

Integrating Design for Environment into everyday product design practice

Lizzie Dutton, The Design Unit, Faculty of Art and Design, De Montfort University, UK

This paper discusses practical methods for integrating Design for Environment (DfE) considerations into the existing design processes of small design consultancies by studying the successes and difficulties experienced by designers integrating DfE in live design projects.

A large proportion of products designed in the UK are developed by small product design and industrial design consultancies. Time, resources and the demand for incorporating environmental considerations are limited. Furthermore developing a company strategy for optimising DfE processes is an extravagance normally only afforded by larger organisations.

The Resource Efficient Design (RED) Initiative enables small and medium-sized design consultancies and manufacturers to develop products with reduced environmental impact. Support ranges from basic information about legislation, through to bringing together both manufacturers and design consultants to develop product concepts. Working with small design consultancies, a need was identified for a practical method of integrating DfE in their everyday product design practice.

In the field of DfE, research to date has produced a range of tools to assist designers in developing products with environmental considerations in mind. However, despite some of these tools having been available for over ten years, the uptake amongst small design consultancies is limited.

Various barriers to engagement with DfE tools have been identified, which include time constraints (Hemel, 2001, Lofthouse, 2006), lack of resources (Hemel, 2001), unpredictability of consequences (Hemel, 2007) and complexity and over-formalization (Lindhal, 2005). The initial constraints perceived by small design consultancies are firstly the time required to identify suitable tools and then the ability to use them alongside their conventional activities.

When DfE tools are used it is generally in product development departments within larger organisations where the tools tend to be adapted to suit the existing development process. This is an activity that requires both time and prior knowledge of the tools available. Tischner reinforces the importance of this business-specific adaptation process: "Experience shows that companies that use a selection of the tools and adapt them to their own needs are able to achieve very good results." (Tischner, 2001). This indicates that in order for the use of tools to be successful, small design consultancies need to be able to develop a strategy for DfE that suits their product development process.

The aim of the project described by this paper was to find out:

How designers react to existing methods for incorporating design for environment in practical design projects.

Which tools designers select and find most useful to their processes.

How designers think they can integrate design for environment in their everyday design practice.

The emphasis of the research was to identify practical solutions and therefore the study of typical live design projects was important. The process involved working with designers at key stages:

Explaining a variety of potential tools available to them before designing commenced.

Allowing designers to select tools that suited the design project and gaining feedback on the successes and difficulties experienced.

Discussing if/how any of the tools can be used/adapted for future design projects at the end of the design process.

The research highlighted the need for guidance in how the tools could be used and their potential benefit. The availability of this guidance was considered important to the level of buy-in and therefore the success and satisfaction of the companies involved.

The research concludes by suggesting a method of enabling design consultancies to integrate DfE into their existing product design strategy. Based on the experiences of practicing designers, this method is an achievable, adaptable and practical approach for small design consultancies.

Bibliography

- Hemel, C, van., Editors, Charter, M. & Tischner, U. (2001) What sustainable solutions do small and medium-sized enterprises prefer?, *Sustainable Solutions*. Greenleaf, Eastbourne, UK.
- Hemel, C, van. *Experiments in Dutch ecodesign*, <http://www.co-design.co.uk/experime.htm>, Delft University, (21 March 2007)
- Lindahl, M. (2005). *Engineering Designers' Requirements on Design for Environment Methods and Tools*. Stockholm, Sweden.
- Lofthouse, V.A. & Bhamra, T.A. (2001). Making things better - an industrial designer's approach to ecodesign, *Proceedings of D3 desire, designum, design: 4th European Academy of Design Conference*. Aveiro, Portugal.
- Lofthouse, V.A. (2006), Ecodesign tools for designers: defining the requirements, *Journal of Cleaner Production*. Iss. 14, pp 1386-1395
- Tischner, U., Editors, Charter, M. & Tischner, U. (2001). Tools for Ecodesign and Sustainable Product Design, *Sustainable Solution.*, Greenleaf, Eastbourne.