

## **Sustainable Use: Changing Consumer Behaviour Through Product Design**

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This paper presents the results of two research projects that aimed to investigate how sustainable product design could be used to change consumer use behaviour. One project focused on identifying, evaluating and applying design-led approaches to reduce undesirable behaviour in the use of mobile phones. The other project focused on developing models and tools particularly applied to reducing energy use in the home.

The use phase of products, which has immense potential for decreasing environmental impact, is often neglected in sustainable design. Product designers are identifiably in a position to plan and to shape the way in which consumption occurs as well as to bridge the considerable intention - behaviour gap between environmental values and consumer everyday action and locked-in occurrence (Sustainable Consumption Roundtable 2006). Products, as the interface between consumers and consumption activities, have the potential to influence the way in which consumption occurs. Over 80% of all product-related environmental impacts are determined during the product design phase (Environmental Change Institute 2005). In the sustainable design field however, designer responsibility traditionally considers raw material selection and product disposal. There is limited work that addresses the environmental impacts relating directly to product use. This work intends to address this gap by investigating how designers can contribute much more to more sustainable use.

This paper begins by analysing some selected behaviour models in social-psychological theories and the barriers to sustainable consumption and a model is developed to uncover the factors stimulating change in behaviour. Design led approaches for changing behaviour identified in a prior literature review were eco-feedback, behaviour steering (scripts, affordances and constraints) and intelligence (Lilley et al, 2006). The use of these approaches is outlined and their application illustrated with case study examples from the research undertaken. Then by linking the design strategy research with the psychological theories, the breakthrough points that potentially enable design to influence the consumer behaviour and habits are identified.

The research is adopting a user-centred approach (Evans et al 2002, Maguire 2001) to understanding product use in the UK. It is designed to gain an insight in to the "actual" practices, habits and needs of users. Employing qualitative ethnographical research methods (Marshall and Rossman 1999, Denzin and Lincoln 2003) to uncover the connection between the knowledge, attitudes, affective and actually use behaviour. The results have been applied to improve product design with the aim of encouraging more sustainable consumer behaviour particularly in their use of products.

Finally, employing the user-centred approach, the results of the two research studies will be presented and contrasted. These results are used to outline a framework for the development of appropriate resources to assist designers in incorporating behavioural concerns into their design process. Conclusions are drawn on the appropriateness of these approaches for design professional and the potential for designers to change user behaviour.

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