
CV & PORTFOLIO OF WILLIAM BLOMSTRAND

M. SC. MECHANICAL ENGINEERING [2000 10 31]
MA INDUSTRIAL DESIGN [2006 06 02]

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CURRICULUM VITAE

PERSONAL DETAILS:

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722 40 VÄSTERÅS
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WORK EXPERIENCE:

Designkontoret, Hällefors/Sweden

Internship, June 2005 - August 2005

TV production that documented the designprocess of five designers in five projects. Five programs broadcasted on Swedish nationwide television (SVT UR). Award winner for best Research & Educational Project - Designårspriset.

Umeå Institute of Design, Umeå/Sweden

Project based employment, April 2005 - June 2005, April 2006 - July 2006
Project leader for the Umeå Institute of Design 2005 & 2006 Degree exhibitions in Umeå and Stockholm. Coordinating 38 + 36 graduating students and responsible for budgets of 30 000 Euros.

DESIGN a STORZ GmbH, Zell am See/Austria

Internship, October 2004 - April 2005
Product and transportation design.

Dolhem Design AB, Stockholm/Sweden

Internship, June 2004 - September 2004.
Interaction, animation and graphical design.

Brunswick Emerging Markets AB, Stockholm/Sweden

Permanent employment, February 2001 – February 2002

Java and database development of an international internet stockbroker service.

Dobedo AB, Stockholm/Sweden

Permanent employment, May 2000 – February 2001

CRM application development of Sweden's, at time, largest youth community.
Affiliating with MTV, NRJ and Expressen.

Siemens – Elema AB, Stockholm/Sweden

M. Sc. thesis, November 1999 – April 2000

Analysis and location of faults in anaesthesia apparatus. Building of test equipment based on sensors and digital theory.

Division of Nuclear Reactor Engineering, KTH, Stockholm/Sweden

Trainee position 1996 - 1998

Illustration of course material using CAD and Excel.

EDUCATION:

2003 – 2006 MA Advanced Product Design, Umeå Institute of Design, Umeå.
2002 – 2003 Artstudies. The International Art School, Stockholm.
1995 – 2000 M. Sc. Mechanical Engineering, Royal Institute of Technology, Stockholm.
1994 – 1995 Military Service, Swedish Air Force, 11 months. F16 Uppsala.
1993 – 1994 Technical introductory year, Mälardalen University, Västerås.
1990 – 1993 Carlforsska Gymnasium, Economic programme, Västerås

COMPUTER SKILLS:

Graphics

2D CAD – AutoCad
3D CAD – Alias StudioTools
Alias Imagestudio
Maya
Adobe Illustrator
Adobe Photoshop
Adobe Indesign
Adobe After Effects
Macromedia Flash + Actionscripting

Modelmaking

Manual
CNC
Rapid prototyping

Programming languages

J2EE(Java,Javabeans,JSP)
C
HTML, XML
SQL - Oracle

LANGUAGES:

Swedish Fluent in speech and writing
English Fluent in speech and writing, 2nd mother tongue
French Intermediate+ in speech and writing
German Basic+
Spanish Basic

OTHER:

-Cashier, Student Union, Umeå Institute of Design, 2003-2004.
-Cashier, Master programme organisation, Royal Institute of Technology. 1999-2000.
-French studies, February 2002 – June 2002. Ifalpes language school, Annecy, France.
-CHI -Computer-Human-Interaction fare, Vienna 2004.
Finalist in student competition.
-Certificate – ‘Sailing in the Archipelago’, Medborgarskolan, Stockholm.
-Awarded ‘Athlete of the platoon’. F16 Uppsala.
-Winner of Umeå’s annual Snow Sculpture competition 2006.
Block of 3x3x3 metres packed snow, 9 teams and 24 hours. 1500 Eur reward.

PORTFOLIO

DEGREE WORK - BLOMSTRAND 85 REVITALISING THE SCANDINAVIAN SAILBOAT MARKET

Personal motivation - Sailing has always been my favourite leisure activity. Ever since I was a small boy I have been attracted to the challenges and the joys that sailing brings. The choice of designing a sailboat was additionally strengthened of the fact that it holds a perfect blend between the two disciplines design and engineering.

The magnificent archipelagoes of Scandinavia are best experienced from smaller sailing boats. The small sailing boats permit sailors to come close to nature and explore shallow bays and make spontaneous shortcuts on the route. Smaller sailing boats are also cheaper and easier to repair. They make the archipelagoes of Scandinavia more available for its inhabitants. During the 70's and the beginning of the 80's there was a decent amount of Scandinavian sailing boat manufacturers producing boats at fare prices for the community. Many of these came in sizes varying between 24-28 feet. These boats are still out there for reasonable prices but for each year going by this fleet is getting older and older. Sooner or later they must be replaced.

Looking at the Scandinavian sailing boat manufacturers of today the range of boats in production start at 31 feet with prices beginning at +100 000 Eur. To find new smaller sailing boats for an affordable price one must look at the larger European players such as Beneteau and Jeanneau.



DEGREE WORK - BLOMSTRAND 85

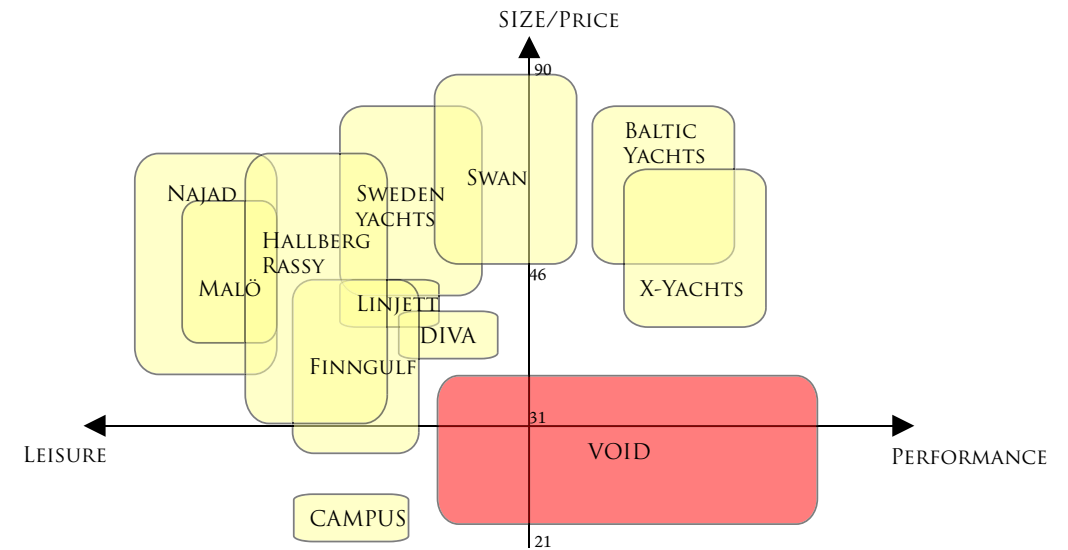
The project started out with an in depth benchmark of the Scandinavian sail boat manufacturers. The research findings where that there is a large void and market opportunity for sailboats in the size below 31 feet.



HR 31 Mk II



Najad 332



To support the idea of dealing with this void on the market discussions and interviews with sailors, experienced as well as amateurs, where carried out. The findings from here where that all have started out with a sailing boat below 10 metres.

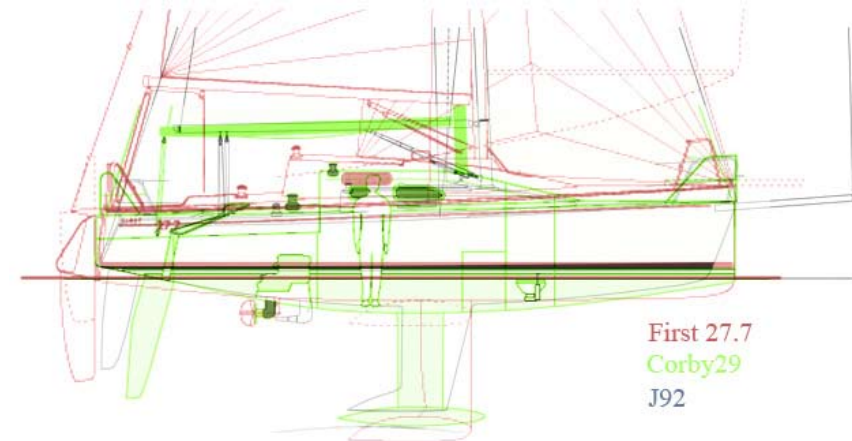
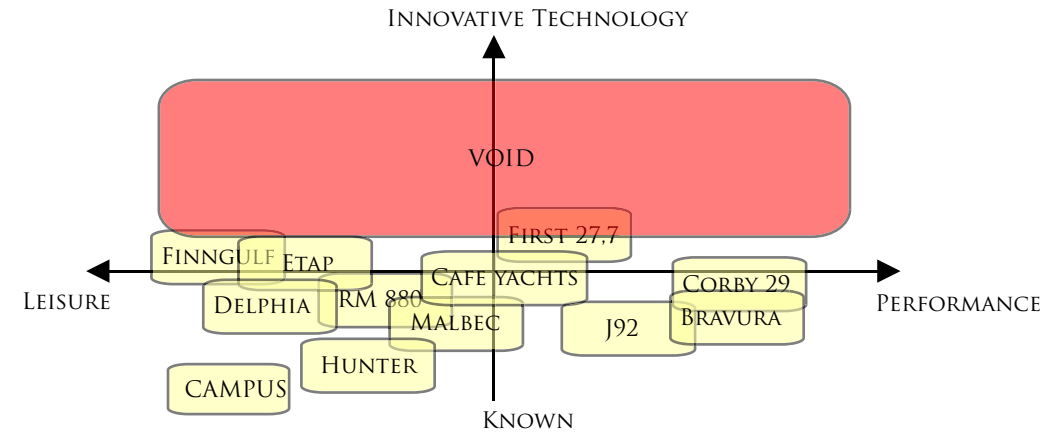
Boatmanufacturers as well as salesmen where also interviewed during the international boat show. Information about how imported smaller boats where modified to meet the Scandinavian environment was extracted and dealt among other things with rig, keel and hull design.



DEGREE WORK - BLOMSTRAND 85

An international sail boat benchmark for boats in the range 26-29 ft was done. Three popular and awarded boats were closed in to become references. All showing good performance and found at reasonable price levels.

The three being, from top to bottom,:
Beneteau First 27,7 - France
J92 S - US
Corby 29 - England



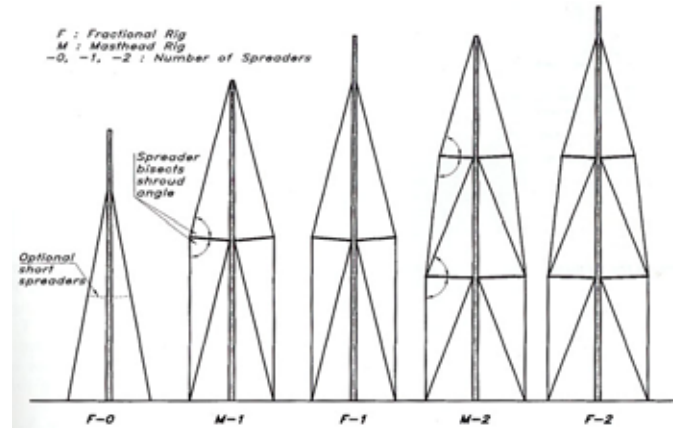
The hull, rig & keel/rudder designs were analysed and discussed with experienced sailors and boat designers to understand weaknesses and strengths.

DEGREE WORK - BLOMSTRAND 85

The rig proposal holds a mast through deck, fractional rig with single pair of spreaders and shrouds connected to the sheer rail.

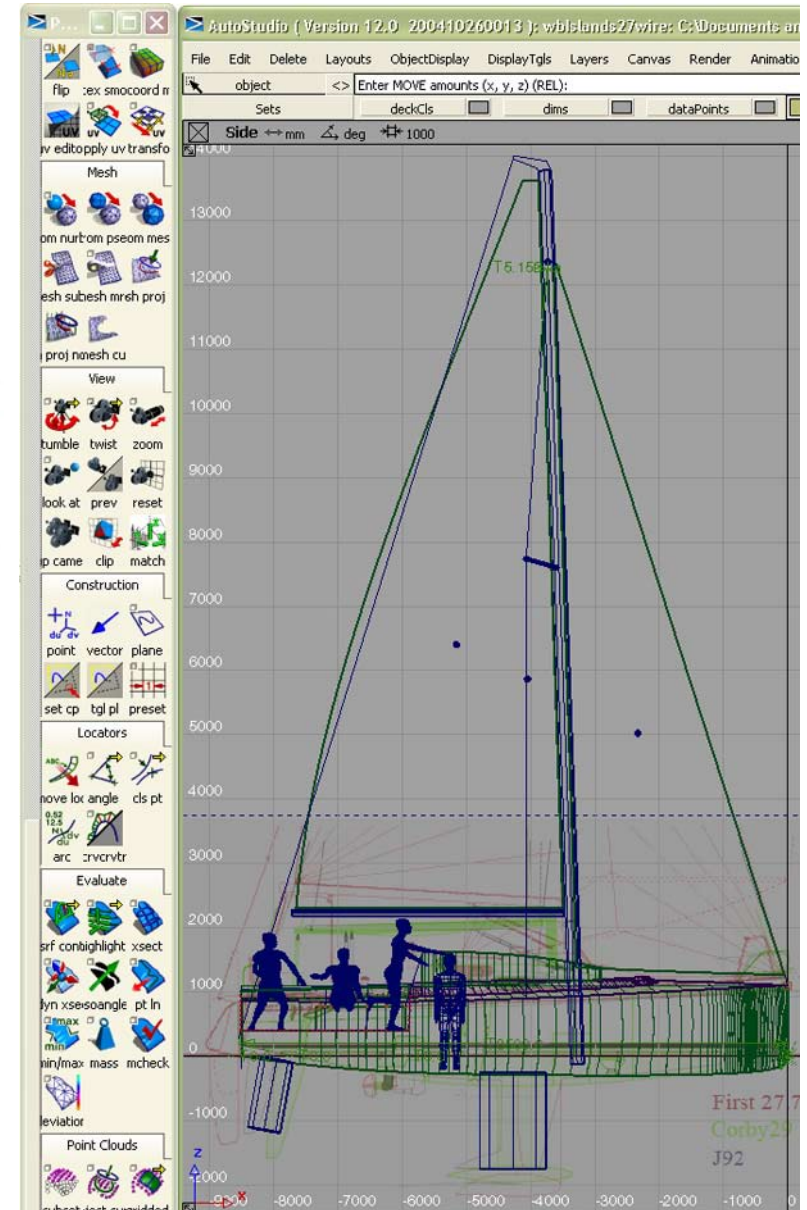
The solution leaves clean deck and interior plus other advantages that come with the use of a fractional rig.

To go deeper into the definition of the rig the righting moment needs to be calculated which in turn requires the centre of buoyancy of the sailing boat.



BOAT	BENETEAU 27.7	CORBY 29	J92	T1 85
MAIN SAIL	27.8	N/A		28
GENOA	21	N/A		18
SPINNAKER	60 ASYM(56)	75		
RIG	F-1 MTD	F-2 MTD	F-2 DS	F-1 MTD
HEIGHT	14	13.86 (12.9+0.96)		14
P	10.96	11.6	11.85	11.38
E	4.21	4.0	4.25	4.15
J	3.19	3.7	3.5	3.27
LP	120%OVERLAP3.83	103%		
I	11.63	11.6+1.3 = 12.9	IM 12.4	12.5
			ISP 13.44	

MTD - MAST THROUGH DECK DS- DECK STEPPED

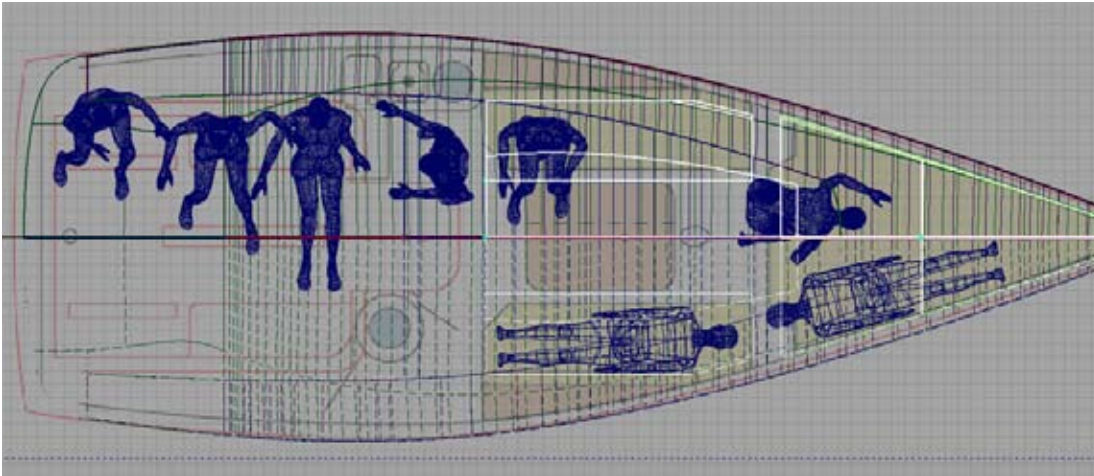


DEGREE WORK - BLOMSTRAND 85

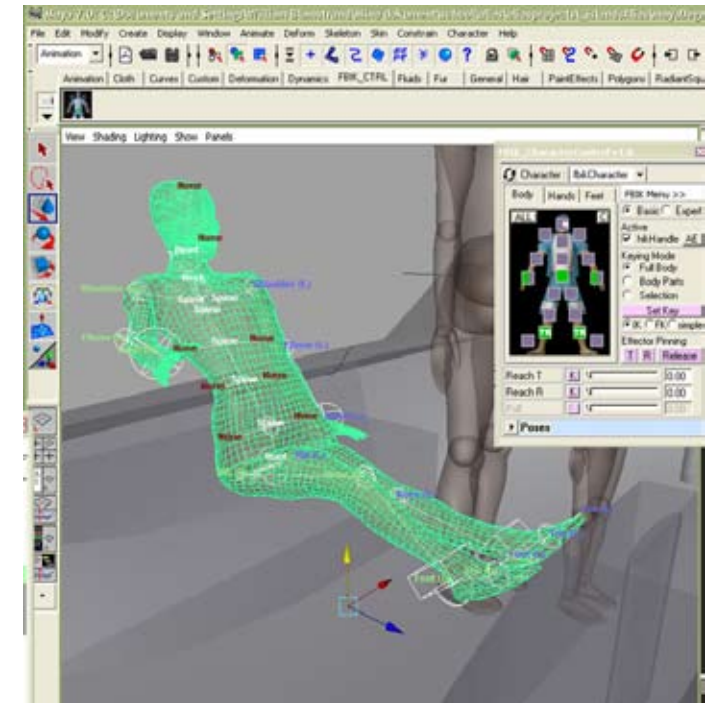
To ensure comfortability for four persons mannequins where positioned in various scenarios.

The exterior was balanced with the interior with the intention of keeping the weight of importance to the exterior and the sailing experience.

The reference mannequins have the human proportions of a 180 cm tall man.



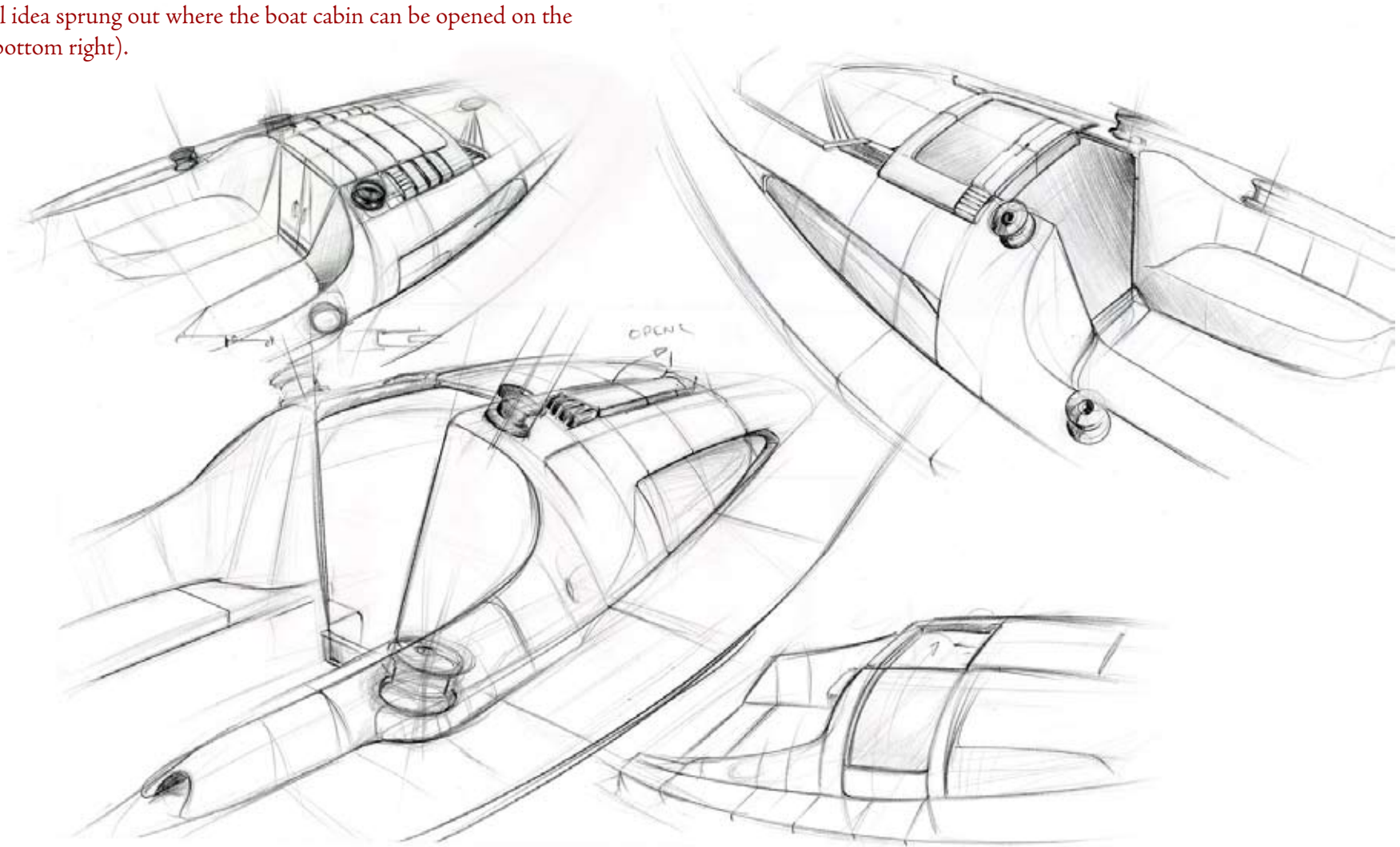
An early line drawing could then be drafted for the design sketch phase to keep everything within realistic proportions and perspectives.



Posing in Maya 7 with FBKIK_CharacterControl

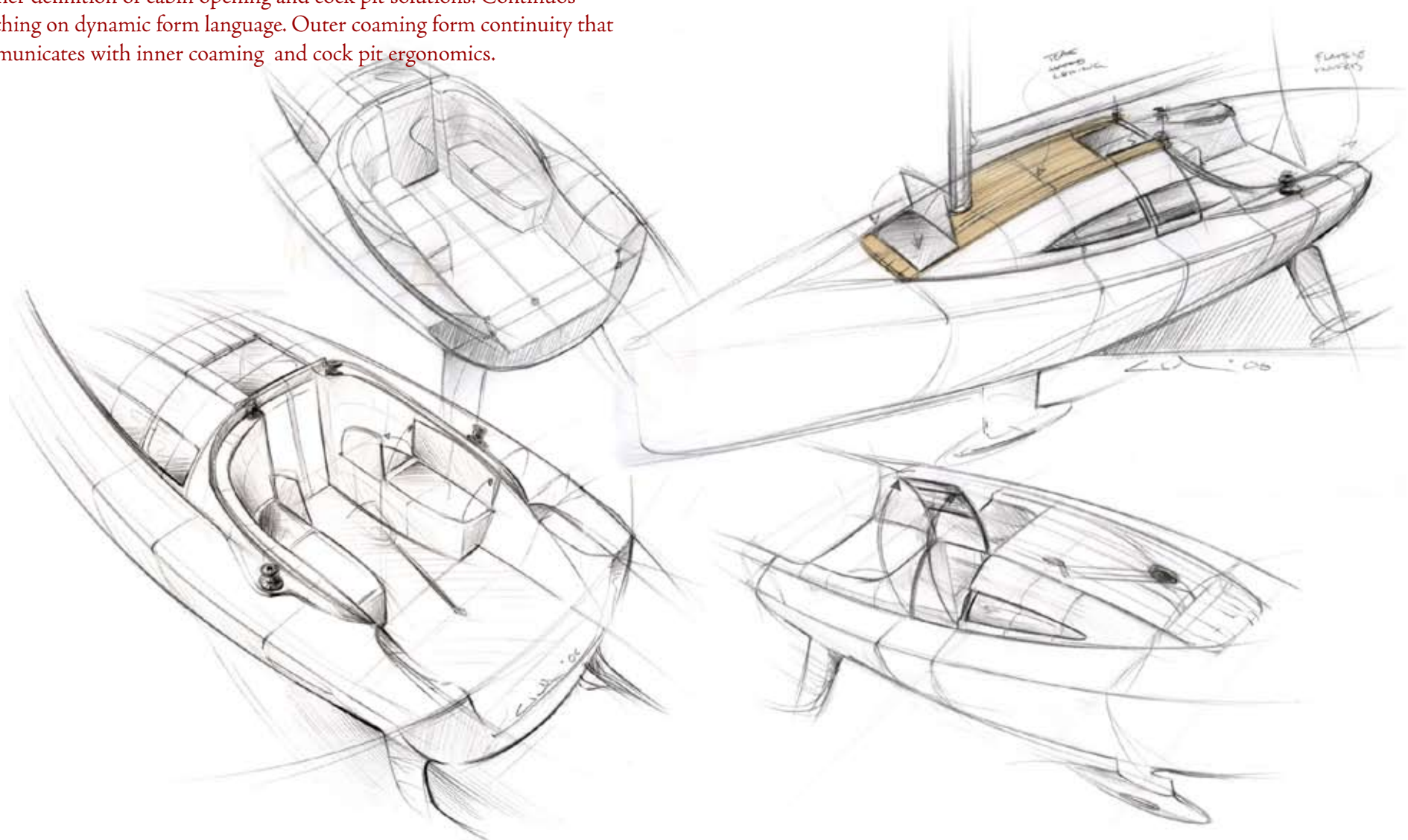
DEGREE WORK - BLOMSTRAND 85

Initial pencilsketches searching for main form and functions in the heart of the boat. Conceptual idea sprung out where the boat cabin can be opened on the side generated (bottom right).

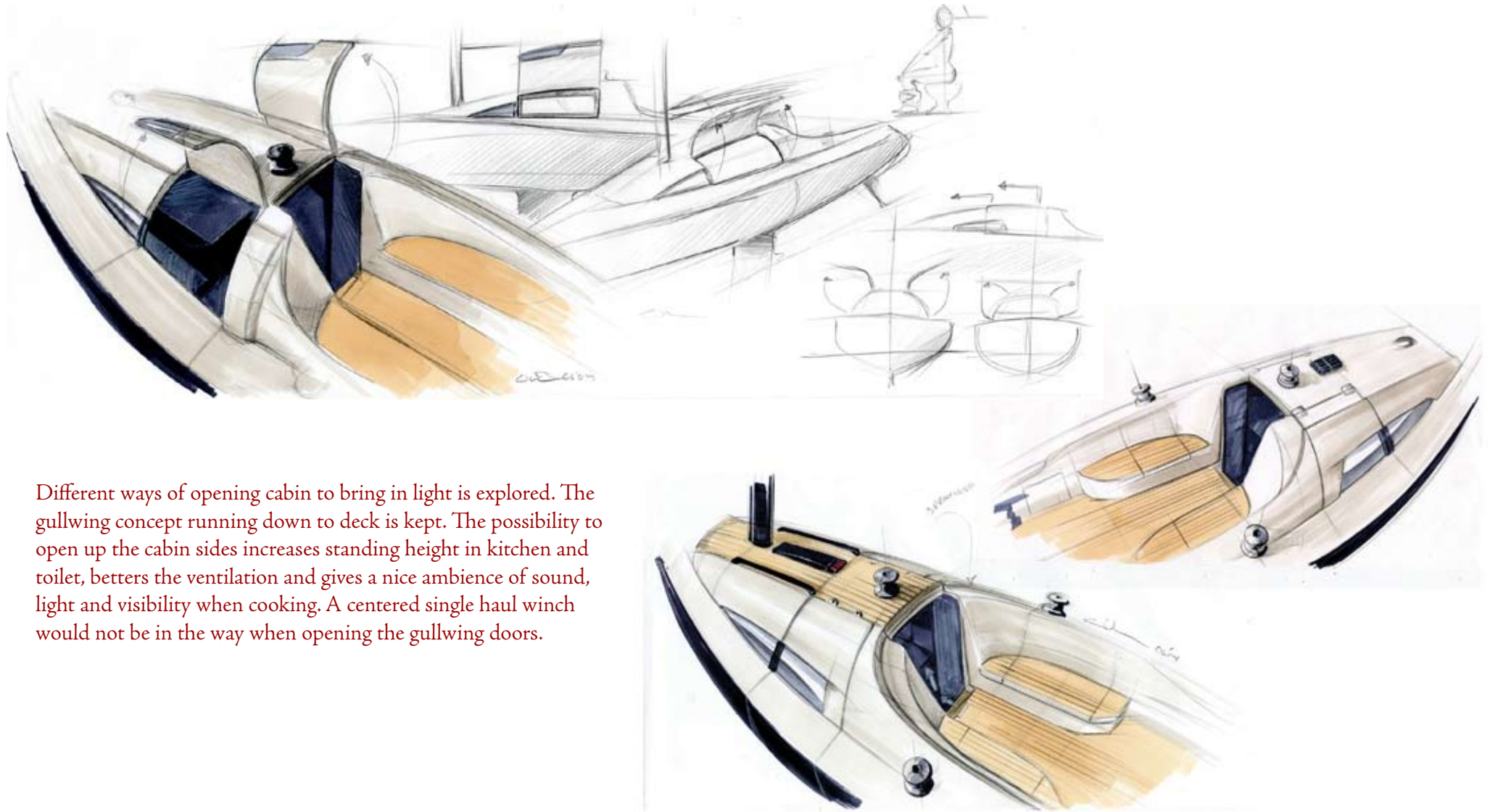


DEGREE WORK - BLOMSTRAND 85

Further definition of cabin opening and cock pit solutions. Continuous sketching on dynamic form language. Outer coaming form continuity that communicates with inner coaming and cock pit ergonomics.



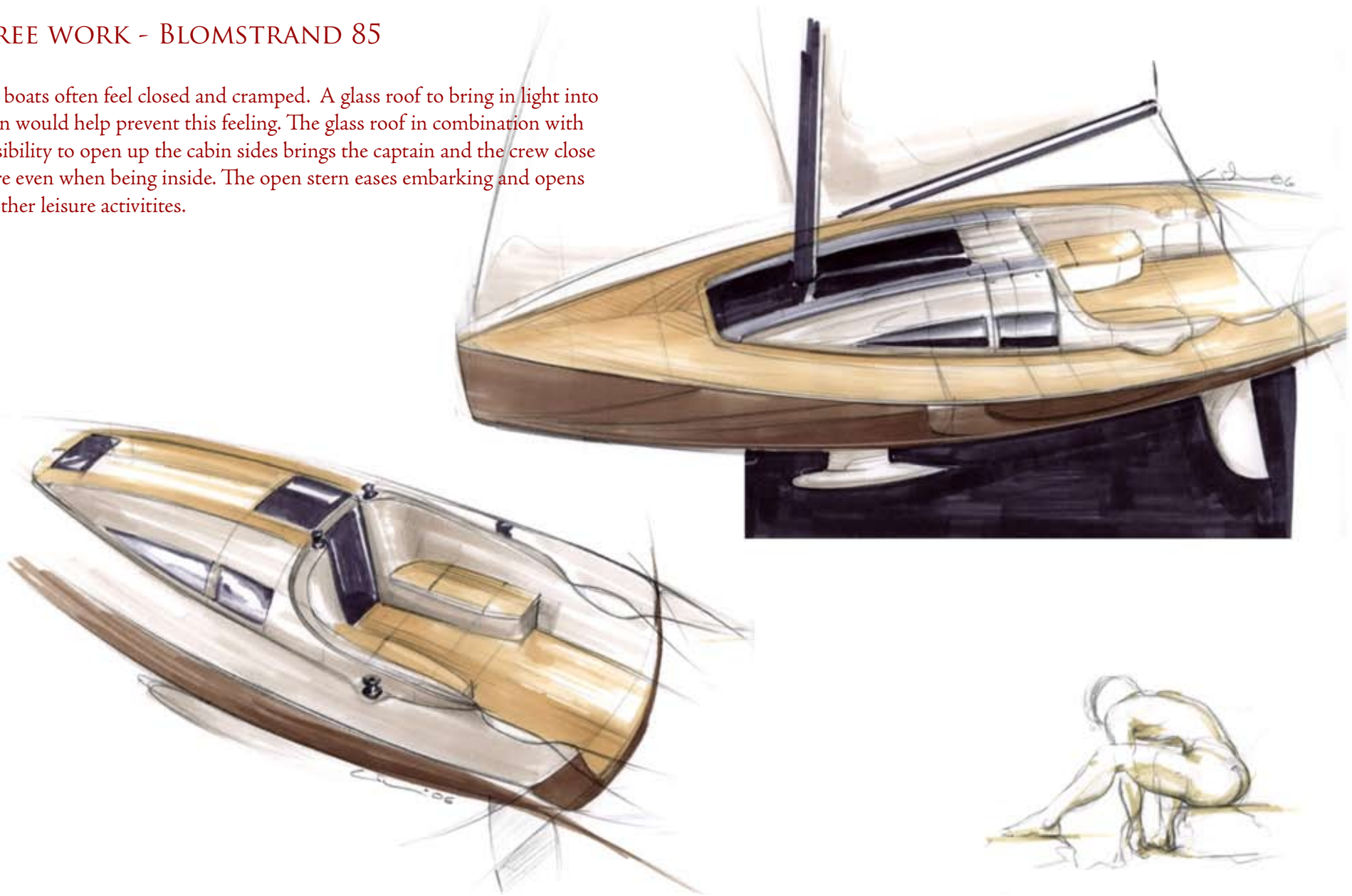
DEGREE WORK - BLOMSTRAND 85



Different ways of opening cabin to bring in light is explored. The gullwing concept running down to deck is kept. The possibility to open up the cabin sides increases standing height in kitchen and toilet, betters the ventilation and gives a nice ambience of sound, light and visibility when cooking. A centered single haul winch would not be in the way when opening the gullwing doors.

DEGREE WORK - BLOMSTRAND 85

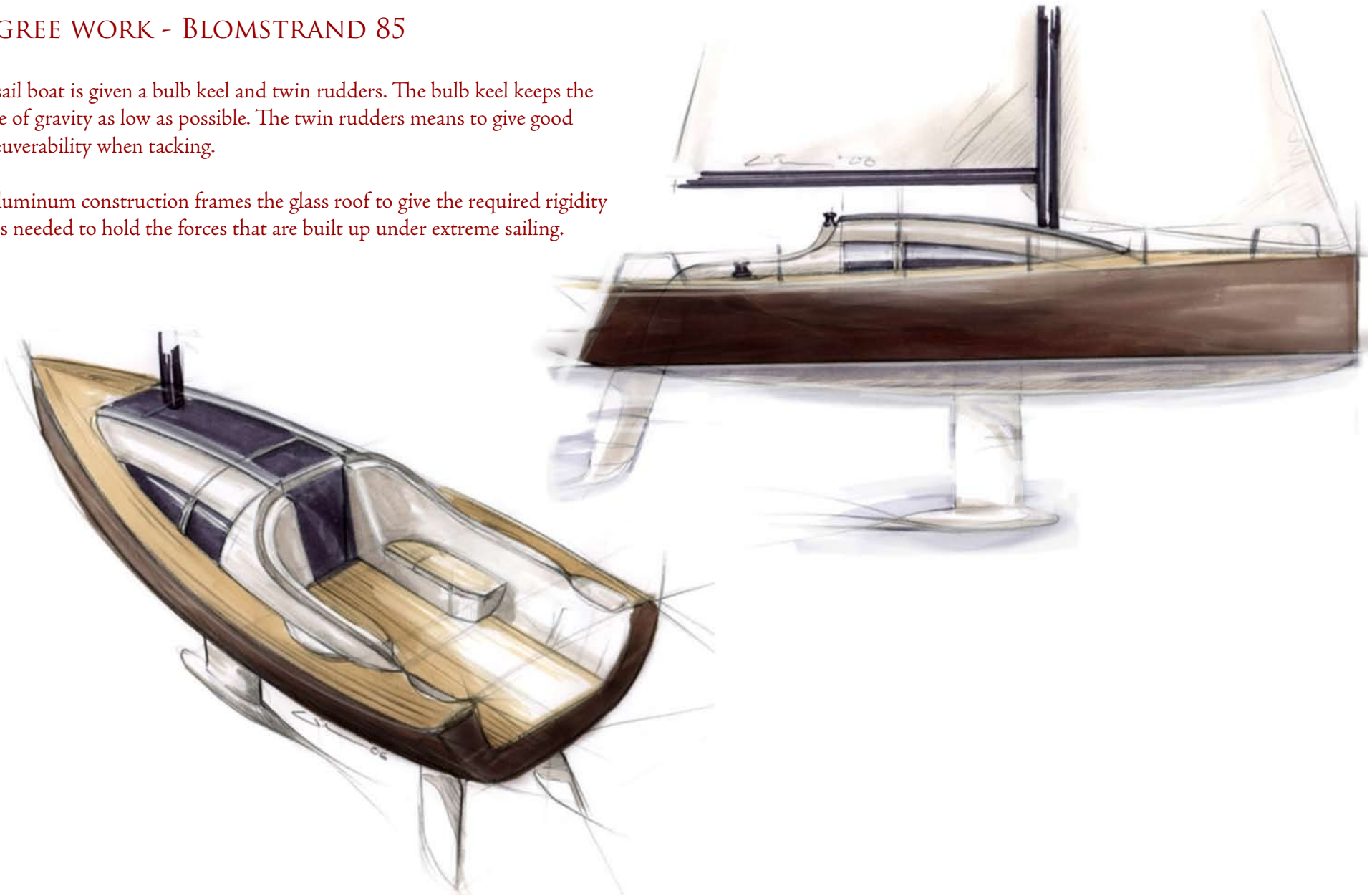
Smaller boats often feel closed and cramped. A glass roof to bring in light into the cabin would help prevent this feeling. The glass roof in combination with the possibility to open up the cabin sides brings the captain and the crew close to nature even when being inside. The open stern eases embarking and opens up for other leisure activities.



DEGREE WORK - BLOMSTRAND 85

The sail boat is given a bulb keel and twin rudders. The bulb keel keeps the centre of gravity as low as possible. The twin rudders means to give good maneuverability when tacking.

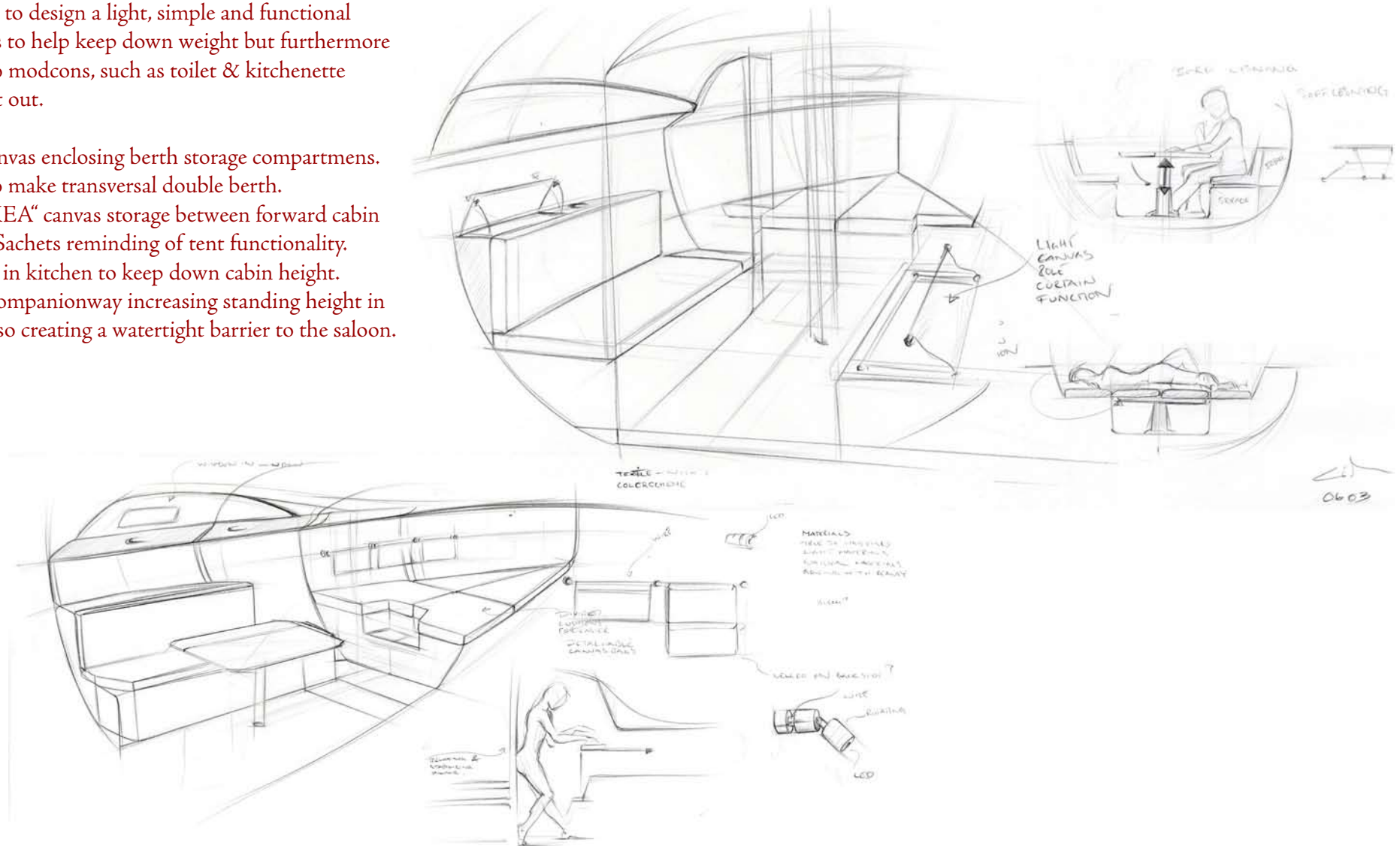
An aluminum construction frames the glass roof to give the required rigidity that is needed to hold the forces that are built up under extreme sailing.



DEGREE WORK - BLOMSTRAND 85

The aim was to design a light, simple and functional interior. This to help keep down weight but furthermore the price. No modcons, such as toilet & kitchenette would be left out.

Stretched canvas enclosing berth storage compartments.
Possibility to make transversal double berth.
Modular "IKEA" canvas storage between forward cabin and saloon.
Sachets reminding of tent functionality.
Resting pole in kitchen to keep down cabin height.
A floorless companionway increasing standing height in galley and also creating a watertight barrier to the saloon.



DEGREE WORK - BLOMSTRAND 85



Final concept: 8.5 meters sail boat with glass roof, teak deck & cock pit, cabin side doors and open stern.

DEGREE WORK - BLOMSTRAND 85



Cock pit with storage possibilities. Inverted front compartment for easy & quick storage. Aft compartments for larger needs such as sails, fenders etc.



Cabin sides can be opened to get better height and improved ventilation in kitchen and toilet. It also improves the handling of luggage when embarking and storing.

DEGREE WORK - BLOMSTRAND 85



The galley holds a sink, a fridge compartment and a gas burner stove. As seen when cabin side is open.



Interior is kept simple and clean. This to cut costs that are related to carpenters work and also to lower the displacement of the boat to improve the sail boats performance.

DEGREE WORK - BLOMSTRAND 85

Top views with mannequinne references.



DEGREE WORK - BLOMSTRAND 85



The BLOMSTRAND 85 is customisable for anyones needs, desires and wallets.

PROJECT LUKA - ROBOTIC WEEDER FOR ECOLOGICAL CULTIVATION

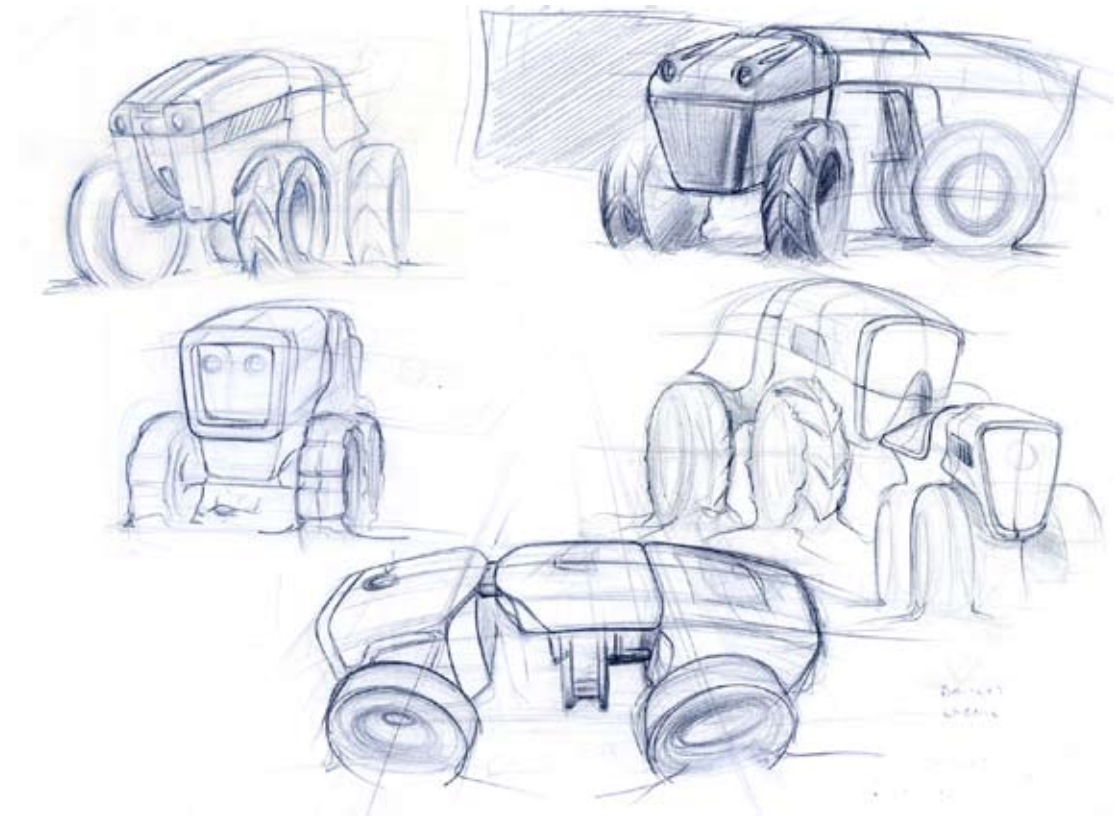
The goal of the project was to make an implementation of a robotic system for agricultural operations. Since ecologically cultivated products have become increasingly popular during the last couple of years the choice fell on dealing with processes within this area. The most expensive process is the manual weeding, and this is not only expensive but it is also hard to find labour, competent enough and willing to carry out this tedious task.

I looked at a research project - Lukas - that has been carried out between the University of Halmstad and Dansukker, Scandinavias largest producer of beet sugar. The starting point was to find a suitable, weather resistant and durable design for the task carried out - mechanical weeding. I also had an ambition to add functionality to this robot.

Project duration: 10 weeks Project year: 2005



Lukas - Robotic mechanical weeder for ecological cultivations



Initial sketches

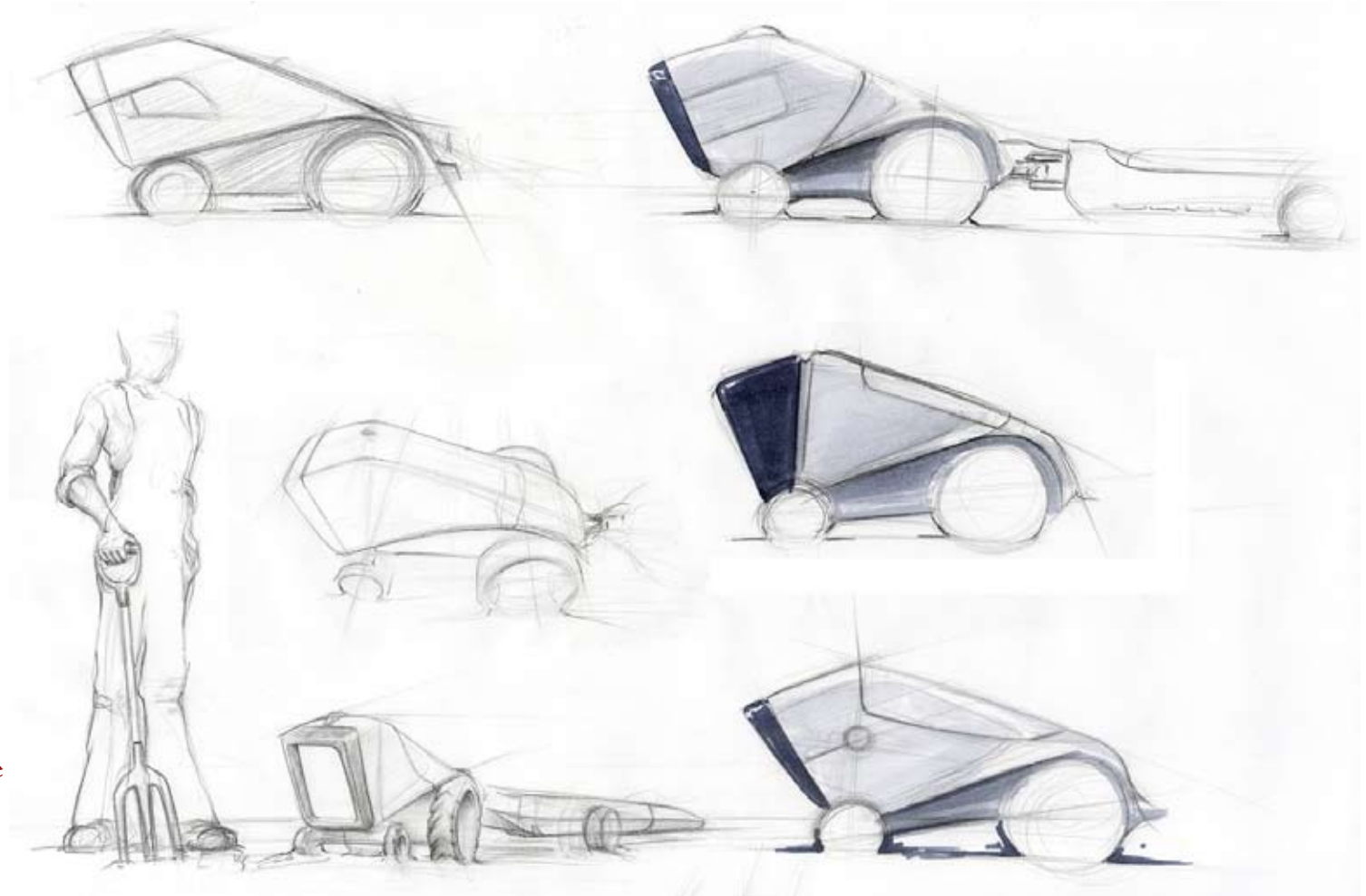
PROJECT LUKA

The search for added functionality led me to a versatile concept where a tractor like meticulous “workin horse” could be coupled together with different carriages.



UV-LIGHT WEEDING

Further research resulted in the finding of a process where weeding actually can be made by using UV-light. When a weed plant is exposed to 25 Watt UV-light for 4 seconds its leaves are dried out and the photosynthesis is hence destroyed. UV-light as opposed to the propane flaming is less energy consuming and does not start fires.



PROJECT LUKA

The concept swung back towards the single tasked weeding robot.

DEFINING PROPORTIONS:

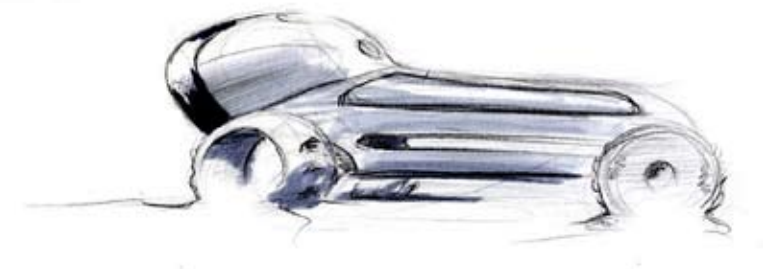
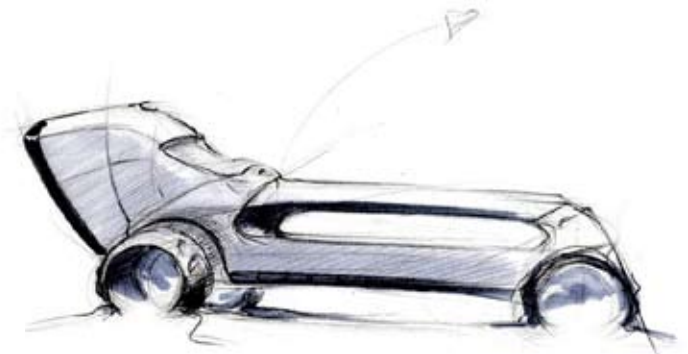
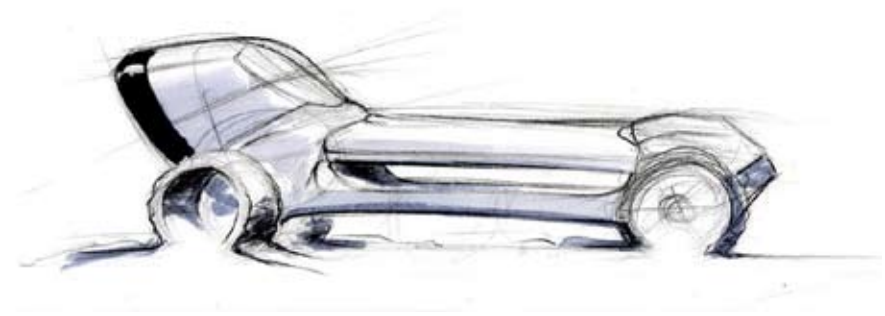
LENGTH: Shifting the mechanical weeding process towards the state of the art UV-light required a longer vehicle. Since each weed needs to be exposed to the light for approx. 4 sec. and the robot must not stop for each weed a UV-matrix with a length of $[4(\text{sec}) \times 0.3 (\text{m/s} - \text{the speed}) =]1.2 \text{ m}$ is required.

HEIGHT: The robot height at the head (0.6 m) is a result from the guiding and analyzing cameras. The analyzing camera determines via a leaf shape recognizing algorithm in the cpu what is a weed and what is an actual crop.

WIDTH: The robot width is a direct result of the crop row width 0.9 m (2×0.45).

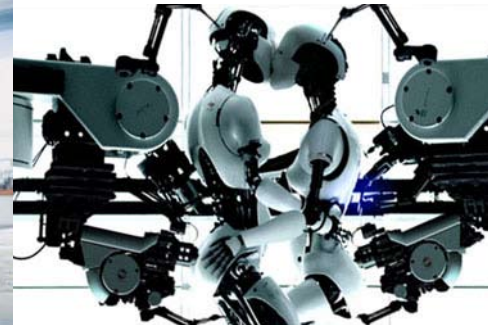


Exploring 3 concepts in workshop to try out proportions and expression.



PROJECT LUKA

CONCEPT CHARACTER - Agricultural equipment, working horse, meticulous, reliable, robotic, autonomous, transparency in function



Inspiration was also found in Daniel Simon's conceptual arctic vehicle "The Nambiquarer".

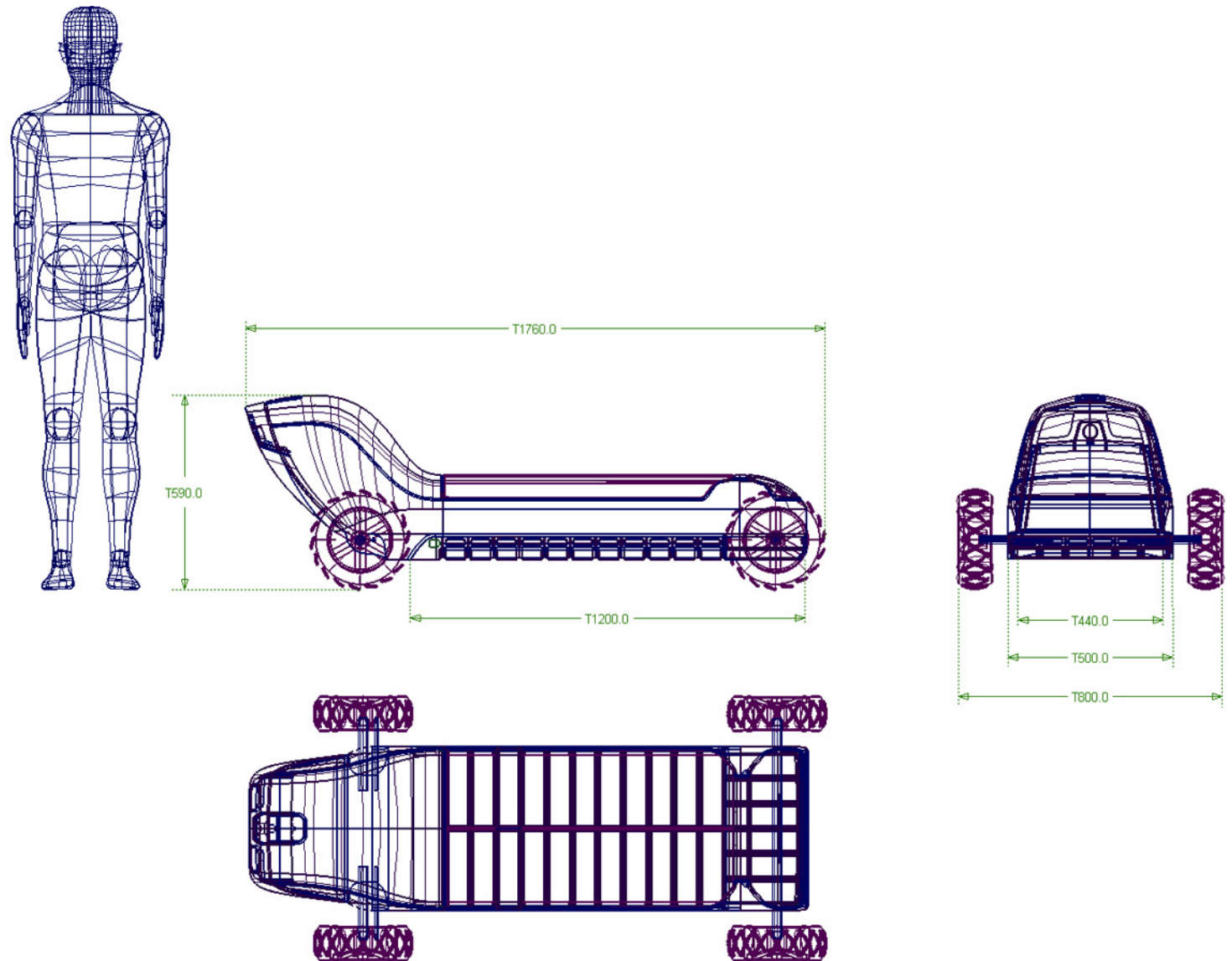


Digital sketches in Photoshop and Painter were done alongside the Alias development. The solar panel (blue area), would later become hidden beneath a pair of wings.

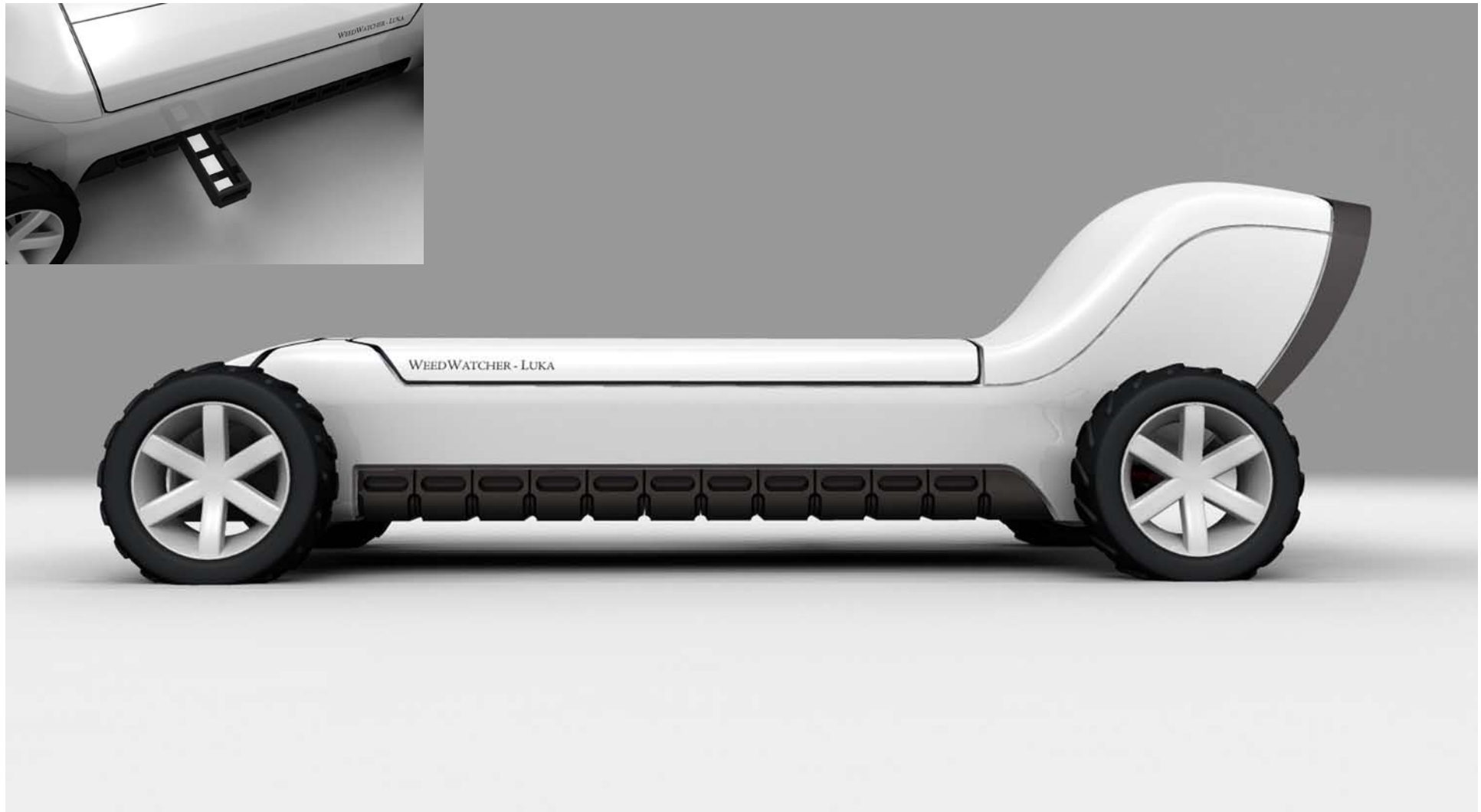


PROJECT LUKA

The proposed design meets the constraints that the working environment demands.

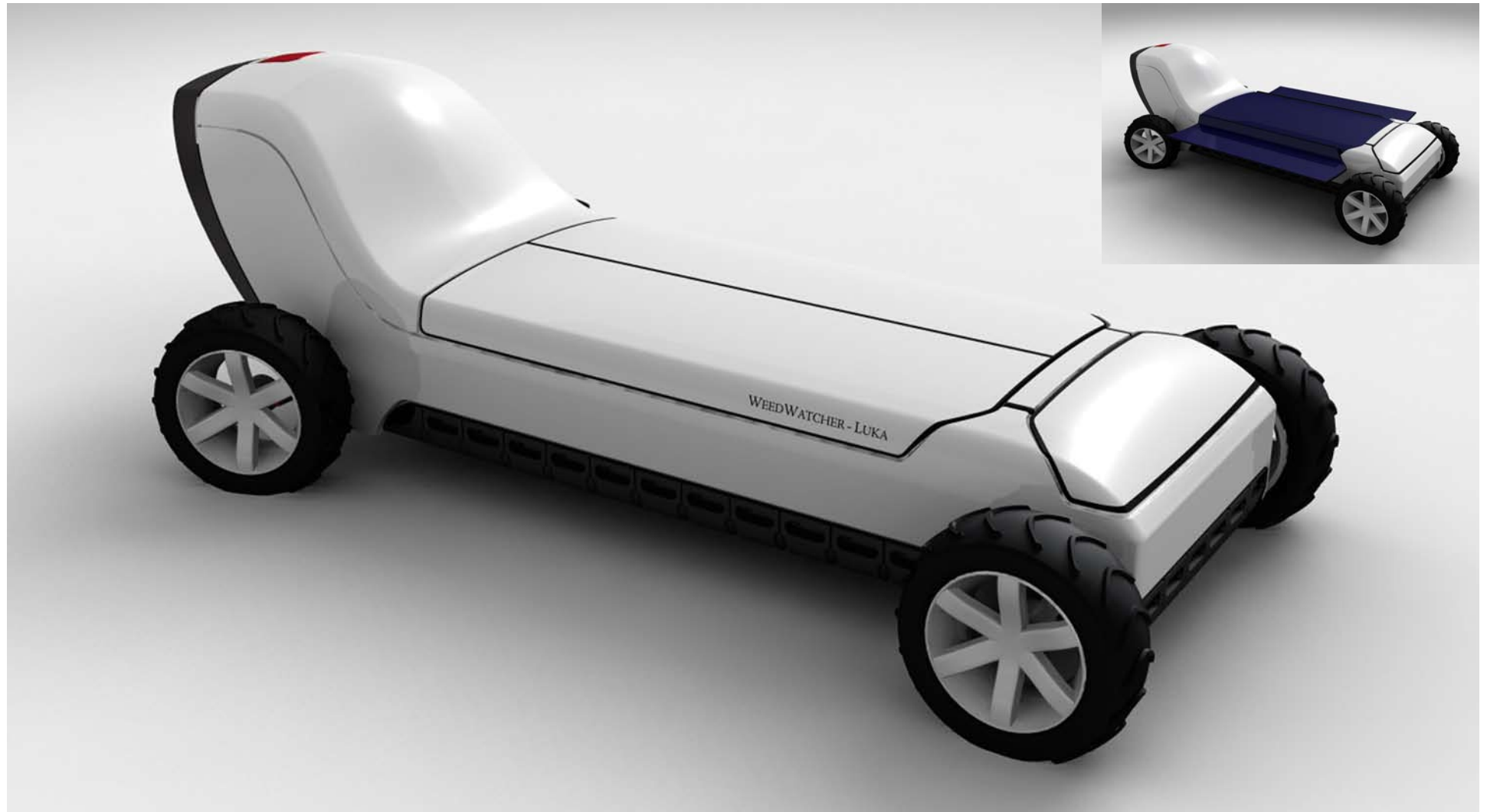


PROJECT LUKA



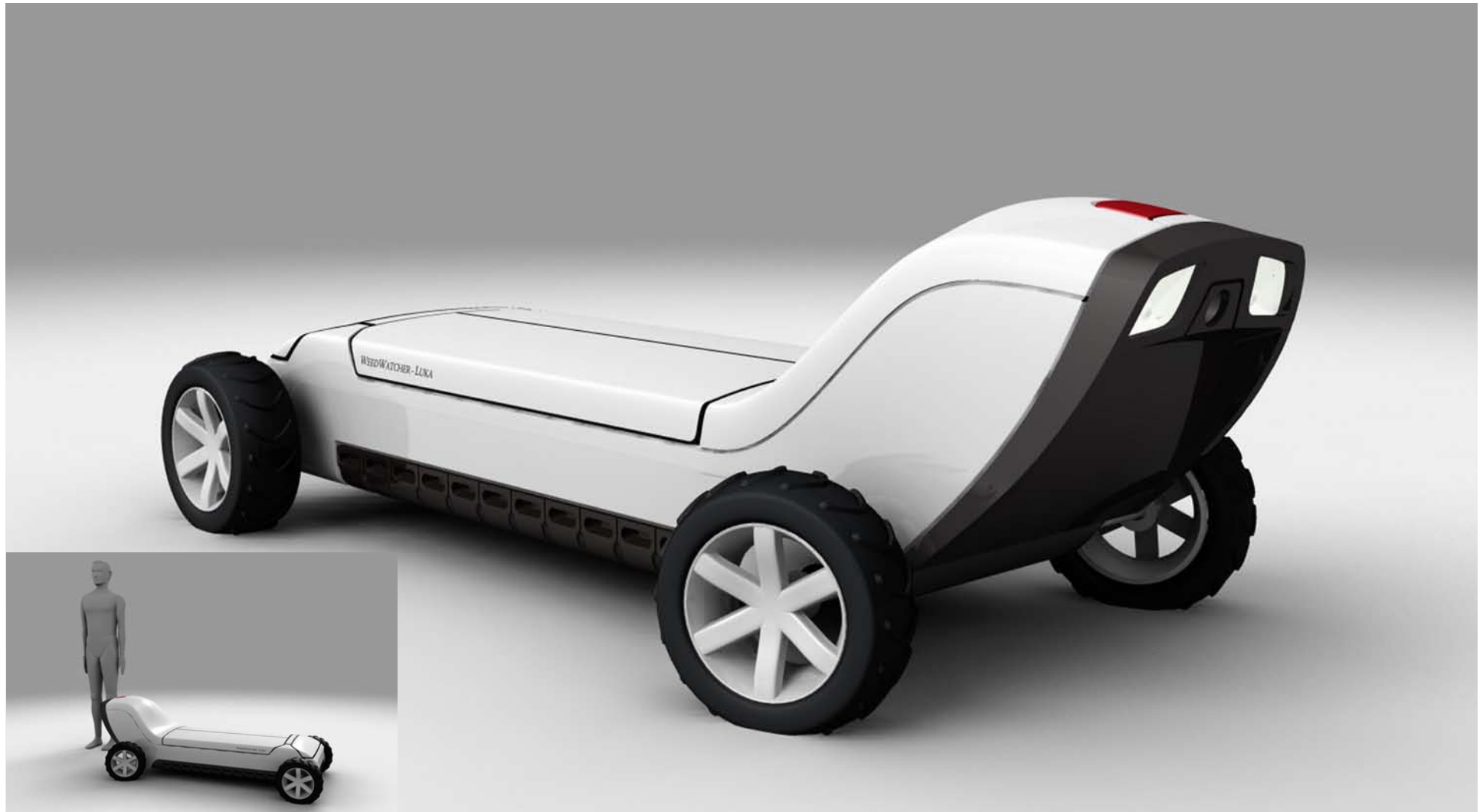
The proposed design holds a 6 x 14 UV light grid. All lights are reached via clever drawers, each holding 3, for easy bulb replacement.

PROJECT LUKA



The top part opens like two wings to reveal a 0,8 m² solar panel. This is sufficient almost to power the 200 W engine. 50 kilos of batteries are carried within.

PROJECT LUKA



Headlights, cameras and GPS in front will help the robot in guiding and determining what is weed and what is crop.

PROJECT MANTA - A COMBINED WASHING MACHINE, DRYING CUPBOARD AND SHOWER. ALL IN ONE.

The idea and design was generated during the Electrolux Design Lab 2004, where the task was to design any home appliance for the year 2015.

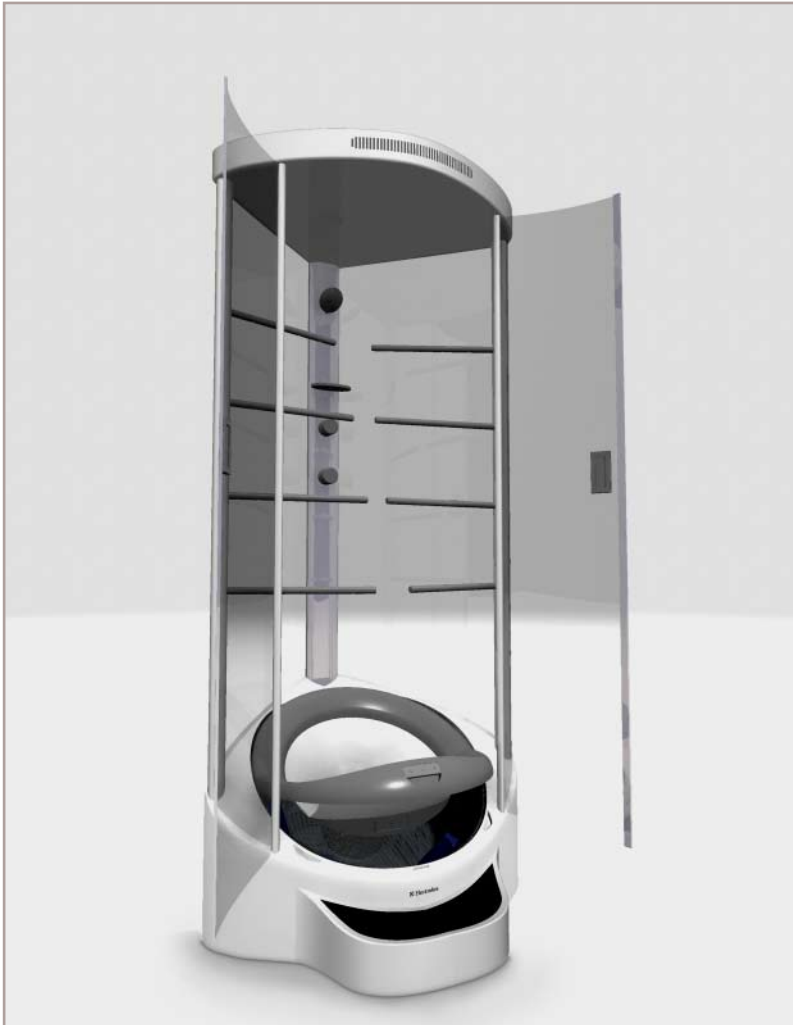
Research via user studies and predictions for the year 2015, led me and my project partner to tackle the following problem areas:

- Urbanisation leading to less space to live in.
- Natural resources, such as water, will become scarce.
- Technological progress, leading to possibilities such as combining products and making them simpler, safer and more comfortable.

Project partner: Paul Yong.
Project duration: 10 weeks
Project year: 2004



PROJECT MANTA



Drying poles are swung out to provide support for hanging clothes on. Holes in each pole lead out hot air that is produced in the main body.

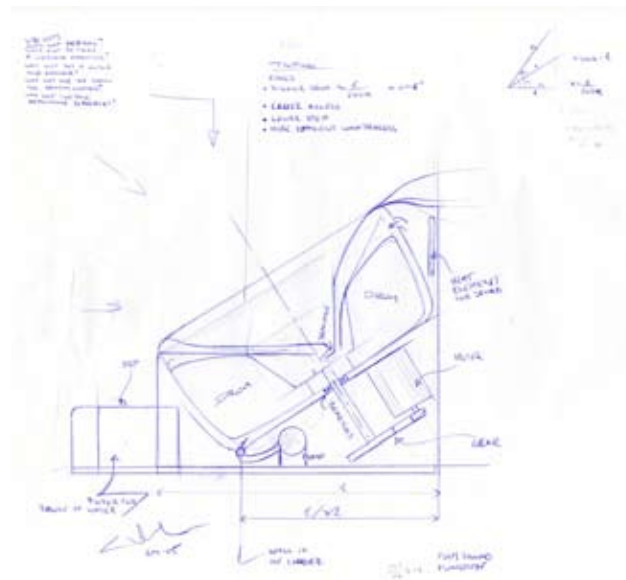
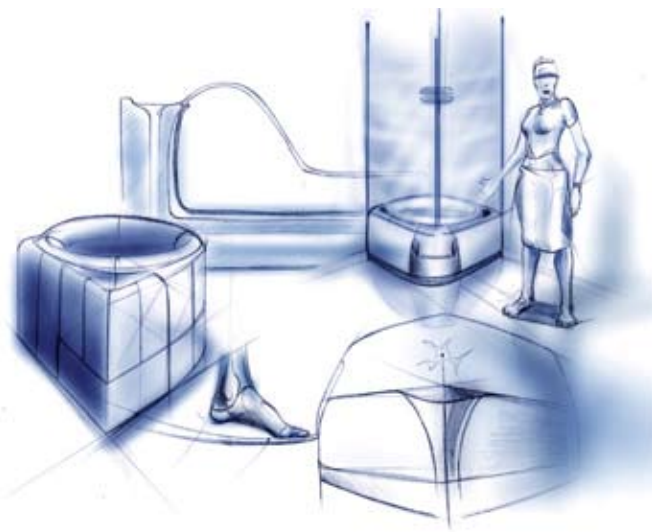
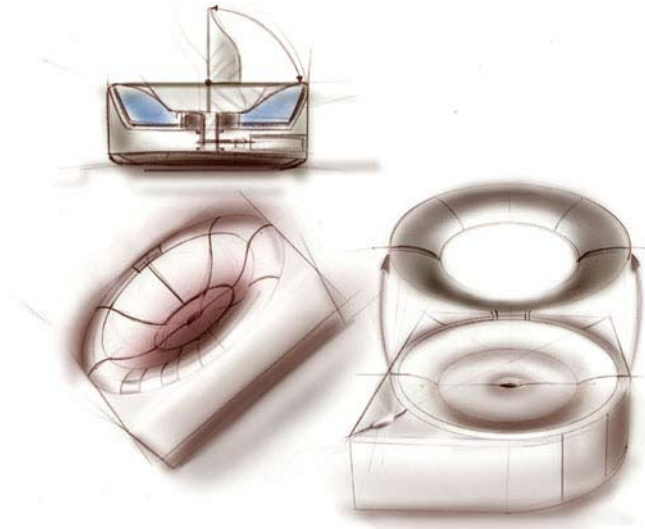


The drum is tilted at an angle of 30 degrees. This results in a more efficient washing process, easier access and a bigger drum for the used floor space. The drum size is 80 litres and can be compared to a conventional washing machine holding 45 litres.

PROJECT MANTA

Material produced “on the way” included:

- User studies
- Ideation sketches
- Mockups (full scale feasibility and 1:8 form)
- Form sketches
- Alias model
- Scale 1:4 physical model (partly milled)
- 2 minute long animation.
- Flash presentation



PROJECT PELICULA

The Pelicula marks the start of the next generation of projectors. Via state-of-the-art sensor technology it responds to your interactions with the projected image. Its visual processing technology and software allows you to explore the world beyond, thus creating a new dimension in visualisation and user experience.

Pelicula is easily mounted on a wall or on the ceiling; or just put on a horizontal surface. It can be rotated in three axes and project non distorted images on up to 45 degree angled surfaces.

The tentacle-like arms in anodised aluminium do not only constitute the platform of the construction but also hold the sensors that register the interaction with the projected image.

Its excellence will not only be proven in home environments, but also in public areas as a presentation tool for marketing, art movies, cultural media, documentation and other events.

Project duration: 10 weeks

Project year: 2003-2004

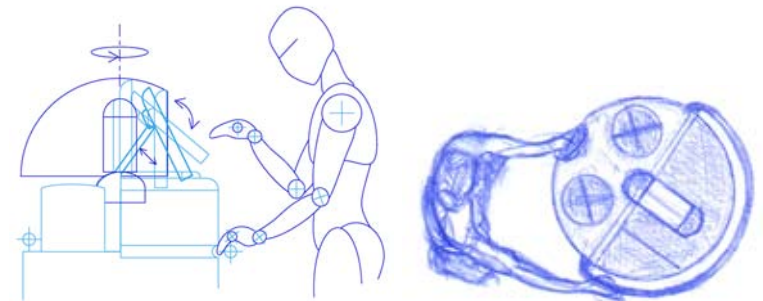
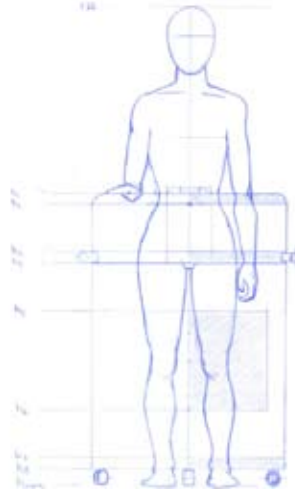


PROJECT ANAESTHESIA APPARATUS

Anaesthesia is the science that aims to minimize pain during operations.

While doing my M. Sc. thesis at Siemens - Elema I developed measuring equipment to prevent faults from recurring on such a machine. This gave me the opportunity to familiarise myself with how it works and how it is handled.

Project duration: --
Project year: 2003

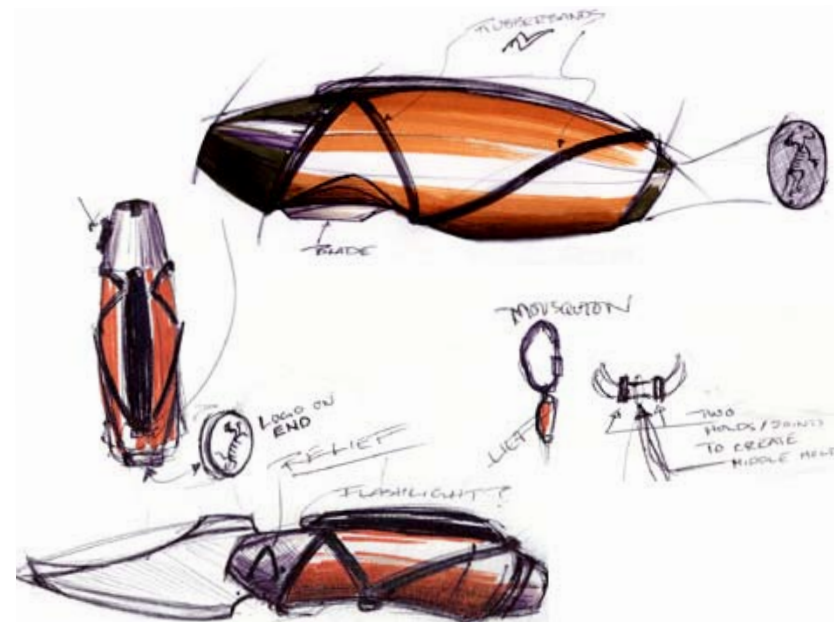
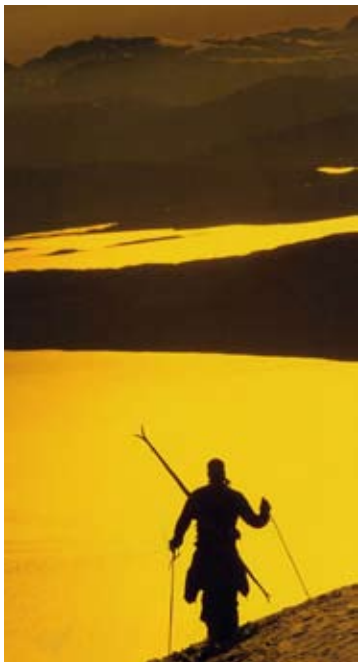
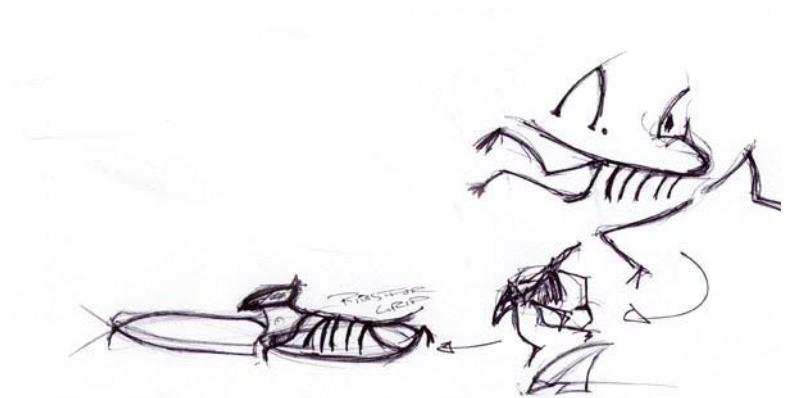


PROJECT KT

The KT is a folding knife with an inbuilt flashlight. The design is in keeping with the short but successful tradition of Arc'Teryx with high quality and functionality. Rubberbands running alongside make it easier to fasten to any other equipment, improve the grip and provide a bracelet. The rubberbands also echo the torso and tale of the reptile used in the logo.

Project duration: 2 weeks

Project year: 2003



PROJECT BIOFUEL REGION - LOGO DESIGN

BioFuel Region is a company that produces bioethanol for vehicles. The usage of this fuel is necessary to prevent global warming and pollution. Bioethanol creates a sustainable balance where no “new” carbon dioxide is added to the atmosphere which is the case with traditional fossil fuel.

The company values that I chose to guide me in designing the logotype were: sustainability, know-how and design based on organic shapes. Inspiration was fetched from Kaj Frank's organic textile patterns.

Project duration: 2 weeks

Project year: 2003



PROJECT BIOFUEL REGION - PUMP INTERFACE DESIGN

Alongside the work with the logo I also designed and developed a fully functional twelve layered interface in Flash supported by actionscripting.

The idea of structure is that it should resemble the tankstructure beneath a gas station's surface. There is also a clear E in the structure to enhance the feeling of being an E-ethanol pump (& E-cological).

Logotypes - BioFuel Region - supplier of bioethanol & OK Q8 - Gas station owner and supplier of regular fossile fuel. Each logo is pasted onto a tank on the generic structure of the interface.

Volume and Price - Start, stop and reset button.

Blend - Either traditional fuel or mixture between traditional and bioethanol. The adding and deduction buttons [+5/-5] are set next to the adjacent tank.

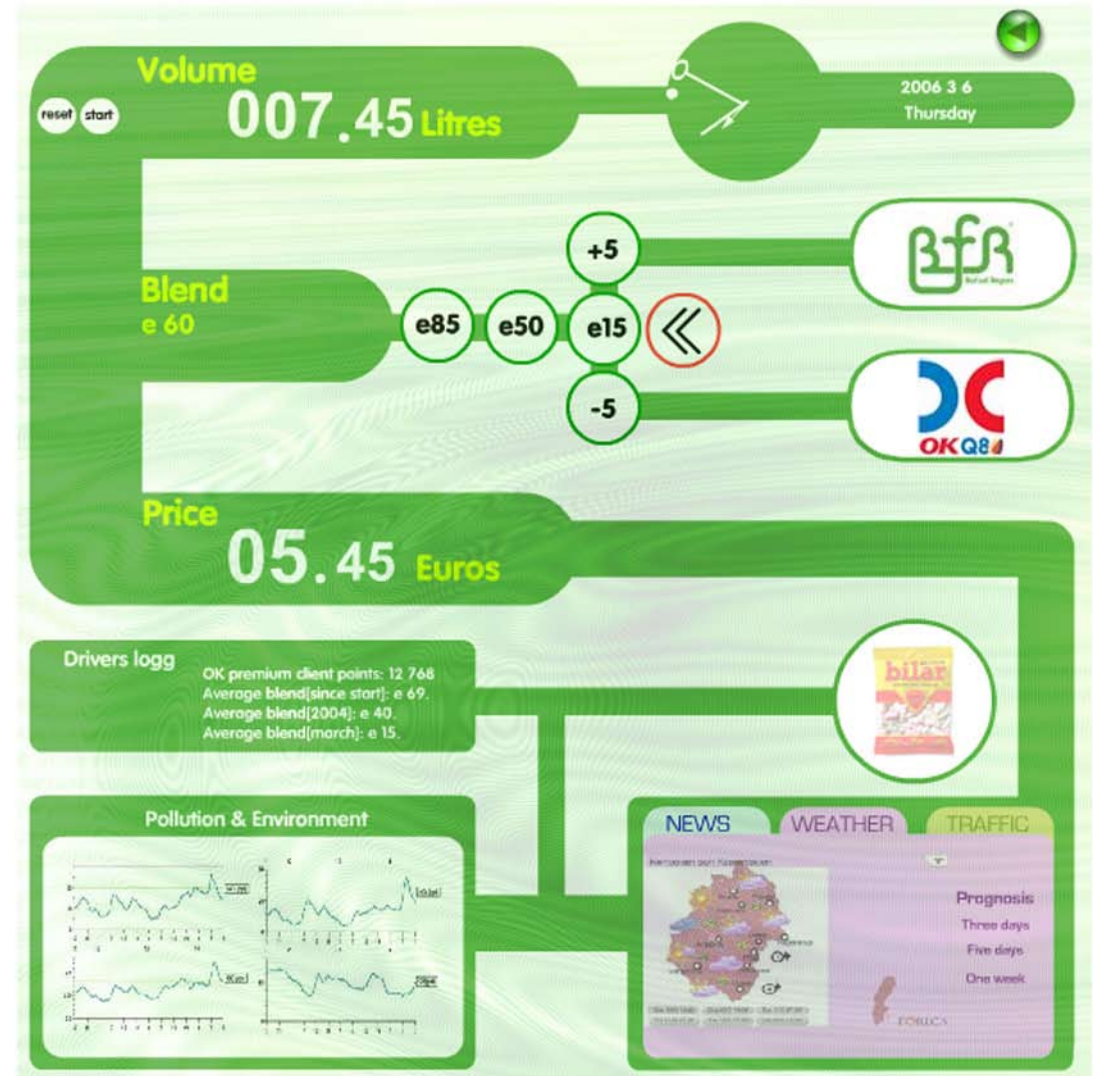
News, Weather and traffic - Each tag is clickable and provides the customer with relevant information while waiting for tank to fill up.

Pollution and environment - Education is an important issue to increase the understanding to change behaviour towards a better environment.

Drivers logg - Customer can get a view of his behaviour.

Current offers - Advertising current gas station offers.

Clock and date - Analog clock with digital date.



PROJECT GRYTHYTAN STÅLMÖBLER

Grythytan Stålmöbler asked for a design suitable for outdoor cafes.
The leading words were stackability, lightness and easy to clean.
Project duration: 3 weeks Project year: 2005



PROJECT MINI-SUV



PROJECT MINI-SPORTSCOUPÉ

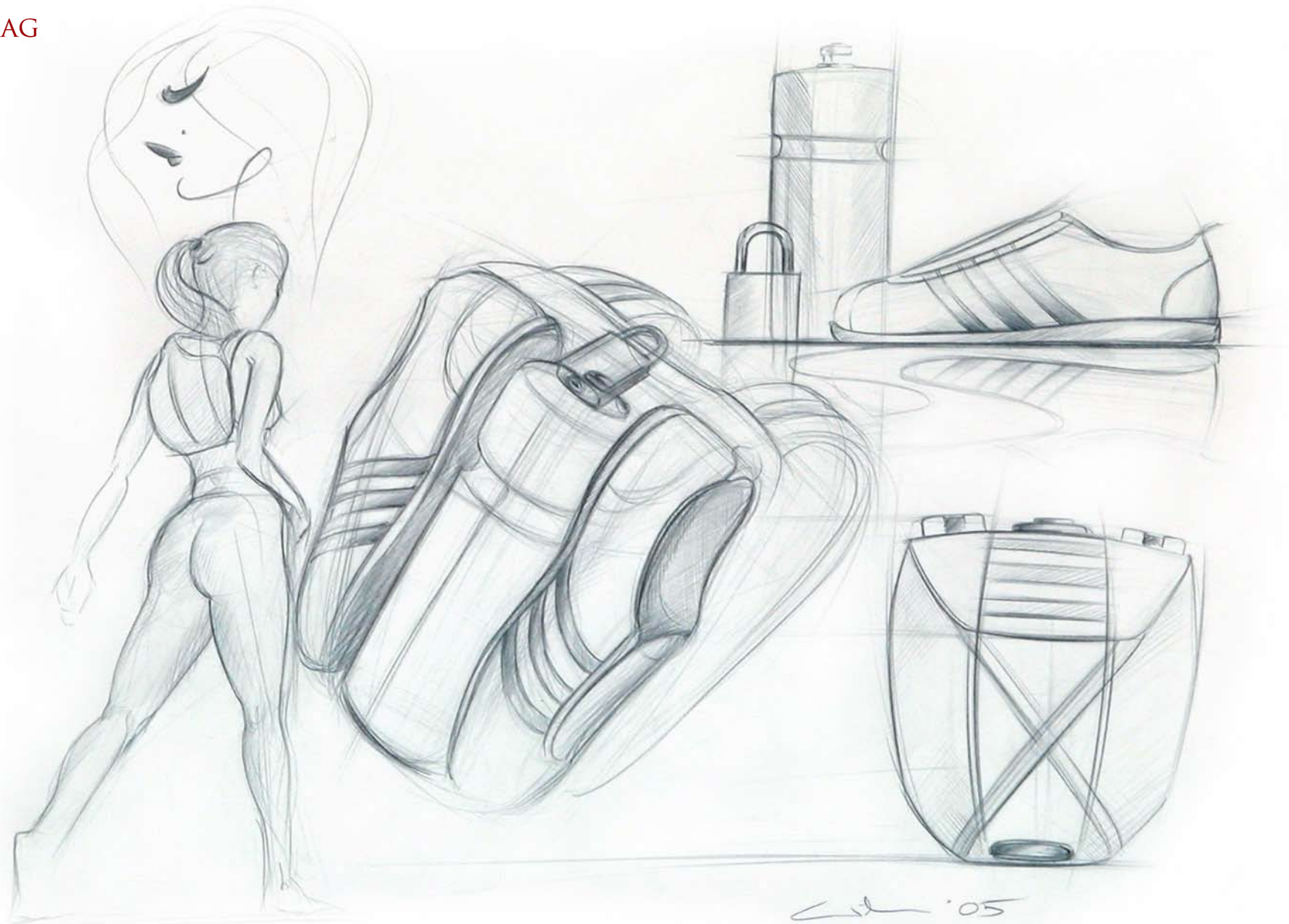
Exploring an idea for a Mini - SportsCoupé where the roof is adjustable in height depending on whether the backseat will hold passengers or not.



MINI WHEELS



SPORTSBAG



RENDERING

Prismacolor, Copic Markers & Pastels



RENDERING

Prismacolor, Copic Markers & Photoshop



LIFE DRAWING



LIFE DRAWING



SCULPTURE

Team: The White Elephant with The Elephant Trick. Winner of the yearly snow sculpture competition in Umeå 2006.
Team members: William Blomstrand, Berdan Cercioglu, Manuel Gattinger. All from Advanced Product Design.

