be increased**

Designers can influence a product's lifetime in several ways by making it:

- more durable
- upgradeable (such as computers or washing machines that have replaceable chips).
- Collectable – a well-designed product can become an heirloom.

## **5. Services can sometimes replace products**

A new product is often seen as the solution to a particular problem. Sometimes a service can be a good solution. A laundrette, for example, can replace many individual washing machines.

## **6. We can use less amounts or fewer materials**

Looking critically at dimensions, strength required and production techniques can reduce the amount of material required for a product. It is often beneficial to use materials that have a high environmental load-per-kilogram (such as aluminium), if weight is saved. This is particularly true in transport equipment, where less weight means less fuel consumption.

## **7. There is a demand for recycled materials and 'green' systems.**

If there is a demand for recycled materials, the supply is likely to follow. Similarly, demand for recycled materials puts pressure on institutions and industry to put the systems in place to support this activity.

## **8. Many products can be recycled.**

But only a few will be, unless they are easily disassembled and have a high enough yield to be chosen for recycling. For example, TVs can be economically recycled because the plastic housing contains a high-grade, expensive plastic.

## **9. People can exercise choice.**

Consumers can choose a product that is made using ecodesign principles. As demand for 'cleaner and greener' products grows, so will investment in research, design and innovation to deliver these products at a competitive price.

## **Why is it important?**

The benefits of design for the environment are:

- maintaining global competitiveness  
Markets such as Europe are demanding products with low environmental impacts. Australian-made products face tough competition from overseas producers.
- reducing production costs  
Producing goods and services inefficiently costs more and reduces profitability.

Well-designed products can reduce pollution, improve manufacturing processes and minimise the use of toxic materials.

- improved planning and decision making  
A life cycle assessment allows for better planning and more accurate estimation of costs.
- improving company value  
Improving a company's environmental performance can be a selling point. It can also reduce exposure to liabilities such as pollution, contamination and consumer backlash to unsafe products.
- identifying new business opportunities  
Decisions based on past practices are not always the best decision.
- improved relationship with government and the community
- improved staff morale  
Staff will support this design approach as it is better for the environment and generally means improved OHS in the workplace.
- A systematic look at the design of products using ecodesign principles will yield better results for the environment and a sustainable future.

### Want to know more?

*Eco-indicator 99*, manual for designers, downloaded from [www.pre.nl](http://www.pre.nl)

John Gertsakis, Helen Lewis, Chris Ryan, *A guide to EcoReDesign*, Centre for Design at RMIT, 1997

*Shop smart buy green* booklet, Environment Australia, 2001

*Product innovation: the green advantage*, Environment Australia, 2001

[www.powerhousemuseum.com/exhibitions/ecologic.asp](http://www.powerhousemuseum.com/exhibitions/ecologic.asp)