

Master projects 2006

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The White House

The official building of Lund University was designed by the architect Helgo Zettervall and was inaugurated in 1882.

The site for our master projects exhibition; DesignVal 2006.





DesignVal 2006

The University Building, Lund, 18-29 September 2006

Viking – Big Game Fishing Reel

Lisa-Stina Eriksson

My master project was developed in cooperation with Abu Garcia, one of the world's leading fishing reel manufacturers. My goal was to design a fishing reel for saltwater fishing in warmer climates, which would complement the Abu Garcia product range.

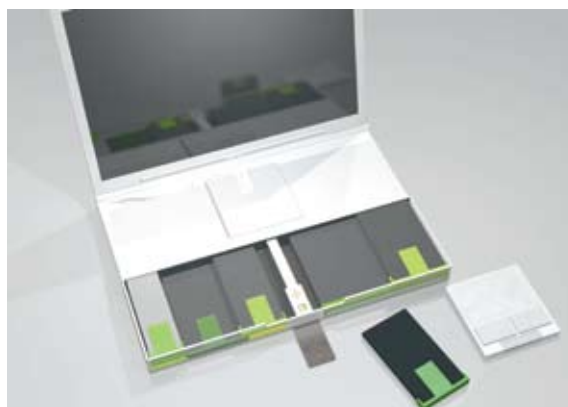
Since the brand has a strong position on the American market, the aim was to primarily attract American consumers. Abu Garcia is proud of being a Swedish brand; its Swedish tradition is highlighted in all means of worldwide communication. Therefore I accentuated the heritage theme in my design.

The result is the "Viking" fishing reel; its form language and details derived from Swedish history.



Long Lasting Computing

Elin Annebäck



My master thesis is about how we buy, own, use and dispose of our personal computers – how that affects our environment and us. The result of my research and design work is “evo”.

“evo” is a portable computer that will last a very long time. It can be upgraded in three different levels. The first level is an upgrade of software; the second level is an upgrade of some of the hardware as well. The user can easily accomplish this whenever needed. By comparison, the third level is a major upgrade – possibly one or two times during the ten-year life cycle of “evo”. The different levels of upgrading are visualised by exposing the components through a transparent front casing.

The underside is covered in durable brown high quality leather, which also acts as the closure. The keyboard and track pad can be removed to make usage more flexible; this will also reveal the opening to the components.

A gradually appearing branch pattern will show time passing by working like a subtle motivator for keeping the product.



Husqvarna TRIAD365
Gustav Landberg



My master project was done in collaboration with Husqvarna AB.

It's an "all season outdoor product", a combination of three standard products: a lawn mower, a snow thrower and a power brush. Reason: make the three yearly garden chores that little bit easier: Mowing the lawn (spring and summer), sweeping fallen leaves and gravel (spring and autumn), and throwing the snow (winter).

The TRIAD365 is a "walk-behind" mower. Its design is based on three core values: professional, dynamic and experience.

The idea was to bring Husqvarna to a new generation of consumers. The target group is a couple that has just purchased a house with a yard and is a first time user/buyer of outdoor maintenance products – they are amateur users who nonetheless want a professional result. To buy three separate products is too big an investment for them. The TRIAD365 gives them three useful tools at the same time whilst saving storage space.



Mobile Lunar Laboratory

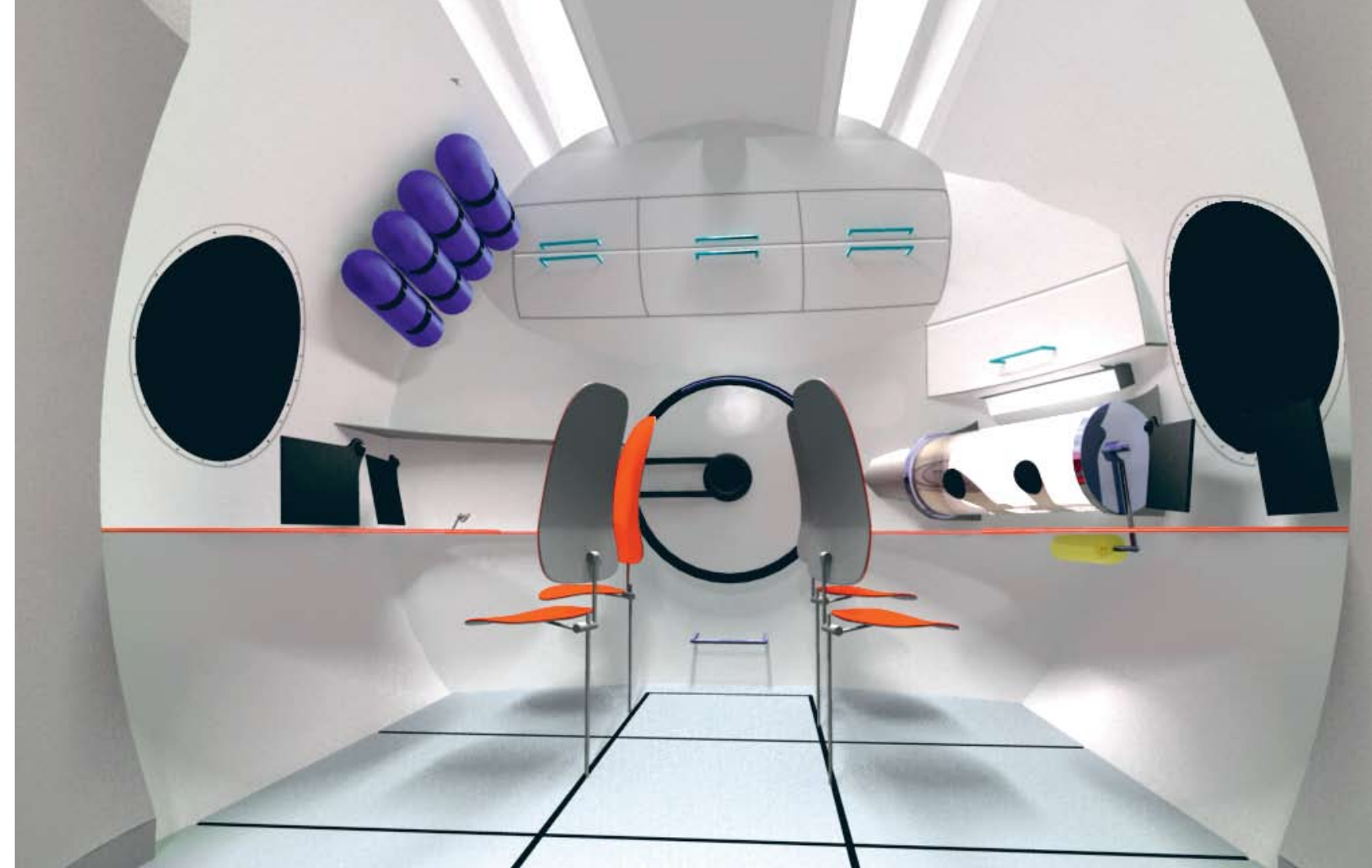
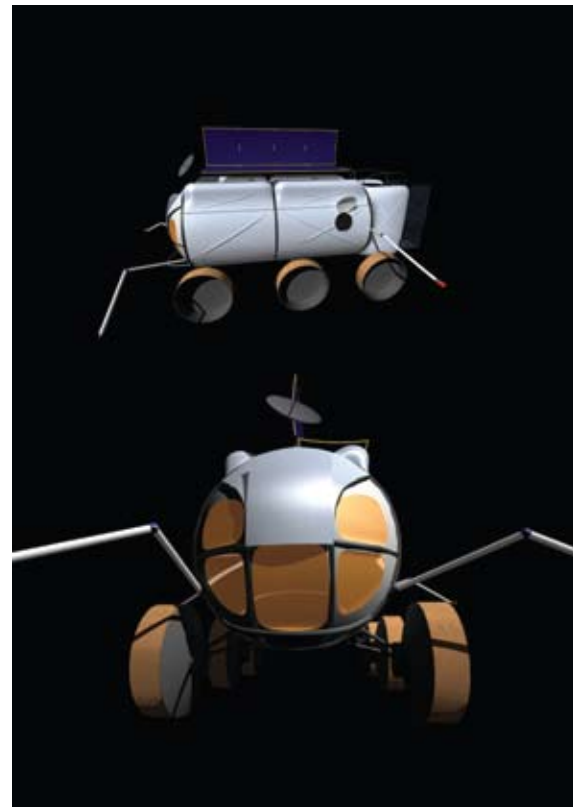
Bo Berggren

The problems of efficiently exploring the lunar surface and enabling a crew to increase the science reward are multifaceted and considerable. One way to cover a larger area to do more thorough research, land surveying and geological mapping of the lunar surface is to rove the surface with the habitat and laboratory together. This method of exploring vast areas has a higher probability of finding valuable locations for scientific research and higher science reward than the proposed Apollo like missions that are currently in NASA's vision/pipeline for exploring the Moon once again. The area that can be explored is limited by the time the astronauts can do hands-on science and research, current and proposed EVA time is up to eight hours. Limiting factors are the human physique – EVA is very hard work – and the EVA suits and technology proposed for future use. They allow for an activity radius around the habitat/mobile that ensures a safe return of the astronauts. Safety is of maximum importance since fatalities would result in mission failure. A serious injury would compromise the mission; even an on-location treatment or stabilisation of an injured astronaut would greatly reduce the efficiency of the mission.

A lot is unknown about the Moon; to have an evolving mission that results in new insights means the crew must operate with a high degree of autonomy and suitable tolerance to allow for improvisation. Such a habitat/mobile needs sufficient space that permits improvisation and a mission schedule that warrants maximum autonomy.

My master project investigates and proposes a mobile lunar laboratory that will rove the surface of the moon for 30 ± 3 days per crew rotation. The design addresses known problems and

risks of lunar exploration, some of which are: hostile environment, reliability of technology, mission objectives and the human factor – the astronauts – that rely on life-sustaining factors in a controlled environment. The final concept was presented as an interior of a pressurised lunar rover for a crew of four. The way I presented it was as computer generated 3D data and visualisations. The software used was AutoStudio™ and Maya® Unlimited™ from Alias® and Poser from e-frontier.



Fjällräven Kajka

Henrik Andersson



Kajka is a backpack concept made in cooperation with the Swedish outdoor manufacturer Fjällräven. It is to be used by travellers, trekkers and others with a need for a larger carrying capacity. The pack is built on the heritage of the Fjällräven brand while being modern and expressing innovation as well as continuity, functionality and simplicity.

While the product should be as versatile as possible, focus during the development has been on specific activities such as travel and different sports. This has led to features designed to solve a specific issue, but will also be functional for other activities and occasions. One example is the "Wet compartment" in the bottom of the pack. First designed to enable drying soaked surfing or diving equipment (wetsuit, towel, etc.) it can just as well be used for sweaty socks or wet tent cloth during a trek. Being as multifunctional as possible the backpack can be bought as a

one-pack-only instead of different packs for different activities. Buying one backpack instead of two saves energy and material in production and lets the customer spend money on activities, not only equipment.

Many backpacks on the market today are overloaded with straps and use-specific pockets and are made in multiple materials in multiple colours. I wanted to strip the unnecessary stuff off the backpack. Fewer parts lead to fewer seams which means less leakage and fewer parts to break. It also means easier disassembly when it is time to recycle the pack.



Backflip

Sofie Collin



My task was to design footwear for young girls who are into action sports under guidance from Nike's action sport division.

I started my research by developing an understanding of Nike's SB & 6.0 brand positioning as well as getting an overview of styles and consumers' desires. Based on my analysis, I focused on the essentials to address my chosen target group whilst incorporating athletes' functional requirements, too. My footwear designs were to appeal to dedicated action sport girls as well as to merely fashion-oriented people.

The result is a two-in-one design – the slip-in sneaker becomes a mule with the heel cap folded down. It is aimed at the new generation of sideways thinkers, female youngsters whose constantly shifting interests push action sports constantly forward, be it skating, surfing or biking. This kind of footwear is normally worn all day, raising issues of comfort, durability and cost.

My final design is a merger of two footwear categories – sports and casual – allowing for versatility. The two-in-one concept is also an expression of "mutation"; just like action sports are persistently changing, reflecting on the behaviour of flickering activity and passivity.

I chose durable materials that look good even when worn down, that's why I also developed the initially hidden "mutant logo" that appears on the outsole after some period of intensive use – abrasion and deterioration become somewhat positive characteristics here. I stripped away as many parts as possible, also doing away with shoelaces, which tear apart rapidly on action sport footwear.



Kärlek and Industrial Design – I'm Choosing My Life

Anna Persson

"Three passions, simple but overwhelmingly strong, have governed my life: the longing for love, the search for knowledge, and unbearable pity for the suffering of mankind."

/ Bertrand Russell

By questioning the foundational driving force of Industrial Design (that being traditional market thinking – supply versus demand) and replacing it with Kärlek (Swedish word for love), one accesses a whole new world of possibilities, exceedingly full of potential.

K&ID is all about the intangible stuff in life that gets rationalised away because it can't be directly translated into numbers, but, when left without, makes our lives seem empty and leaves our souls yearning for deeper meaning. In such a state, no product (no matter how well designed) can really make you feel any better...

Now, the easy way out would have been to join a yoga class, but instead I decided to give myself 20 weeks to try to come to terms with what this stuff is to me. I felt that as I am about to head out in the world earning my living by working as an industrial designer (which often means being the creator of questionable products), it is crucial to have my priorities straight. I guess I could say that the point of this project was to give myself a sense of how far I'm willing to prostitute myself and my values for economical gain. Or put in another way – to what extent am I willing to let numbers rule my life? In the end that choice is mine.

Essentially Kärlek and Industrial Design, is a diploma work that deals with my moral and existential issues connected to the decision to become an industrial designer. It started out as a proactive measure, to deal with stuff that would catch up with me sooner or later anyway. But progressively it turned into taking charge of my destiny, hence the subtitle – I'm choosing my life.

The aim was that anybody remotely receptive should know who I am and what I stand for, which consequently implied that I too had to find out those things.

When I set out on January 16th 2006 I had: a title, two supervisors, an examiner and a deadline but maybe, above all I had an unshakable incentive to take this project on. For as far as method and demarcations go, that was it; the rest was to be made up along the way, starting out with ten full weeks of free thinking time – bliss!

In the end K&ID resulted in the concept of philosophical design (describing thoughts and ideas through objects), three rapid-prototyped symbols (concept of philosophical design applied) and a report describing the journey, themes and struggles in paragraph form.

Yet, the true result of K&ID has a more elusive nature. I can confidently claim that my mind was thoroughly exercised by K&ID. But, I dare venture further and state that working with K&ID profoundly enlightened me. Concept of philosophical design and its symbols aside – the main result of K&ID was a forever altered Anna! For me K&ID represents a major breaking point brought on by insightful introspection. At the same time, despite its complete self-centeredness, K&ID brings up issues that more or less apply to every one. In the end we all strive to find love, happiness and meaning in life, I just happened to make it my top priority.

Three symbols of K&ID

K&ID is structured around three pillars: kärlek, industrial design and me. Throughout the process I had to be careful not to focus too heavily on one nor the other, as to prevent the project from ending up lopsided. It was pondering this balancing act that gave me the idea for *The balance stool*.

Life is a constant balancing act, the trick is finding equilibrium: the balance stool – promoting mental as well as physical balance in life. The three legs of the balance stool represent any three factors that need to be balanced against each other (e.g. work, home and you; society, technology and the environment; etc.). The only way of staying on the stool is finding the middle point i.e. the balance between the three factors.

It was watching and getting completely wrapped up in the movie *Love Story* that gave me the idea. I was deeply touched, and kept thinking – what is it that gives some things this amazing power to override all preconceptions, leaving lasting imprints in one's soul? What delicate internal instrument governs our unpredictable receptiveness? (That Tuesday morning back in March, I was in the ultimate *Love Story* mood yet, I'm fully aware that another day, in another mood I might just as well have written it off as a sentimental bla, bla movie). Conclusion: maybe it's not so much about what it is that affects us, but rather what it is that is affected in us ...

The Emotional String Harp: a hypothetical and symbolic organ, an illustration embracing our intangible inner verve. Its fictional function: to tune in, respectively play on, our inherent, dynamic emotional strings.

There's a multitude of essential entities in life that don't seem to belong in any given space. *The alternative shape sorter – Ö för övrigt* – is an acknowledgement of all those things and speaks to our overconfidence in various forms of shape sorting. From an early age we are taught that everything belongs somewhere. And yes, to some extent that is a valuable lesson. It's good for helping us to organise and structure our lives along with its content but, when taken too far it's a breeding ground for prejudice and intolerance. The block shaped like the Swedish letter Ö doesn't fit into any of the holes in the lid – tough luck! To me that is an equally important lesson.

On a more personal level the alternative shape sorter speaks to my own unwillingness to be typecast. In that way I am the Ö personified.



Trim & Colour for Pininfarina's stand at Geneva Motor Show 2006
Sandra Boberg



For the Geneva Motor Show 2006, I researched colours and trends to create a special trim & colour concept for Pininfarina's three production cars exhibited there.

In my thesis, I explored the possibilities to unite three different cars through the use of related materials and colours. I also investigated the surrounding environment in which the cars were to be presented – in order to create a connection between them and the presentation area.

I followed the project throughout the entire process, from first ideas to the "creation off" and press release preparations, to the project completion and presentation in Geneva.



Trinette – The Compact Kitchen in cooperation with Electrolux
Karin Härenstam



This redesign of the well-known Trinette kitchen unit is a space-saving and flexible solution for the small home. This compact kitchen includes facilities for hot and cold running water, cooking, food preparation, storage, food preservation and an air purification system.

My design features different modules containing all necessary elements a kitchen must have. It is a flexible solution allowing different arrangements to fit the individual home environment. The Trinettes' kitchen elements can be hidden when not in use, transforming it into a subtle piece of furniture.

The tap can be pushed down into the sink – the protection surface is then usable as a lid to cover the sink top. This functionality gives the product a more flexible use and makes it possible to put the unit in any open space, kitchen or living room area. The concept addresses the essential needs of saving space and time for the user in order to allow more time for other activities.



Lilit, LED Lamp for IKEA
Olga Cudakova



Lilit is my result of applied research, technology and aesthetics. It is a portable rechargeable lamp for all occasions. It emits light suitable for reading or completing small tasks featuring a one-watt LED source. It sets a homely environment without the need for cabling and sockets. The lamp is wireless, featuring moulded-in rechargeable batteries. Lilit is a set of three portable units and a charger that can be placed on any horizontal surface or wall mounted.

Each portable lamp unit has a leaf shape on one end that illuminates and a clip on the other to connect it to the charger. It can stand on its own or be clipped to thin surfaces such as a book, a shelf or an armrest.

Take Lilit with you wherever it's too dark and let the soft light and elegant form brighten up your life.



Saferide

Daniel Gunnarsson

My design was developed in cooperation with Norrøna Sport.

Skiing has ever-increased in popularity; these days much of skiing is about the free-ride culture. Free-ride is all about off-piste skiing, hiking and jumping off cliffs in remote areas with pristine untouched snow. This style of riding is potentially hazardous because of hidden rocks, steep cliffs and avalanches – a higher level of safety is needed. In my master project, I addressed these safety issues improving protection for free-riders without interfering or limiting their skiing experience.

I executed and improved this initial concept together with the Norwegian company Norrøna Sport, a well-known brand for the development and manufacturing of quality outdoor and mountaineering clothing.

I conducted interviews, did surveys and a target group analysis. This research revealed that the essentials of all basic safety equipment for off-piste riding are a transceiver (radio transmitter/receiver to locate skiers buried in an avalanche), an avalanche probe and shovel. To prevent losing the transceiver in case of an avalanche, it should be carried under the jacket at all times. I concluded also not to develop any ancillary equipment as it would add weight and limit free movement – my interest was rather to optimise the indispensable safety equipment for free-ride skiers and improve handling.



X-Ray Tools

Kajsa Bobjer

For my thesis, I chose to develop products for the medical field. I designed a series of positioning tools that will support nurses in X-ray examinations, along with a storage system to store and organise these tools. The focus was on the development of such tools that not only perform well but also enhance the feeling of working pride – fusing functionality and aesthetics to meet the needs of the clinical environment. My aim was to design tools that correspond emotionally to patients' and nurses' expectations of products for the X-ray environment.

I was rather surprised to find that auxiliary X-ray equipment has not improved in the past. Much progress was made in the actual X-ray technology and imaging systems, leaving the tools in the shadow. I believe that in order to provide serious and high quality care, nurses have to be proud and satisfied with their tools and working environment. Attractive professional products will encourage them to treat patients even better.

I got the opportunity to share my ideas with professionals within the medical field – complemented in terms of the actual designing by my industrial design supervisor Anna Carell at Ergonomidesign in Stockholm. It was exciting for me to share knowledge and skills with people from different professions. This project has been the most fun and challenging of my education.



Fire Helmet

Ola Lantz

The task I set myself was to design a fire helmet with the focus on demands and needs of the users – fire fighters. Instead of collaborating directly with a manufacturer, I based my work on experiences and demands from the Swedish Rescue Service (Räddningsverket) and fire fighters.

Everything in my research pointed to the need for a new helmet because of certain shortcomings of the products currently available. A shift in the type of rescue operations performed – with an increasing number of traffic related incidents – has led to new requirements of the helmets used, such as the need for combining helmets with eye and ear protection. Each individual fire station purchases its own equipment; too many cannot afford the more advanced and rather costly helmets available. Therefore, affordability was a key factor in my project.

I also explored a decidedly modern aesthetic compared to existing helmets, where many aesthetic elements date back to the old style metal helmets used by the army. I found out that a helmet must look somewhat "cool" without appearing threatening – visually it must not be confused with army or police helmets. The identity of a firefighter comes to a large extent from his or her helmet and its graphical treatment, such as the fire station badge and reflecting stickers. I therefore made sure these elements could be prominently located.

The result is a helmet with an integrated half-face visor to protect the eyes when using metal- and woodcutting equipment. It is ergonomically designed so as to allow for ear protection to be worn comfortably as well as with auxiliary equipment such as protective hoods and a breathing apparatus. I put a lot of work on the head-helmet balance and adjustability to achieve a good overall fit.



Tova, Trans Orbital Voyager

Johanna Håkansson

Myself, Katarina Eriksson and Sandra Kopljär, the latter architecture students working on this project, the last one before their own diploma projects, developed this group project.

The Trans Orbital Voyager is a design and development project of an overall interior layout for a lunar capsule and was done in cooperation with NASA. Research was performed both onsite at Johnson Space Centre in Houston, Texas where the group met with engineers, human factors researchers, astronauts and architects from Lund University. In the process, a full-scale mock-up was built; it was used both for sketching and brainstorming with spatial relationships as well as for user tests. Our group also conducted human factors tests with persons outside of the group.

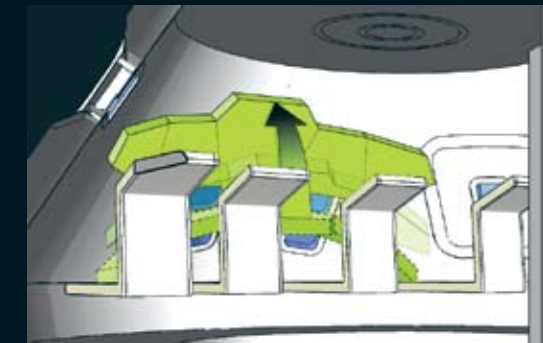
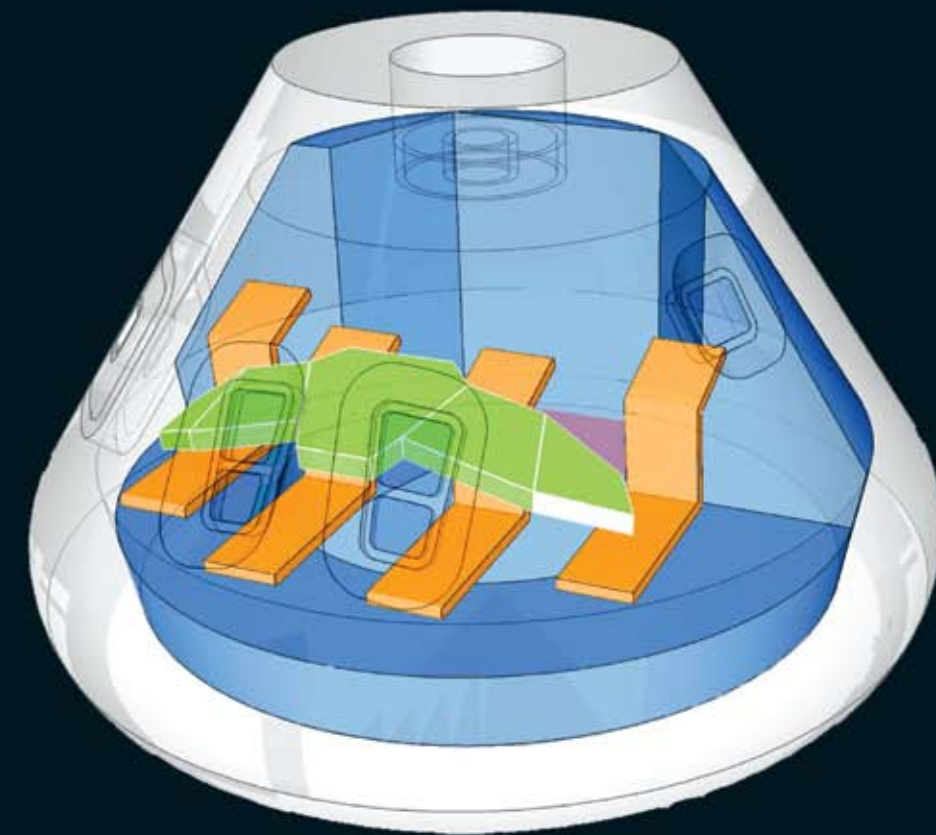
The capsule is a small pressurised volume with which a crew of four is supposed to be able to live and work for up to 18 days going on a lunar mission. It also serves as a transport vehicle for bringing a crew of six to the ISS (International Space Station). By addressing the requirements of the longer and harder lunar mission, the design also covers the – to some degree “simpler” – ISS mission.

The project brief was to establish design criteria and develop ideas for specific parts of the interior that were to be integrated. The starting point for our design was the human factors perspective and how the volume was to be used most efficiently. Our assignment entailed a broad spectrum of very diverse information. Psychological, physical, technical, operational and social parameters are all pieces of the puzzle. Astronauts have to be able to live and work in space – an environment where

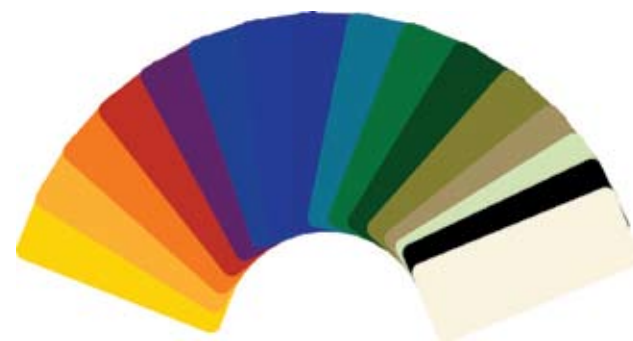
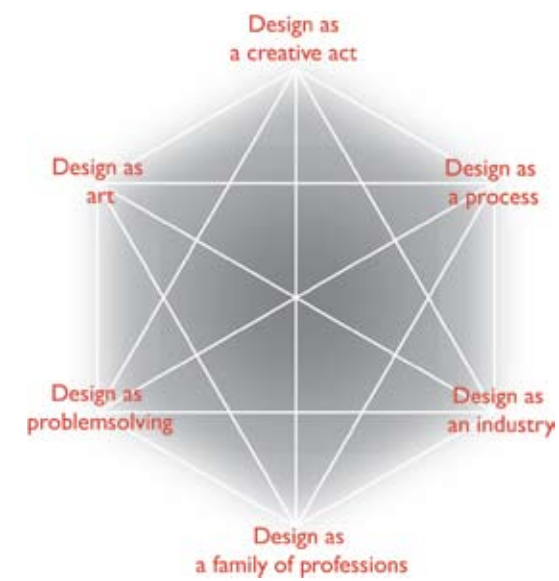
they would not survive without that extra “skin” the capsule provides. Within the habitable volume, a crew should be able to eat, sleep, work, have their privacy and leisure time when off duty. The crew should feel safe and as comfortable as possible in a situation where there is constant pressure on them to perform efficiently at all times.

Weight control issues were considered in parallel with the fact that all items have to be placed within easy reach, but at the same time “out of the way” – everything in a space capsule has to be integrated so it will be usable in all different situations that can occur on a space mission. Also, weight distribution is important so the vehicle can be flown safely when reentering the Earth’s atmosphere.

The final design makes the interior of the capsule very flexible compared with other space vehicles. In launch mode, when the seats are out and the control panel flipped down, our capsule can be used for either a crew of four or six by only adding the last two seats. When the capsule reaches orbit, the seats are stowed and the panel flipped up out of the way to let the crew have as much habitable and usable space as possible. The hygiene area, which is mostly a matter of privacy, compared with how much space it needs, will only take up space when it is in use. Since the human waste system is hidden in the stowage wall and pulled out like a drawer, it well fulfils the design criteria our group established at the outset: out of sight, out of mind.



Theory to Practice – The Zeta Case
Sara Gottschalk



My diploma work has been an attempt to confirm how a designer can apply design management theories in reality.

I collaborated with the foodstuffs manufacturer and distributor Di Luca & Di Luca (the "Zeta" brand). The aim was to execute a project that proves how the company could use design as a strategic resource for a potential brand extension. I started off with an in-depth study of design management literature and a company survey to develop a thorough understanding of how I could develop such a new strategy.

The outcome has been a conceptual proposal of a delicatessen where the potential of the "Zeta" brand would be demonstrated to its full extent. Also, Di Luca & Di Luca would form a closer relationship with their customers by means of direct communication.





Zero Gravity Surgical Workstation OGSW
Johan Hägg

This project is a collaborative effort between NASA at JSC Houston and Lund University Hospital to develop an operating table for surgery in space. Long-term missions like Mars explorations will very much depend upon the ability to solve medical problems right on the spot, where the distance from Earth is too long for a rescue mission. This problem requires an operating table that allows for competent surgery – rather than only a stabilisation of the patient as is the case in today's space missions. Surgery in microgravity is in many ways different from the same procedure on Earth. If successful missions are to be carried out, there are essential factors to consider like fluid management, waste disposal, anaesthesia, working positions and restraints of the surgeon, patient and equipment.

The OGSW is an operating table designed to meet the restraint demands as well as electrical insulation for defibrillation. The OGSW is radiolucent so that the patient can be restrained during radiography. Its weight has been reduced to less than 6kg by using lightweight materials such as carbon fibre, aluminium and low-density polyurethane. The boards can be positioned and adjusted for various operating positions and – because it is used in microgravity – the surgeon can face the patient from all angles and have full overview while operating.

The boards easily fold together to reduce space when not in use. The OGSW also has mountings for the LUCAS™ system that provides mechanical heart compressions in case of cardiac arrest.





Buster, a vacuum cleaner concept for children

Kristina Andersson



Buster is a vacuum cleaner concept to not only attract and address adults (or rather parents), but also their children. They shall be encouraged to help out with cleaning their home in a fun and inspiring way. Kids can "ride" Buster like a bobby car. Literally speaking; vacuuming becomes child's play. Very young children are simply attracted to Busters' toy-like qualities; as they grow older they can "ride & clean" in a more directed manner – growing more aware of household tasks and maturing in their responsibility.

As a low children's seat, the vacuum cleaner is also a piece of cute technological furniture – it doesn't have to be hidden away. Fantasy animals have inspired its shapes; the product is accompanied by a picture book to enhance its toy-like qualities even further.

