

MTA-BME MOMENTUM - NEW GENERATION OF STEEL BRIDGES RESEARCH GROUP

BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS (BME)



About the Research Group

Contact:
Balázs Kövesdi, PhD
associate professor
Head of Research Group
kovesdi.balazs@emk.bme.hu

<https://hsz.bme.hu/hsz/lendulet-kutatocsoport>

HORIZON-CL5-2024-D4-02-04: Design for adaptability, re-use and deconstruction of buildings, in line with the principles of circular economy || Partner seeks Consortium

We can contribute to the following tasks as described in the Topic:

- 1) Validate construction and renovation solutions based on the integration of innovative tools, products, techniques, processes and methods, that facilitate deconstruction and reuse, based on life-cycle approaches across the value chain.
- 2) Develop building elements and products that can be disassembled and reused, including those made from CO₂-storing materials such as sustainably sourced long-lived bio-based materials and products and, innovative lower emission materials /aggregates.
- 3) Where relevant, contribute through specific and targeted actions to standardization and regulatory evolutions that can foster reuse and deconstruction of buildings materials and products.

What we can bring to the consortium:

- Our department conducts intensive research about structural behaviour and design of sustainable and demountable steel-concrete composite joints, composite floor and frame systems in order to use materials with a low ecological footprint by minimizing the waste generated during manufacturing of building structures, by reusing and recycling the structure.
- Comprehensive research is focusing on retrofitting using fiber reinforced polymer (FRP) stiffeners which are lightweight, noncorrosive, nonmagnetic, have high tensile strength, and can be reused in different applications.
- High-quality infrastructure: structural laboratory for performing large-scale measurements and material tests, ANSYS APDL and Workbench simulation environments, qualified project management staff at university level
- Experience in joint projects and a strong collaboration with the main participants of the Hungarian bridge engineering industry.
- Collaboration with European standardization bodies (CEN/TC 250/SC3/ WG5, WG13 and WG22 committees), especially with CEN/TC250/SC3 AHG Assessment and retrofitting of existing iron and steel structures and European Convention for Constructional Steelwork (ECCS).





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With its regular high-ranking positions (between 200 and 800) BME is among the top universities (2-6%) globally. At the university's 8 faculties and 76 departments, there are 1,200 lecturers teaching 5,000 subjects and 10,000 courses each semester. In the H2020 Framework Programme BME has ranked #1 among the Hungarian institutions with 67 funded projects. The University is an active member of the European Engineering Learning Innovation and Science Alliance (EELISA) European University, the CESAER association of universities of science and technology and the European University Association.

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