

EXPERIMENTAL ATELIER: GARBAGE DESIGN

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Summary

Experimental atelier at FA CVUT, Molab is basically focused on getting students go through analysing, designing and building their own design, similar to projects in reality. The process of evolving new design combines individual and teamwork and is focused on advanced modeling and computer techniques. The final result is one or more working prototypes, finished by teams of students.

The topic (partly changes each semester) is reusing waste in architecture and design. First, analysis of the topic is made and experiments with used material are undertaken. For this purpose PET bottles are collected in the university entrance hall, where a big PETlin tower was built as a container. After finishing the individual designs an investor is asked to choose a product, which is finally being produced by the students. The major contribution is not only the new design invented by students, but also bringing students and the public to the topic of recycling garbage and giving it space in the education system of the FA CVUT.

Keywords: experimental, garbage, design, education

1 Education towards sustainability

1.1 Method of education

The semester on CVUT consists of 13 weeks, which are in the experimental studio divided into three phases: analyses, individual design and creating a prototype. After each phase a presentation follows, where the individual or collaborative results are shown. Students are asked to come to the studio regularly and to do their work at the place. The Molab institute owns a laboratory, computer room, a hall with wifi “café,” and a kitchen, all of which gives students the comfort to stay several hours.

We do not support printed posters for presentation, students are to share their pictures and works on the internet. We use Moodle, the platform for sharing information [1], [2], [3]. It is an on-line memory of the seminar. Students are given the teachers rights to edit the pages, thereby they are led to using electronic way of communication.

1.2 Phases

The design process in the experimental design studio proceeds through the following phases: analysis in groups, individual design, finishing a prototype, and public presentation.

1.2.1 Analysis

There are several ways of conducting the analyses. An excursion is made to a dumping place, Internet is searched for the references, and experiments with concrete were executed utilizing different types of rubbish in the Laboratory of concrete at the Faculty of Civil Engineering ČVUT. For this purpose PET bottles were collected in the entrance hall of the faculty into a so-called PETlin tower. The main inspiration to the project was the film Garbage Warrior, which is watched and interpreted in one of the first lectures [4].

1.2.2 Individual design

While analysis was done exclusively in groups, designing in the first phase is done individually. Different types of garbage are used and experimented with to create new designs. Students can choose anything they consider to be trash. PET bottles are the favorite, but there can be cans as well as waste bags or car tires. Results of this continual work can be seen all over the institute.

1.2.3 Finishing a prototype

Once there are several designs ready an investor is asked to choose the one to be realized. Czech students and teachers usually search for the investor during the semester, who then allows one or more projects to come true. Students are motivated by the vision of their own product and the investor gets the original idea for free. This everything helps spreading the idea of recycled architecture and creates a basis for scientific research.

1.2.4 Presenting the results

The public final presentation of experimental atelier is important, because that is also one of the aims of the studio. Not only do the students learn how to speak to the public and present their project, but they must also cover the sustainability topic and explain it. That is why we try to organize the exhibition of the products in a public gallery.

1.3 Impact

Teaching recycled architecture on ČVUT can have a long term impact on students in their way of thinking. We want to show people the possibility of using such material, reusing old and unneeded stuff, and to start thinking about it. Creating prototypes should prove the viability of the garbage designs.

2 Garbage design

2.1 Design process

In the experimental design studio six students took part, five of which were foreign. One design was not realized as prototype because it had to be constructed outside which was not possible due to winter conditions (a pagoda created with chicken wire, old towels, and concrete). The other projects were all realized as object.

2.2 Individual designs

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not possible due to winter conditions (a pagoda created with chicken wire, old towels, and concrete). The other projects were all realized as object.

2.2.1 Slovenian PET bottle chair

(B) Cheap variant of litter piece of furniture. Materials: around 120 pieces 1,5l PET bottles, 3 rolls food foil, old newspapers, and wallpaper glue. One day work. Light. Holds 100kg. Still works after three months. The surface needs to be polished. Medium comfortable. Creator: Ana Pezdirc.



Fig. 1 PET bottle chair, Ana Pezdirc

2.2.2 Finnish chair made of plastic bags

(B) Strings of the armchair knitted of plastic bag threads. Materials: Plastic bags, two colors, steel frame. Construction of the steel frame was made by a blacksmith using 7m steel tube. Light. Holds 60kg, when more, the back rests on the ground. Very comfortable. Still works after three months. Creator: Mathias Saresuvo.



Fig. 2 Finnish plastic bag chair, Mathias Saresuvo – front view

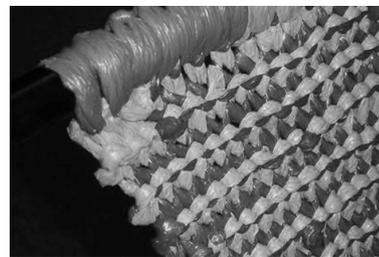


Fig. 3 Finnish plastic bag chair - detail

2.2.3 Mexican chair made of a car tire

(B) Car tire seat placed on a steel construction. Materials: 1 car tire, steel support and legs. The steel parts were made by a blacksmith. Medium weight. Holds any human weight. Rather uncomfortable. Still works after three months. Creator: Rodrigo Diaz.



Fig. 4 Car tire chair, Rodrigo Diaz

2.2.4 Finnish PET bottle lamp

(A) PET bottles cut into stripes. The stripes are brushed to give translucent quality. They are connected with stapling machine, and combined into a “rectangular” construction. Materials: PET bottles, aluminum wire, steel stitches, and bulb. Light. Shines comfortably. Still works after three months. Creator: Miku Saurén.



Fig. 5 PET bottle lamp, Miku Saurén
– front view

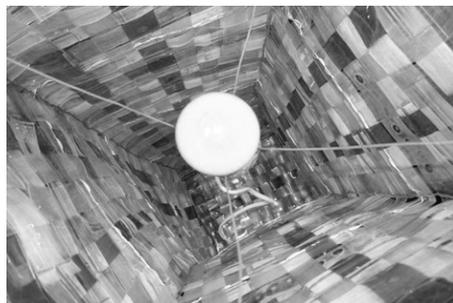


Fig. 6 PET bottle lamp – view inside

2.3 Producing mechanism

Most of the work the students could do with the facilities present in MOLAB. For the concrete experiments we were greatly assisted by the Concrete Laboratory of the Faculty of Civil Engineering ČVUT. For the steel frames we found a blacksmith who was willing to create the frames for free. The investor was a gallery owner who also provided his space for the public presentation. We gratefully acknowledge their support in this experiment.

References

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