

Portfolie

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The Design and Innovation study programme at the Technical University of Denmark

The student's creative potential is developed through complex project assignments requiring participation and technical knowledge, teamwork skills and knowledge of methods.

The basic engineering subjects e.g. materials science, thermodynamics, mathematics, physics and chemistry are, to a large extent, integrated in the basic subjects combined with engaging project work.



Design of playgrounds in Copenhagen

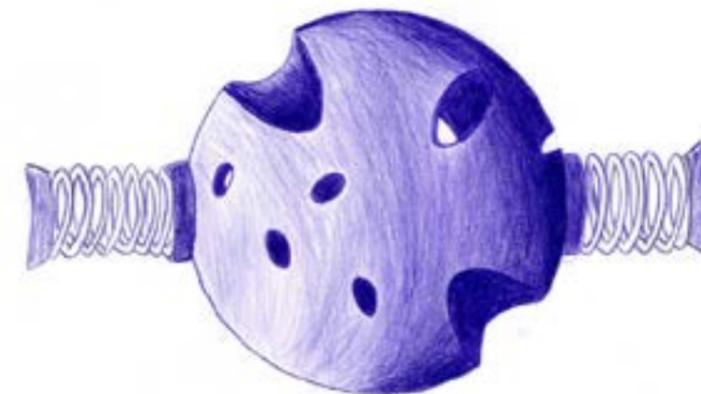


Multibubble

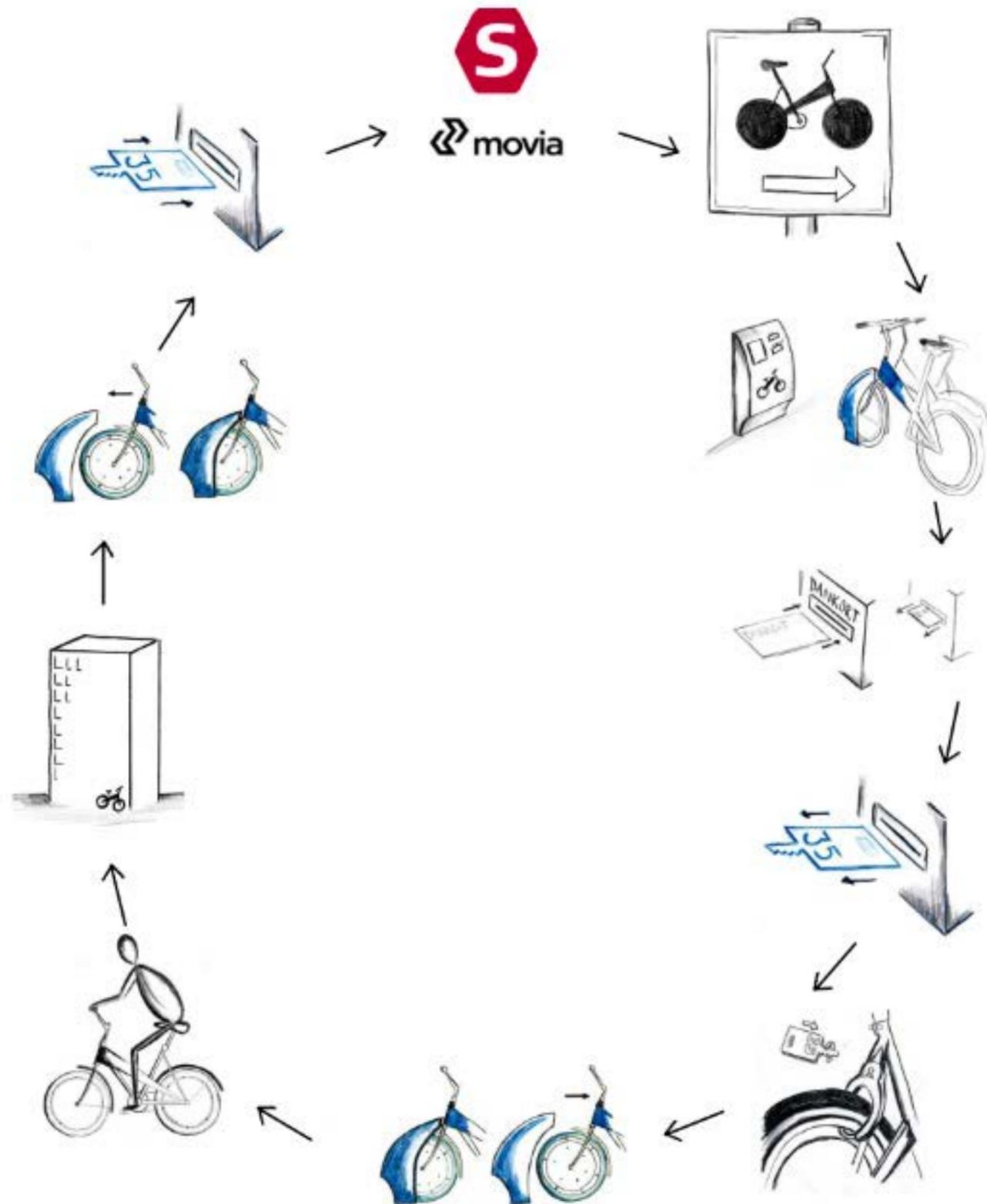
Developing an inspiring and stimulating playground equipment. The solution is a big ball that can be placed in three different ways.

The reason why children will love it is that it works as a seesaw, climbing frame and a hideout.

The Multibubble improve the childrens balance, coordination and stimulate their creativity because of the simple design.



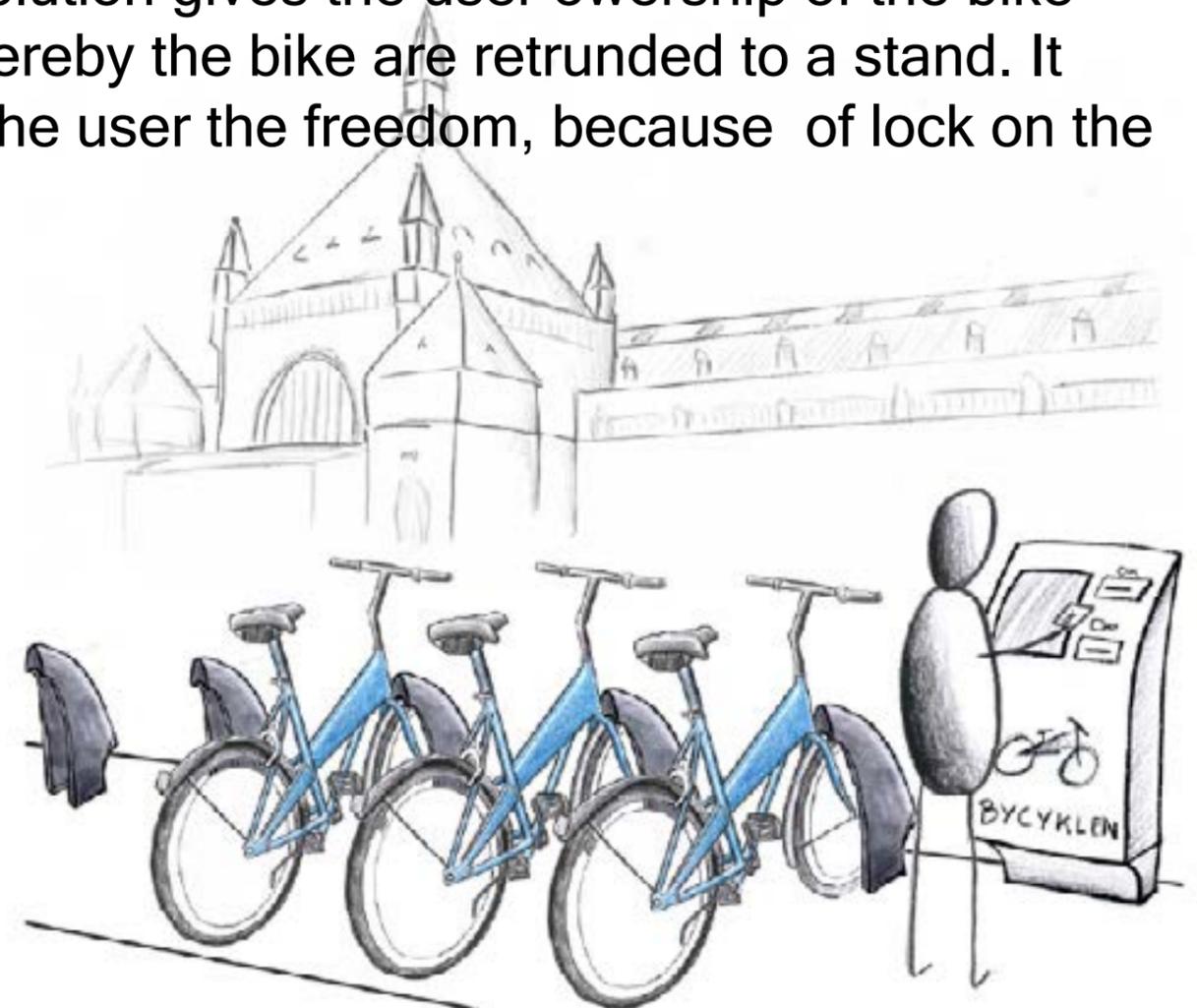
Redesign of the city bike in Copenhagen



The city bike system in Copenhagen is very popular, but there are some challenges about the feeling of ownership of the bike. The user does not respect the 20 kr. deposit and therefore the bikes are not returned.

This solution is based on the credit card, so the user is registered when they take the bike. Then they get a key that is also a card, so the function is like a standard bike.

This solution gives the user ownership of the bike and thereby the bikes are returned to a stand. It gives the user the freedom, because of the lock on the bike.



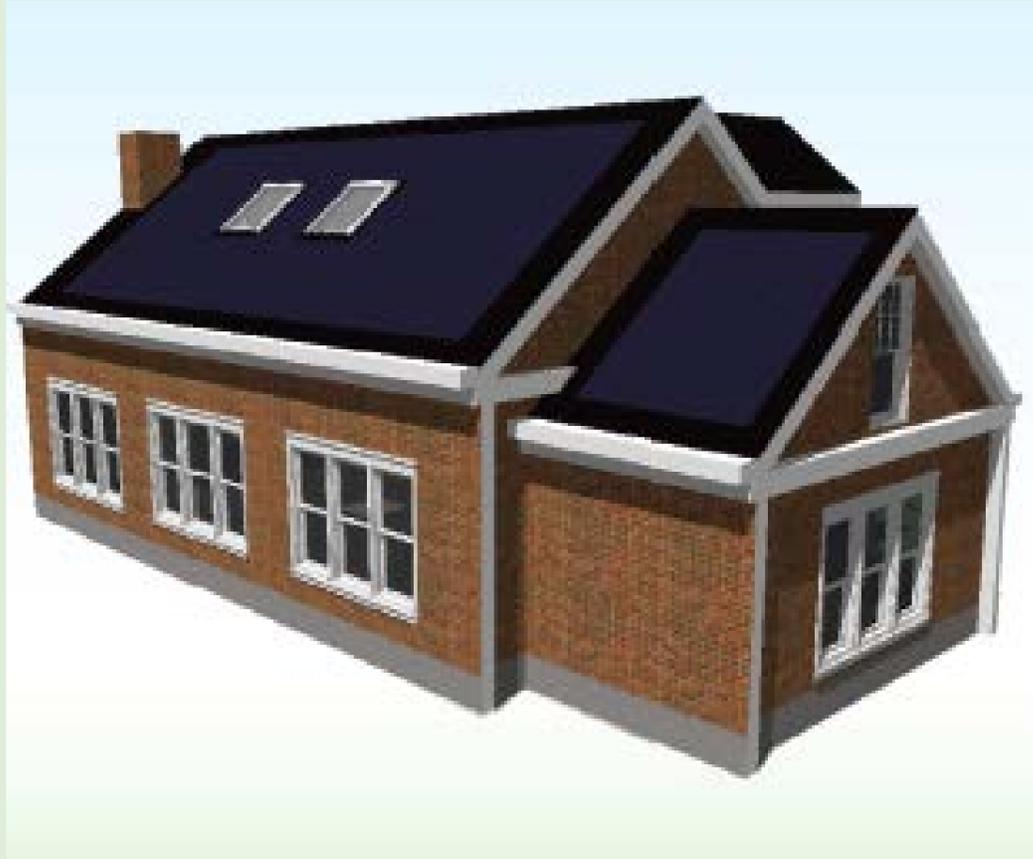
Radio and music player

It is a radio that is inspired of the design and architecture of Barcelona, with names like Antoni Gaudi, Salvador Dali and Joan Miro. It should not just be the function that is in focus, but also a very special and provoking shape that looks more like a sculpture than a radio.

The idea is to make a radio/music player that break with the normal design of a radio. The last many years the HiFi-design have been more and more streamlined and mostly in black and white. And it has to look like that to be recognised as quality and style. This radio should be a happy and special feature in e.g. the kitchen.



Developing solarroof



The Danish Energy Roof new energy-producing roof gives you a solar cell system that is 100% integrated into the roof and thereby avoids installation of panels on the roof. The solution appears simple and discreet.

Danish Energy Roof intergraded solar cell is based on a proven technology. Behind the beautiful design is more than 35 years of experience in production, thesis projects, system design and installation of the equipment.

In the project there were made a MEKA of the Danish Energy Roof

Made in cooperation with:

The logo for Danfoss, featuring the word "Danfoss" in a red, cursive script font.



Environmental trafficpool system

The concept is a package to be offered to owners' associations in Copenhagen. It must be offered by a newly formed non-profit organization, and with partners.

The package includes a choice of petrol cars, electric cars and vans, as well as a system that can manage the loans of the products.

Parts arrangements would mean that there are so many cars that stand and fill up the streets, as each family should not own their own.

Such a system gives citizens a flexible and economically favorable alternative to ownership of a car, while contributing to the goal of a CO2-neutral Copenhagen in 2025.



Non-profit	Ejerforening	Lokal ansvarlig	Produkterne	Indmeldelse	Chip	Reservering	Afhentning	Bilagten	Brug	SMS-service	Aflevering	Brugerbetalning	Ekstern rengøring	Ekstern service
NPO														



WATSON

THE BEDSIDE TABLE

Creating a bedside table for hospitals

The table is created based on the users need and the solution is:

- ▶ Lightweight design and easy to manoeuvre
- ▶ Aesthetics that differ from the existing market
- ▶ Can be customised to specific needs through modules
- ▶ Few corners and large surfaces making Watson easy to clean
- ▶ Dedicated spaces for nurses and for patients respectively
- ▶ Electrical and stepless height adjustment makes it easier for weaker users to adjust
- ▶ The possibility of using Watson both lying and sitting in a chair
- ▶ Table easily put into a good reading position
- ▶ Rubber edges on the slide table serving as armrest and preventing items falling off
- ▶ Lockable storage room to keep valuables secure
- ▶ Integrated power sockets



Made in cooperation with:

Labflex
Labflex Group



Rigshospitalet

Master thesis: Waste management system for a village in India

The project takes place in the village Joygopalpur in West Bengal in India. Today there is no waste management system present to deal with the continuous increase of plastic that comes into the village every day and therefore no means to handle the waste.

By making a collection system it becomes possible to give the plastic value. By melting it into building blocks in a sun grill using solar power, the plastic is recycled. This concept solves the waste problem in the village, creates local jobs and gives the inhabitants houses that are able to withstand the monsoon.



THE PRODUCT

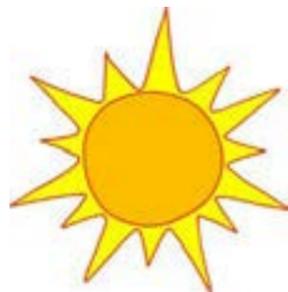
A prototype of The Block has been made from recycled plastic. This gives an idea of how the block can be used in real life. The Block's force is being measured in a lab at DTU, to make it can be used for building houses. The block will be used as a kind of fundament for the houses, which will be covered with clay, in order to maintain the look they have today. By using these blocks after the monsoon the house will still be there with the roof on and they will no longer need to build it up from scratch as they do today. Today in Nairobi in Kenya, they are doing something similar, but with machines and therefore on a much larger scale. This is not possible in the rural areas of India, because as soon as you have to transport the soft plastic it loses its value. The unique idea here is to make it in a micro perspective in the villages by using solar power.



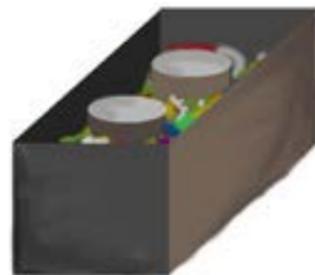
The soft plastic is washed if it is needed.



The plastic is grinded by cutting. This will in the beginning be done by scissors or knives. Then later maybe in a machine.



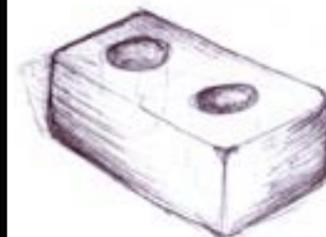
The production is only possible when it is a sunny day.



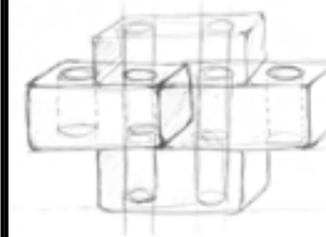
The grinded plastic is placed in the mould. Five moulds can be filled at the same time.



The moulds are placed in the sun grill.



When the plastic is melted after about an hour, the moulds are moved out of the heat and the blocks are taken out of the moulds.



The blocks are connected by bamboo. The bottom block has only holes half-way through, so the bamboo is not touching the soil.



Building robust houses out of plastic. The blocks are covered with clay, so it is not exposed for direct sun light.

Winder of Green Challenge 2014



“Grøn Dyst (Green Challenge) is an educational initiative at DTU focusing on sustainability, the environment and climate technology in all of DTU’s study programmes. Every year, the efforts to embed green and sustainable initiatives in the teaching at DTU culminate with the Grøn Dyst student conference where all DTU students can publicly present their visionary projects and compete to win prizes.” www.groendyst.dtu.dk

The 27th of June 2014 I won the Green Challenge with my thesis project

