New Primary of Lindegårdsskolen

A.U. Døi, R. V. W. Nielsen and S. R. Svare
DTU Architectural Engineering, Technical University of Denmark

INTRODUCTION
Our project is a proposal for a new primary school in Lyngby-Taarbæk municipality. In this proposal our focus has been to optimize the building, focusing on the sustainability and the indoor climate, so that the amount of energy used is reduced to a minimum. Along with this, we have to make the building as functional as possible, since the school is not only used in school purposes, but will also be used by the public in the afternoon and the like.

METHOD
To accommodate the needs for the project, we have had to combine design with new technology. On the roof we have solar panels, which can deliver the necessary electricity, and a solar heating system for heating up all the water in the building. On the first floor is almost all the rooms supplied with skylight, so that the need of electric light is almost reduced to zero in the daytime.

The size of the windows in each room is optimized by their orientation, so that the need of cooling is reduced. To reduce the use of drinking water as much as possible, the rainwater is collected in a tank below the ground, ready to use for toilets and the like.

To reduce the need of electric light, we have simulated every room in Velux Visualizer to optimize the daylight factor, without increasing the need of cooling the rooms.

FINAL PROJECT
In the end, we’ll end up with a new primary school, in more ways than just one. New materials, innovative constructions, room layout and the whole idea of, that every inner wall can be removed, are all contributed to make a building as sustainable as possible.

Ozzy and the garbage bin

M. Harboe, F. Søndergård-Gudmandsen, F. Sidenius and P. Trachsel
Communication and IT, Københavns Universitet

THE NEED FOR GASIFICATION
Household garbage holds a great unused gasification potential, which can provide us with fuel, electricity, heat, and enriched soil. There is, however, no option for citizens of the municipality of Copenhagen to send their garbage to gasification, but recent politics and energy plans announce that this will soon be a focus in Denmark. To harvest this great potential, it is requires that all citizens get used to sorting their everyday waste into biological decomposable and non-decomposable garbage to accommodate gasification. Our project is to teach children to do exactly that.

DESIGN ADDRESSING YOUNG CHILDREN
Our project targets children of the age 6-10 years old since they will be the citizens and consumers of tomorrow, but also because their young minds are more impressionable to new ideas and habits where as adults often are more set in their ways.

We have designed an interactive garbage bin to be located at school classes from 0.-3 grade. A touch screen is attached to the bin and provide the children with a story about how to sort their garbage and why it is important. This narrative is told by Ozzy the Earthworm (Ormen Ozzy) and is told in pictures, text and sound in an explorable world. We use a mix of small games, a sense of competition, videos, stories, songs, and statistics. Thus do we seek to teach the children about garbage and gasification and to stimulate their sense of curiosity and urge to help. We have sought to design at a level of abstraction and with point of stimulation to best accommodate the users age. These design decisions are based heavily upon several observations and interviews of children in their classrooms, at lunch and using installations at Experimentarium.

THE PROTOTYPE
We have placed a prototype of the installation in three different schools in Copenhagen for a period of two weeks. We have also placed a bin without the design and touch screen in three other schools to test if the interactive design offers more encouragement than just a regular plea for the children to sort their garbage.

The children have expressed a great liking for the fictional Ozzy and sympathy for the plea in the narrative. They have done the best of their ability to help collect decomposable garbage for Ozzy and they have also showed more focus upon garbage sorting at home after the two weeks of having the installation at school.

Although our design aims at a long term effect in changing the behavior of children, which we are not able to fully confirm within the durance of this project, we still believe based on our findings that our design do motivate, educate and entertain young children and thereby offers a great mean toward our goal.

To see more of the design visit Ozzy and his friends at www.jagtenpaanoget.dk.