

Designing for a Sustainable Future: Partnerships to Sustainability

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Abstract

Many environmental economists have written of the environmental harm caused by products. Most of the world's environmental problems can be traced back to the impacts from one or more stages of a product's life cycle, and importantly, most of a product's environmental impacts are locked in at the design stage. For this reason, minimising or eliminating environmental impacts must be a core consideration for all product designers and manufacturers.

This paper gives an overview of Sustainability Victoria's Design for Sustainability program and focuses on the core component of the program, the *Design for Sustainability Partnership*, which is a unique collaboration between government, the design community, private enterprise and academia, and which has developed initiatives to progress the mainstreaming of DfS.

Introduction

Most of the world's environmental problems can be traced back to impacts caused at one or more stages of the life cycle of products, and the majority of these impacts are locked in at the design stage. For this reason, minimising or eliminating environmental impacts must be a core consideration for all product designers, design engineers and manufacturers. Sustainability Victoria recognises this, and in 2004 a comprehensive program was established to promote design for sustainability (DfS) to the Australian design community and manufacturers.

This talk outlines the scope of Sustainability Victoria's *Design for Sustainability* program, some of the strategies used and specifically focuses on the core component of the program, the *Design for Sustainability Partnership*, which is a unique collaboration between government, the design community, private enterprise and academia, and which has developed initiatives to progress the mainstreaming of DfS.

Who is Sustainability Victoria?

Sustainability Victoria was formed in 2005 when two Victorian government agencies, EcoRecycle Victoria and the Sustainable Energy Authority of Victoria (SEAV) were merged. Sustainability Victoria has responsibility for implementing the Victorian Government's sustainability policies – specifically policies relating to sustainable use of resources – materials, energy and water.

What is DfS?

The Finnish environmental economist Eva Heiskanen¹ said: *“Products can be considered as the embodiment of environmental harm caused by production, consumption and disposal.”* It is estimated that 70% of a product’s environmental impact is **locked in at the design stage**. This simple statement exemplifies the importance of sustainable thinking at the design stage.

Simply stated, DfS is about designing products in such a way as to minimise or eliminate their negative environmental impacts over the whole of their life cycle. The key principles of DfS are:

1. Efficient design – keeping the material and resource inputs to a minimum, that is doing more with less.
2. Cyclic design – designing to enable materials to be continuously cycled through natural or industrial systems. That is, designing products that can be easily reused, refurbished or remanufactured; designing for easy disassembly; using recycled materials and/or materials that can be easily recycled at end of life.
3. Safe design - avoiding toxic and hazardous substances and processes. Keeping human health in mind as well as ecological impacts.
4. Communications design – ensuring that product and packaging related communications are informative and accurate, to encourage responsible consumer behaviour.

Sustainability Victoria’s DfS Program

While most of Sustainability Victoria’s programs are concerned with environmental impacts at the use and end-of-life stages of product life cycles, the DfS program moves the emphasis to the beginning of the life cycle - that is to the design stage. Designers and product developers are in a key position to influence and reduce environmental impacts and contribute to a sustainable future - often by using straightforward methods.

Studies have shown that by adopting DfS strategies aimed at reducing the amount of materials used in products, and by reducing use of energy and water, and minimising waste during production, manufacturers can also make considerable cost savings (Birkeland²; Lewis et al³; Centre for Design⁴).

The DfS program aims to firmly place sustainable design on the political and business agendas, and to make environmental considerations a mainstream concern of design professionals, product developers and manufacturers

The key objectives of the program are:

1. To see DfS established as an integral part of good design practice - to make it simply a part of delivering a professional design service to clients.
2. To make product development and design professionals as well as manufacturers aware of and engage with, DfS practise.
3. To grow awareness amongst the general public of DfS and the importance of product design.

The DfS program does not focus on 'deep green' or 'eco' products, but aims to move sustainable product thinking away from this narrow concept to focus it squarely on mainstream, everyday products.

DfS needs to become an integral part of good design practise so that every product entering the market place, from food to furniture, and computers to cars, is designed to have minimal impact on the environment.

Main initiatives in the program

The key initiative is the DfS Partnership established with the Design Institute of Australia (DIA), the professional body for designers, the Centre for Design at RMIT, an internationally respected design focus research centre, and the sustainable design consultancy firm Product Ecology. Through this partnership Sustainability Victoria has been successfully engaging with the Victorian and national design community.

One aspect of the partnership involved Sustainability Victoria funding an industry liaison officer based with DIA for one day per week, to boost awareness of DfS across the DIA membership, by ensuring that sustainable thinking is integrated into all professional activities of the Association.

Other initiatives of the Partnership include:

- A professional training course for designers, called *Head Start*. The course was offered to designers as a weekend course in 2005. The course was well attended and well received and is currently being developed into an in-house training package which will be rolled out in late 2007.

- A series of professional resource brochures for designers called *Quick Start*, which comprise of concise, easy to digest information to assist designers and product developers to integrate environmental factors into new product design projects. So far 5 issues have been distributed free in the Australian design magazine *Curve*.
- A number of very successful professional forums and public lectures organised under the banner of the DfS Partnership. In July 2006, a forum looking at challenges for designers in encouraging clients to take up DfS, was held as part the *Melbourne Design* festival; and in October *Design in 2050*, a forum focusing on the future challenge of resource shortages was held as part of the Victorian government sponsored *State of Design* festival.
- A small grants program was establish to award five successful designers with funding to help cover the extra costs associated with working with their client to incorporate DfS considerations into an existing design brief.
- A National eco-design curriculum for industrial design students was developed and is currently being trialed in several universities around Australia.
- A showcase of products exhibiting excellence in sustainable design is being developed.

Sustainability Victoria is also working with design award organisers to develop sustainable design entry and selection criteria for all categories of design awards, instead of the more common practice of having a 'sustainable' or 'eco' category, which is often of lesser importance than other categories. We have been working with the organisers of the *Australian Design Awards*, the *Premier's Design Awards* and *Inside Design Awards*. Each of these awards will have DfS criteria in all categories from 2007. And a special award for excellence in DfS will be awarded to a product selected by the DfS Partnership from the finalists in the *2007 Australian Design Awards*.

A challenging design future

The DfS program is now starting to bear fruits with Sustainability Victoria being increasingly seen as the lead agency in Australia at setting the DfS agenda. DfS is being talked about in the Australian design community; design award organisers want to include sustainable design criteria in all award categories; sustainable design forums have regularly been booked out, and the feedback is positive; and successful design companies are increasingly considering sustainability as part of their standard design practice.

The future will have a number of environmental challenges for manufacturers, none more pressing than shortages and increased costs of resources, especially oil, plastics, metals, energy and water. Designers will need to face these challenges and it is essential that they and manufacturers, and our leaders, start to embrace the challenge now. Through DfS strategies these challenges can become opportunities for smart design professionals and manufacturers. A sustainable future is possible, and DfS is a key strategy for achieving it.

¹ Heiskanen, Eva (1999) 'Every Product casts a shadow: but can we see it, and can we act on it?' *Environmental Science & Policy* 2, 61-74

² Birkeland Janis (2004) *Design for Sustainability*. Earthscan, London

³ Lewis H and Gertsakis J, (2001) *Design and environment: a global guide to designing greener goods*. Greenleaf, Sheffield.

⁴ Centre for Design (1997) *Introduction to EcoReDesign: Improving the environmental performance of manufactured products*. RMIT, Melbourne

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