EuroTeQ Collider 2023

Theme: "Forgotten" structural and material systems from natural materials and their potential for a sustainable future

Introduction

As the carbon footprint requirements become more stringent, the construction industry will need to increase the proportion of purely natural raw materials without the need for energy-intensive secondary processing, or sourced locally to minimise emissions associated with their transport. Historical construction methods from before the Industrial Revolution often inherently met these principles. They can thus become a technically proven inspiration in the past with potential for the present.

Who is behind this initiative?

DEK is a group of companies that supply materials and services to the construction industry. With a turnover of CZK 30 billion, we are the largest supplier in the Czech Republic. We currently operate more than 136 sales outlets and employ over 3.5 thousand employees. We provide extensive technical support for the design and implementation of buildings. We communicate with our customers and their clients in this context, among other things, through proven construction solutions. When creating documents, we not only take into account generally applicable technical standards and design procedures, but also use our own design and expert experience and knowledge from building monitoring. These verified design solutions are entered into the DEK electronic Building Library, which our customers then use for their own building designs.

What is the challenge?

For our DEK Building Library we are looking for low carbon footprint building structures based on historically proven design principles, locally sourced and with real potential for contemporary use. We are also attracted by the opportunity to experience structures that are unknown in our country but traditional in other countries.

Interested student teams are asked to engage in the above area by
- Select interesting constructions.
- Evaluate whether, thanks to the current level of development of science and technology, some of the systems can be "revived" and find their potential for the present.
- Identify usability risks (moisture for unfired clay, current availability ...).
- Suggest ways to 'modernise' and develop the identified systems with potential.

Relevant considerations for the challenge / theme:
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