



To:  
UPADI Members

Our sign: 542-0001/2018  
Date: 5<sup>th</sup> July, 2018

**Subject: World Construction Forum 2019: "Building and Infrastructure Resilience"  
Ljubljana, Slovenia, 8 to 11 April, 2019  
- Call for Abstracts**

Dear Ladies and Gentleman,

In approximately 10 months' time – from 8<sup>th</sup> to 11<sup>th</sup> April, 2019 – the World Construction Forum 2019: »Building and Infrastructure Resilience« will be taking place in Ljubljana, Slovenia (<https://www.wcf2019.org/>).

It will be accompanied by the annual Executive Council meeting of the World Federation of Engineering Organisations (WFEO).

The Organising Committee is currently working on the detailed programme of the forum. It has expressed its wish for those giving lectures to come from all over the world and not just part of it.

**We are now turning to you, UPADI members, with a Call for Abstracts.**

**We kindly ask you to:**

- **inform your members about a Call for Abstracts,**
- **propose one or more respectable speakers.**

The topics of the forum and their key points are listed in the enclosure to this letter.

The programme of the forum will be divided into sections. Each speaker will be given 15 to 20 minutes. Each section will conclude with a discussion led by the chair of the section when the section comes to the end.

**Call for Abstracts (name, biography, title of the speech, abstract (100 words)) is open until Monday, 15th October 2018.**

**Abstracts have to be submitted at <http://submissions.wcf2019.org> .**

By the end of the year 2018 the Organising Committee will decide which authors will be given the opportunity to speak at the forum. The decision will be based on the relevance of the proposed theme, the speaker's references and the regional representation of speakers.

All other authors will be asked to prepare short video presentations to be shown at WCF2019.

Outcome of the forum will be also video recordings of lecturers and their PPT presentations which will be available on the WCF2019 web site for the period of minimum two years after the forum and a Ljubljana Declaration, accepted by WFEO, prepared on the basis of lectures and short video presentations.

Authors will be granted reduced forum fee.

In case you need more details about the forum, please contact Ms Polona Okretic ( [polona.okretic@izs.si](mailto:polona.okretic@izs.si) ) or Ms Barbara Skraba Flis ( [barbara.skraba@izs.si](mailto:barbara.skraba@izs.si) ) from Slovenian Chamber of Engineers, in case you need more information about Call for Abstracts please contact [secretariat@wcf2019.org](mailto:secretariat@wcf2019.org).

Be part of WCF2019!

Yours faithfully,

Dean  
Faculty of Civil and Geodetic Engineering  
University of Ljubljana

Prof. Dr. Matjaž Mikoš



President  
Slovenian Chamber of Engineers

Mag. Črtomir Remec





#### TOPICS of the lectures:

- Energy in 21<sup>st</sup> Century
- Engineering Capacity Building
- Construction 4.0
- Cultural Heritage in Digital World
- Disaster Risk Management & Governance for Resilient Communities
- Facility & Asset Management, BIM Lifecycle

#### KEY POINT OF TOPICS:

##### Theme 1: Energy in 21<sup>st</sup> Century

The section is intended to give the viewpoint of lecturers and conferrers on questions related to **Wind Power, Nuclear Power, Water Energy, Solar Energy, Sustainable Energy**, with special emphasis on technical and economic feasibility of energy issues of significance to society. It aims at providing the engineer and decision-making officers with updated information regarding the resource potential, advantages and disadvantages of specific energy, state-of-the-art of different technologies that are being used or under consideration for the supply of energy, energy productivity & efficiency, examples of good and bad practice, commissioning and operation, maintenance, electrical system integration, infrastructure requirements, policy and regulatory framework, waste management, costs, influence on climate change, emissions, global trends, challenges.

##### Theme 2: Engineering Capacity Building

The section is intended to give the viewpoint of lecturers and conferrers on questions related to a **key role that engineering professionals play in the global economy of the 21st Century**, in the overall economic development activities of countries and regions, but only when the role of the engineering professional is well understood and utilized. Special focus will be given to strengthening of economies, governments, institutions and individuals through education, training, mentoring, orientation and the mobilization of resources by developing secure, stable, appropriate, affordable and sustainable structures, systems and organizations, with a particular emphasis on improving the quality of life. Improving the capacity and skills of engineering professionals to carry out effective action in the face of disasters is also a part of this topic.

##### Theme 3: Construction 4.0

Construction 4.0 is construction industry's version of Industry 4.0. Technically, industry 4.0 is about creating cyber-physical systems. In these systems the material world and the digital world merge and overlap into one – with the goal of creating not only high quality, inexpensive and sustainable, but also smart, interconnected and customized products for the end user. Construction 4.0 is achieved through internet of people and their social networks and internet of things where the material world is flooded with sensors and cameras; where machines are digitally controlled and include robots and 3D printing. Data (big data!) is collected and analysed using cognitive computing methods, artificial intelligence, high performance computing, and cloud computing for storage and processing. A key technological element is a digital twin of the real world where interaction of the digital with the real can be designed and simulated. In construction, this is called Building Information Model. For the end user all this results in smart products, smart materials, smart buildings, smart cities, smart infrastructure. The section is intended to give the viewpoint of lecturers and conferrers on issues related to technologies underpinning construction 4.0, the emerging new business models, as well as new management and organizational methods. It will also address social issues that include the data divide and data privacy. It will address Construction 4.0 in the fields of buildings, transportation and civil infrastructures, as well as education and research policies.

##### Theme 4: Cultural Heritage in Digital World

The section is intended to give the viewpoint of lecturers and conferrers on questions related to importance of digital technology in the integrated approach to cultural heritage. The key themes addressed in this theme are: development of methods and tools for data collection and processing needed to support policy development, inclusive heritage site management, intervention decision-making and decision impact analysis, furthermore increasing of heritage asset resilience based on application of digital technology, innovations in 3D modelling of cultural heritage through an inclusive approach for time-dynamic reconstruction of artefacts, built and social environments applying the Historic building information modelling (HBIM) and last but not least development of sustainable use of cultural heritage based on digital technology in order to increase economy development in cultural heritage areas.

### **Theme 5: Disaster Risk Management & Governance for Resilient Communities**

The quality of life of citizens and functionality of communities are primarily dependent on the service provided by the built environment which cannot be absolutely guaranteed due to geophysical, hydrological, metrological, climatological and technological hazards. These hazards threaten every day service of built environment in a form of earthquakes, tsunamis, floods, landslides, cyclones, extreme temperatures, droughts, frost, wildfires, chemical releases, nuclear accidents, NaTech events and by a series of such events. Each of these events can cause severe disasters and, as a consequence, huge economic losses and extremely long recovery time due to the complexity of built environment. In order to optimize the functionality of built environment and enhance community resilience by developing smart buildings, smart infrastructure and smart cities, it is necessary to understand disaster risk, adequately communicate the risk among all stakeholders and managing disaster risk by establishing effective partnership between national authorities, professional organizations, code-writing bodies, civil defence units, construction industry, insurance and reinsurance companies, owners and other stakeholders exposed to risk.

The objective of this section is to exchange the viewpoint of lecturers and conferrers on questions related to disaster risk management and governance aimed at enhancing community resilience by discussing on hazard identification, risk and resilience assessment of existing and new constructions including systems of built environment, risk reduction, prevention, preparedness and response procedures as well as strategies of recovery and reconstruction of the affected built environment caused by extreme events. The emphasis will be given on understanding the risks, developing and demonstrating cyber-physical systems for different stakeholders, addressing the role of construction industry and engineering practitioners, monitoring and reporting on emerging policies, strategies and practices at national and international levels and promoting high standards for engineering practitioners, research and higher education units.

### **Theme 6: Facility & Asset Management, BIM Lifecycle**

The section is intended to give the viewpoint of lecturers and conferrers on questions related to Facility and Asset Management with special emphasis on organizing controlling and coordinating the strategic, tactical and operational management throughout the lifetime of buildings and facilities – at all times of the day and every day of the year. The goal is to ensure proper and efficient operation of all physical aspects of built environment, creating and sustaining safe and productive (internal) environments for residents and users, while enhancing sustainability aspects and reducing impact on the natural (external) environment. These goals can be achieved by introducing advanced information management with new digital workflows – enabled by the BIM lifecycle – from project information model to asset information model.

Facility management encompasses access and egress, health and wellbeing, security, safety, energy, water services, heating, ventilation and air condition (HVAC), owner and resident services. Asset management plays a pivotal role as an enabler of sustainable development of infrastructure and other essential assets in built environment. The balance between limited capacity and regulatory compliance of existing assets one side, and new investments in infrastructure on the other side, will strongly depend on the level of digital (smart) asset management, which will build a new generation of cyber-physical asset systems.