WORKSHOP

WATER-FILLED GLASS (WFG) FAÇADES: CONSTRUCTION ASPECTS, STRUCTURAL AND ENERGY PERFORMANCE

SUMMARY

The workshop introduces the water-filled glass (WFG) facade system, an innovation developed and patented by Dr Matyas Gutai. WFG is a hybrid structure that utilizes glass and water infill, which improves the structural, acoustics and energy performance of the facade compared to standard glass. The most important novelty of WFG is its capacity to absorb and distribute energy on the glass surface and throughout the building, which lowers both cooling and heating demand with substantial energy savings. These unique properties were tested on buildings designed and built by Matyas, including the first Water House projects with continuous fluid-solid building envelope that covers the whole structure. The workshop is divided in two parts.

The first part introduces the system, offers a comparison with standard glass structures, and presents the design guidelines for WFG facades. The second part guides the audience through the steps of the design process, which includes a simplified calculation method to evaluate energy savings with WFG for any project.

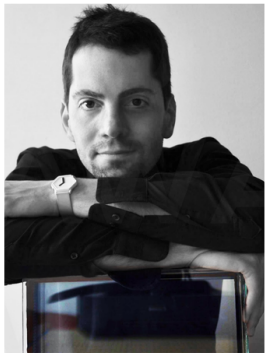
The workshop is recommended for design professionals, constructors and manufacturers interested in glass innovations, sustainable buildings and structures. The workshop is expected to offer sufficient basis for professionals to design water-filled glass structures for their own projects.

COURSE TIMETABLE 14TH OF JUNE 2023

9:00 : Start
13:00 : End

DURATION : 4 Hours

ABOUT THE AUTHOR



MATYAS GUTAI, WATER-FILLED GLASS LTD

DR MATYAS GUTAI is an architect, academic, entrepreneur and developer of water-filled glass (wfg) technology. He has an architecture and engineering background and graduated at Budapest Technical University (March) and The University of Tokyo (Meng and PhD).

Matyas has international architecture experience and worked for offices in Japan (Shigeru Ban architects, Arata Isozaki architects), Portugal (Alvaro siza) and Hungary (Zoboki Demeter Associates, Balazs Mihaly architects, Puhl Antal architects) before starting his PhD on WFG. After he defended his PhD in 2010, he has been researching the concept of WFG for over a decade whilst teaching architecture at The University of Tokyo, Feng Chia University (Taiwan) and Loughborough University (UK). ABOLFAZEL (FAZEL) GANJI KHEYBARI Having a background in civil engineering, architecture, and building physics, Fazel merges his competencies into developing new solutions for healthy and comfortable buildings.

During his postdoc at the Built Environment Department of TU Kaiserslautern, he was involved in innovative projects for applying advanced simulation and optimization techniques in the design and automation of dynamic façade and complex fenestration systems. His experience in living lab smart office space brings his insights about glare, daylight and thermal comfort into reality by providing new data-driven models and tools.

He is also a well accredited professional and a DGNB international consultant of the German Sustainable Building Council to ensure the health and well-being in buildings alongside high performance and energy savings.