

Grant topics

Construction history of industrial and public heritage buildings from the turn of XIX and XX century in Lower Silesia and Saxony – assessment → data base → revitalization concepts

Description

- research project based on the results of completed and new analysis of existing heritage industrial and public buildings from the turn of XIX and XX century situated in both regions
- elements of diagnostic: archival documentation review (drawings and calculations), architectural inventory, material assessment, structural modeling and calculations FEM
- data base containing relevant examples of heritage buildings and guidelines for revitalization/refurbishment methods



HR EXCELLENCE IN RESEARCH



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Grant topics

Improving the energy efficiency in existing buildings

Description

- energy simulations for improving building energy balance by reducing energy consumption
- finding the best cost effective solutions for the existing buildings



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Grant topics

The use of simulation technology in virtual reality (VR) in the training of construction workers

Description

- development a safe and fully reliable training environment using BIM technology, including virtual reality and 3D simulation



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Grant topics

Application of modern NDT systems for assessment of the technical condition of concrete structures

Description

- research project is focussed on the complex assessment of the technical condition of existing concrete structures using modern NDT methods, in particular following subjects are considered:
 - ✓ application of the modern NDT methods for assessing actual mechanical properties of concrete in existing structures,
 - ✓ application of the advanced NDT systems for identifying and locating internal defects in existing concrete structures,
 - ✓ evaluation of the corrosion risk by means of modern NDT methods.



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Grant topics

Application of modern non-destructive methods for testing composite materials (especially fiber-cement cladding)

Description

- testing the effects of operating factors (including high and low temperature, the impact of fire) on the structure of fiber-cement boards using modern non-destructive methods (acoustic emission method, ultrasonic method).



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