

## Curriculum examples

Year five

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## Research Methodology

Lena Sperling

The aim of the course is to introduce basic principles of theory of science and the research process, as well as to present methods and models for realisation and documentation of projects of a theoretical as well as practical nature. The course conveys a vision of a subsequent research career in industrial design. At the same time supports the coming diploma project and future work as a practising industrial designer.

After the course, the students will be able to account for, plan, carry out, report and discuss a small research study in relation to current knowledge.

Industrial design is presented as a growing field of research within the design sciences and is positioned in its epistemologic and scientific contexts. The various phases of the research process are presented. Introductions are given to information searching in scientific data bases, scientific authorship and writing of popular reports. Research methods in the three main areas of industrial design (Management, Meta-qualities and Methodology) are presented by researchers in industrial design. Investigation methods in user-centred design will be given special attention in the course. The students will carry out small research projects using various investigative methods and report them according to scientific praxis.

Educational form:

Theoretical lectures and practical demonstrations, self-organised reading, group discussions and research under supervision, group presentations and critique. Feedback on reports by groups.



**Sony Ericsson, 2002**

Claus-Christian Eckhardt

Michael Henriksson

Johan Karlberg

Joshua Murray



3G concept phones in cooperation with Sony Ericsson.

The original assignment was to create a "near future navigation paradigm and device" for mobile phones. This paradigm and device should respond to the upcoming needs created by new forms of applications and content that mobile devices will be using.

As the project developed, the focus of the assignment broadened to even include the design of the entire mobile device, with the navigation paradigm as a basis.

To support the design students, industrial designers and interaction designers from Sony Ericsson's Creative Design Center visited the design school periodically during the project for progress reviews and feedback.

The completed projects were presented at Sony Ericsson Creative Design Center and received positive feedback from their design team.





**NASA, STAR Design**

Per Liljeqvist

Based on a three-week field study at Lyndon B. Johnson Space Center (JSC), Houston

**The Project**

STAR Design started in 1998 and is a project run in cooperation with the Space Programme at JSC in Houston. This is a project in continuous development, where the fields of interest change due to the work our collaborators execute. In the last five years, themes of interest have been different habitat, work and emergency functions/solutions for the International Space Station, on the way to the Moon and Mars and back, on the surface of Mars and on the surface of the Moon.

Basic human needs of everyday life become visible where life support systems are required. The study and work is about solving elementary problems in extreme circumstances. The human dependence and interaction with the environment, surroundings and artefacts, are the foundations of the project.

Students are trained in planning and developing complex projects and processes. Because the students explore things unknown to them, they learn to put questions instead of starting with an answer. Students are trained in gathering information and converting data into knowledge that they can apply in their design processes. In order to do so, it is necessary to try reading and defining the interacting sub-systems, like architectural, physical, sociological, biological and technical systems. This method embraces systems-mapping which focuses on defining different systems and their integration with each other and with the citizen.

The project consists of three phases:

Phase 1 Man in Space

Phase 2 Field-study at NASA

Phase 3 Design Applications

Preparatory studies in Lund include general information, lectures, workshops and assignments to make the students start thinking in the right direction. Central for this project is the focus on lunar or Mars habitation in different situations. Students will have to consider such challenges as normal routines and emergency situations under these conditions.

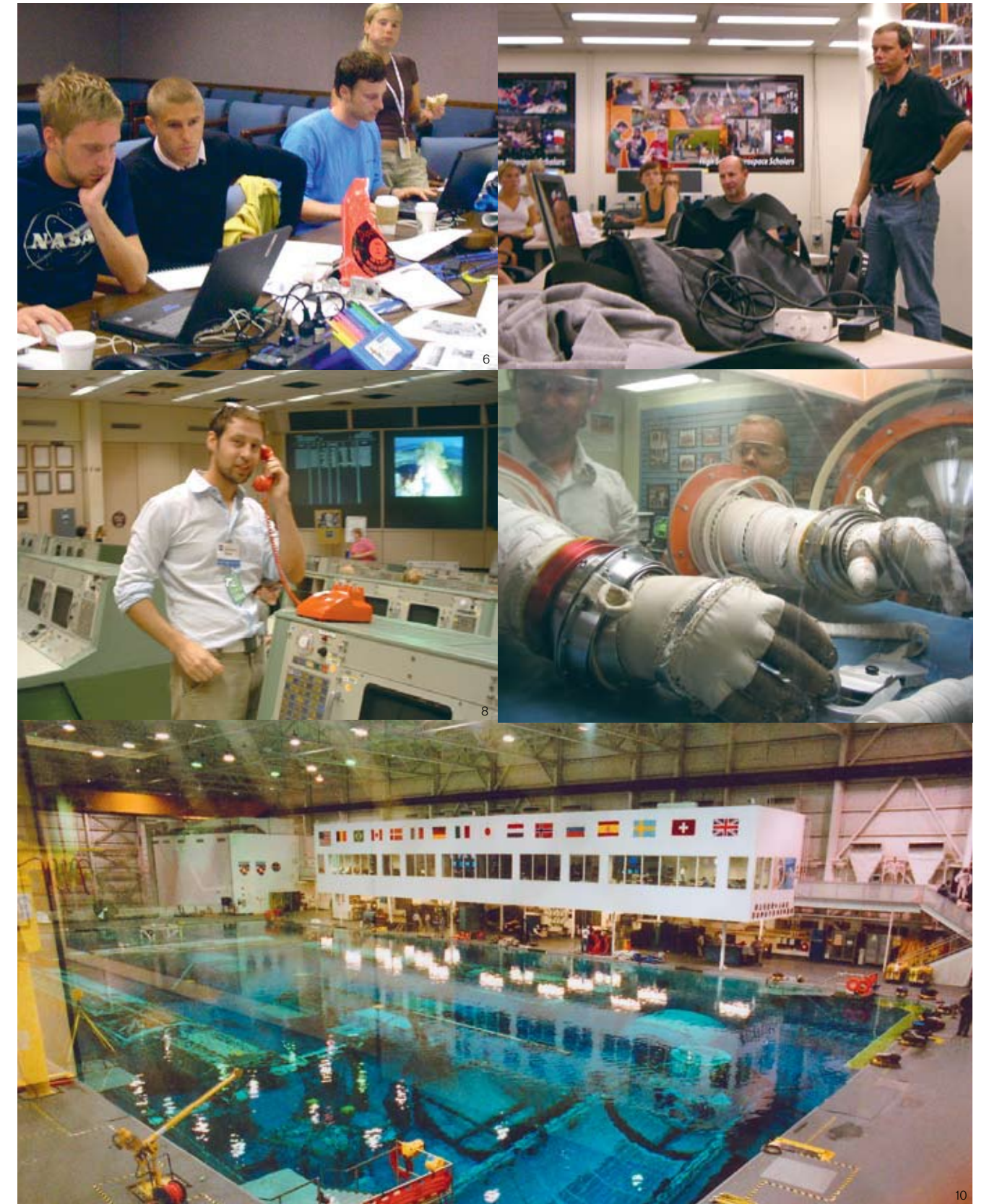
The fieldwork takes place at NASA's facilities in Houston, Texas. The students work within an ongoing project and focus on designing with human aspects, the human interaction with the physical environment, the well-being and how to live in a dense life support system. The students are introduced to specialised knowledge of the life, environment and conditions in space.







1/ The ISS Mission Control Room 2/ Sonny Carter Training Facilities 3/ Inside International Space Station mockup 4/ Inside panel of capsule door 5/ Students visit the building where the mockup of the ISS and Shuttle are housed 6/ Students working on their projects 7/ A memorable moment meeting with the Swedish astronaut Christer Fuglesang 8/ Visiting the control room used for

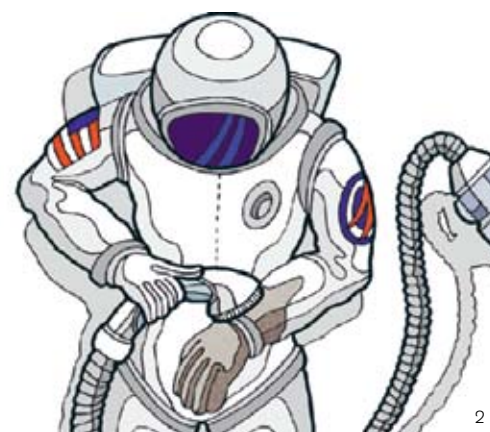


the Gemini missions through Apollo missions 9/ Testing astronaut gloves in vacuum 10/ The Johnson Space Center's Sonny Carter Training Facility houses the Neutral Buoyancy Laboratory, a 6.2-million-gallon pool used to train astronauts for space walks

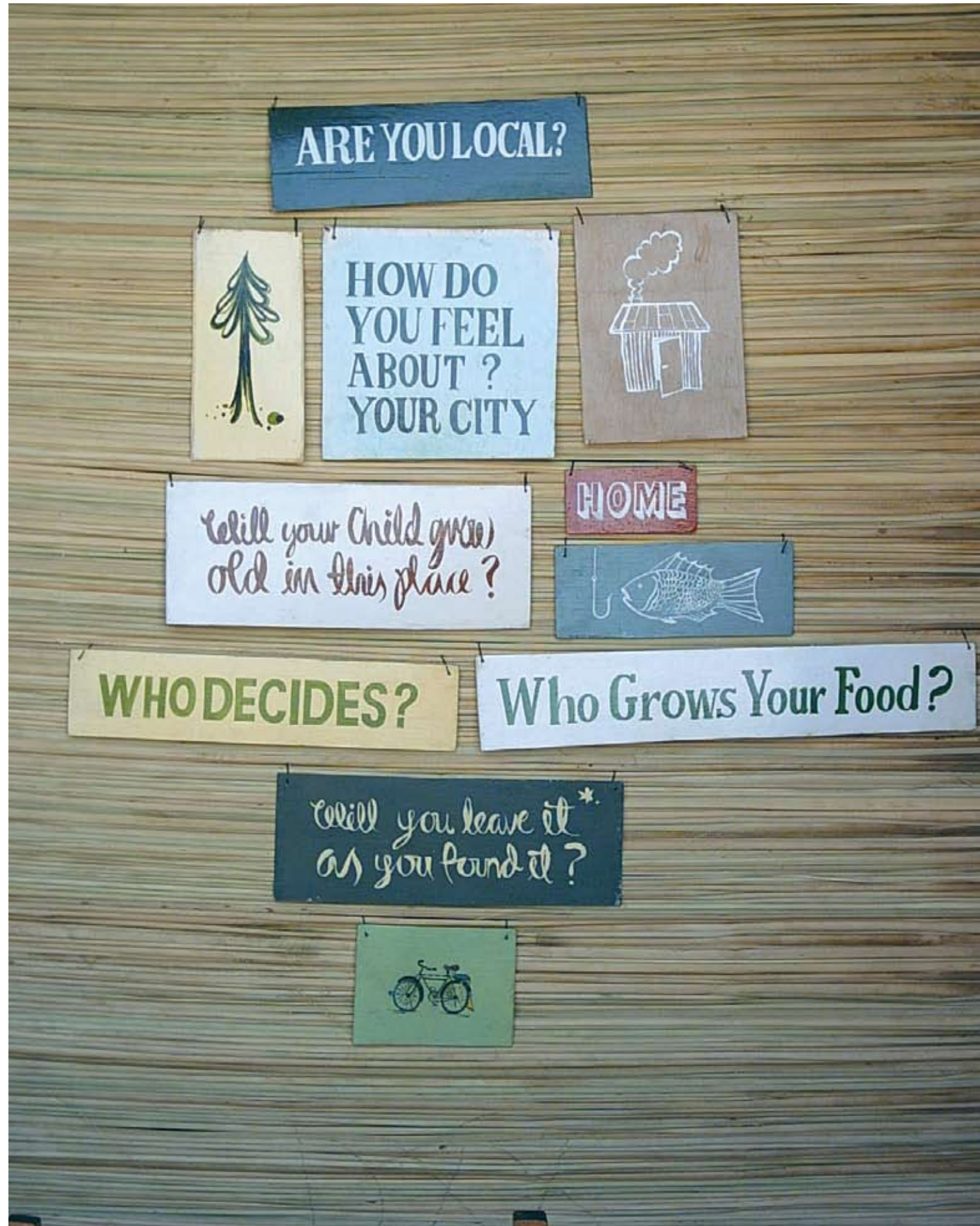


The students formulate their projects while at JSC, NASA and present a "midterm" presentation on-site. They present their ideas and the formulation of the project that they, at that time, have taken to a level that it can be criticised by experts. This presentation is to give them feedback and guidance.

Back at Lund University the project continues. From the input the students got from the presentation on-site at JSC, they start to develop their projects. They evaluate the information and seek more if needed.







## Kenya, Design in unfamiliar cultures

Catarina Östlund

Based on a six-week field-study in Kenya.

The visionary and long-term goal of the study is to improve the health and quality of everyday life on Earth. The goal of the study is to find new planning strategies for urban areas, villages and neighbourhoods. Sustainable development is a global issue which needs to be managed with care for each local situation. Each site which is studied is in need of analysis and specific solutions for its future development. But they also face problems in common with each other and many other cities of the world such as cultural identity and increased tourism, population growth, expansion and pressure on resources, declining markets and growing slums. The world planners and developers face an enormous task – creating the cities of the future. As designers we form processes, products and systems in society. We interfere with developments in progress that affect physical as well as social factors in developing countries. The study philosophy is centred on what architecture and design do, over time, rather than what they are.

It is our intent to work with the whole design process towards design, architectural solutions and implementation. The students explore things unknown, to them, and create visions in the process of designing. In order to do so, it will be necessary to understand the relation between different levels, between the micro- and macro-perspectives. The students get tools to help them understand and react to complex situations. They learn to put questions instead of starting with an answer, and to describe reality from a problem-oriented point of view.

The course consists of three parts: introduction in Lund, field study in Kenya and finalisation of the projects back in Sweden. During the introductory phase, theories on sustainable urban development are studied and previous projects analysed. In their

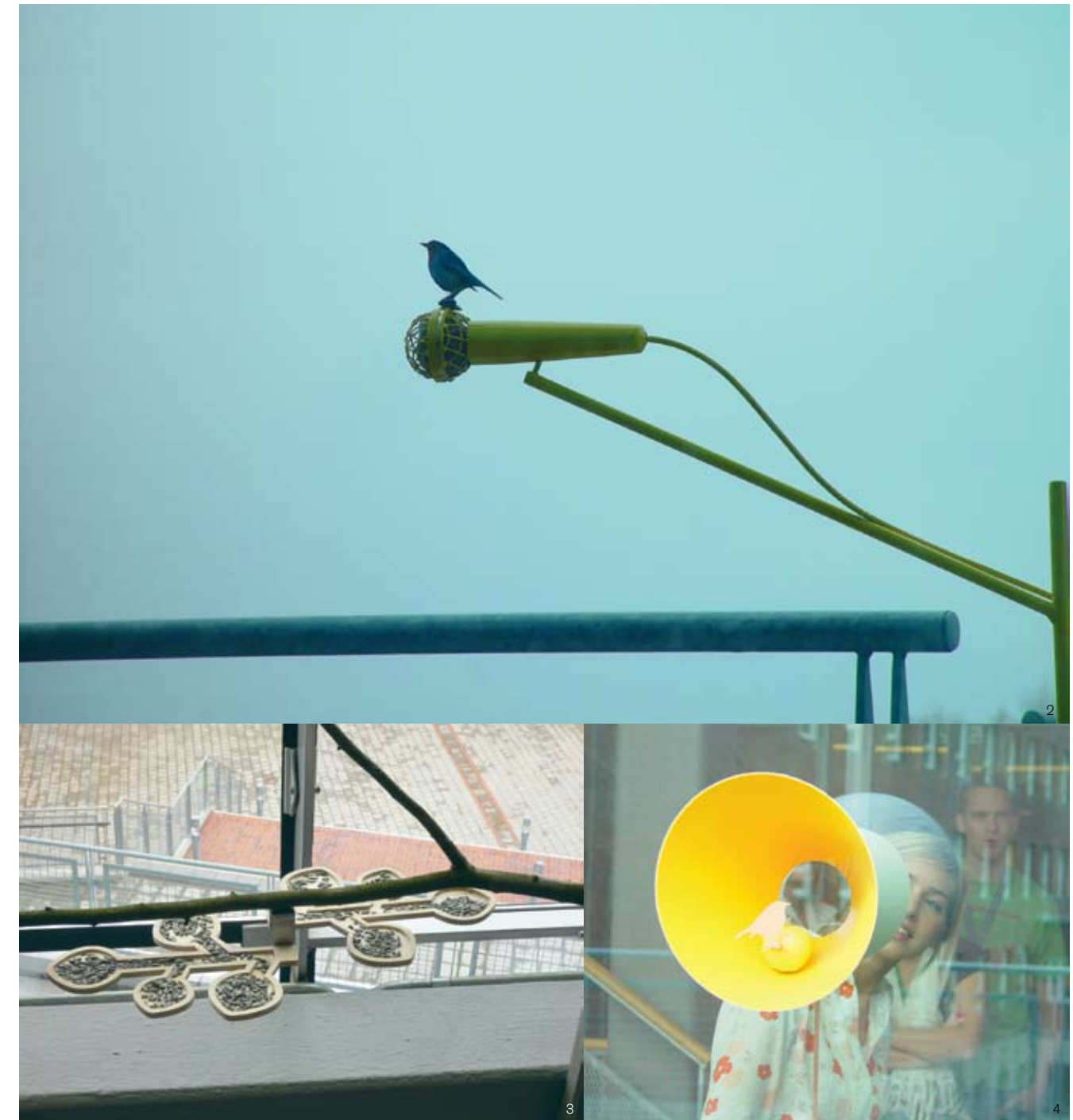


field study, the students are introduced to a range of different environments, organisations, institutions and people in Kenya. Based on this, various interest areas are developed and the students formulate these into project definitions. The different projects are documented in separate reports and distributed back to UN-HABITAT and the involved parties on site. The projects are also presented in exhibition form both on-site in Kenya and in Sweden.

As of 2005, the course is a collaboration between the Architecture and Industrial Design Schools at Lund University, Chalmers University of Technology, University of Nairobi and UN-HABITAT. The collaborating organisations are represented in the teacher-and-resource-persons group as well as in the student group.

The Department of Architecture and Development Studies has been carrying out studies from 1995 and onwards mainly in Vietnam and Tanzania and since 2004 in Kenya. In 2002 and 2003, the site studied was Bagamoyo, a small Swahili town on the coast of Tanzania and collaborating partners were the University College of Lands and Architectural Studies (UCLAS) and the Department of Antiquities. In 2004, the objects of study were Lamu Island and Masai Mara in collaboration with the University of Nairobi and the National Museums of Kenya. In 2005, the field study was located in two towns at the northeastern shore of Lake Victoria, Kisumu and Homa Bay, and carried out in collaboration with UN-HABITAT, Chalmers University of Technology and the University of Nairobi.





### Birdhouse, 2005

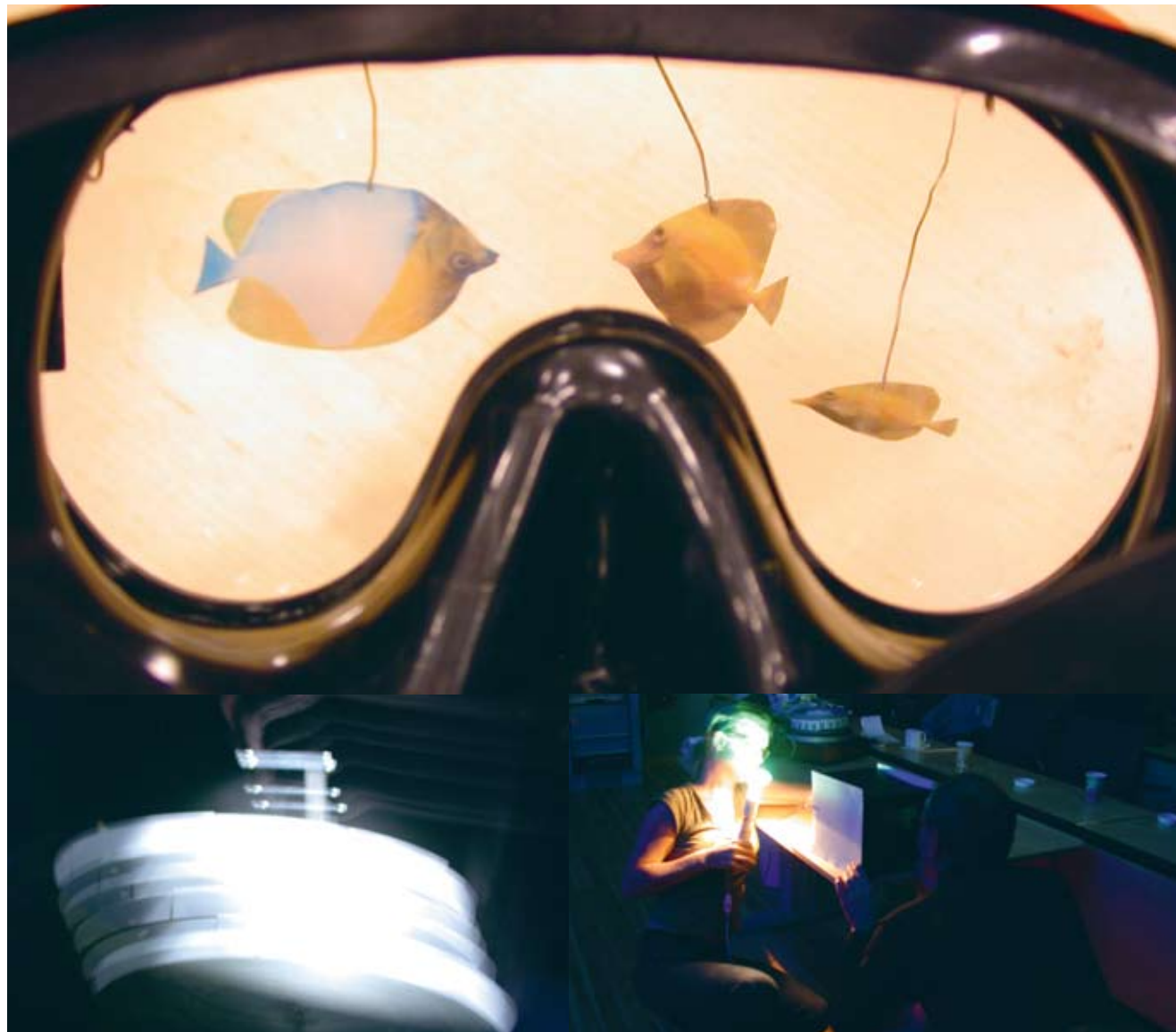
Marko Macura

In the first week of November 2005, with the Swedish winter just around the corner, a five day workshop took place. The challenge was to create (in teams of two) a birdhouse, birdfeeder or new archetype, focusing on one strong innovation element or characteristic. The designs should respect functional and practical issues, (cleaning, mounting, etc.) but not focus on them, as the ultimate goal was to explore the narrative, poetic and emotional qualities of such an object. Needless to say, next to highly creative solutions, the students needed to address and answer the following four key aspects in their designs:

- The context of use – understanding of the environment and its application

- Functionality – how it will be used by birds and/or people
- Materials & finishing – a clever and fresh choice of materials
- Presentation – clear explanation of the concept as if to a potential manufacturer

The students rose to the challenge and created concepts both for public as well as domestic applications. In a short time, (less than five days of hard work), they created a series of hard models and brought their ideas to an impressive and finalised level.



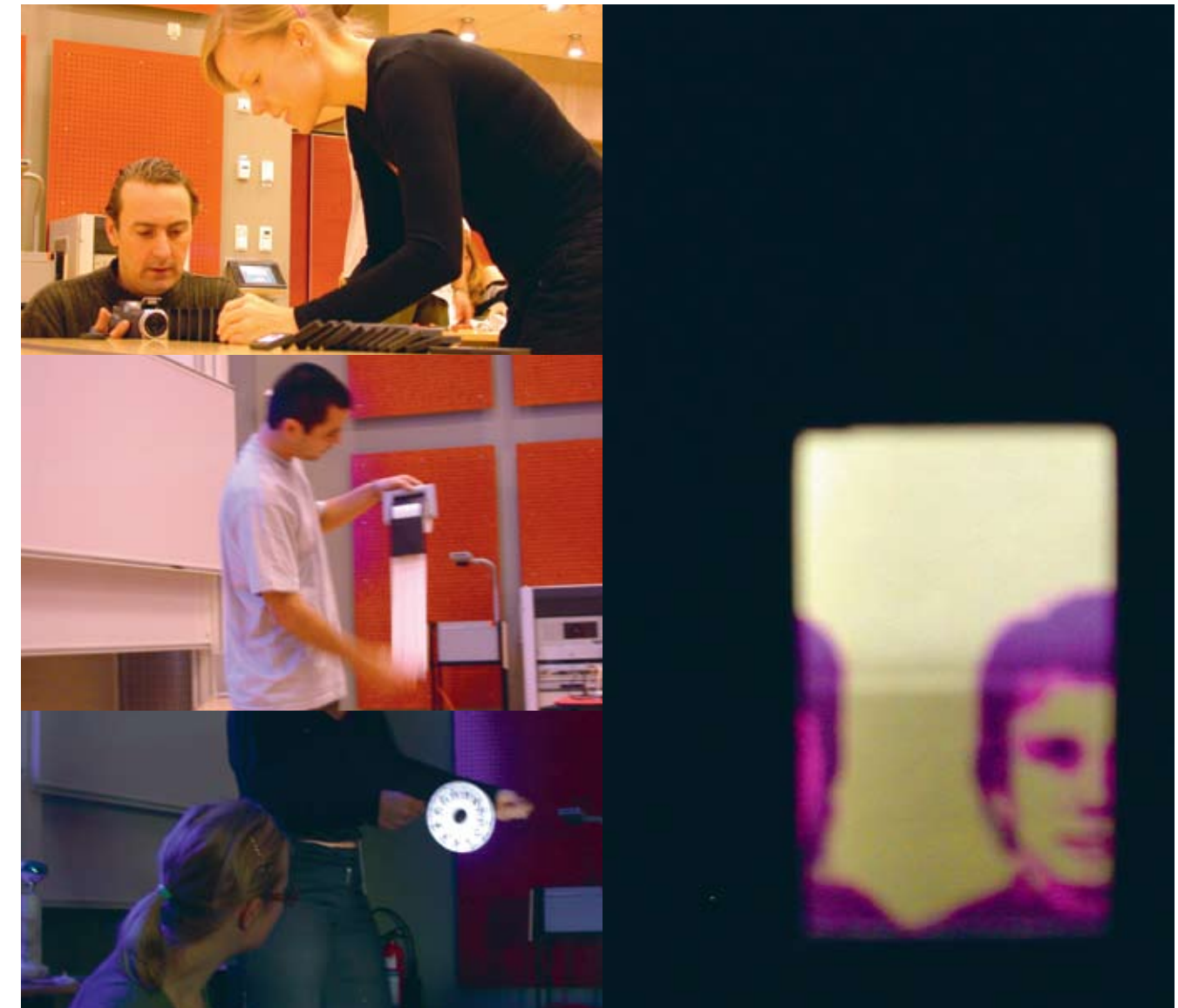
### Seemachines, Vogt+Weizenegger, 2003

Oliver Vogt

Background: In the beginning of the 19th century, (1820-30), many inventors developed toys that played with the post-picture effect of the eye due to human physiology. Humans can only see single pictures in a frame rate of 16 pictures per second. If there are more pictures per second, the human brain interprets them as a fluid movement which we nowadays call film. These toys were invented to play with the psychology of vision. The brain of the observer was a necessary part of the game to complete the pictures into something running, moving, morphing and acting.

Today it is normal to have access to film and video; TV is an everyday feature, video cameras are as good as film cameras and even phones can record small films that can attract friends in remote places in order to let them participate in a reality, where more and more moving pictures are exchanged as bits of a global and digital community. The reason to rethink the SEEMACHINES is that new technologies can open new ways of thinking.

Brief: You are asked to create the next generation of SEEMACHINE toys: innovative, easy to produce, ready for the mass market, un-copyable, outstandingly different, good for marketing uses like advertising, attraction of visitors in a museum, toys for the children and so on. Just imagine that you can change the way we see.



Questions at hand:

What could happen to the cinema when we invent new SEEMACHINES that are as amazing as film was in the past?

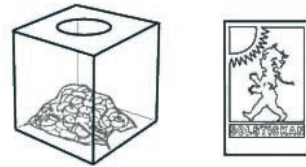
What can attract the human brain as much as possible to become part of an illusion?

How can we create an imaginative attraction for a modern audience that touches all senses without using too much technology?

What could be the SEEMACHINES that would possibly create a different kind of cinema in the future?

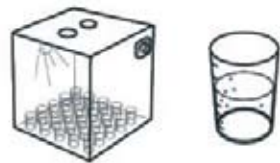
Material: Digital photography, mirrors, headsets, phones, lenses, glasses, GPS, laser copies on transparent film, beamers, old slide projectors, home lighting, fireplaces, lanterns, architecture and, of course, the "short term attention perception" (STAP) of today's audience.

Outcome: After discussing all kinds of visual experiences and attractions that were known and experienced by the students, it was a surprise to see in which directions the course went. After visiting the scrap market and the electronic supply shop in Lund - the students started to experiment in a playful way with the materials they found. An old record-player served as a projection wheel, a salad dryer was used to mix the pictures, a stroboscope became a projection lamp and a domino became a one-second filmstrip.



#### "Nordic light"

(Is a box with a package of 100 candles; GLIMMA from IKEA)  
The nordic light is famous, it is classic, and in Sweden there is a lot of light. In Sweden people believe in democracy and they want to share their light with others. This is a democratic action to spread the Nordic light all over the world.



#### "Swedish dental hygiene"

This is a box full of glasses containing fluoride. It was very common in Sweden to administer fluoride rinse in school about ten years ago, and now people can celebrate this way of taking care of your teeth. Swedish people are known for their exceptionally white teeth, and the fluoride rinse could be a reason why.

When I was a child I thought it was the most terrible moment of the week, when the old fluoride lady came to school and forced us to have this fluid in our mouths for two minutes!

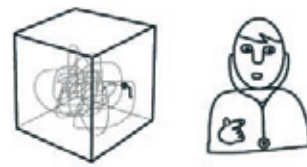
#### Speaking through objects, designRAW, 2002

Tad Toulis,  
Roman Gebhard

A design collective originally conceived by eight industrial designers living in San Francisco, designRAW, seeks to demonstrate an important but seldom explored facet of design: its ability to reinforce and manipulate us by playing upon shared values. designRAW's investigations have been presented to design audiences and the general public throughout North America and Europe. Prior to their arrival in Lund, designRAW assigned the students two simple tasks each created with an aim towards liberating their thinking from form and placing it squarely in the realm of ideas.

1) Go to the market and buy plastic forks, knives and spoons. Change them in some way. Cut, join, deform. Come to the first day of the workshop prepared to present, explain and discuss.

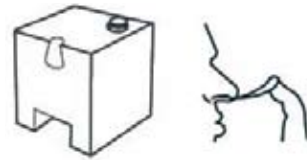
2) Find an object which represents to you each of the following: "Childhood, Fear, Happiness, Lund". The first day of the workshop, come with your object or a photo of it, ready to explain and discuss why these items represent these themes.



#### "Socialstyrelsen"

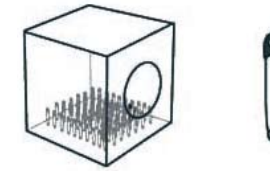
Sweden's National Board of Health and Welfare has for decades helped Swedes live quality lives; safe and healthy. Their recommendations have often been very hands-on, and they are not disrespected by the population.

Recommendations include:  
- You should eat 6-8 slices of whole-grain bread a day.  
- Everybody should try and get 8 hugs a day.  
- Every woman should bear 1,8 children.  
- Copper amalgam must not be used, irrelevant of the patient's age.  
- A straitjacket must not be used for more than 4 hours in a row.  
- Fitted carpets should be used with caution.



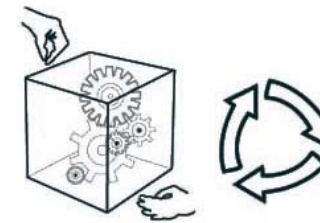
#### "Swedish privacy"

One prejudice says that the Swedes prefer doing things in privacy. You should also mind your own business. This box allows you to experience Swedish privacy by picking your nose without showing it to your surrounding. As a souvenir you can collect your nosepicks in a paper cup.



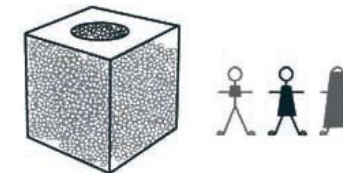
#### "The delusive feeling of safety"

- Volvo is the safest car to drive.  
- Sweden is the safest place to be.  
- There is always someone (the government) to take care of you.



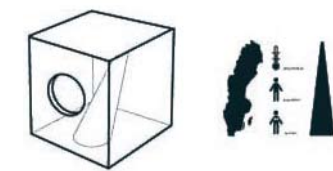
#### "Swedish generosity"

In Sweden you don't get without giving. Try how it is to be a Swede for a brief moment. To offer something of yourself and expect something back.



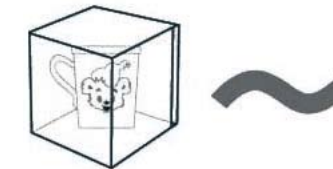
#### "Lagom" – Just right

The concept "Lagom" in Swedish means "just right". It's something that's embedded in the Swedish psyche and apparent in everyday life. "Lagom" is subjective and this is reflected in the way the peas shape themselves to accommodate your hand. For you the fit is "Lagom".



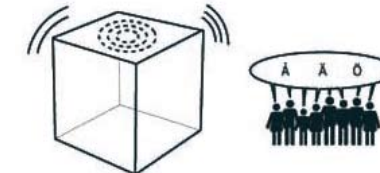
#### "Feel the difference"

Put your hand in the box and feel the differences between the north and south of Sweden.



#### "Invisible transition"

Bamse = Swedish socialist welfare state.  
Teaching children to be good citizens.  
Coffee is something that Swedes drink every day. Put Bamse's face on a coffee mug and make a profit.

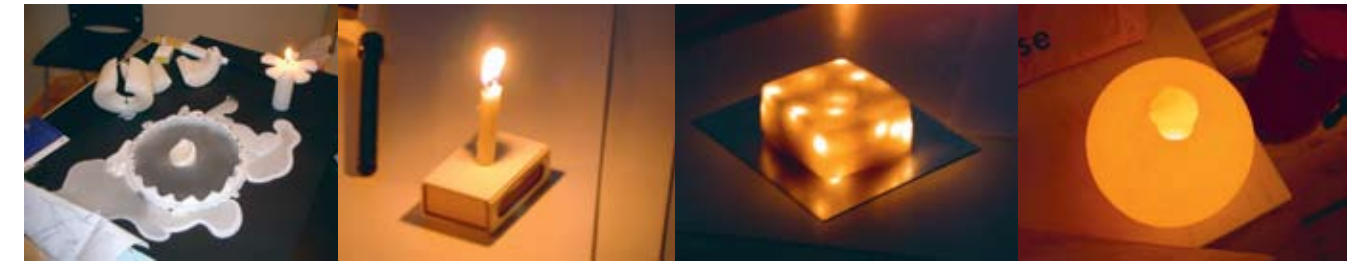


#### "The sounds of Swedes"

These are the most common "uncommon" sounds in Sweden.

The first day of the workshop started with Tad Toulis and Roman Gebhard giving a brief introduction of designRAW, its approach, its background as well as some of the design collective's key projects and installations.

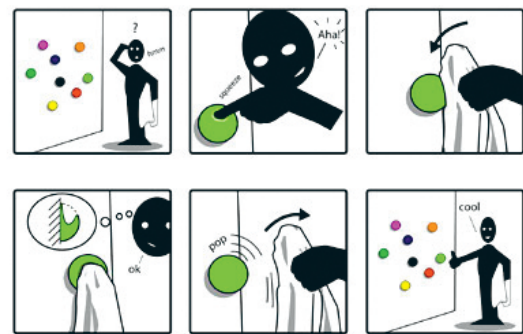
This presentation was followed by a work session where all the participants presented the results of their pre-assignments. The results and the process of presenting these objects illustrated the impact that each student's background and personal experiences can have on the way they see objects. In addition, the notion of culture as a silent hand influencing the design and importance we place on individual objects was also discussed. Building on this idea "souvenir", the project pursued over the course of the workshop explored the possibility of everyday objects and notions to express complex ideas, in the case of the workshop: What is Sweden?



Time, designRAW, 2003  
Tad Toulis, Roman Gebhard

At the invitation of the Industrial Design Programme of Lund University, designRAW returned for a second year to conduct a three day workshop exploring abstract themes in design. As they had done with their first Lund workshop, "souvenir", which explored cultural beliefs and biases in contemporary Sweden, the 2003 workshop "time" encouraged students to investigate time as a material agent in the design process. To facilitate the exploration, wax paraffin was chosen as a material and candles were selected as the

medium. The choice of material allowed the designs to transform their static state and become dynamic objects which in the very act of burning expressed their author's design intent. Drawing on Scandinavia's rich and profound affinity for candles, the students blended traditional concepts with contemporary themes to generate design solutions which were steeped in notions of time, nostalgia, and a thoroughly Scandinavian perspective.



Coat hanger, IDEO, 2003

Leif Huff

The focus of this three-day workshop was to work under the typical time constraints and "product briefings" designers are confronted with in their daily business. The topic was to design a coat hanger for a fictitious plastics manufacturer. Teamwork was encouraged.

After an initial research phase, where the students created an overview over the past and current "coat hanger market", each group focused on generating ideas for coat hangers for a specific market segment or user. This user group was to be defined through storyboards, mood-boards or other methods of storytelling. The teams quickly needed to select their favourite product idea during focused critiques with the whole team. Each team had only one day to develop their idea to a presentable result. The presentation focused on the definition and visualisation of each product in their specific context. The workshop was a success! Each team selected a different style of presentation and visualisation of their ideas. Each team was able to bring across their idea in a humorous, surprising, and gripping way at the final presentation. The teams worked well together, and the critiques in the "classroom setting" were efficient and fun.



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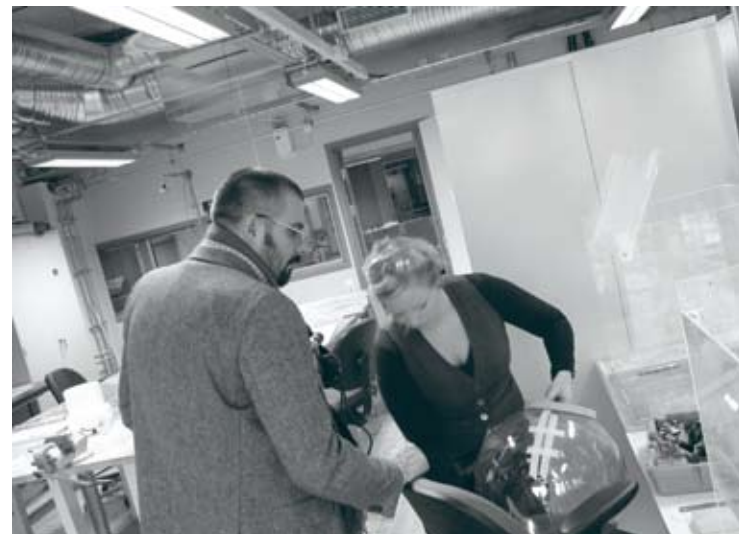
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Human behaviour and gestures, IDEO, 2005

Leif Huff

Design inspired by human behaviour and gestures.

"Develop a product concept for the home that is inspired by human behaviour. Think about all the stages of the day; from when we get up in the morning until we go to sleep at night. Think about the "touch points" during this journey where we interact with products. Think about how we behave while using these products and create one product concept accordingly."



#### Human behaviour and gestures, IDEO, 2006

Leif Huff

Products for cooking and eating: Develop a product concept, that is inspired by human behaviour, for the preparation or consumption/enjoyment of food. Think about all the stages of the day that are linked to food. Think about the "touch points" during this journey where we interact with products to prepare, consume and enjoy food. Think about how we behave while using these products and create one product concept accordingly. In order to make the workshop efficient and to get the most out of it, please prepare for it by doing some research. It is simple: all you need to do is watch yourself, your partner, your roommates or think about an interesting environment, like a professional kitchen, an outdoor food vendor, a restaurant or your cafeteria and watch how people behave there, what kind of routines and rituals they follow. Take pictures, collect quotes. Try to gain key insights about their behaviour that will inspire us during the workshop. Make sure you think about the WHY! We want to look at the unanticipated issues inherent in the routines and circumstances people experience every day. We want to reveal the latent needs that people might have and design a product that addresses these experiences and needs. Please bring that material to the workshop so we can start right away!