

# Designing services

Another step towards a sustainable future

Report from the project Ekodesign II – 2002-2003



# Project Facts

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**SPRING 2002** The Swedish Industrial Design Foundation (SVID) launched the project Ekodesign II - One more step. The goal is to apply environmentally adapted product development in the service sector. The objective of the study described in this report is a broader project during 2003-2005 within the scope of the Swedish national action programme "Design as a force for development".

The background is Ekodesign – A step towards a sustainable future – a project conducted by SVID 1998-2000 that attracted considerable attention for its undertakings related to environmentally adapted product development. In co-operation with thirteen companies Sweden's designer corps demonstrated that it is possible to develop products with documented lower environmental impact. On average, the environmental impact was reduced by 50 percent.

**The feasibility study for service design consists of three parts:**

1. The intellectually disabled's path through care - a vision

2. Street-side collection of recyclables from single-family dwellings in Sundsvall
3. Street-side collection of hazardous waste from households in Söderhamn

Funding is provided by SVID, the Swedish Business Development Agency (NUTEK), the Ministry of Industry, Employment and Communications, the county administrative boards of Gävleborg and Västernorrland, the Swedish Waste Management Association (RVF), Söderhamn Vatten och Renhållning, Reko Sundsvall, IL Recycling, Västerbotten County Council, Municipality of Umeå and the Federation of County Councils.

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# Introduction

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**EKODESIGN II** - One more step. The name refers to one more step towards a sustainable future, foremost ecologically but naturally also socially and economically. In the first ecodesign project we focussed on the environmental impact of products. In this study we have analysed the environmental impact of services and how services are developed. Primarily we have tested if industrial designers are suited to improve existing and develop new services. The word design is now becoming worn since it is used in all imaginable contexts. The Swedish Industrial Design Foundation has a definition of the concept ([www.svid.se](http://www.svid.se)). One minimum requirement is that it is something performed by trained, professional designers.

However, what do we actually mean with the design of services? Or service design which is the shorter term used in the rest of this report. For many years Swedish designers have applied a successful methodology which, among other features, is characterised by genuine attention to the needs of the consumer/user. This requires thorough preparatory work in the important pre-design phase. Transferring the working method to services is not far-fetched but, in fact, rather logical. This is exactly what we have tested in this project.

We have conducted a project of change incorporating both the perspectives of sustainability and that of the consumer within home healthcare/psychiatric care, the collection packaging plus

the collection hazardous waste. The results were surprisingly good. Design methodology proved that it performs better than other methods for service development. In collaboration with other, complementary expertise the industrial designers possess the necessary tools and methods even for non-physical products.

Service design is also a new field for designers and there is a need for more development, research and trials within service design. It is a rather new sector where there is enormous potential for improvements that originate from, and benefit, both the designer and the user. We would like to take this opportunity to thank the financial backers, participating companies and organisations as well as the designers for their fine co-operation!

*Christer Ericson and Hans Frisk  
Project leaders*



# Designer places the consumer in focus

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**THAT AN INDUSTRIAL DESIGNER** is creative when it comes to problem-solving and generating ideas is hardly open to question. Also, the ability to manage form and other aesthetic values is regarded as self-evident. Of more interest is how the information that forms the basis for the idea phase or the actual problem area is produced and then processed.

Throughout the entire process the designer places the consumer in focus and defines the needs that the solution is expected to satisfy. These fundamental needs together with the other requirements – ecological, technical, commercial – constitute the objective that the designer and others involved in the development process work towards.

Design methodology and its tools strive to chart all aspects of the user in the user's situation and in the process also capture attitudes and perceptions. These clarify what is to be satisfied but say nothing about how the solution will look and this is an important basis for quality conceptual work.

The methodology also includes tools to evaluate the different needs in relation to each other. This plays a major role when alternative ideas are to be assessed and refined. The creative phase involves seeking broader solutions before moving on to details for the final solution. In other words, the industrial designer sketches overall pictures that are then evaluated before the designer be-

gins working on details. Regarding a solution - a service or product - as one of several possibilities for satisfying the defined needs opens the way for identifying new alternatives and better solutions.

The design approach becomes a tool that can open new pathways. That the industrial designer has the ability to visualise ideas and solutions at an early stage increases the chances of finding the right concept before the process has advanced too far.





# Why it also works for services

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**A LIFE CYCLE ANALYSIS, LCA**, is normally divided into three phases, "from the cradle to the grave": production, use and residual processing. Use is often the dominant environmental villain when it concerns, for example, transports and when heating/cooling buildings. The bar graph on the next page uses cars as an example.

Naturally it is possible to influence factors such as fuel consumption, exhaust emissions etc. during the development process. However, within the foreseeable future, the use bar will never drop to the level of the others. Consequently, what remains is to study use. How, and by whom, is the product used? Fairly quickly one comes to the conclusion that the use largely involves work-related activities. The majority of new cars are company cars, the majority of air travel is on business, commercial premises constitute a significant portion of the building stock and so on.

We have not expended effort to assemble statistics but it is possible to confirm that the performance of work is responsible for a very large part of the environmental impact. Presumably greater than industrial production. There are no schools that train service developers. This is noteworthy since services represent a large and growing feature of both the public and private sectors. Certainly, there are fields within economics and the behavioural sciences

that touch upon the subject but none however have development as the primary focus.

Most services are developed by the manager at the next, higher level which we within product development refer to a little unkindly as supervisor design. The results are often good but increasingly complex operations facing rising economic and time pressure can require specialist expertise that is difficult to obtain today.

The starting point for design methodology is a number of defined needs that are to be satisfied. This means that the basis for the industrial designer's idea generation says nothing about how the actual solution will look. The methodology has only defined the fundamental needs and requirements that form the objective. Therefore, it is a clean sheet as to whether the right solution is a physical product, a service or a combination of the two. The industrial designer can, with an overall view, quickly survey and visualise the problem area from a broader perspective before undertakings are limited to the area later decided upon.

It is this delimitation and definition of the problem area that determines if we are to work on a physical product or if it is to be a service or process. In order to eliminate the notion from the problem-solving process that the so-

lution consists exclusively of a physical product it is important that the defined needs do not describe solutions but focus solely on the underlying needs. The car is not the need. The need is to be able to relocate, have convenient transportation and so forth.

It is a conscious decision at some stage that determines if we are to work with a refrigerator or something else that provides the user with fresh and chilled foodstuffs. When industrial designers are allowed scope for their creativity and visualisation capacity it becomes clear that design methodology is also appropriate for service development.

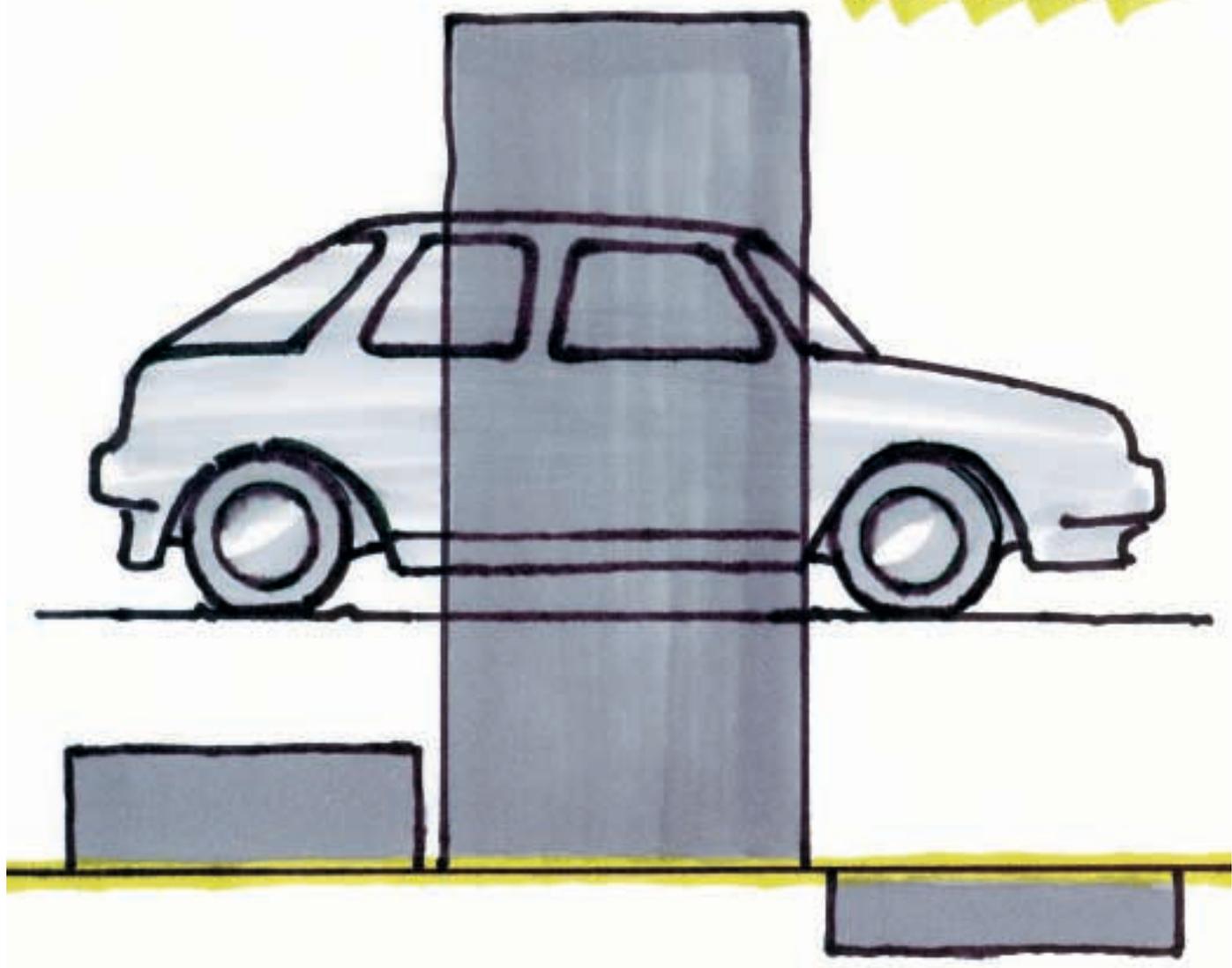


**EKO**DESIGN

PRODUCTION

USE

RESIDUAL  
PROCESSING



# "Design methodology was a boost"

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**SUBPROJECT 1:** The intellectually disabled's path through care – a vision

**Participant:** The TILLIT Project in Umeå, Sweden

**Designer:** Elin Kolterjahn, Struktur Design

## **Project description:**

A person afflicted by a disease is offered care and support by both the county council and the municipality. A long list of different bodies and people are involved. In Umeå, the county council, municipality and private enterprises are conducting the TILLIT project together. The goal is to coordinate and increase the efficiency of care, always keeping the patient in focus. An important feature of this undertaking is a database where those involved can quickly and easily obtain relevant information.

Industrial designer Elin Kolterjahn has conducted an analysis of the chain of care for the intellectually disabled, and thereafter created a vision for how things would look if the needs of the users were to steer the organisation.

Design methodology has proven to be very valuable and TILLIT is continuing collaboration with industrial designers for the duration of the project.

## **What has design expertise contributed?**

According to Eva Bergström, project leader for TILLIT, design methodology is very suitable for this type of undertaking.

"It is good to bring in someone who is not in

the middle of things. This has given us a good overview. Design methodology has given us a big boost," she says.

The municipality and the county council can have different goals and a different focus. To implement a better model everyone has to compromise, comments Elin Kolterjahn.

"I don't have any preferences for one thing or another. I come in as the 'joker'."

Eva Bergström thought that a major part of the designer's work would concern technology. "I was surprised that comments were made about the user interface. It was clear that it gave us so much more. Elin has taken in the complex of problems in a good manner. She has also only needed a relatively short time to comprehend and describe the process."

Elin Kolterjahn's work was presented at a Swedish national conference on the theme IT Support for Chains of Care in November 2002. "The participants were very impressed. By using this methodology we can provide significantly better services within the care field. That's why we are hopping for a continuation," says Eva Bergström.

Several student projects within the framework of the Ekodesign project have been conducted where TILLIT has collaborated with the Umeå Institute of Design.



**EKO**DESIGN



# "The designer views things with other eyes"

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**SUBPROJECT 2:** Street-side collection of recyclables from single-family dwellings in Sundsvall

**Participants:** Reko Sundsvall and IL Recycling

**Designer:** Gunnar Anderung, Vector Industridesign in collaboration with consultant Mikael Nilsson, Prejector Sweden

## **Project description**

Just over 60 single-family households in Sundsvall tested a system for the near-home collection of sorted waste during a six-month period. The aim was to study whether sorting increases if one does not need to travel to a recycling station. Each household was provided with a new recycling container with sections for paper, glass etc. The material was collected once a month. The designer's task was to evaluate the system from a user perspective and identify potential improvements. Before the test was launched the participants were asked to respond to 43 questions about their attitudes to waste sorting and the most important factors for them concerning waste sorting.

The evaluation showed that the system was regarded as superior to the old one, but the participants were not willing to pay a higher collection fee (there was no charge for collection during the test period). IL Recycling has continued with the system and offers single-family households in central Sundsvall collection at a cost of SEK 45 per month. Each collection container, which costs an additional SEK 12.50 per month, now accommodates two different types of material. Initially, a handful of households have chosen to purchase the service.

## **What has design expertise contributed?**

The designer chose to take a broader approach and examine the all of the circumstances related to packaging.

"The product will be better if you allow yourself to go behind the solution. Even the behaviour of other players affects the conditions for IL Recycling. This macro perspective has also provided them with knowledge of the competitive situation and thereby improved their readiness for changes, for example, in legislation," says designer Gunnar Anderung.

According to Annacarin Östlund at IL Recycling the designer methodology has functioned well.

"What is unique is that we have brought in a new type of expertise that views things with other eyes. Putting the user in focus proved to be the right method," she says.

By not using an existing system as the starting point IL Recycling has obtained valuable knowledge and information from the users.

"This can, in turn, lead to other concepts and solutions than we tested in the feasibility study," says Annacarin Östlund.

The Swedish Association for Waste Management (RVF) has also participated in the project.





# "We experts can easily miss what is close to home"

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**SUBPROJECT 3:** Street-side collection of hazardous waste from households in Söderhamn

**Participants:** Söderhamn Vatten och Renhållning

**Designer:** Peter Nordgren & Stina Juhlin, Myra Industriell Design

## **Project description**

How can hazardous household waste be collected in a simple, rational and environmentally sound manner? What is the best way to provide information on sorting and collection? The aim of the study was to weave together the interests of the collector and the customer without compromising environmental and safety requirements. The goal was to reduce the amount of hazardous waste in household refuse that is incinerated.

The designers began by classifying the various types of hazardous waste and produced distinct graphic symbols for them since information is a prerequisite for efficient collection.

The next step was to produce a proposal for the actual collection. This involved a "red box" used by the householder to gather the hazardous waste and which was placed at the property line for collection by collection vehicles which also provided the opportunity to ask questions concerning hazardous waste.

The goal of Söderhamn Vatten och Renhållning, the municipal water and waste management company, is to introduce street-side collection of hazardous waste during 2004. The grap-

hic symbols produced by the designers will then come into wider use.

## **What has design expertise contributed?**

As is the case in many other industries it is technicians who control the technology and logistics within the waste management industry.

"This presumably makes it easy for us to miss what is close to home and hinders development from a user perspective," states Hans Hagelin, CEO of Söderhamn Vatten och Renhållning.

Bringing in designer expertise was therefore a means to broaden the perspective.

"The industrial designer's methods were well-suited for this type of assignment. We are accustomed to posing questions from a user perspective and we view things from a new angle," comments designer Peter Nordgren.

The ideas presented concerning marking and information have been very valuable according to Hans Hagelin.

"We hope that they can also lead to the adoption of a national standard," he says.





# Moving along ...

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**In the Swedish** Industrial Design Foundation's national action programme "Design as a force for development" service design has been designated as a priority area in anticipation of Design Year 2005. We will further develop this successful methodology together with other stakeholders.

In year 2001 close to 85 percent of all newly started businesses were service companies. The majority of the companies that want to expand are found within the service sector. The feasibility study shows that design methodology can be used to develop better, more efficient and more environmentally adaptable services. We now wish to extend to project to other industries and businesses producing physical products. It is namely so that these enterprises consist to a considerable extent of processes and services - services that can be improved and made more efficient with the help of design methodology.

The designer employs a systematic working method: an analysis phase leads to a creative phase, a phase that is intangible and that science has always attempted to understand. This working method often leads to unexpected, successful results. We do not want to study creativity but rather to apply it where we know it exists - with the designers -to develop and improve services. Together with the expertise within behavioural sciences, organisational theory and economics we want to both demonstrate and develop the designers' expertise in the co-ordination and execution of integrated service development. In the same manner

as in the first Ekodesign project we will invite national and international experts to participate and educate.

We are operative in the companies/organisations. This has proven to be a very practical approach since the specialists, often from the university world, are eager to test their methods in the industry sector.

## **We have adopted the following project objectives:**

- *that 5-10 companies/organisations participate in the service design project and can serve as good examples*
- *to produce new and/or better services, have more satisfied customers/users, more efficient undertakings*
- *to minimise the environmental impact of the services we develop*
- *that service design becomes accepted as a field of activity*
- *to deepen the knowledge and methodology related to the creation of services*
- *to conduct LCAs that document lower environmental impact*
- *to educate and "de-productify" someone at all of the important design offices, about 25 people*
- *to intensify collaboration with the Umeå Institute of Design and the Institute of Design in Lund*
- *that service design is added to the program of all design institutes (as with ecodesign)*



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