PORTFOLIO

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INTRODUCTION

Introduction

In this portfolio I will show you some of the products I made during my studies at the Delft University of Technology. This consists of a variety of products, from pure form projects to technical design problems. In this portfolio I present my work and try to make clear what my vision is and how I have learnt to work.

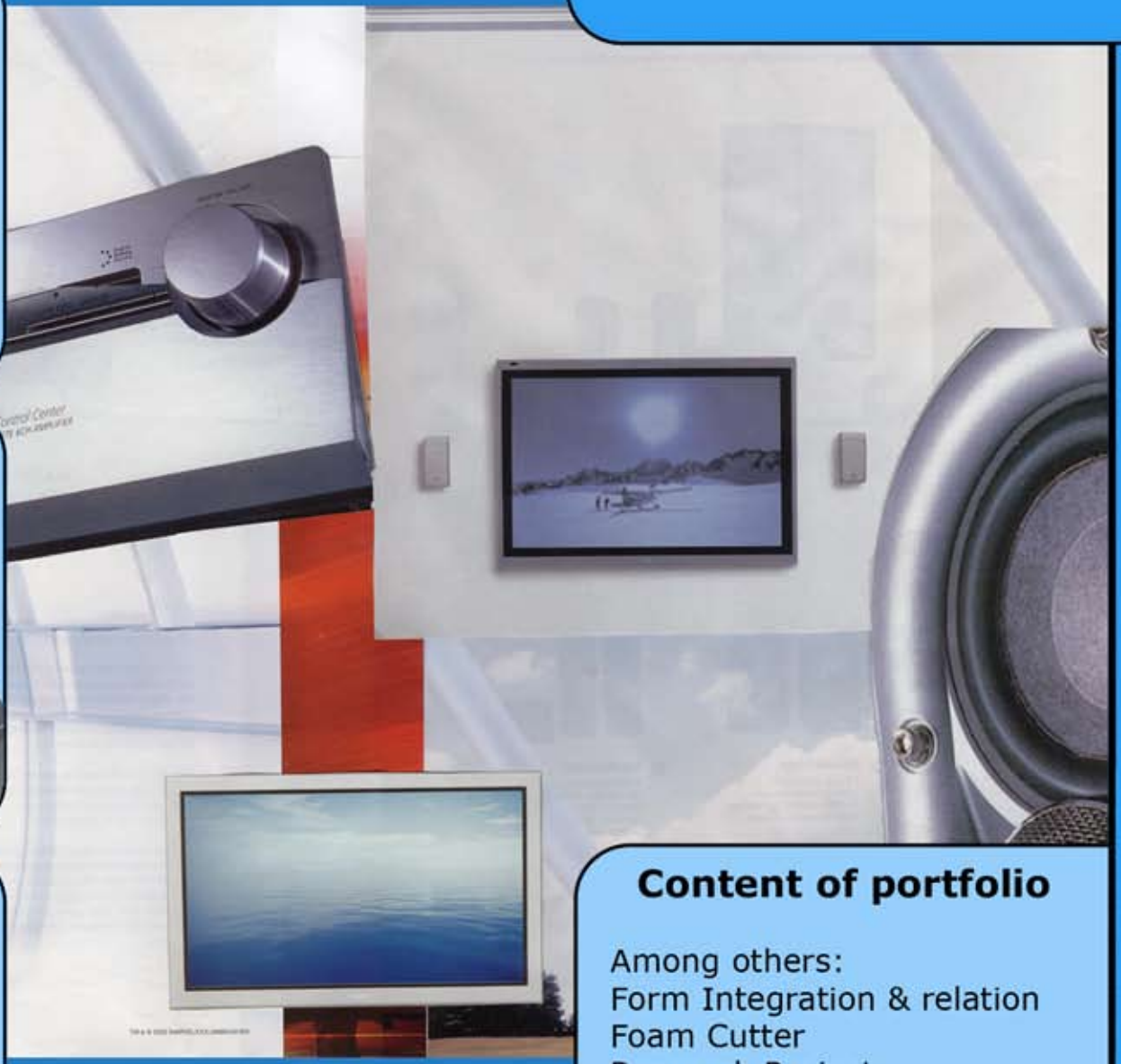
Vision

Straightforward, simple, open, free, and relaxing.

Products should not have too many adornments which make them complicated. Simplicity and usefulness are my keywords.

Ambition

As a designer I want to improve the use of products by simplifying them. I want to make products durable by using cold materials. And finally I want to add extra features to the product for more usefulness. The first and the last seem to be a contradiction but this is my aim.



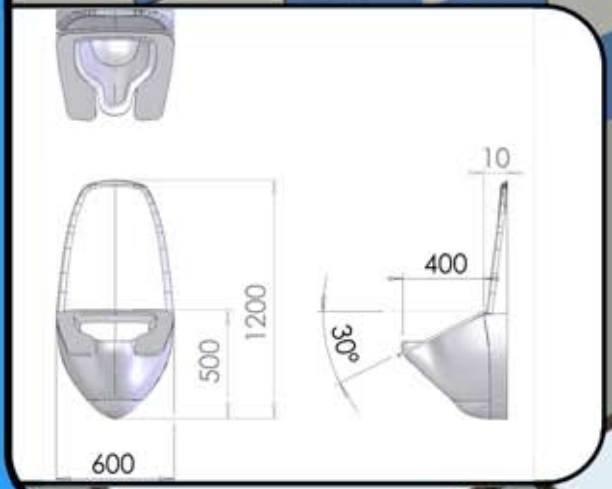
Content of portfolio

Among others:
Form Integration & relation
Foam Cutter
Research Project
Simulation and CAD
Drawing
Graduation project
and more.

Design for All

Friendly Restroom project

This is a project done within the faculty Industrial design in collaboration with European Universities and organizations.
The goal of the project is to improve the restrooms for the European market and make it suitable for all target groups. Our group has focused on the elderly people.

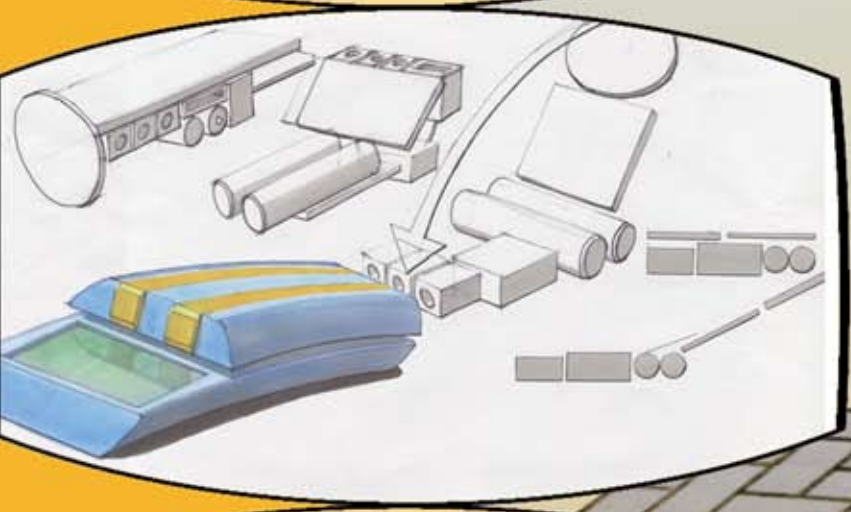


Improvements

The result of our analysis was that the target group has difficulties sitting down. With our solution the user doesn't have to sit down completely. The toilet bowl can be used in two ways: standing upright in front of it or by leaning backwards on it. The angle of the bowl is adjusted to improve the ergonomics of the ritual.

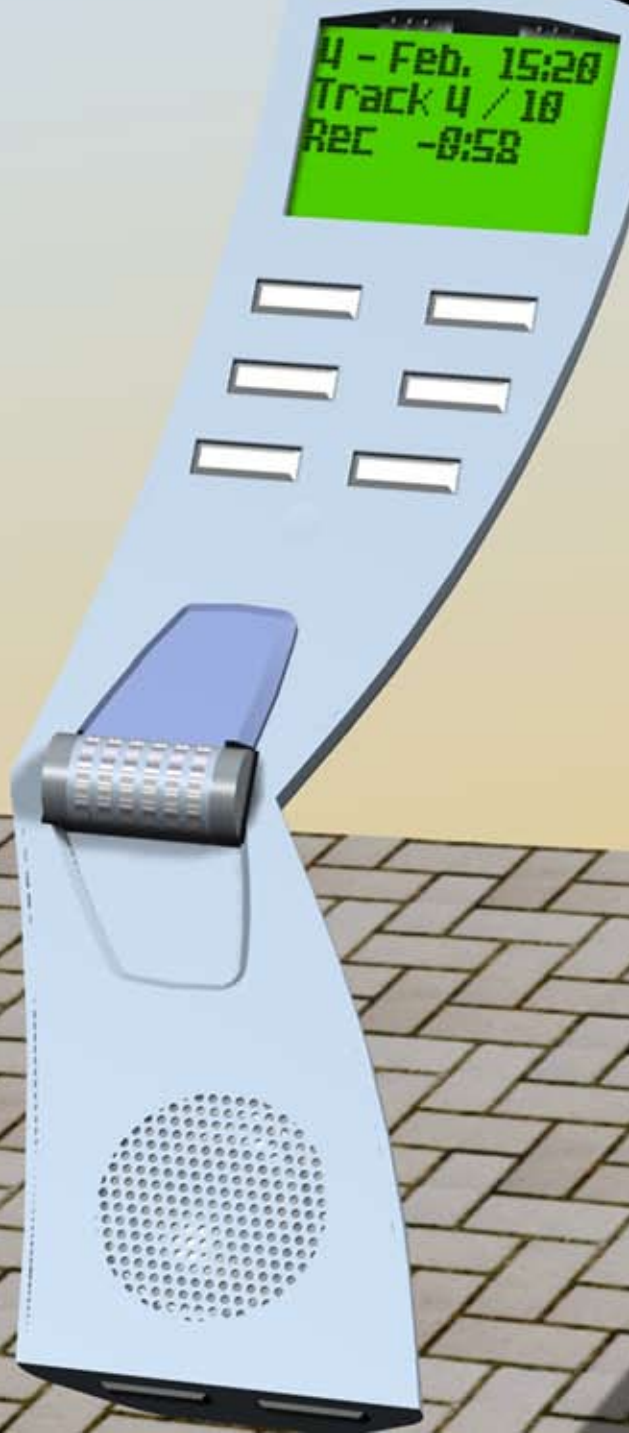
Mobile digital Voice recorder

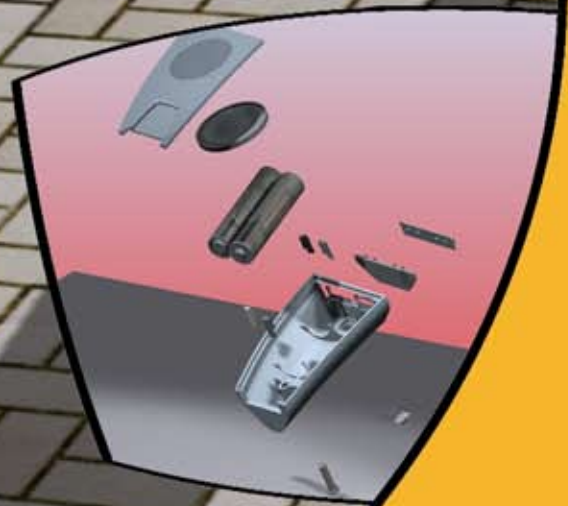
The assignment was to design a voice recorder on the base of components that have to fit in the housing. I first had to analyze what components there were and how these could be arranged into solutions.



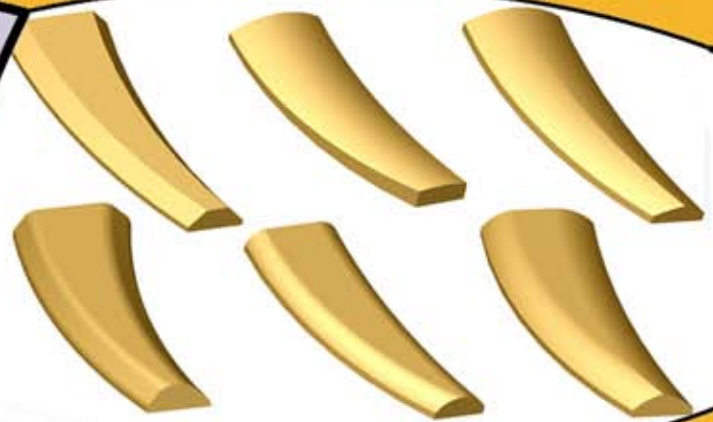
Method

To make different solutions I used the Structural Variants Method. With this method I arranged all the components in a different relation to each other and photographed them; afterwards I made fast sketches from the photographs. From these arrangements I chose three which I made in foam to get a better understanding of the grip.



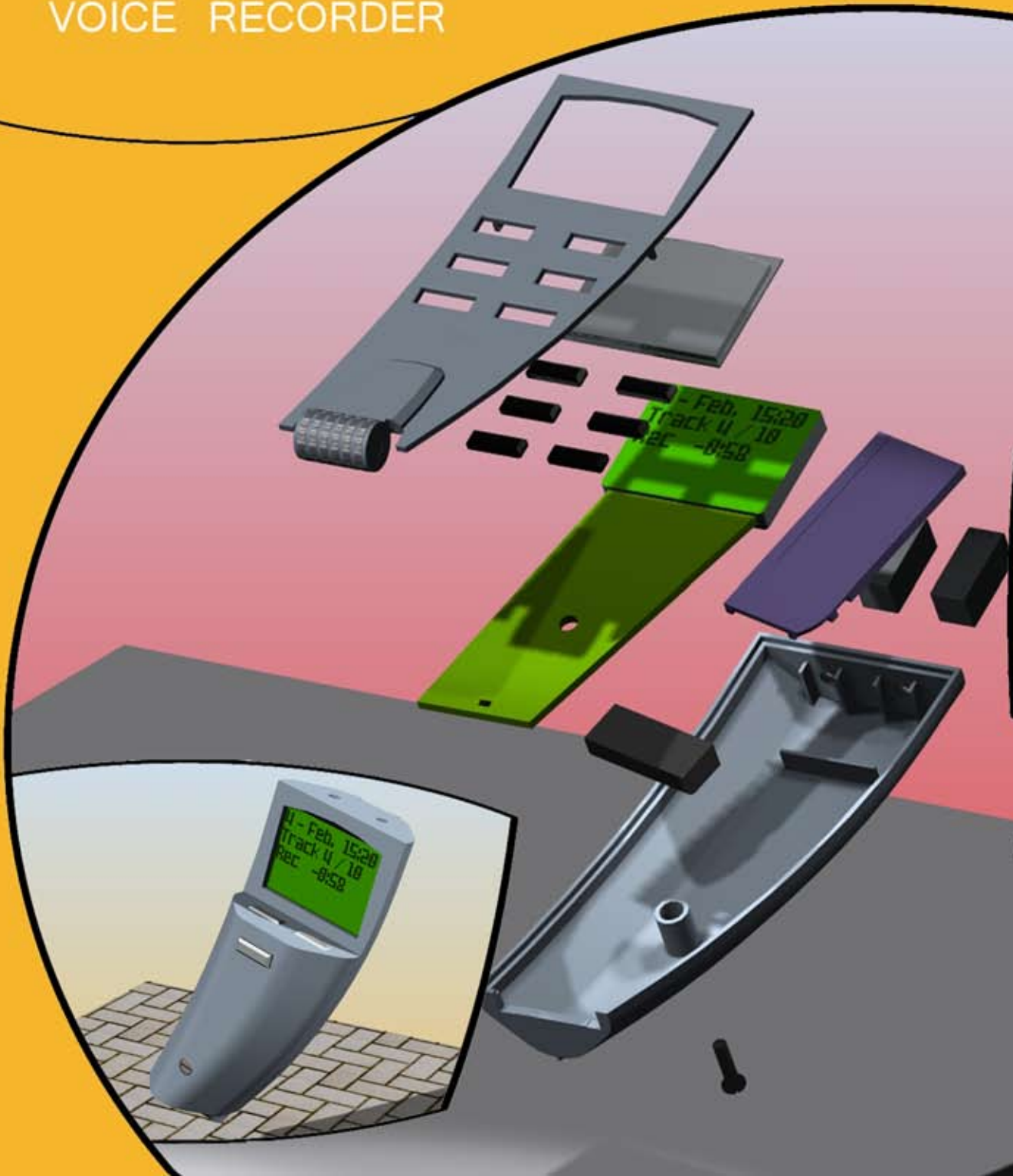


VOICE RECORDER



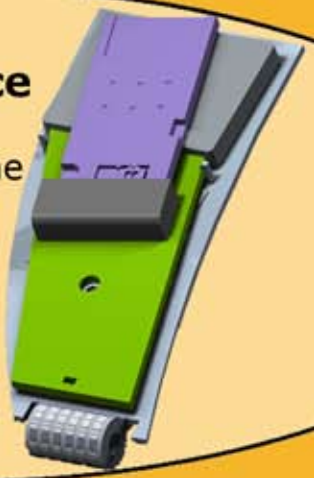
Detailing

From the chosen concepts I looked at the detailing of the form. I did this with the PC since this gives a more exact representation than drawing by hand.
With the program Solid Works I visualized all the different components to get an exploded view. This gives a good overview of the interior of this product.



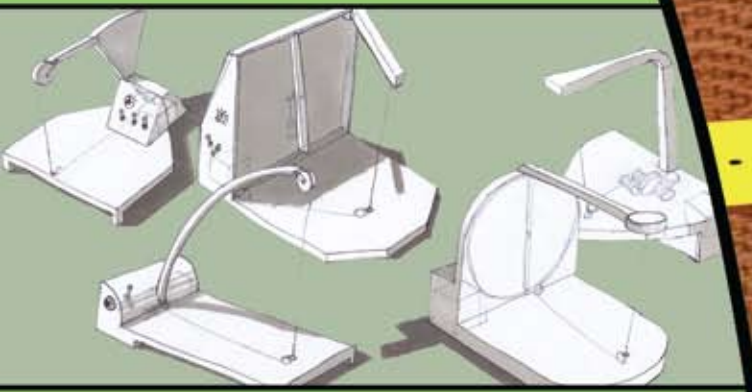
Learning experience

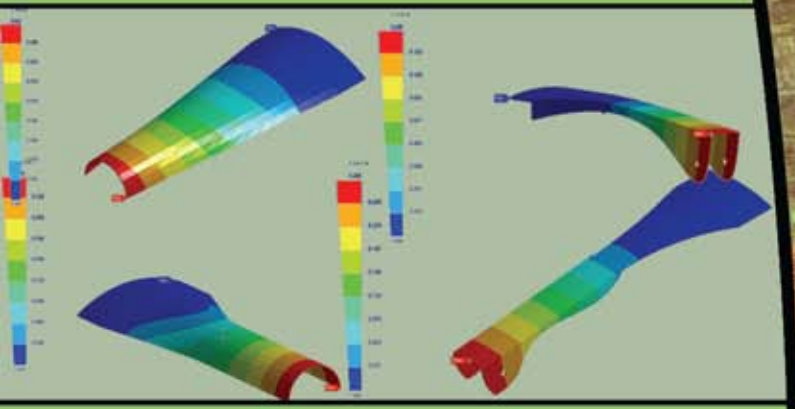
Different methods to come to a concept;
computing models with SolidWorks;
taking into account all interior parts.

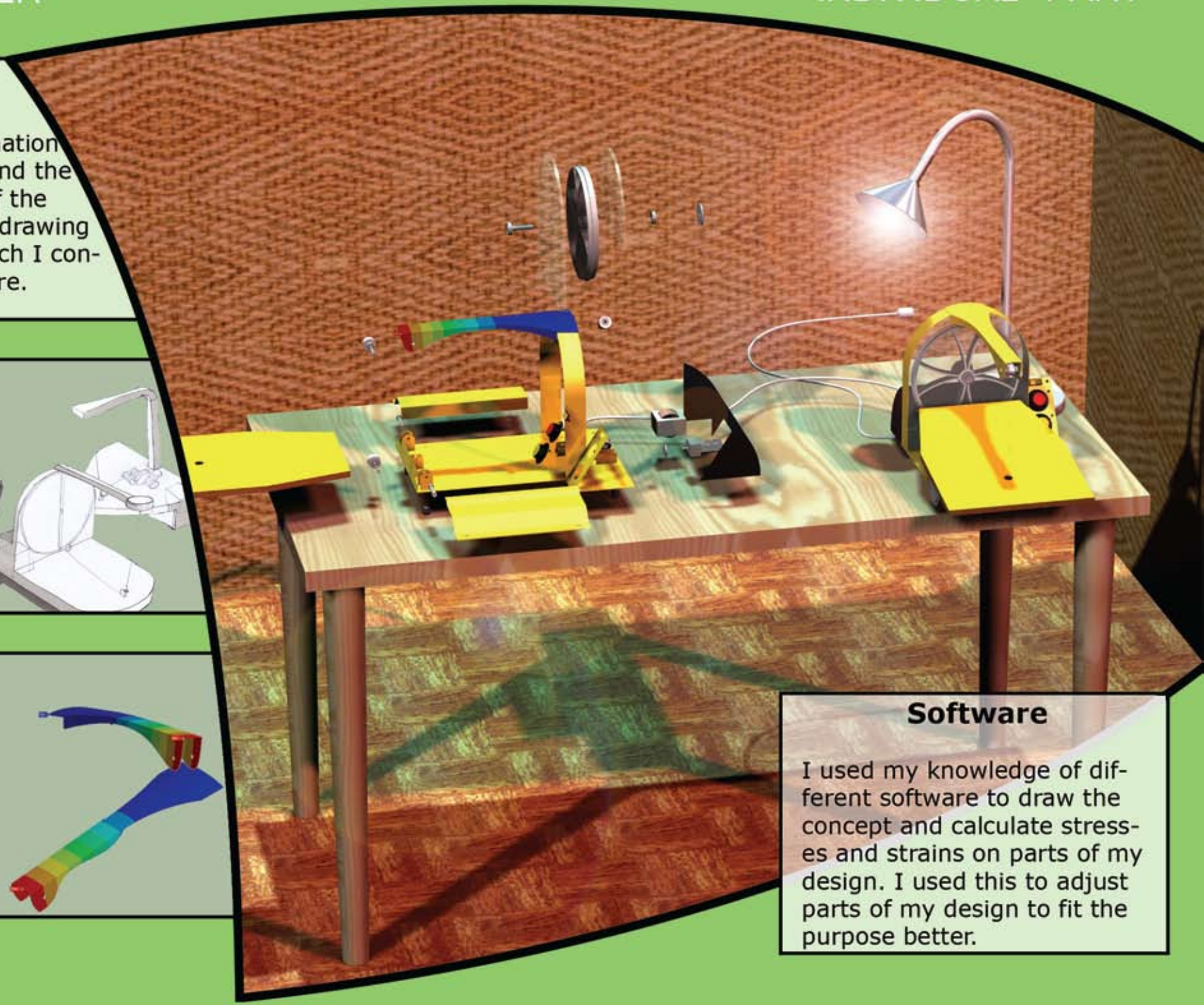


Foam Cutter

This project is a combination of the design practice and the technical background of the education. I started by drawing ideas by hand after which I continued with CAD software.

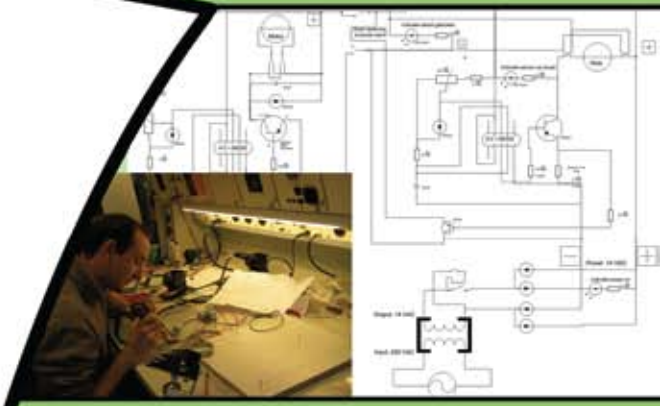






Software

I used my knowledge of different software to draw the concept and calculate stresses and strains on parts of my design. I used this to adjust parts of my design to fit the purpose better.



Prototyping

To have a usable prototype for the user research we made the electronics 1 on 1. The other parts were constructed from steel plates and other raw materials.

Group work

I was responsible in a group of six people for the prototyping, because of my practical mentality, and the digitalization of the design, because of my computer skills. In this project I learned that to get the most out of a crew you need to show ambition as a supervisor.

Second phase

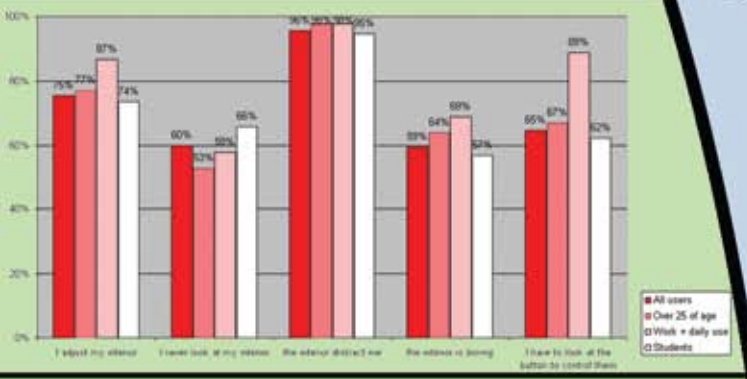
This assignment ended with a working prototype and production drawings. We divided the work consisting of optimizing the design, detailing, user research, and prototype building.

IDP PROJECT

FINAL GROUP PROJECT

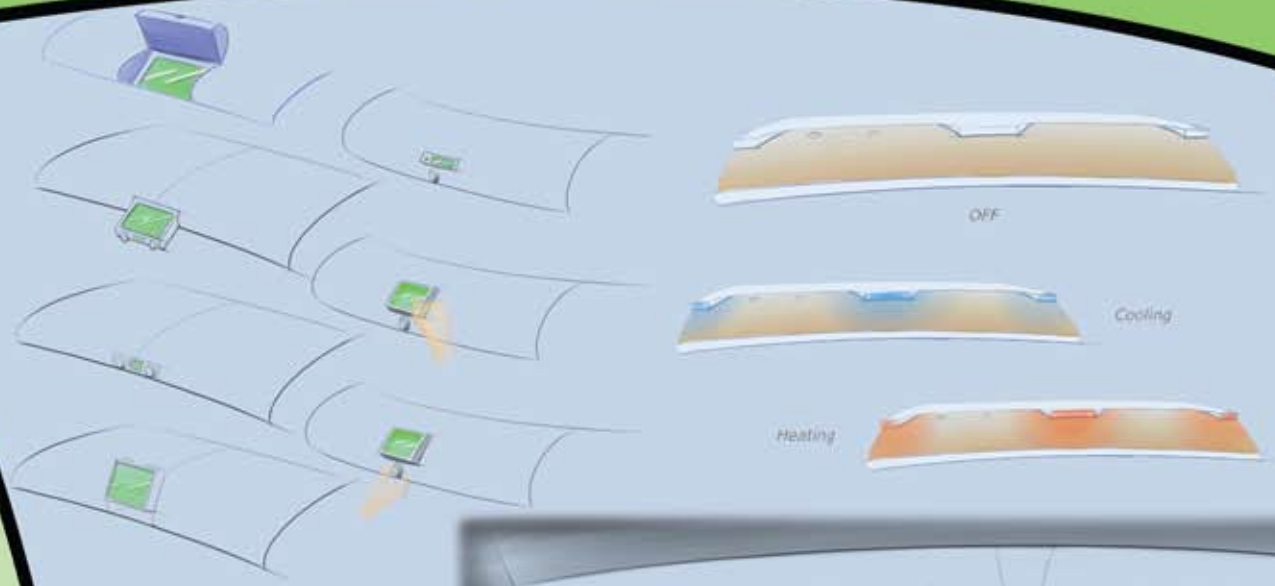
The team

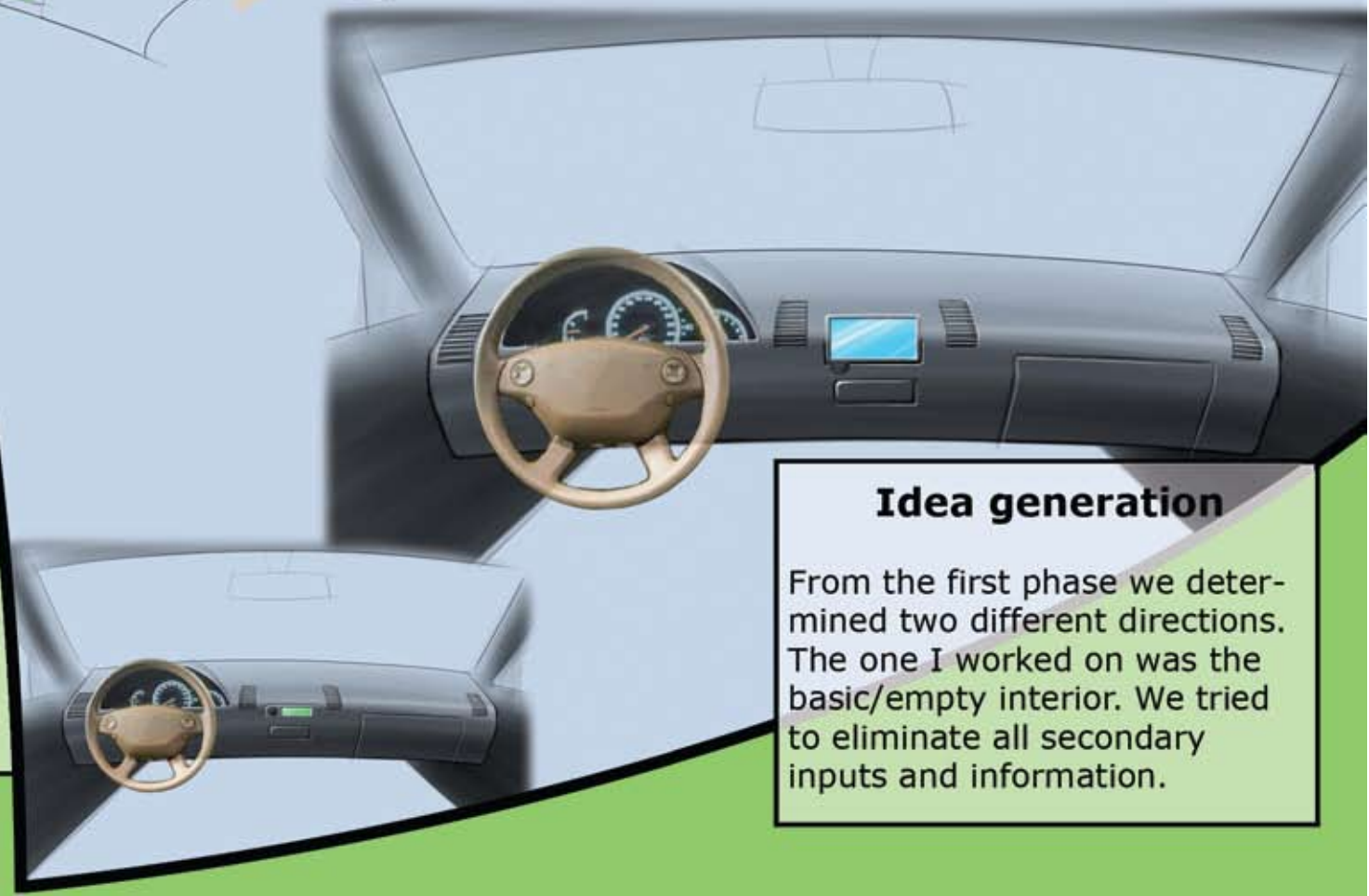
The team consisted of students from each ID master. Learning to work together was the key factor within this project. We were to divide tasks in a practical and efficient way to exploit every students' best skills.



Analyzing target group

I supervised the quantitative research taken over the Internet with over 100 participants. From this research we established some problems within the car use. On the base of these problems we created our own design problem and goals.



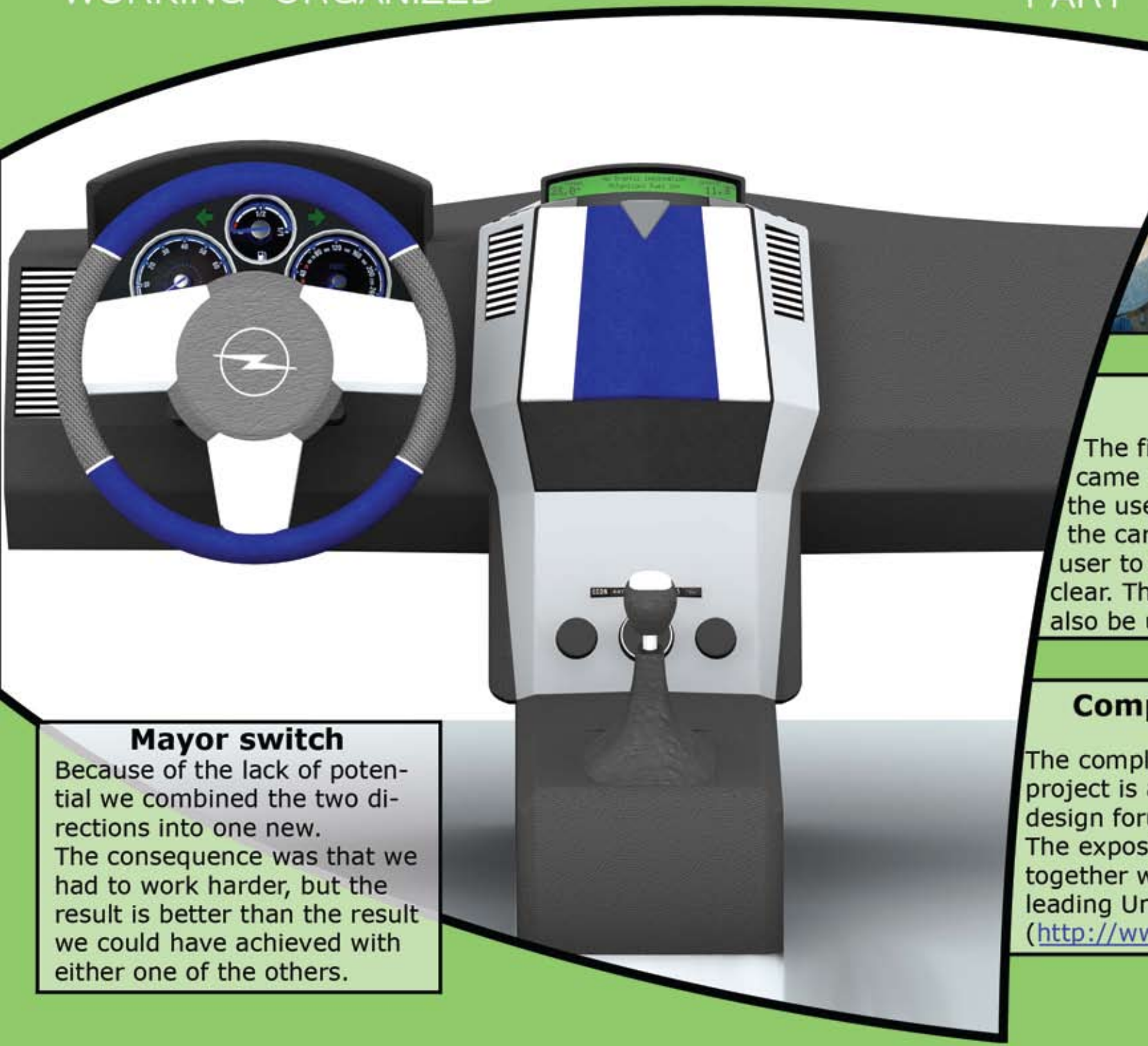


Idea generation

From the first phase we determined two different directions. The one I worked on was the basic/empty interior. We tried to eliminate all secondary inputs and information.

WORKING ORGANIZED

PART OF CAR INTERIOR



Result

The final product we came up with is a bag the user can take out of the car. This will help the user to keep the interior clear. The product can also be used in daily life.

Mayor switch

Because of the lack of potential we combined the two directions into one new.
The consequence was that we had to work harder, but the result is better than the result we could have achieved with either one of the others.

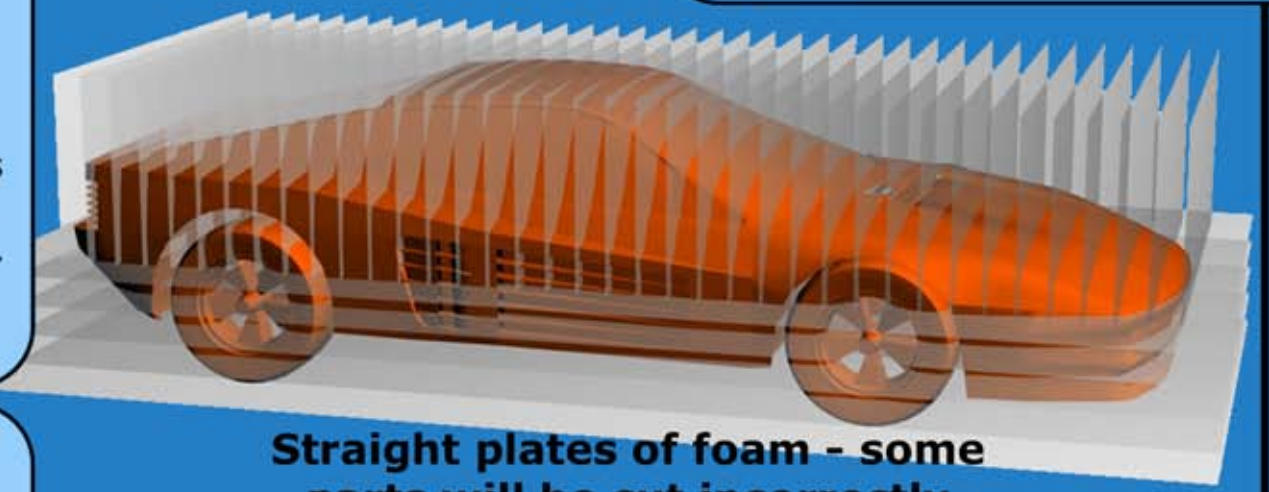
Completion of the project

The completion of the project is a stand at the design forum in Solingen. The exposition is held together with 10 European leading Universities.
(http://www.forum-solingen.de/)

RESEARCH PROJECT

Research

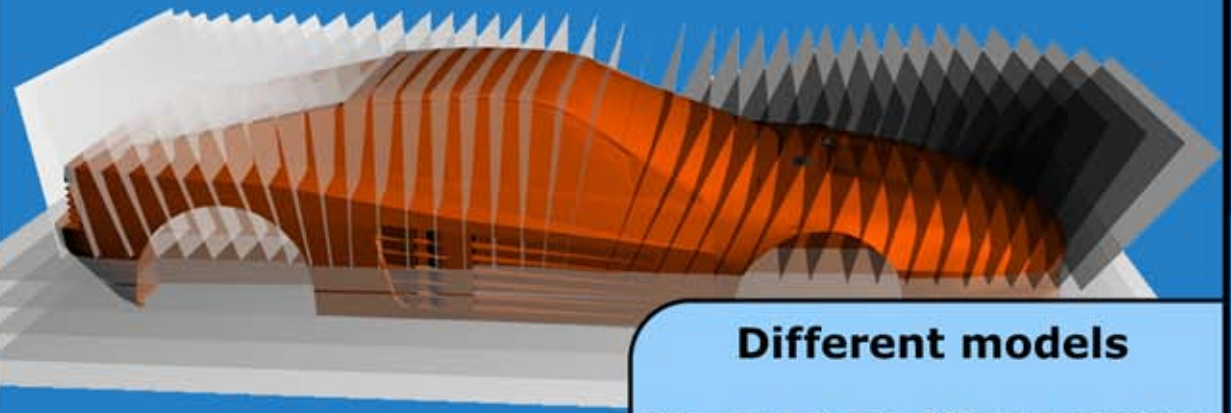
I did this project to get acquainted with several methods of research. I did this in a group of two people; we used the Experimental method of research. The project was done for the Dynash research group at the Delft University of Technology subfaculty ID. The project started with an intensive Literature analysis.



Straight plates of foam - some parts will be cut incorrectly

FF-TLOM

This form of rapid prototyping is using a heated blade to cut through foam. Large plates of foam can be cut into the outer shape of a product. These plates are then glued together and form the prototype.



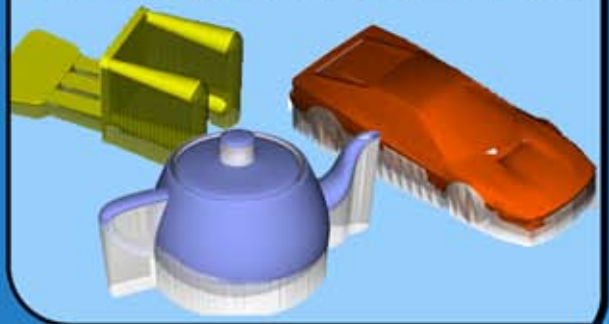
Result

We finished this project with a new method for the rapid prototyping. The advice we gave was to use different types of foam. In this way the cutting angle is always perpendicular to the foam.

Improved by adding angled plates to the selection thus optimizing the cutting angle

Different models

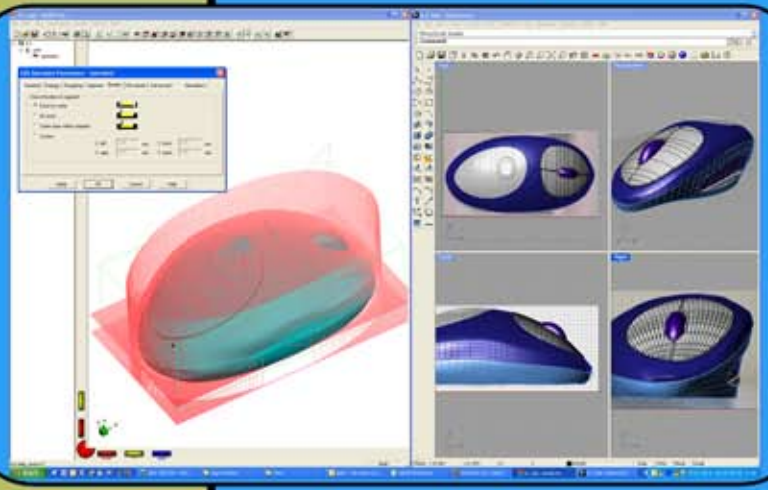
We used three different models.



PROTOTYPING

Rhino

During this course I learned the basics of Rhino. I used this knowledge to create a 3D surface model of a Logitech cordless mouse later to be used for prototyping on a three axis milling machine.

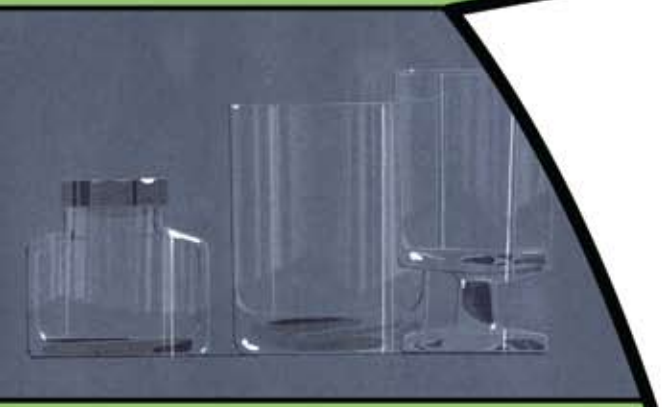


Deskproto

The program deskproto was used to remodel the STL file from rhino. After tweaking the surface and choosing the cutting strategy I created a ROL file readable by the prototype machine. After this the model was machined within a few hours.

Goal

With this course I learned the advantages and limitations of prototyping.
By improving the rhino model on the visible result of the prototype is a simple and fast way to correct imperfections in a 3D CAD model.
Check http://vanprooijen.net/portfolio/cad.php for the rhino CAD model.

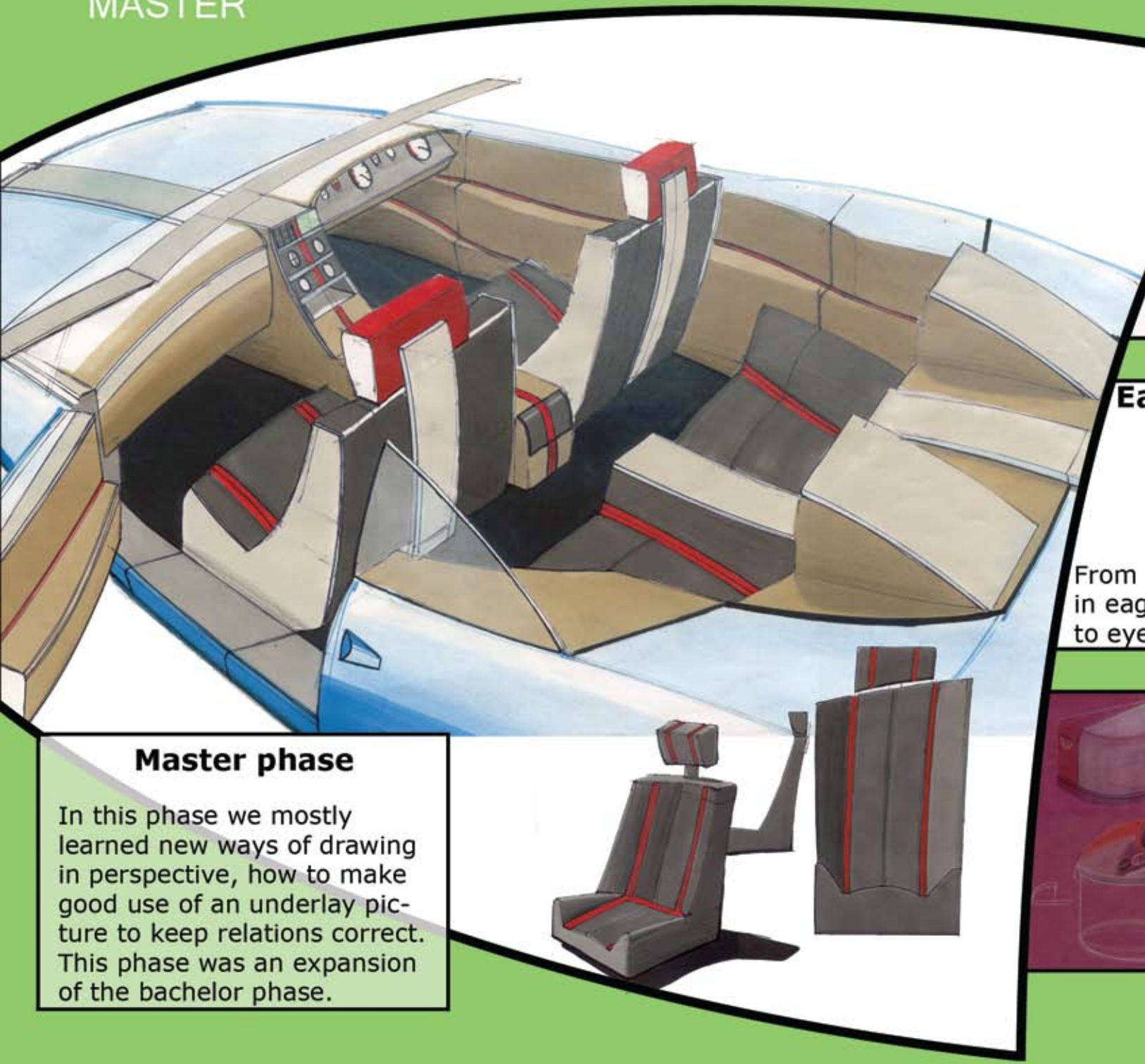


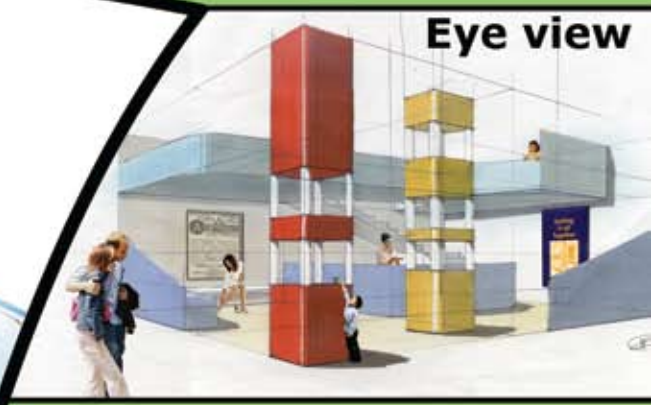
Sketching

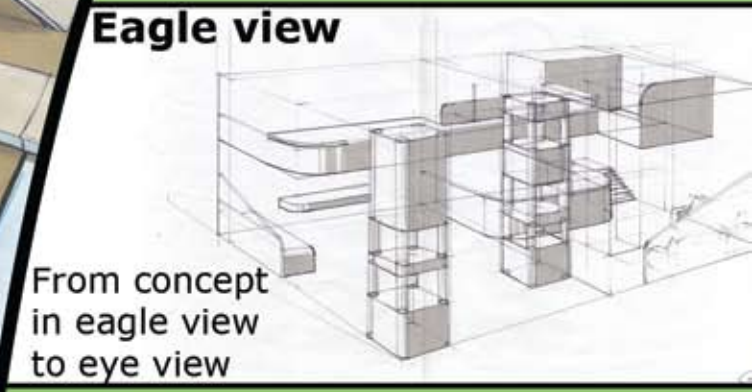
For this subject I learned drawing by using different kinds of materials and tools like colored paper, fine liner, Pantone and chalk. I leaned different techniques for drawing materials like glass, chrome and plastics.

Presentation

Not only did I make sketches, like the vacuum cleaners on the left-hand side, but I also made exact drawings of products, like the paintbrush.





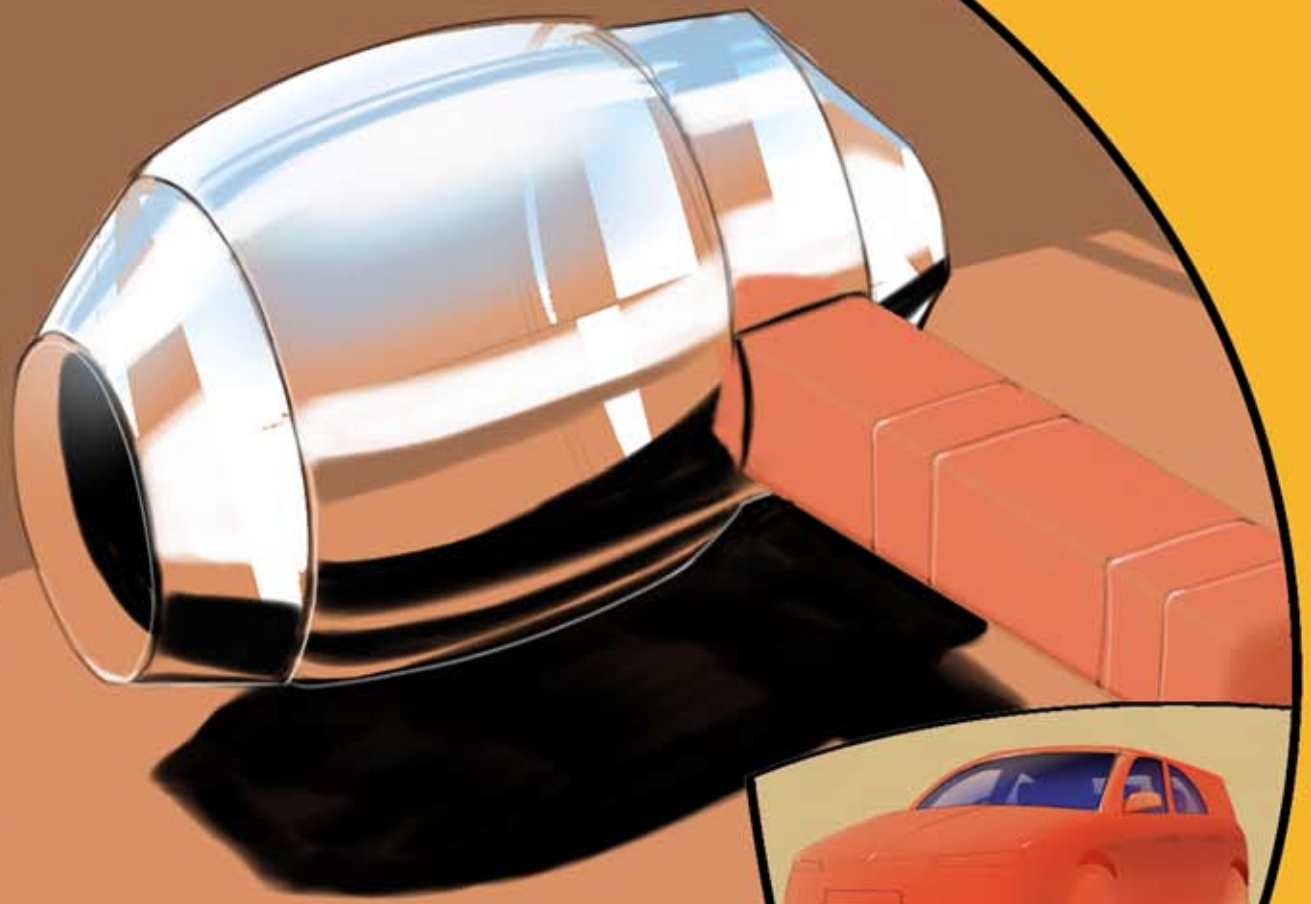


Master phase

In this phase we mostly learned new ways of drawing in perspective, how to make good use of an underlay picture to keep relations correct. This phase was an expansion of the bachelor phase.

Elective course

The aim of this elective course was to learn to make fast sketches. Most of the sketches were to be finished within 1,5 hour. During this course we learned the basics of computer drawing. The program we used to learn this was Corel Painter 6.



DESIGN MANIFESTATION

The project

This project was aimed at learning how to create a solution for a contradicting design problem: "create a garbage can for youngsters". I analyzed the specific habits of the target group and adapted the solution to the group. My solution was to challenge youngsters to throw away garbage.

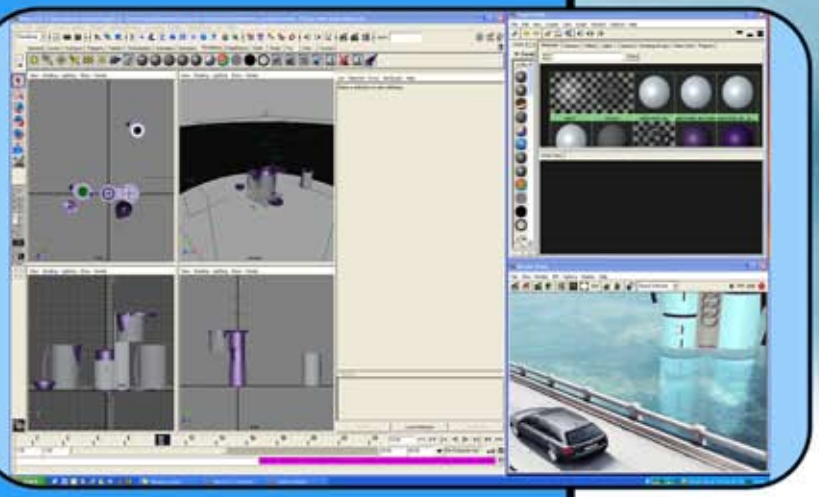
Method

The start of the project was to analyze the target group by making collages, secondly creating ideas for the target group that solve the problem. Finally work out the idea taking in mind as much aspects of the use as possible.

COMPUTER VISUALIZATION

Maya

I did this project to learn visualizing products using Maya software (6.0) to make a CAD replica of an existing product. Then I used the Maya render engine to make different pictures of the product in several surroundings. By doing this I did not only learn the 3D program but also about making different materials and textures.



Rendering

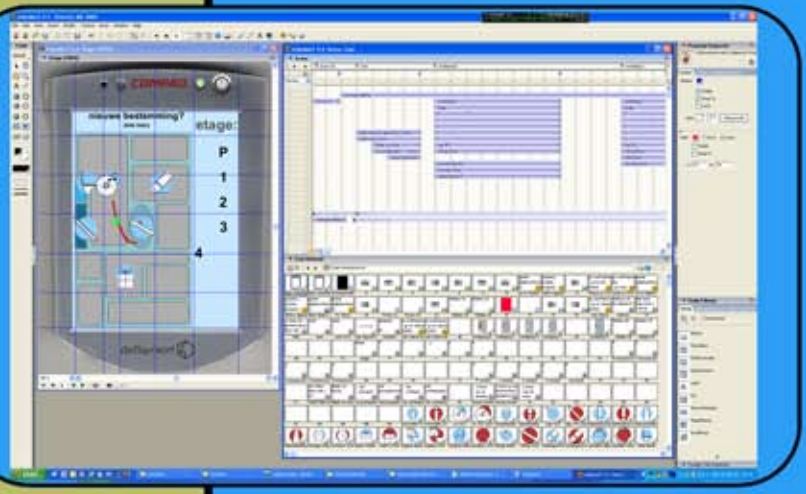
On the bottom right there is a photo-realistic rendering with an invisible 360º wall around the product for the reflection on the surface. The rendering in the middle is an advertisement for a coffee machine for Audi, the background was made in Adobe Photoshop CS to give the product the right atmosphere.

Due to the low image resolution of this portfolio the detailed rendering surface is not clearly visible.

SIMULATION

Visualization

Visualization of an icon was the first part of this project. The icons need to be readable even when they are very small. Also the icons need to fit in the style of the firm, in this case the Bijenkorf.



Simulation

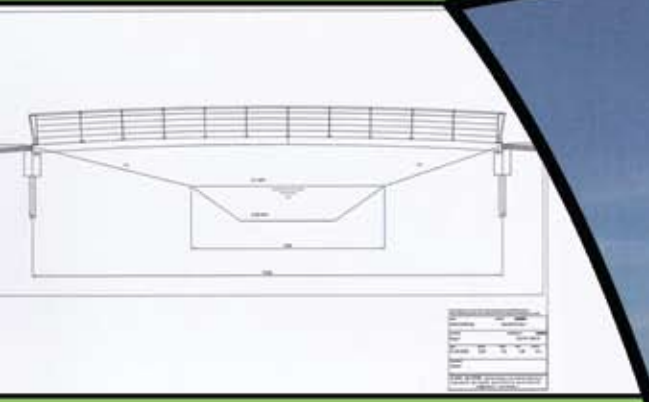
The goal of this project was to make a simulation for a hand-held route planner. The firm I made it for was a shopping center in The Hague. The product had to suit the style of this firm, which is: cozy, clear, and wealthy.

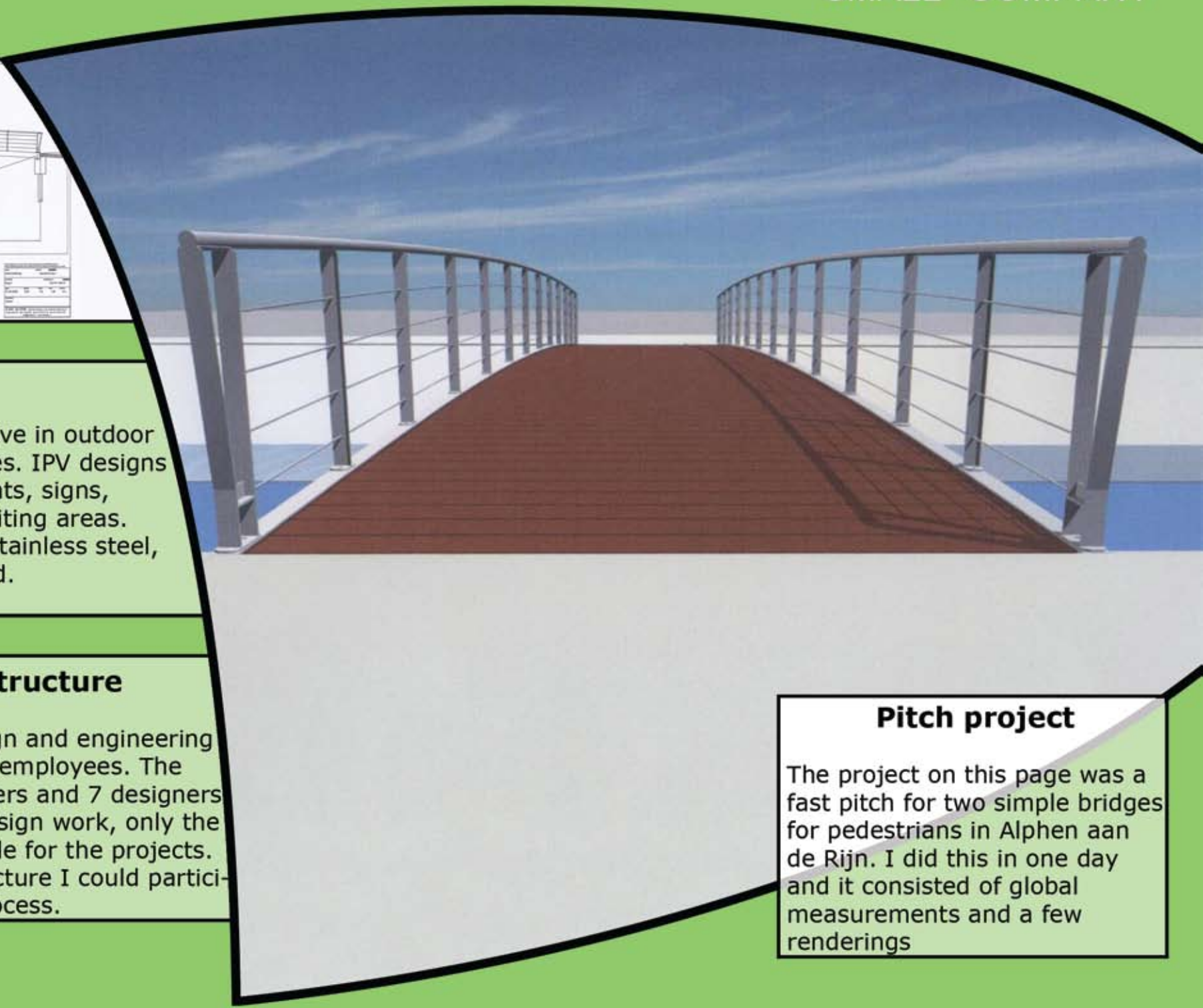
Director

To make a good simulation of the software I used Macromedia Director. This program offers the possibility to let users try the software it in a simple form. The options are limited but it is used to get an impression before the final software is written by programmers. We also made an advertisement movie and an interface for photo printer. (www.vanprooijen.net/portfolio/dir.php)

INTERNSHIP

SMALL COMPANY





IPV Delft

IPV delft is currently active in outdoor products for public spaces. IPV designs bridges, piers, street lights, signs, benches and outdoor waiting areas. The materials used are stainless steel, concrete, glass and wood.

Company structure

IPV delft is a small design and engineering company with about 12 employees. The owner, 4 project managers and 7 designers They all do the same design work, only the managers are responsible for the projects. Because of this flat structure I could participate in the complete process.

Pitch project

The project on this page was a fast pitch for two simple bridges for pedestrians in Alphen aan de Rijn. I did this in one day and it consisted of global measurements and a few renderings

IPV DELFT

INTERNSHIP

Controlling

Since I participated in the company as a full employee I also went to the delivery of a bridge. I had to verify whether the bridge was manufactured by the standards stated in the report. All the flaws had to be photographed and reported.

Completion of the project

In the four months internship I have learnt to co work in a group and also do projects by myself. I made myself familiar with AutoCAD, had contact with suppliers, did simple stress calculations and designed and worked out several projects from a bench series to a bridge.

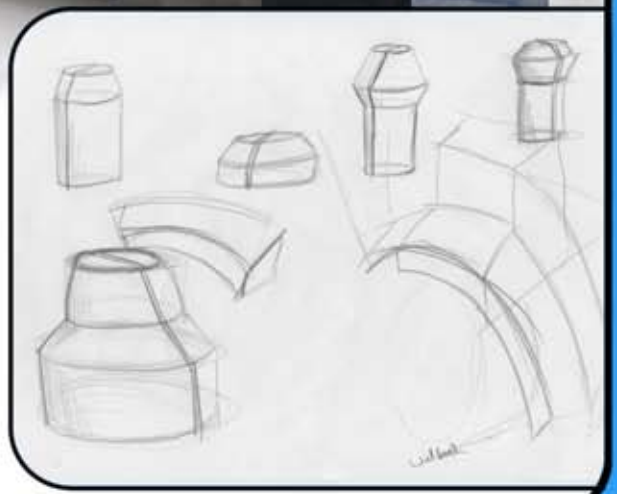
FORM RELATION

Assignment

The assignment of this project was to design a set of products related to each other. The set was extracted from a single commercial advertisement.

From advertisement to sketch

From the advertisement I extracted forms, style and materials and put them into words. From the words I made a collage. After this I made several sketches.



CHESS SET

Soft models

The chess pieces are modeled in Solid Works. Within Solid Works I optimized the forms to give them a strong and ridged look. Finally I made a few photorealistic renderings with the right materials to see what they would look like.

Prototyping

The chess pieces are finally produced in aluminum. The method I used to make them was by CNC machining. The Solid Works models are used to get the CNC data. All the small carvings I made by hand. Afterwards the rooks have been sanded to give a rougher look. Both king and queen have a highly polished top to show their value.

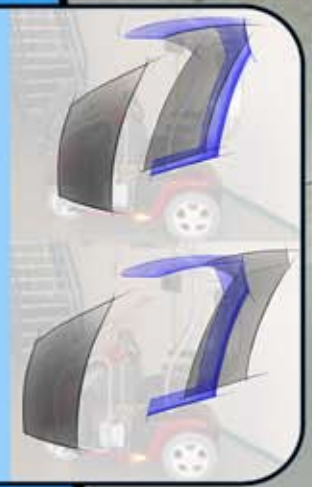
GRADUATION PROJECT

Assignment

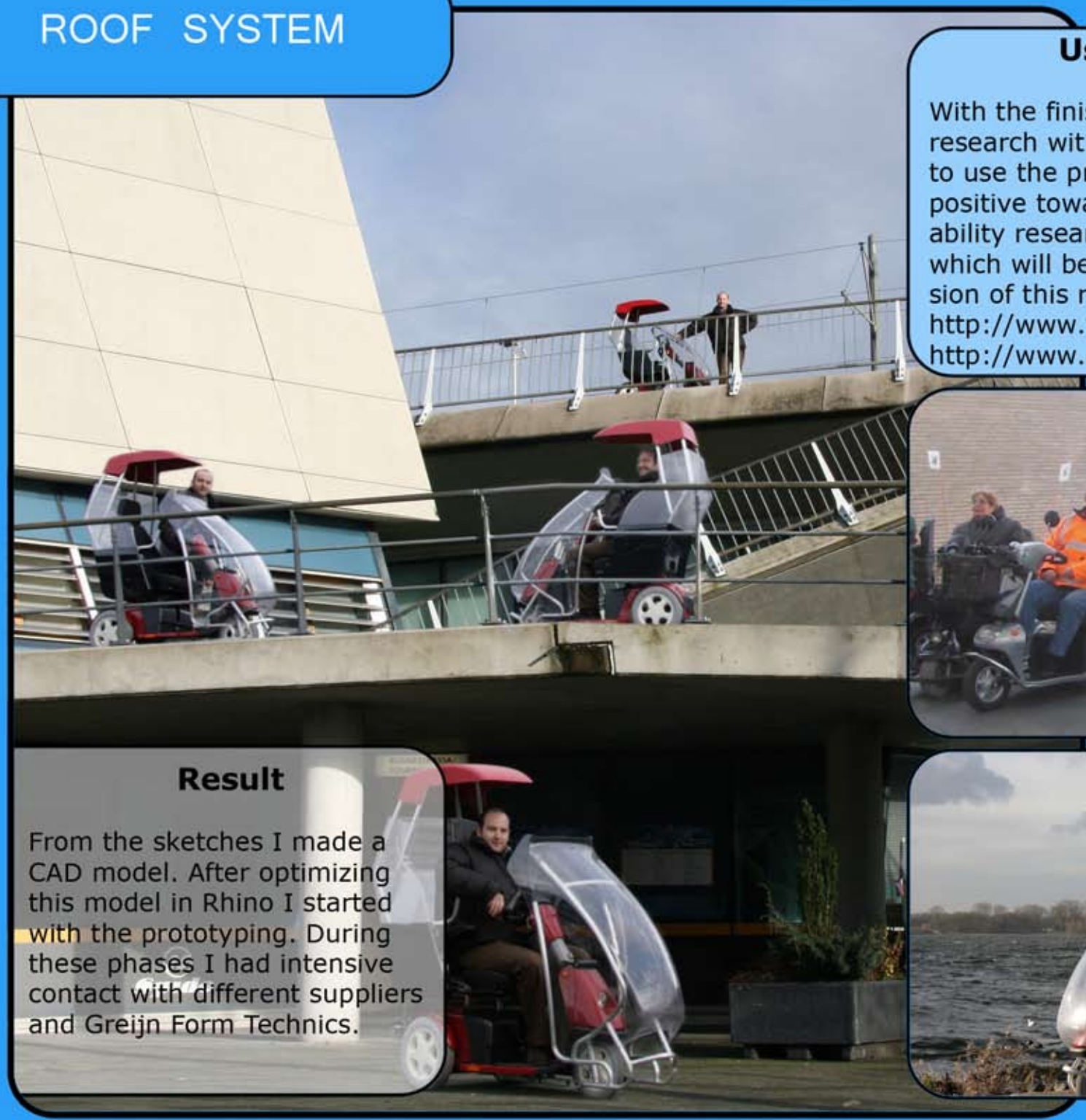
The assignment of my graduation project was to design and prototype a roofing system for mobility vehicles. This project was done at the Delft University of Technology under the supervision of Greijn Form Technics. The project was done by myself from start to finish in 6 months. Greijn Form Technics aided in the production of the plastic parts.

User research

During the analysis phase I did a user research with the target group. I used information on the strength of the users to create a usable sliding mechanism. From the user observation I took measurements for the entrance.



ROOF SYSTEM



Usability research

With the finished prototype I did a usability research with over 30 users. 95% was able to use the product. All the users were very positive towards the product. From this usability research came a few improvements which will be implemented in the next version of this roofing system. More info at:
http://www.vanprooijen.net/greijn/
http://www.greijn.com/

Result

From the sketches I made a CAD model. After optimizing this model in Rhino I started with the prototyping. During these phases I had intensive contact with different suppliers and Greijn Form Technics.

Functional

The aim of all my home projects is to make a product with a lot of functionality and a straightforward design. The products have to be simple in use and should have no unnecessary features. I started each project because of the need for a certain function. I made them after making some quick sketches and drawings.

Electronic

One project I did was an appliance that is able to switch different power lines. With this I can control 8 different 230V appliances. With this project I explored my skills in electronics. The control of the appliance is done with a computer interface. The appliance can be controlled via a mouse click, remote control, and an internet interface.

Lighting

I believe that lighting is an important part of an interior I have paid special attention to the lighting in my own room. One of the projects involves these shelves with lights in them. They can be controlled with the above electronic appliance and are dimmed. The shelves are connected to the wall with a sliding mechanism so no connections are visible.