INTERDISCIPLINARY PROJECT-BASED DESIGN 2024/2025/1 FALL SEMESTER

UpCycled Campus

Department of Explorative Architecture

Tutors: Adél Sághegyi, Dóra Dávid

and

Department of Mechanics, Materials and Structures

Tutors: Prof. Péter Várkonyi, Mehmet Köhserli

COURSE DESCRIPTION

Interdisciplinary Project Based Design is a design course carried out in tandem by a design and an engineering department, with the aim of widening the range of design tools for participating students and to integrate more aspects of design in the process.

The course is held in a workshop style. Students are helped by consultants from both responsible departments throughout the semester (design & structures). Students develop their projects in international groups of 3-4 members. By the end of the semester, groups are expected to present a developed conceptual design proposal in drawings, a virtual and a physical model, based on the detailed brief that is handed out in the beginning of the semester.

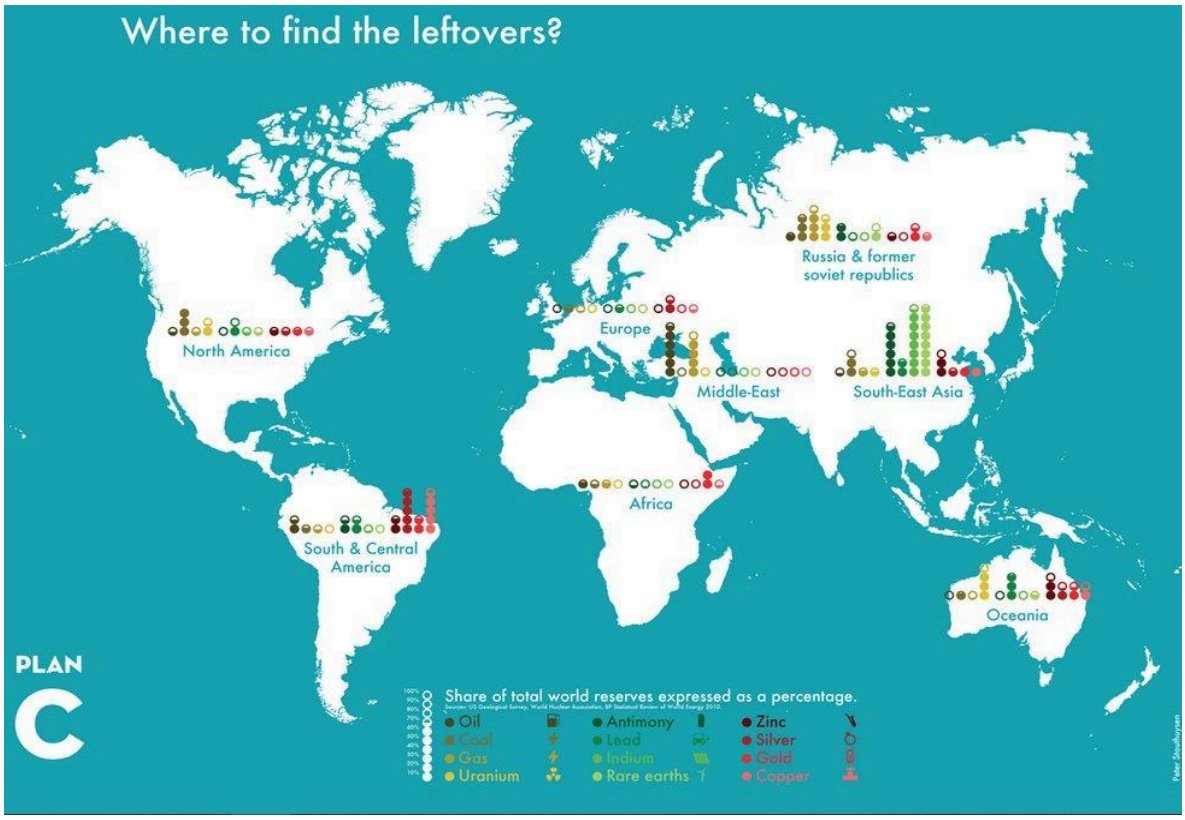
In the beginning of the semester we introduce the site and the detailed task description, after which the site and program analysis will be presented by student groups. Consultants give lectures to inspire the design process and to equip students with a basic knowledge of programming as a design tool (Rhino & Grasshopper). The core of the semester consists of consultations for the groups with regular presentations about the progress. Consultations are held twice a week, the course lasts 7 weeks. (Tuesday 8:15-16:00, Thursday 8:15-16:00).

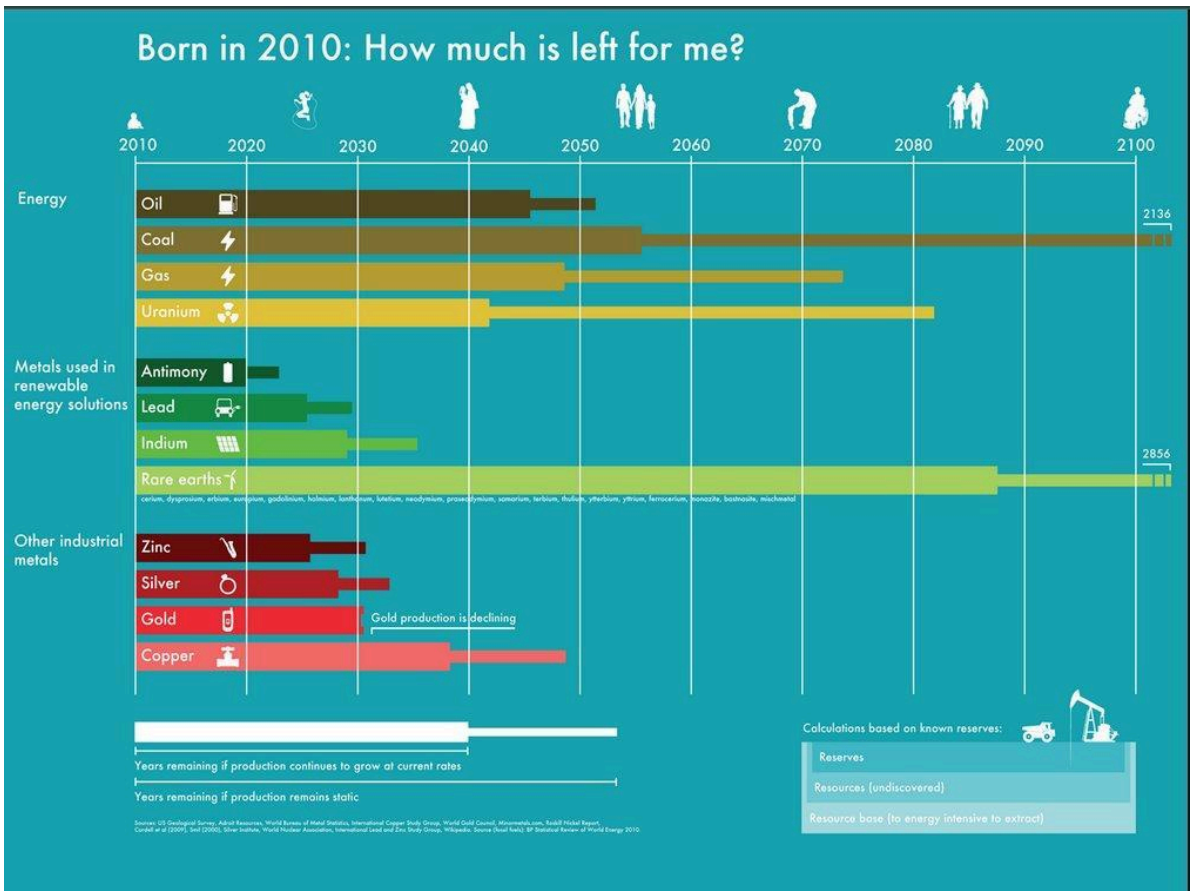
THE ISSUE IN FOCUS

Building construction is one of the main sources of green-house emissions on the planet, therefore implementing sustainable design methods is essential to tacle the climate crisis. Since Europe is a continent very poor in raw materials, a more mindful approach to the already existing materials also makes economic sense as it reduces the continent’s dependency on imported materials. The pioneer work of the Lendager Group (one of many experiments in the area) has proven that greenhouse gas emissions of a construction project can be reduced by up to 70% by reusing locally available materials.

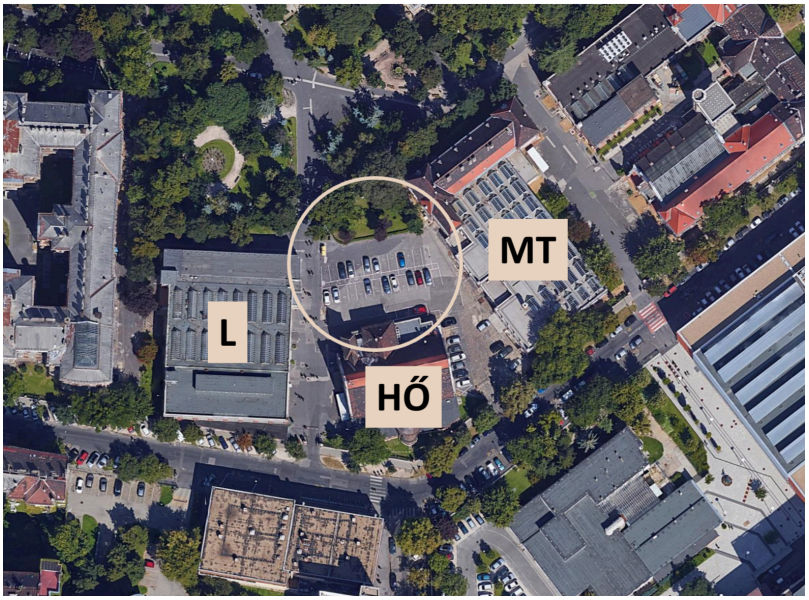
Can sustainable design, buildings made of re-used materials reach the aesthetic and functional standards of our traditional design methods? We believe that the answer is yes. However, we may need to redefine what we consider aesthetic, after all, can something that causes harm be truly considered beautiful? Exciting, flexible, environmentally conscious structures should take the lead in the future. In this spirit, the course challenges students to design a workshop space for the campus of BME, using a provided set of construction materials, applying parametric tools to investigate the potential in this field.

Sustainable design practices are at very different stages of development and application among countries, thus the course is an excellent platform for all participants to learn from one another.

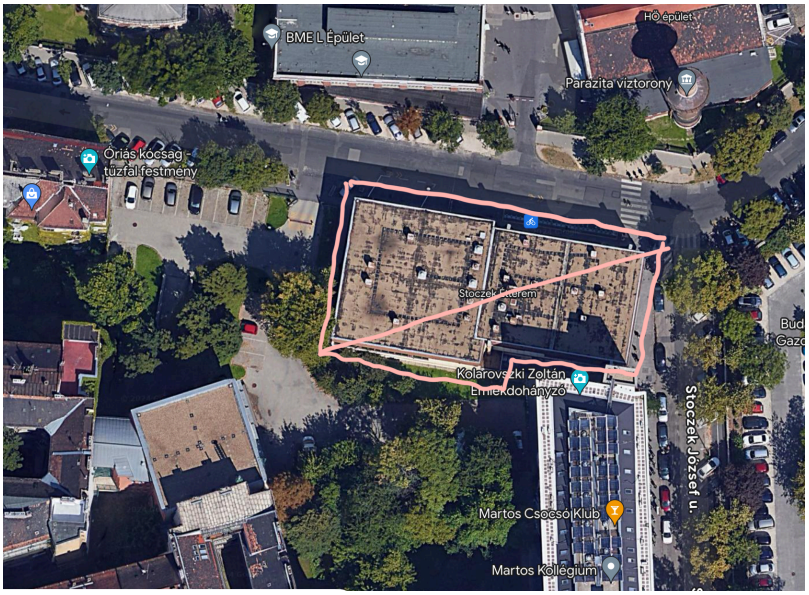




Location 1 – the parking lot in the southern part of campus, betweek HŐ, L and MT buildings.



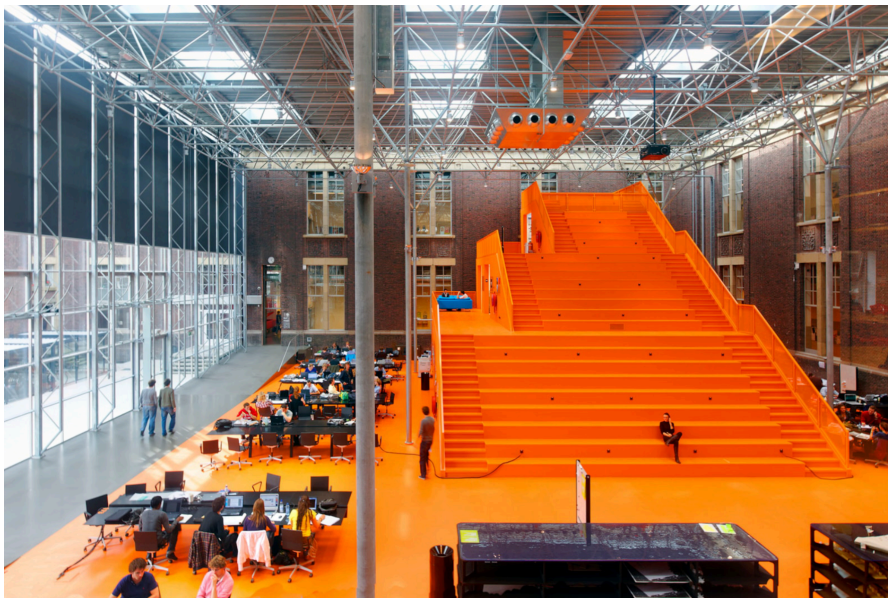
Location 2 – the place of the Stoczek Canteen, right next to campus



THE DESIGN TASK

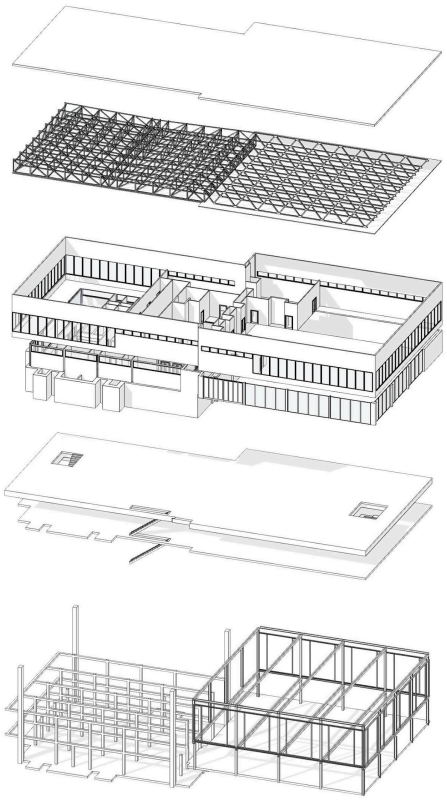
The task is to design a workshop and project space for the campus which may be used by all students. The workshop is equipped with basic carpentry machines, 3D printers, laser cutters and other tools. The project space allows for teams of varying size (3-10) to work together on their projects. The project space should be equipped with screens for presentation, variable/modular furniture, and a flexible partition system. The facility hosts a small café as well.

References: the Why Factory Tribune of TU Delft and the open air workshop space of the Leonaro Campus of Politecnico di Milano

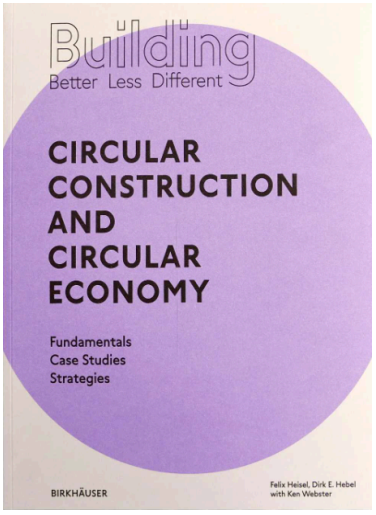


THE DONOR BUILDING – STOCZEK CANTEEN

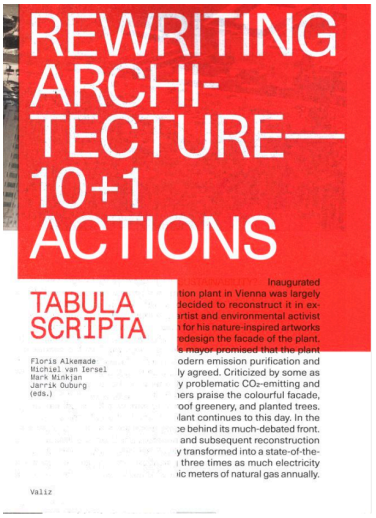
The demolishion of the Stoczek Canteen is a recurring topic in campus life, thus in the semester we will consider it demolished or partly demolished, and its building structures available for re-use. It is a requirement of the semester that each group creates its building using these materials to degree of at least 50%. Repurposing elements is definitely possible, i.e. the load-bearing structure of the donor building might be used as a landscape elements, furniture, etc. The elements will be provided in a 3D CAD file.



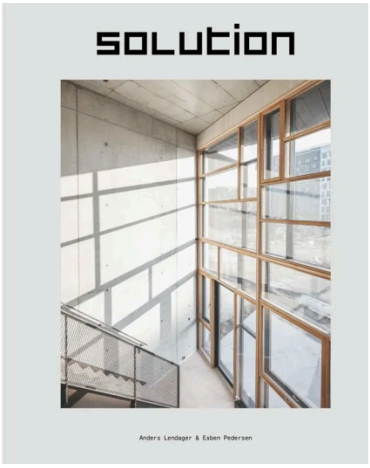
LITERATURE



Heisel, Hebel, Webster : Building Better - Less - Different



Alkemade, Iersel, Minjkan, Ouburg : Rewriting Architecture – 10+1 Actions



Lendager, Pedersen: Solution