

IALCCE 2020

The Seventh International Symposium on Life-Cycle Civil Engineering

27-30 October 2020, Shanghai, China



IALCCE 2020

*The Seventh International Symposium on
Life-Cycle Civil Engineering*

Nowadays, people have realized the importance of creating a sustainable society to avoid or alleviate problems like climate change, environmental pollution or economic crisis. Therefore, the life-cycle thinking of civil engineering is discussed more and more frequently.

Civil engineering is mainly focused on design and construction during the past days, but contemporary society needs civil engineering to pay attention to more aspects, such as inspection, monitoring, repair, maintenance and optimal management of structures and infrastructures, in order to effectively manage the function of these structures throughout their lifetime. Considering these needs, the objective of the International Association for Life-Cycle Civil Engineering (IALCCE) is to promote international cooperation in this field of expertise to enhance the welfare of society. Its mission is to become the premier international organization for the advancement of the life-cycle civil engineering.

Previous editions of the bi-annual IALCCE symposium took place in Varenna, Lake Como (2008), Taipei (2010), Vienna (2012), Tokyo (2014), Delft (2016) and Ghent (2018). The Seventh International Symposium on Life Cycle Civil Engineering (IALCCE 2020) will be organized on behalf of IALCCE under the auspices of Tongji University in Shanghai (China) on October 27-30, 2020.

All major aspects of life-cycle engineering are addressed, with special focus on structural damage processes, life-cycle design, inspection, monitoring, assessment, maintenance and rehabilitation, life-cycle cost of structures and infrastructures, life-cycle performance of special structures, and life-cycle oriented computational tools.

We are looking forward to welcome all of you in Shanghai in 2020!

Mini-Symposium MS-12:

Modelling and Assessment of Existing Concrete Structures

Objective of the Mini-Symposium MS-12



Robby Caspeele
Ghent University
Ghent, Belgium



Fabio Biondini
Politecnico di Milano
Milano, Italy



Alfred Strauss
University of Natural Resources
and Life Sciences
Vienna, Austria



Wouter Botte
Ghent University
Ghent, Belgium

Current practice on the assessment of existing concrete structures subject to aging, deterioration and damage processes often lacks thorough life-cycle reliability and risk-based evaluations. The assessment is often performed on the basis of guidelines which rely on the (subjective) experience of the investigator and improvements are necessary to quantitatively incorporate in this process available data and results from inspection, monitoring and/or laboratory investigations.

In this mini-symposium, focus is given to new developments in relation to:

- Modelling of deterioration processes and associated structural responses of concrete structures;
- Development of quantitative methods to assess existing concrete structures in relation to reliability and risk-based performance criteria;
- Application of Bayesian updating approaches to incorporate and exploit information from inspections, monitoring and/or testing for updating instantaneous and time-dependent performance predictions;
- Modeling of spatial variability in properties and degradation of concrete structures in relation to performance predictions;
- Time-dependent performance prediction approaches;
- Conceptual assessment strategies;
- Case studies.

The mini-symposium will also report on advances and new developments within fib and SEI/ASCE technical committees working on life-cycle assessment of existing concrete structures.