



University of Isfahan

Faculty of Civil Engineering and Transportation

International Webinars
Held by
International Cooperation Office
Faculty of Civil Engineering and Transportation (CET)
University of Isfahan, Iran

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Isfahan 81746-73441, Iran

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Mina Moradizadeh (Ph.D.), International Representative of the Department of Geomatics Engineering (GE)

Version 3

2 October 2026

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1ST INTERNATION WEBINAR ON “VIBRATION AND DYNAMICS”

BASIC INFORMATION

Date: 4 March 2021

Title: Recent advances on the noise and vibration simulations in railway

Speaker: Dr. Pedro Alves Costa, University of Porto, Portugal

Host: Dr. Mohammad Hossein Esmaeili, Faculty of CET, University of Isfahan

Abstract:

Railways considerably contribute to boosting transportation in metropolitan cities. However, its induced vibrations might cause serious problems in surrounding environments. In order to ensure the safety of building, residents and sensitive instruments, Finite Element Methods (FEM) simulations is usually implemented. The FEMs can give an interesting support on the prediction of vibrations induced by traffic and also on the design of mitigation countermeasures. The webinar focuses on the challenges and possibilities provided by numerical modelling on the prediction and mitigation of vibrations induced by railway traffic. Once very large domains need to be considered, the potentialities of 2.5D approaches for dealing with the problem are discussed. Moreover, the ability of this kind of models for dealing efficiently with the train track ground building dynamic interactions is highlighted.

After the discussion about the modelling strategies, their ability for dealing with real situations is evaluated through the comparison between predicted and measured results.

A comprehensive discussion about the efficiency of various kind of solutions is performed, with focus on the potential impact that can be achieved on the vibration levels inside buildings close to the railway infrastructures.

2ND INTERNATION WEBINAR ON “VIBRATION AND DYNAMICS”

BASIC INFORMATION

Date: 6 March 2021

Title: Dynamic diagnosis of structures using a modal hammer and a dynamic inertance function

Speaker: Prof. Arkadiusz Kwiecien, Krawcow University of Technology, Poland

Host: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

Abstract:

Masonry structures are vulnerable to earthquakes, especially those of poor construction. Such structures are very popular all around the World, because they are made of available cheap local materials, not requiring high funds. Moreover, the structures are constructed by not well qualified workers. The most popular vernacular masonry structures in such areas are stone masonry walls, earthen walls or unreinforced brick masonry walls. One important consideration in making protection and strengthening of massive masonries in seismic areas is improving of earthquake resistance of structures with strengthening systems carrying additional loads, increasing structural ductility, but not increasing structural mass (structure should be as light as possible).

Masonries undergo disaster during earthquakes because of various reasons. Generation of high inertial forces proportional to mass of structure results from action of seismic waves, propagating through elastic soil supporting structures. The magnitude of the inertial forces increases proportionally to the weight of structures and resonance. The resultant stresses (dangerous for masonries: shear, tensile) build up fast with the increase of vibration duration, leading to damage of structures. Damage process causes changes in structural stiffness, dangerous especially in the resonance zone of the dynamically excited structure. It is mainly affected by cyclic character of dynamic loads, acting with dominant frequency band characteristic for the seismic area, when they are close to resonance. Seismic loads generate stresses overcoming the strength of masonry structural material of brittle properties.

Deterioration process of masonry materials starts even at the relatively low load level, with appearance of stress concentrations in places of material discontinuities. Under the peak of stress concentration brittle materials reach easily their limit of elasticity and start fracturing. Stress concentrations cause damages in masonry structures at low load level especially, when they are of poor construction. The huge mass of construction material and low strength led to a massive disaster during earthquakes.

Changes in structural damage and thus in stiffness are difficult to detect without dynamic investigation. New diagnosis approach basing on inertancy and compliance functions is presented, which allows detecting changes in eigen-frequency and thus in global or local structural stiffness. This information is significant when structural eigen-frequencies start to be close to the dominant frequency band characteristic for a seismic area. Threatened of resonance, assessed during dynamic monitoring of a structure, should trigger structural intervention process to avoid sudden collapse of urban and heritage structures during next earthquake. The presented diagnostic methodology allows also determining damping of the structure, which both with eigen-frequencies can be useful for validation of numerical models of structures. Properly validated numerical models allow engineers to assess more easy vulnerability and toughness of analysed structures. This diagnosis methodology is presented on structural examples examined on a shake table.

Engineers assessing heritage structures have to be like detectives, taking into consideration past reconstructions and structural interventions, as well as other deteriorations in surrounding. Not visible damages in historical structures can be detected by dynamic diagnostic methods.

3RD INTERNATION WEBINAR ON “VIBRATION AND DYNAMICS”

BASIC INFORMATION

Date: 7 March 2021

Title: Structural assessment of historic towers: the key-role of operational modal analysis

Speaker: Prof. Antonella Saisi, Politecnico di Milano, Italy

Host: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

Abstract:

Historical masonry towers are relevant architectural heritage often in strategic position within the city centres. Their height and position require specific controls in order to define the state of preservation. The paper describes the investigation procedures developed by the Author in selected case studies. According to the timing and to the complexity of the structure, the approach requires preliminary visual inspections, geometric, crack pattern survey supplemented by historical research and stratigraphic survey. Operational modal testing evaluates the overall structural behaviour, indicating eventual local (or global) problems to study in deep by monitoring or further local tests. Emergency operations, like controls after earthquakes, could require prompt procedures. In this case, the combination of visual inspection, geometric and damage survey with dynamic testing is a reliable procedure for the structural assessment. Additional investigation increases the knowledge of local problems or gives information for further activity like structural modelling. For instance, relevant data are the evaluation of the masonry quality or the control of the local state of stress to estimate through non-destructive or minor destructive testing in selected positions. Nevertheless, such activities require accurate projects of the investigation too, planning and localising the several tests in order to solve the problems detected in the preliminary steps of the diagnosis process.



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International Webinar on Vibration & Dynamics

1. Recent advances in railway noise and vibration simulation and measurement

Pedro Alves Costa

Associate Professor, University of Porto, Portugal

Mohammad Hasan Esmaeili

Assistant Professor, University of Isfahan, Iran



2. Dynamic diagnosis of structures using a modal hammer and a dynamic inertance function

Arkadiusz Kwiecień

Professor, Cracow University of Technology, Poland



3. Structural Assessment of Historic Towers: The Key-Role of Operational Modal Analysis

Antonella Saisi

Associate Professor, Politecnico di Milano, Italy



SAVE THE DATE

Schedule (Iran time (UTC+3:30))

- 04 March 2021, 12:30 to 15
<https://live.pentaserver.ir/rah-ahan/>
- 06 March 2021, 18:00 to 20:30
<https://meeting.ui.ac.ir/ch/cet>
- 07 March 2021, 18:00 to 20:30
<https://meeting.ui.ac.ir/ch/cet>

Info: +989131140282

m.hejazi@eng.ui.ac.ir

**No registration is needed
Enter as guest**



4TH INTERNATION WEBINAR

BASIC INFORMATION

Date: 27 April 2021

Title: Improving Reliability for Satellite Navigation: A Kaleidoscope of Challenges and Opportunities

Speaker: Prof. Peter J.G. Teunissen, Professor of Geodesy and Satellite Navigation, Delft University of Technology

Host: Prof Alireza Amiri-Simkooei, Faculty of CET, University of Isfahan

Abstract:

It has become hard to imagine a world without Global Navigation Satellite Systems (GNSSs). As we increasingly rely on their enabling services, we become equally vulnerable to their threats, such as satellite orbit and clock anomalies, signal perturbations, atmospheric propagation disturbances, and receiver interferences with data corruption (accidental or intentional). These threats can have a huge impact, particularly when the integrity of GNSS is at stake and hazardously misleading information is provided.

In this presentation a kaleidoscopic overview of some of the GNSS integrity challenges and opportunities will be given. It represents samples of fertile grounds for the typical researcher (PhD student and Postdoc alike) who is eager to take up a difficult challenge and/or looking for research opportunities that can make a difference.

Examples of some of the topics that will be addressed are the consequences of combining estimation with testing, the ease to achieve zero-integrity, how to choose between detection and identification, how next-generation GNSSs can offer better integrity and how to understand the integrity of integrity.

5TH INTERNATION WEBINAR

BASIC INFORMATION

Date: 28 April 2021

Title: Incremental Dynamic Analysis in its 20s: New Challenges and Applications

Speaker: Dr. Dimitrios Vamvatsikos, Associate Professor, National Technical University of Athens

Host: Dr. Hossein Tajmir Riahi, Faculty of CET, University of Isfahan

Abstract:

Incremental Dynamic Analysis (IDA) made its public debut in 2002. Since then, 19 years have passed, and IDA is now legally an adult, free from the care, responsibility, and control of her loving parents. Now she is roaming the world, facing new challenges and applications every day. First and foremost comes the issue of bias associated with hazard inconsistency and excessive scaling. This has been an endemic problem from the very start, and should not be discounted without careful consideration. A good knowledge of structural behaviour is necessary to understand when ground motion characteristics, such as pulse period, magnitude, or duration, which are not captured by our intensity measure may influence the response of the structure to be analysed. Highly efficient and sufficient intensity measures, are naturally our best allies against bias. A multi-level conditional spectrum can also help alleviate any remaining issues and bring IDA back on target for single or multi-site evaluations. Thus IDA is not alone in this fight, and its main advantage remains the ease of handling and postprocessing, which has allowed it to expand into some new and exciting adventures: Tackling new R- μ -T (strength ratio, ductility, period) relationships, assessing novel intensity measures, and offering broad assessment capabilities for the calibration of behavior (or strength reduction, or response modification) factors for US and EU seismic codes. All in all, it has been a fun journey that promises to continue well into the future.



**Consortium of Top Iranian
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International Scientific
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**Faculty of Civil Engineering
and Transportation**

**2nd International
Webinar and 1st
TAFTASH Webinar**

**1. Improving Reliability for Satellite Navigation:
A Kaleidoscope of Challenges and Opportunities**
Peter J.G. Teunissen
Professor, Delft University of Technology, Netherlands

**2. Incremental Dynamic Analysis in its 20s:
New Challenges and Applications**
Dimitrios Vamvatsikos
Associate Professor, National Technical University of Athens, Greece




**SAVE THE DATE
WITH CERTIFICATE**

**No registration is needed
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Schedule (Iran time (UTC+4:30))

1. 27 April 2021, 16 to 18
<https://meeting.ui.ac.ir/ch/cet>
2. 28 April 2021, 14 to 16
<https://meeting.ui.ac.ir/ch/cet1>

If you need a certificate, please contact
Tel: +989135956695
Email: m.hejazi@eng.ui.ac.ir



6TH INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 1 June 2021

Title: Microwave Satellite Soil Moisture Retrieval: Techniques and Applications

Speaker: Assis. Prof. Prashant K. Srivastava, Banaras Hindu University, India

Host: Dr. Mina Moradizadeh, Faculty of CET, University of Isfahan

Abstract:

The accurate estimation of soil moisture in the top Earth's surface is very important for understanding the terrestrial water cycle and land surface fluxes. It is an important variable for various applications such as in agriculture, water resource management, weather and climate, land trafficability, flood monitoring, drought assessment etc. In this work, the state of the art radiative transfer models as well as machine learning algorithms will be presented for soil moisture retrieval using active and passive microwave datasets. Several case studies will be also provided to understand the possible applications of soil moisture in different fields.

7TH INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 2 June 2021

Title: Investment Analysis for Construction Project

Speaker: Assoc. Prof. Christiono Utomo, Sepuluh Nopember Institute of Technology (ITS), Indonesia

Host: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

Abstract:

Project investment is a series of processes that aim to obtain economic benefits from financial resources by investing in land, buildings, equipment, and other capital assets to produce products, goods and services with the aim of maximizing economic benefits during the life of the investment. Calculation of economic feasibility must be done in each project plan, which includes the determination of capital expenditure, operational expenditure, source of funds, rate of return, investment period, residual value and terminal value. Capital budgeting is the analysis tool. The first stage is to obtain investment alternatives through eligibility criteria, both in the form of NPV, IRR, Payback Period, and Profitability Index, then the second stage is to make a comparative analysis of alternatives using incremental analysis for mutually exclusive projects. A good alternative selection analysis will avoid the opportunity loss of project investment. Case studies in an LNG regasification & storage project, and a Light Rail Transit project will be presented.

8TH INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 3 June 2021

Title: Architectural Objects in Islamic Illustrated Manuscripts

Speaker: Assoc. Prof. Betül Bilgin, Fatih Sultan Mehmet Vakif University, Turkey

Host: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

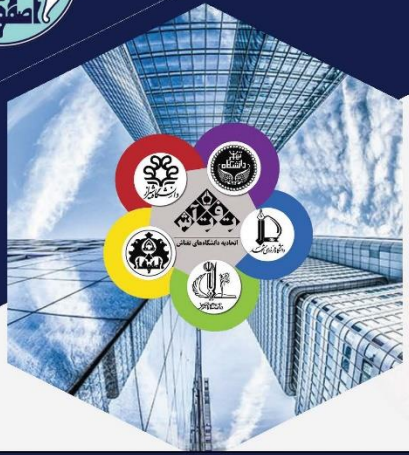
Abstract:

As well as works of art, miniatures are also significant since they architecture carry the quality of being documents for architecture and many other disciplines, and they can be used in restorations as well as sustainable architectural works. This study includes architectural elements through miniatures from different periods. In this context the importance of miniatures as architectural documents will be determined and evaluated.



Consortium of Top Iranian Comprehensive Universities (Taftash)

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IRAN



International Scientific Cooperation Office

Faculty of Civil Engineering and Transportation

3rd International Webinar and 2nd TAFTASH Webinar

1. Microwave Satellite Soil Moisture Retrieval: Techniques and Applications
Prashant K Srivastava
Assistant Professor, Banaras Hindu University, India

2. Investment Analysis for Construction Project
Christiono Utomo
Associate Professor, Institut Teknologi Sepuluh Nopember, Indonesia

3. Architectural Objects In Islamic Illustrated Manuscripts (In Turkish with Persian translation)
Betül Bilgin
Associate Professor, Fatih Sultan Mehmet Vakif University, Turkey





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Schedule (Iran time (UTC+4:30))

1. 01 June 2021, 17 to 19
<https://meeting.ui.ac.ir/ch/cet>
2. 02 June 2021, 18 to 20
<https://meeting.ui.ac.ir/ch/cet1>
3. 03 June 2021, 18 to 20
<https://meeting.ui.ac.ir/ch/cet3>

Fill in the relevant form to receive the certificate:

1. <https://forms.gle/wCzAUyxpwrVtKn8>
2. <https://forms.gle/ZgeemBsiY9GPFQVQA>
3. <https://forms.gle/EHoJ1kVLMrdkT3dS6>



9TH INTERNATION WEBINAR

BASIC INFORMATION

Date: 18 October 2021

Title: Railway Industry and Rail Transportation in Turkey

Speaker: Dr. Ing. Mehmet Emin Akay, Head of Rail Systems Engineering, Karabük University, Faculty of Engineering, Karabük, Turkey

Host: Dr. Mohammad Emad Motieyan Najar, Faculty of CET, University of Isfahan

Abstract:

This online event features on Railway Industry In turkey and Rail Transportation facts and figures in Turkey. The topics are including high speed railway, traditional and innovative transportation funding and finance. It will focus on Investments, Manufacturing of railway industry in local and global level. attendee will get more about the Karabuk University railway research and with industry agreements or cooperation. It can be pointed to the following:

- UNIKA – TCDD (Turkish State Railways) Agreement,
- UNIKA – KARDEMİR IRON & STEEL Co. Agreement, Karabük,
- UNIKA – CRRC & MNG Agreement (Urban rail vehicles manufacturing investment as Turkish – Chinese Joint Venture, Ankara),
- UNIKA – TÜDEMSAŞ (Turkish Wagon Manufacturing Co., Sivas). Agreement
- Iron & Steel Institute of UNIKA : tests, references laboratoy services, etc.

10TH INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 19 October 2021

Title: The Logic of Seismic Design of Reinforced Concrete Buildings in Europe

Speaker: Prof. Elissavet Vintzilaiou, School of Civil Engineering, National Technical University of Athens, Greece

Host: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

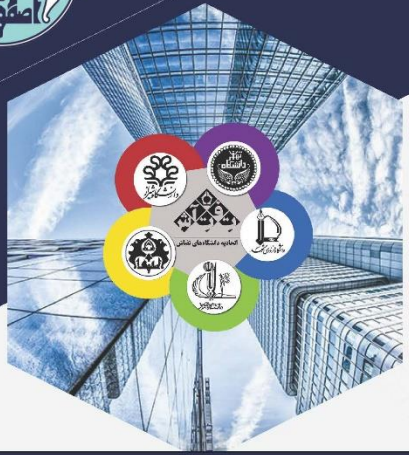
Abstract:

The uncertainties related to the phenomenon of earthquakes, as well as those depending on the properties of buildings are briefly presented. The basic principles, the criteria and the application rules adopted by Eurocode 8 to face the uncertainties are presented and explained. The presentation focuses on some of the major application rules, namely, the ductility (the need for ductility, the parameters on which this property depends, the ways to ensure it), the hierarchy of resistances (beams to fail before columns, avoidance of shear failures, etc.), the conceptual design of buildings and the effect of masonry enclosures on the seismic behaviour. Structural detailing for principal structural members.



Consortium of Top Iranian Comprehensive Universities (Taftash)

University of Isfahan
IRAN



International Scientific Cooperation Office

Faculty of Civil Engineering and Transportation

4th International Webinar and 3rd TAFTASH Webinar

1. Railway Industry and Rail Transportation in Turkey
Mehmet Emin Akay
 Head of Rail Systems Engineering, Karabük University, Turkey
Moderator: Dr. Mohammad Emad Motieyan

2. The Logic of Seismic Design of Reinforced Concrete Buildings in Europe
Elissavet Vintzilaïou
 Professor, National Technical University of Athens, Greece
Moderator: Dr. Mehrdad Hejazi




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Schedule (Iran time (UTC+3:30))

- 18 October 2021, 14:30 to 16
<https://meeting.ui.ac.ir/ch/webinar1>
- 19 October 2021, 18 to 20
<https://meeting.ui.ac.ir/ch/webinar2>

Fill in the relevant form to receive the certificate:

- <https://forms.gle/NmbukiKy9Tj7hKSc7>
- <https://forms.gle/xQbQmKHEEMg9JzrG6>



11TH INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 11 December 2021

Title: Drought Concepts and Modeling

Speaker: Dr. Ashok Mishra, Department of Civil Engineering, Clemson University, USA

Host: Dr. Mohammadali Alijanian, Faculty of CET, University of Isfahan

Abstract:

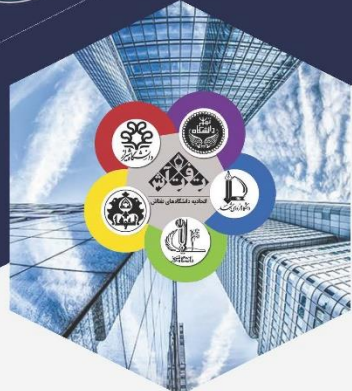
Hydroclimatic extreme events have a significant impact on civil infrastructure systems, water security, environment, the economy, and human life. Therefore, quantifying these extreme events is vitally important for creating responsible policies to maintain civil infrastructure systems and the ecological and economic health of a region. One such extreme event is drought, which is the most complex but least understood of all natural (environmental) hazards, with an immediate and serious threat to water security, food, energy, and infrastructure nationwide that regularly impacts the lives of millions of people. I will present different concepts of droughts and methodologies used for drought modelling, including drought forecasting, probability-based modelling, Spatio-temporal analysis, use of Global Climate Models (GCMs) for drought scenarios, land data assimilation systems for drought modelling, and drought planning. Besides, I will highlight and related emerging topics related to drought research. Drought-related research is vital as persistent drought could force foundational changes in the way communities use and live on the land, for example, with water-intensive industries potentially relocating and agricultural production shifting to other regions.



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**5th International Webinar and
4rd TAFTASH Webinar
in Honor of Research Week**

•Drought Concepts and Modeling

Dr. Ashok Mishra

Associate Professor

Glenn Department of Civil Engineering

University of Clemson, South Carolina, US

Associate Editor of Journal of Hydrologic Engineering, ASCE (2018-)

Associate Editor of Journal of Hydrology (2015-).

Associate Editor of SERRA (2014 -).

Associate Editor of Open Water Journal (2017 -).



Moderator: Dr. Mohammadali Alijanian

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No registration is needed

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int-office@cet.ui.ac.ir

Schedule (Iran time (UTC+3:30))

11 December 2021, 17 to 19

<https://meeting.ui.ac.ir/ch/drought>

Fill in the relevant form to receive the certificate:

<https://forms.gle/qbZuiZpWUVupS45PA>

12TH INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 16 February 2022

Title: GNSS Remote Sensing at GFZ: Overview and Recent Results

Speaker: Prof. Dr. Jens Wickert, GFZ German Research Center, Potsdam, Germany

Host: Dr. Jamal Asgari, Faculty of CET, University of Isfahan

Abstract:

During the recent two decades ground- and satellite-based GNSS remote sensing (GNSS-RS) methods evolved into a versatile and powerful tool for Earth system research on different spatio-temporal scales with operational applications. Large regional and global GNSS ground networks and numerous space-borne receivers provide unique neutral atmospheric/ionospheric data and observations of the Earth's surface. One of the pioneering institutions for these developments is the German Research Centre for Geosciences GFZ at Potsdam. We briefly review recent GFZ developments in GNSS remote sensing.



Dr. Jens Wickert

Professor
GFZ German Research Center, Potsdam, Germany

GNSS Remote Sensing at GFZ

Overview and Recent Results



Moderator: Dr. Jamal Asgari
Associate Professor
Department of Surveying and Geomatics Engineering
University of Isfahan, Isfahan, Iran



Schedule (Iran time (UTC+3:30))

16 February 2022 , 12:00 to 14:00



No registration is needed, enter as a guest in:

<https://meeting.ui.ac.ir/ch/webinar>



Fill in the relevant form to receive the certificate:

<https://forms.gle/hxhzKyLeLyEsspiD6>



13TH INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 16 April 2022

Title: Structural Response of Arched Masonry Structures: Experimental and Numerical Experiences

Speaker: Assoc. Prof. Dr. Chiara Calderini, Department of Civil, Chemical and Environmental Engineering, University of Genoa, Italy

Host: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

Abstract:

Arches and vaults are relevant structural elements in historic buildings. The assessment of their structural performance and safety is a key point to preserve them and to protect people using them. However, the description of their structural behavior is quite challenging due to the non-linear nature of the material and their articulated geometries and masonry patterns.

In this seminar, a set of experiences carried out on arches and vaults in the framework of the protection of cultural heritage is presented. Particular attention is given to the actions produced by earthquakes and landslides. The response to seismic actions is studied by two different case studies: the response of an arch with tie-rods and the response of a cross vault. The response to foundation displacements produced by landslides is studied by considering an arch with inclined displacements at one support and different types of vaults. In all cases, both numerical and experimental analyses are presented.

The different experiences presented highlight the role of the key constructive factors (as the presence of tie-rods and the masonry pattern), as well as the role of the nature of the actions acting on them. In particular, the displacement demand and the displacement capacity of such arched structures resulted a relevant element for the assessment of their safety.

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 Hosted by TAFTASH Consortium of Top Iranian Comprehensive Universities

7th International Webinar and 6th TAFTASH Webinar



***Innovative Monitoring, Experimental and Numerical Experiences
 for Maintenance Management of Masonry Structures***

1st Speaker
Dr. Chiara Calderini
 Associate Professor
 Department of CCEE, University of Genoa, Italy

**Structural Response of
 Arched Masonry Structures**
 Experimental and Numerical Experiences

Moderator: Dr. Mehrdad Hejazi
 Department of Civil Engineering
 University of Isfahan, Isfahan, Iran

 Schedule (Iran time (UTC+4:30))
 26 April 2022, 16:00-18:00

☒ No registration is needed, enter as a guest in:
<https://meeting.ui.ac.ir/ch/ui2022-1>

☒ Fill in the relevant form to receive the certificate:
<https://forms.gle/rYYMRpGpxfr9WbAj9>



14TH INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 31 May 2022

Title: Long-Term Earthquake Response Monitoring of Nineteenth-Century Timber Temple in Japan

Speaker: Prof. Dr. Kaori Fujita, Department of Architecture, School of Engineering, The University of Tokyo

Host: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

Abstract:

Effective use of historic architecture is of high social demand in Japan today, and it is essential to secure their structural safety. Research on the structural performance of historic timber structures have increased largely since the latter half of 1990s.

In order to clarify the structural performance of historic architectural heritage, including the influence of time and exterior force, non-destructive vibration measurement is of high interest. The most classical method is the ambient vibration test (micro tremor measurement), which has been operated on timber structures in Japan since the 1920's. Recently due to the development in affordable sensors and devices, various studies relating to damage identification based on earthquake monitoring is increasing, but examples of long term measurement on timber architecture are still scarce.

In this presentation, examples of earthquake monitoring on historic timber architecture, Kencho-ji temple in Japan, which the authors have been operating for over 10 years, are introduced. The performance in the elastic range including micro vibration, dependence on time, deformation and climate are introduced. Finally the application of structural health monitoring on timber structures are discussed.

15TH INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 31 May 2022

Title: Seismic Performance of Precast & Prefabricated Systems

Speaker: Prof. Thomas Kang, Department of Architecture and Architectural Engineering, College of Engineering, Director for Engineering Education Innovation Center & GECE (Global Education Center for Engineers), Seoul National University, South Korea

Host: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

Abstract:

In this webinar, a few novel precast concrete (PC) and prefabricated systems will be introduced, including PC column-to-column and wall-to-wall connections, pre-fabricated steel coupling beam-PC wall connections, PC moment frames with bolted connections, and PC modular system with no emulated connections.

Particularly, a new coupling beam system is developed that consists of a wide-flange steel coupling beam, embedded steel beams, top-seat angles, embedded nuts and high-tension bolts. The developed coupling beam system was experimentally verified using reversed cyclic tests of half-scale specimens, which will be discussed in the webinar, along with a design equation for minimum embedment length of the steel section derived to promote the development of the nominal shear strength of a steel coupling beam and a design equation for the nominal shear strength for other cases.

As a part of the PC modular system, the use of a self-supporting precast concrete (SSPC) system is proposed using clamped headed bars. The system provides structural safety and serviceability without use of temporary bracing or guying during construction as well as in post construction. To verify proposed system performance, material tests, mock-up tests, quasi-static push-over and cyclic tests and vibration tests were performed. Additionally, analytical studies for

temporary installation and completed states were carried out in comparison with the experimental results.

The developed systems will be useful for both low-rise and high-rise constructions, minimizing the construction time and cost. Excellent seismic performance of the said systems has also been verified.

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8th International Webinar and 7th TAFTASH Webinar
1st Day



***Seismic Performance, Innovative Monitoring,
and Maintenance of Structures***

1st Speaker
Dr. Kaori Fujita
 Professor
 Department of Architecture, The University of Tokyo, Japan

**Long-Term Earthquake Response
Monitoring of Nineteenth-Century
Timber Temple in Japan**



Moderator: Dr. Mehrdad Hejazi
 Associate Professor
 Department of Civil Engineering
 University of Isfahan, Isfahan, Iran

 Schedule (Iran time (UTC+4:30))
 Tuesday 31 May 2022, 11:00-12:30

☒ No registration is needed, enter as a guest in:
<https://meeting.ui.ac.ir/ch/ui-101>

☒ Fill in the relevant form to receive the certificate:
<https://forms.gle/ro7mu6Ae1e7mxFKk7>





2nd Speaker
Dr. Thomas Kang
 Professor
 Department of Architecture and Architectural Engineering
 Seoul National University, South Korea

**Seismic Performance of Precast
and Prefabricated Systems**

Moderator: Dr. Mehrdad Hejazi
 Associate Professor
 Department of Civil Engineering
 University of Isfahan, Isfahan, Iran



 Schedule (Iran time (UTC+4:30))
 Tuesday 31 May 2022, 16:00-18:00

☒ No registration is needed, enter as a guest in:
<https://meeting.ui.ac.ir/ch/ui-102>

☒ Fill in the relevant form to receive the certificate:
<https://forms.gle/qA7S4SixcatynRfb6>

16TH INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 1 June 2022

Title: Maintenance Management of Monuments by Use of Innovative Monitoring Technologies

Speaker: Prof. Dr. Luigi Petti, Faculty of Civil Engineering of the University of Salerno, Italy

Host: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

Abstract:

The relevance of knowledge, monitoring, and maintenance of cultural heritage in areas exposed to natural risks is clearly stated by national and international organizations (like UNESCO) to preserve cultural properties. As well known the need to preserve the authenticity, meaning, physical properties, as well as documentary value, signs of time, and the transformations of the materials, requires a not trivial approach. The safety assessment approaches and methods used for ordinary architectonical structures are almost always not suitable to investigate the behaviour of historical monuments, which is why it is necessary to refer to the past experiences and/or results of experimental studies. Therefore, in this context, monitoring the actual safety conditions and their time evolution by innovative technologies represents a unique opportunity.

The lesson will illustrate some applications to relevant monuments in southern Italy like the Temple of Neptune in Paestum and the Trajan Arch in Benevento. In both cases of study, a monitoring network has been used to allow real-time dynamic assessment of the response induced by natural and anthropic sources. In particular, by using innovative seismometers (UNISA FOLDED PENDULUM), developed and patented at the University of Salerno, mechanical properties and building technologies have been investigated in the case of the Trajan Arch, while dynamical behaviour is currently monitored at Paestum for the Temple of Neptune.

University of Isfahan, Isfahan, Iran
 Faculty of Civil Engineering and Transportation
 International Scientific Cooperation Office, int-office@cet.ui.ac.ir
 Hosted by TAFTASH Consortium of Top Iranian Comprehensive Universities

8th International Webinar and 7th TAFTASH Webinar
2nd Day



***Seismic Performance, Innovative Monitoring,
and Maintenance of Structures***

3rd Speaker
Dr. Luigi Petti
 Professor
 Faculty of Civil Eng., University of Salerno, Italy

**Maintenance Management of
Monuments by Innovative
Monitoring Technologies**

 **Moderator:** Dr. Mehrdad Hejazi
 Associate Professor
 Department of Civil Engineering
 University of Isfahan, Isfahan, Iran

 **Schedule** (Iran time (UTC+4:30))
 Wednesday 1 June 2022, 14:00-16:00

☒ No registration is needed, enter as a guest in:
<https://meeting.ui.ac.ir/ch/ui-103>

☒ Fill in the relevant form to receive the certificate:
<https://forms.gle/zLjre7zDSdBtgGy67>



17TH INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 6 June 2024

Title: Disaster Risk Management of Historical Buildings and Sites

Speaker: Prof. Mehrdad Hejazi, Faculty of Civil Engineering and Transportation, University of Isfahan, Iran.

Vice-President of ICOMOS ISCARSAH

Host: Prof. Arkadiusz Kwiecien, Faculty of Civil Engineering, Cracow University of Technology, Poland

Abstract:

This lecture presents an in-depth exploration of the principles and methodological foundations of Disaster Risk Management (DRM) for cultural heritage. The discussion begins by outlining the phases that frame the DRM cycle, emphasising the importance of structured action before, during, and after a disaster. Particular attention is given to the pre-disaster stage, where risk assessment forms the core of informed and effective heritage protection.

The lecture first examines the process of establishing and understanding the context, which includes defining the scope, goals, and assessment criteria; gathering and interpreting relevant data; and preparing essential tools such as zoning maps, information tables, tailored checklists, and questionnaires. This contextual groundwork provides the basis for the systematic identification of risks. Risk agents—ranging from physical forces and criminal activities to fire, water, pollutants, biological factors, and managerial shortcomings—are introduced, along with their associated individual risks. The distinction between catastrophic event risks and gradual cumulative risks is clarified to ensure a comprehensive appreciation of the threat spectrum.

The analytical component focuses on the ABC method, originally developed through international collaboration among ICCROM, the Canadian Conservation Institute, and the

Netherlands Cultural Heritage Agency. The lecture also introduces its expanded version, adapted for multi-building heritage complexes. Following analysis, the evaluation of risks is discussed through the concepts of magnitude, priority levels, and the use of MR Priority Graphs. Strategies for risk treatment are then presented, framed through the six layers of enclosure, the five stages of control, and the principles for selecting and implementing appropriate measures. The importance of monitoring and ongoing review is highlighted as an integral part of the DRM cycle, ensuring that plans remain effective, relevant, and responsive to change.

Cracow University of Technology
Cracow, Poland
Faculty of Civil Engineering



University of Isfahan
Isfahan, Iran
Faculty of Civil Engineering and Transportation

9th International Hybrid Seminar (Speech 17)

Poland & Iran Seminar

۹^{امین} سمینار (حضور در لهستان و آنلاین در ایران) بین المللی (سخنرانی ۱۷)
سمینار مشترک لهستان و ایران (دانشگاه اصفهان)

Disaster Risk Management of Historical Buildings and Sites مدیریت خطر بحران محوطه‌ها و بناهای تاریخی

Speaker:

Dr. Mehrdad Hejazi

Faculty of Civil Engineering and Transportation
University of Isfahan, Iran
Vice-President of ICOMOS ISCARSAH



سخنران:

دکتر مهرداد حجازی

دانشکده مهندسی عمران و حمل و نقل، دانشگاه اصفهان، ایران
نایب رئیس ایسکارسا (ایکوموس جهانی)

Moderator:

Prof. Arkadiusz Kwiecien

Faculty of Civil Engineering
Cracow University of Technology, Poland
دانشکده مهندسی عمران، دانشگاه کراکو، لهستان

مدیر جلسه:

دکتر آرکادیوس کویچین



**Schedule (Poland time
(GMT+2:00)(Iran time GMT+3:30)**

Thursday 6 June 2024, Poland 11:00-12:30, Iran 12:30-14:00

پنجشنبه ۱۷ خرداد ۱۴۰۳ ساعت ۱۲:۳۰ تا ۱۴:۰۰ به وقت ایران

Address: Center for Research Excellence, Cracow University of Technology,
Warszawska 24, 31-155 Cracow, POLAND

آدرس محل برگزاری: قطب پژوهش، دانشگاه کراکو، کراکو، لهستان

Link for the seminar:

لینک سمینار به صورت آنلاین:

https://teams.microsoft.com/l/meetup-join/19%3ameeting_NjMwMzNjMWEtOTMlNy00OWUyLTk1YTUuMTBIYWRmMTc4MWIw%40thread.v2/0?context=%7b%22Tid%22%3a%225cf2acf2-acb4-4f1d-8076-6eda3f181eed%22%2c%22Oid%22%3a%22df0e6966-51da-46c1-9397-b961e0907720%22%7d

18TH INTERNATION WEBINAR

BASIC INFORMATION

Date: 5 April 2025

Title: Developing a Business Model Canvas

Speaker: Assoc. Prof. Akhmad Yusuf Zuhdy, Faculty of Vocation, Civil Infrastructure Engineering Department, Sepuluh Nopember Institute of Technology (ITS), Indonesia

Host: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

Abstract:

The Business Model Canvas (BMC) is a strategic management tool that enables organizations to design, analyze, and innovate their business models effectively. This framework comprises nine key building blocks: Customer Segments, Value Propositions, Channels, Customer Relationships, Revenue Streams, Key Resources, Key Activities, Key Partnerships, and Cost Structure. Each element interconnects to provide a holistic view of how a business creates, delivers, and captures value.

The development process involves identifying and refining these components to align with market demands, organizational capabilities, and competitive dynamics. By visualizing the business model on a single canvas, organizations can uncover inefficiencies, discover growth opportunities, and adapt to changing environments more efficiently.

This paper discusses the theoretical foundations, practical applications, and iterative development process of the BMC. It also highlights its utility for startups and established enterprises in fostering innovation, improving strategic planning, and achieving long-term sustainability. Case studies and real-world applications illustrate its relevance across diverse industries.

In conclusion, the Business Model Canvas serves as a versatile and user-friendly tool for driving business success in an increasingly complex and competitive marketplace.

University of Isfahan
Isfahan, Iran



Faculty of Civil Engineering and Transportation
int-office@cet.ui.ac.ir

Sepuluh Nopember Institute of Technology (ITS)
Surabaya, Indonesia
Faculty of Vocation
Civil Infrastructure Engineering Department



University of Isfahan
International Scientific Cooperation Office

18th International Webinar
Iran & Indonesia Joint Webinar

Developing a Business Model Canvas

Speaker:

Assoc. Prof. Akhmad Yusuf Zuhdy

Faculty of Vocation

Civil Infrastructure Engineering Department

Sepuluh Nopember Institute of Technology (ITS), Indonesia



Moderator:

Dr. Mehrad Hejazi

Faculty of Civil Engineering and Transportation

University of Isfahan, Iran



Schedule (Iran time (GMT+3:30)(Surabaya time GMT+7:00))

Monday 5 May 2025, Iran 16:00, Indonesia (Surabaya) 19:30, Paris 14:30

Link for the webinar:

<https://meet.google.com/fyi-yqkr-dji>

Email your personal information to int-office@cet.ui.ac.ir to receive the **certificate**.

19TH INTERNATION WEBINAR

BASIC INFORMATION

Date: 7 May 2025

Title: Revisiting Hyperspectral Remote Sensing Techniques and Applications

Speaker: Assist. Prof. Prashant Srivistava, Department of Environment and Sustainable Development, Banaras Hindu University, India

Hosts: Dr. Mina Moradizadeh & Dr. Farid Cheraghi, Faculty of CET, University of Isfahan

Abstract:

Recent advances in hyperspectral remote sensing have opened new frontiers for precise retrieval of vegetation biophysical parameters, land cover and aquatic environmental indicators. By leveraging multi-platform hyperspectral datasets, including UAV-mounted visible/infrared sensors, airborne AVIRIS-NG imagery, and Sentinel-2 satellite data, the hyperspectral remote sensing can provide accurate estimation of plant parameters, soil surface, dedicated indices for vegetation health and water quality parameters. For hyperspectral data analysis, machine learning techniques can be combined with the radiative transfer modeling and advanced signal processing methods—such as feature selection, wavelet decomposition, and denoising algorithms—to optimize retrieval performance. Sensitivity analyses are employed to identify spectrally significant bands from high volume hyperspectral datasets, leading to the development of robust models resilient to noise and adaptable across ecosystems. Application domains range from high-resolution biophysical and biochemical parameters mapping, water quality estimation, crop and forest type mapping, atmospheric parameters, land cover analysis etc. Collectively, hyperspectral remote sensing, provide scalable and reliable solutions for precision agriculture, forest ecosystem monitoring, and global environmental assessment.

University of Isfahan
Isfahan, Iran

Faculty of Civil Engineering and Transportation
int-office@cet.ui.ac.ir



Banaras Hindu University
Varanasi, India
Department of Environment and
Sustainable Development



University of Isfahan
International Scientific Cooperation Office

19th International Webinar Iran & India Joint Webinar

Revisiting hyperspectral remote sensing techniques and applications

Speaker:

Asst. Prof. Prashant Srivastava

Department of Environment and Sustainable Development
Banaras Hindu University, India



Moderators:

Dr. Farid Cheraghi, Dr. Mina Moradizadeh

Faculty of Civil Engineering and Transportation
University of Isfahan, Iran



Schedule (Iran time (GMT+3:30)(New Delhi time GMT+5:30))

Wednesday 7 May 2025, Iran 11:30, India (New Delhi) 13:30

Link for the webinar:

<https://meet.google.com/cxo-tmgy-msv>

To register and receive a **certificate** of participation in the webinar, please fill this form: <https://forms.gle/ctbxriJDn3VNiR7v6>

20TH INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 26 May 2025

Title: Road Construction Projects: The Reciprocal Relationship of Environment and Resilience

Speaker: Dr.-Ing. Milad Zamanifar, UNOPS scientific advisor- Senior Lecturer at Bauhaus Universität Weimar

Hosts: Dr. Ahmad Goli, Faculty of CET, University of Isfahan

Abstract:

Road infrastructure both affects and is affected by its environment. Traditional engineering metrics and methods are no longer sufficient to meet the sociotechnical demands of modern infrastructure. As a result, understanding the two-way relationship between road construction decisions and environmental changes has become a critical research priority. This talk will explore the challenges, key debates, and future directions for developing resilient, sustainable road systems that minimize ecological impact while adapting to environmental stressors.

University of Isfahan
Isfahan, Iran



Faculty of Civil Engineering and Transportation
int-office@cet.ui.ac.ir

Bauhaus-Universität Weimar
Weimar, Germany



Faculty of Civil and Environmental Engineering

University of Isfahan, International Scientific Cooperation Office

20th International Webinar

Iran (University of Isfahan) & Germany (Bauhaus-Universität Weimar) Joint Webinar

Road construction projects: The reciprocal relationship of environment and resilience

Speaker:

Dr.-Ing. Milad Zamanifar

Faculty of Civil and Environmental Engineering
Bauhaus-Universität Weimar
Weimar, Germany



Moderator:

Dr. Ahmad Goli

Faculty of Civil Engineering and Transportation
University of Isfahan, Iran



Schedule (Iran time (GMT+3:30) (Germany time GMT+2:00))

Monday 26 May 2025, Iran 11:30 am, Germany 10:00 am

Link for the webinar:

<https://meet.google.com/myd-pkem-tob>

To register and receive a **certificate** of participation in the webinar, please fill this form and enter with **full name** in the webinar link:

<https://forms.gle/nhpRqWUwxUCCd4uv6>

21ST INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 31 March 2021

Title: Traditional Construction Techniques in Persia to Mitigate Earthquake Effects: Persepolis

Speaker: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

Host: Prof. Tim Michiels, ICOMOS-ISCARSAH (International Scientific Committee on the Analysis and Restoration of Structures of Architectural Heritage)

Abstract:

Achaemenid architecture dominated the architecture of the whole of Western Asia from the Nile to the Oxus and from the Aegean to the Ganges from 560 to 330 B.C. The use of a huge platform as the substructure and numerous tall stone or wooden columns supporting the wooden roof, which is reflected in Pasargadae, Susa and Persepolis, is the main architectural and structural characteristic of Achaemenid architecture.

Persepolis, one the most magnificent complexes of Persia, was founded against a mountain on a platform of 275 m by 460 m, surrounded by a retaining wall of 12 to 18 m high made of masonry blocks. Blocks were bound with iron clamps without mortar and some were 15 m long and weighed 30 tonnes. In comparison with the Egyptian and Babylonian monuments, the columns in Persepolis were more slender and placed further apart whilst bearing the same load.

Various measures were taken to prolong the lifetime of the whole site against different possible causes of damage. The very high quality of stonework was performed in Achaemenid architecture. Blocks were finely cut and joining surfaces were polished to secure close contact and stability. Cuttings were made in the surface of blocks for the understanding of the setting work. Then the blocks were laid in position, without any use of mortar, and were held by metal links and attachments (clamps of iron and lead) bonding them. Clamps were bars of iron or bronze with both ends bent down like hooks. They were inserted in vertical holes in the bottom

of the clamp-cutting in the surface of blocks. Cuttings were sealed with molten lead. Lead had the effect on neutralising the stresses due to uneven cooling and shrinking. When stones to be bonded could not be secured horizontally, such as for column drums and parapets, wood or metal dowels were used. A special technique was used for the foundation, i.e. it was made of stone blocks connected with iron and lead clamps. The foundation was placed on a layer of sand in order to reduce the transmission of earthquake acceleration from the ground to the upper structure.

In this webinar, specific construction techniques in Persepolis with an emphasis on earthquake mitigation is explained.



Iscarsah
International Scientific Committee on the Analysis and
Restoration of Structures of Architectural Heritage



Earthquakes and Traditional Construction (Part 2)

Traditional structures located in earthquake regions have seismic mitigation strategies as part of their original construction or past repair - knowledge gained from centuries of trial and error. Modern engineered retrofit solutions must navigate modern and traditional methods and materials. Excessive strengthening may have unintended effects that may harm a building's seismic resilience. How does one balance empirical and numerical methods for evaluation and seismic retrofit? The **International Scientific Committee on the Analysis and Restoration of Structures of Architectural Heritage (ISCARSAH)** hosts an inter-ISC discussion on understanding traditional technology and craftsmanship with case studies where contemporary interventions can be informed by knowledge, skills and experience from traditional construction. This is the second of an **ISCARSAH-hosted webinar** series focused on this and other critical topics of international cultural heritage preservation.

The recording of **Part 1** is on youtube: https://youtu.be/cBAAF_8jxd4

Webinar Time: Wednesday, March 31st, 2021 - 14:00-16:00 GMT/UTC (15:00-17:00 Paris)



Discussion Moderator

Tim Michiels

PhD, Structural Engineer and Professor (New York, USA)



1) A tale of two regions: Haiti and Bhutan

Stephen J. Kelley

Architect and Engineer FAIA (USA, Haiti & Bhutan)



3) Some lessons on the conservation of the Architectural Heritage derived from the earthquakes of September 2017 in Mexico

Fernando Peña Mondragón

Professor and Engineer (Mexico)



5) Insights on Earthquake Resilience of Vernacular Masonry Buildings along the Himalayan Arc

Jitendra Bothara

Structural Engineer (Nepal & New Zealand)



2) Traditional construction techniques in Persia to mitigate earthquake effects: Persepolis

Mehrdad Hejazi

Professor and Engineer (Iran)



4) Earthquake-resistant techniques from ancient time to the 19th century in the Maghreb Region (Algeria-Tunisia and Morocco)

Amina Foufa

Professor and Architect (Algeria)

22ND INTERNATION WEBINAR

BASIC INFORMATION

Date: 9 June 2022

Title: Nano Technology in Construction

Speaker: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

Host: Dr. Yusuf Zuhdy, Sepuluh Nopember Institute of Technology (ITS), Indonesia

Abstract:

Nano technology is concerned with materials and other phenomena and their usage and control in dimensions below 100 nanometres. During last two decades, nano technology has played an innovative and important role in the construction section. The results have been improvement in durability, performance and strength of construction elements. In the field of civil engineering, construction materials such as cement, concrete and steel have benefitted much from nano materials. The result has been stronger, more durable, self-healing, air purifying, easy to clean, water proofing, and fire-resistant materials.

In this speech, an introduction to nano technology and nano materials and their applications in different fields, with an emphasis on the application of nano technology in construction sector will be presented. Examples include cement, concrete, steel, ceramic tiles, glass, wood, and application in restoration of historical objects.



WEBINAR #7 2022 SERIES DTIS

**Civil Infrastructure Engineering Department
Vocational Faculty - Insitut Teknologi Sepuluh Nopember (ITS)**

Nano Technology in Construction

Speaker



Mehrdad Hejazi

Associate Professor in Structural Engineering
Department of Civil Engineering, Faculty of Civil
Engineering and Transportation, University of
Isfahan, Isfahan, Iran

Moderator



A. Yusuf Zuhdy

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**Thursday, June 9, 2022
01.00 - 03.00 PM WIB
Via Zoom Meeting**

Registration

<https://intip.in/Webinar7LMPKDTIS>

Registration will be closed on Monday, June 8, 2022 at 07.00 PM WIB.
zoom link will be sent to e-mail after the registration closed.

CONTACT PERSON
Ninda Hayyu - 0817 0365 4547

23RD INTERNATION WEBINAR

BASIC INFORMATION

Date: 5 April 2025

Title: Some Comments on HIA in West Asia

Speaker: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

Host: Dr. Kai Weise, ICOMOS Asia Pacific Regional Network (ICOMOS Malaysia)

Abstract:

This paper presents some comments on Heritage Impact Assessment (HIA) in West Asia, with a particular focus on the main risk categories affecting cultural heritage in the region. These include economic risks related to development pressures, social risks arising from changing urban and community dynamics, and institutional weakness risks that may limit effective heritage protection and management. The discussion is illustrated through an HIA example from urban development in Iran, focusing on the UNESCO-listed Jami Mosque in Isfahan. In this case, two major interventions are considered: the reconstruction of Atiq Square and the construction of an underground metro line. The paper highlights how such developments may influence the heritage values, physical integrity, and surrounding urban context of the site. Finally, the study argues that HIA can be made more effective by incorporating it into Disaster Risk Management Planning (DRMP), thereby strengthening preventive planning, improving coordination, and supporting more sustainable decision-making for heritage conservation in West Asia.

HERITAGE IMPACT ASSESSMENT (HIA): ISSUES & CHALLENGES IN ASIA PACIFIC REGION PANEL DISCUSSION

Panelists :



Ms. Tina Paterno
ICOMOS Philippines



Dr. Jihon Kim
ICOMOS Korea



Dr. Jane Harrington
ICOMOS Australia



Ms. Poonam Trambadia
ICOMOS India



Kai Weise, PhD
ICOMOS Nepal

Moderator :



Mr. Soehardi Hartono
ICOMOS Indonesia

Scan The QR Code
to **REGISTER**



bit.ly/HIA-PanelDiscussion

Date and Time :

Saturday, April 5th, 2025
12:00 PM - KL Time (GMT +8)

Organizer :

ICOMOS
Asia Pacific Regional Network

Zoom Platform hosted by

ICOMOS Malaysia

5 APR 2025

24TH INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 11 April 2026

Title: Heritage Destruction in Iran

Speaker: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

Host: Dr. Kai Weise, ICOMOS Asia Pacific Regional Network (ICOMOS Malaysia)

Abstract:

Heritage destruction in Iran has emerged as a critical concern due to armed conflict in 2026. The recent wave of damage has affected a broad range of cultural assets, including historic monuments, museums, sacred buildings, and urban heritage fabrics. The destruction has not been limited to structural failure alone, but has also included the loss of decorative elements, interior finishes, historic materials, and the spatial integrity of heritage settings. In many cases, fragile components such as frescoes, mirror-work, stucco, wood, and traditional masonry have suffered irreversible harm. The concentration of damage in major cities and historic cores demonstrates that heritage loss is shaped by both exposure and intrinsic vulnerability under conflict conditions. Beyond the physical consequences, such destruction weakens collective memory, cultural continuity, and the identity of historic places. This paper argues that heritage destruction in Iran should be understood as a layered process in which armed conflict directly triggers physical, spatial, and cultural loss. It further emphasizes the need for preventive planning, documentation, and risk-informed conservation strategies to reduce future losses.

ICOMOS Asia Pacific Regional Network

19TH REGIONAL MEETING

Date: **Saturday 11th April 2026**

Time: **16:00 Sydney, (11:45 Kathmandu, 13:00 Jakarta, 14:00 Manila, 15:00 Seoul)**

Hosted by: **ICOMOS Malaysia**

Chaired by: **Susan McIntyre-Tamwoy**

	Topic	Presenter	Time
1	Welcome and update on relevant ICOMOS matters	Susan McIntyre-Tamwoy	5
2	Discussions on GA2026, Elections, Board Meeting		
2a	Updates on GA2026 AP contribution, promote registration, abstract submission by 30 April 2026	Faisal Abd Rahman / Kian Boon	15
2b	Update on Election Process (mention nominees for next meeting)	Susan McIntyre-Tamwoy	10
2c	Feedback from Board Meeting	Susan McIntyre-Tamwoy with Doo-Won, Takeyuki, Nupur	10
3	Heritage destruction in Iran	Mehrdad Hejazi	10
4	ICOMOS AP activities		
4a	HIA trainings Including plans for the GA	Soehardi Hartono and Caitlin Allen	10
4b	Plans for April 18 events	Anyone	5
4c	ICORP Publication Proposal presented to the Board	Takeyuki Okubo	5
4d	ICOMOS regional networking Improvements and succession planning	Tina Paterno and Kai Weise	10
5	Vote of thanks	Nupur Prothi	5
6	Closing statement And announcing next meeting	Susan McIntyre-Tamwoy (Australia/VP International)	5
			90

Please note: The time has been fixed at 90 minutes. The discussion might take a bit longer; however, the meeting will not go beyond 2 hours. To introduce additional discussion points or comments, approval of the meeting chair is required.

25TH INTERNATION WEBINAR

BASIC INFORMATION

Date: 30 April 2026

Title: From Geometry to Construction: Applied Geometric Knowledge in Persian Architectural Patterns

Speaker: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

Host: Prof. Betul Bilgin, Fatih Sultan Mehmet Vakıf University, Türkiye

Abstract:

This paper examines geometry in Persian architecture as a form of applied knowledge that enables design, construction, and spatial organisation, rather than as a purely symbolic or metaphysical system. Moving beyond interpretations that emphasise sacred or cosmological meanings, the study focuses on the operational role of geometric principles—such as proportion, modularity, and repetition—in the generation of architectural form and surface articulation.

Geometry is approached as a practical framework through which architects and craftsmen structured both the overall configuration of buildings and the detailed organisation of patterns. Basic geometric constructs, including the triangle, square, and hexagon, are shown to underpin two-dimensional tessellations that allow the systematic covering of surfaces. These systems are not merely decorative; they provide a rule-based method for scaling, continuity, and adaptability in architectural production.

The paper further investigates how proportional systems, including those associated with harmonic ratios and the Golden Ratio, contribute to the coherence between architectural elements, from overall massing to structural components. Through selected examples of Persian historical buildings, it is demonstrated that geometry governs not only visual order but

also construction logic and structural behaviour. In particular, geometric configurations are shown to influence material efficiency, jointing techniques, and the stability of structural forms such as domes and wooden assemblies.

By analysing geometric patterns as modular and repeatable systems, the study highlights the relationship between surface readability, density, and void. It argues that the ability to anticipate and construct such systems reflects a form of trained spatial cognition developed through practice-based knowledge transmission. Geometry, in this sense, operates as a cognitive and technical tool that links design intention with material execution.

The paper therefore positions Persian architecture within a broader understanding of geometry as a discipline rooted in making—where imagination is structured through measurable principles, and where architectural form emerges from the continuous application of geometric order.

International Webinar

FROM IMAGINATION TO SCIENCE: SOURCES OF GEOMETRY

**Fatih Sultan Mehmet Vakıf University, Ayasofya Campus, İstanbul, Türkiye, 30
April 2026**

This webinar aims to approach the origins of geometry not as a metaphysical or purely philosophical field of thought, but as a practical, verifiable, and repeatable body of knowledge that emerged from humanity's fundamental needs for measurement, calculation, and construction. The historical trajectory of geometric thinking is examined primarily through an application-based knowledge framework that made architectural and ornamental practices possible, rather than through abstract theoretical formulations.

Subtopics:

- Defining Geometry as a Field of Knowledge: Theory, Practice, and Measure
- Imagination and the Faculty of Imagination: Processes of Image Formation in Islamic Thought
- Geometric Thinking and Mental Discipline in the Nakkaş Tradition / The Geometric Theory of the Nakkaş
- The Evolution of the Master–Apprentice Relationship
- Module, Pattern, and Proportion: Structural Principles that Enable Form
- Void and Density: The Readability of the Surface and Geometric Continuity
- Conception Before the Surface: The Mental Construction of Spatial Composition
- The Interaction between Technical Knowledge and Creative Ability
- Interdisciplinary Perspectives: Architecture, Ornament, and Educational Practices

Presenters:

Prof. Dr. Selçuk MÜLAYİM (Chief Negotiator)

Prof. Dr. Hasan Fırat Diker

Prof. Dr. Mehrdad Hecazi

Dr. Burcu Bayer

Selçuk Artut

Dr. Richard P. McClary

26TH INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 21 May 2026

Title: Cultural Heritage Under Threat: Post-Blast Impact Analysis and Lessons (Iran, 2026)

Speaker: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

Host: Dr. Umut Almaç, ICOMOS Türkiye, Türkiye

Abstract:

Following the 2026 armed conflict, cultural heritage in Iran experienced widespread damage affecting monuments, museums, and historic urban contexts. Recent assessments indicate that more than 149 cultural and historical sites across 18 provinces were affected, together with 59 museums and 7 registered historical contexts. The damage was concentrated in major urban centres, especially Tehran and Isfahan, but also extended across several other provinces, showing a national pattern of vulnerability. Case studies reveal that blast overpressure, ground vibration, and debris impact produced different forms of structural, architectural, decorative, and contextual damage. Highly fragile elements such as mirror-work, frescoes, stucco, and historic joinery were especially vulnerable, while enclosed architectural volumes tended to suffer greater internal pressure effects. The findings show that conflict-related damage to heritage is a multi-layered process involving physical, spatial, and cultural loss. This study highlights the need to integrate spatial analysis, structural behaviour, and material vulnerability into disaster risk frameworks for more effective heritage protection.

IDMS Living Heritage at Risk in the Middle East: Insights from Conflict Zones

ICOMOS Türkiye 2026 - IDMS Event

WEBINAR

21 May 2026

19.30 - 21.30 (UTC+3)

Opening: Umut ALMAÇ (ICOMOS Türkiye)

Moderator: Zeynep Gül ÜNAL (ICOMOS Türkiye, ICOMOS ICORP)

Assaad SEIF (ICOMOS Lebanon)

From Continuity to Rupture: War's Impact on Living Heritage Systems in South Lebanon

Shireen ALLAN (former president of ICOMOS Palestine, 2021-2025)

Case studies from Palestine: Heritage Destruction, Governance Challenges, and Response Frameworks, Including Local and International Responses

Mehrdad HEJAZI (ICOMOS Iran)

Cultural Heritage Under Threat: Post-Blast Impact Analysis and Lessons (Iran, 2026)

Q&A Session



27TH INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 23 May 2026

Title: Expect the Unexpected: Post-Blast Impact Analysis and Emergency Lessons from the 2026 Conflict in Iran

Speaker: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

Host: Dr. Kai Weise, ICOMOS PANEL SERIES, Türkiye

Abstract:

Following the 2026 armed conflict, cultural heritage in Iran experienced widespread, multi-scalar damage affecting individual monuments, urban ensembles, and museum institutions. This presentation provides a consolidated assessment of the systemic vulnerability revealed during the crisis, where over 149 historical sites across 18 provinces were impacted.

The analysis focuses on the intersection between heritage density and exposure to conflict-related hazards, specifically blast overpressure and ground vibration. In major urban centres such as Tehran (61 sites) and Isfahan (23 sites), the spatial distribution of damage confirms that heritage loss is governed by proximity to blast sources, architectural configuration, and material vulnerability.

Through detailed case studies of UNESCO World Heritage sites, including Golestan Palace and Chehel Sutun, the presentation illustrates how "expected" structural behaviours were challenged by "unexpected" conflict conditions. Findings show that sealed architectural volumes experienced intensified internal pressure effects, while ventilated systems exhibited differentiated structural survival. Furthermore, the extreme sensitivity of decorative systems—mirror-work, frescoes, and historic joinery—to blast overpressure represents an irreversible cultural loss that standard disaster frameworks often overlook.

By categorising observed damage into structural, non-structural, decorative, and contextual groups, this study identifies blast overpressure as the dominant mechanism of failure in historic interiors. The findings underscore the urgent need to integrate blast-resilient strategies and multi-phase degradation analysis into international disaster risk management (DRM) frameworks for heritage protection in conflict zones.

ICOMOS PANEL SERIES Organized by ICOMOS ICORP Crisis Monitoring & Response Working Group “EXPECT THE UNEXPECTED: CONFLICTS” 23 May 2026 12:00 – 16:00 CET		
12:00	Welcome	Moderation KAI WEISE
12:05	Zeynep Gül Ünal – President of ICORP	
12:05	Opening Speech	
12:20	<i>ICOMOS Perspective on Heritage Protection in Conflict Settings</i> Teresa Patricio - President of ICOMOS, ICORP Member	
12:20	<i>Rethinking the Canon of Emergency Response for Cultural Heritage in Conflict</i>	
12:35	Bijan Rouhani (ICORP) , Zeynep Gül Ünal (ICORP)	
12:35	<i>Cultural Heritage in the Context of New-Generation Warfare</i>	
12:50	Zeynep Ece Atabay (ICORP)	
12:50	<i>Post-Blast Impact Analysis and Emergency Lessons from the 2026 Conflict in Iran</i>	Moderation BIJAN ROUHANI
13:05	Mehrdad Hejazi , (ICOMOS Iran – ICORP, ISCARSAH)	
13:05	<i>Ukraine's Heritage Under Fire: The Challenges of War</i>	
13:20	Liubov Apostolova-Sossa (ICOMOS Ukraine)	
13:20	<i>The 2025 Sagaing Earthquake: Conservation under Complex Circumstances</i>	
13:35	Ohnmar Myo (ICOMOS Myanmar)	
13:35	Coffee Break	
13:50		
13:50	<i>Armed Conflict and Its Impacts on a World Heritage Site: A Case Study of Preah Vihear Temple, Cambodia</i>	Moderation BIJAN ROUHANI
14:05	Kong Puthikar (ICOMOS Cambodia)	
14:05	<i>Conflict Situation in Mogadishu</i>	
14:20	Kai Weise (ICORP)	
14:20	<i>Heritage Under Compound Crises in Palestine: Field-Based Insights from Endangered Heritage Sites</i>	
14:35	Shireen Allan (ICORP)	
14:35	<i>Heritage Preservation in Armed Conflict Zones: Structural Resilience and Emergency Response in the Ukrainian War</i>	
14:50	Pedro Cantor (ISCARSAH)	
14:50	<i>Conflicts and Emergency Response: The Case of Cultural Heritage in Southern Lebanon</i>	
15:05	Ghadir Abdallah Mustapha (ICOMOS Lebanon)	
15:05	Questions & Answers	
15:35		
15:05	Closing Remarks	
15:30		

28TH INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 8 June 2026

Title: Heritage Security in Armed Conflict: Post-Blast Assessment and Emergency Protection Lessons

Speaker: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

Host: Prof. Arkadiusz Kwiecien, Heritage Security Congress in Kraków, Poland

Abstract:

Recent armed conflicts have shown that cultural heritage is vulnerable not only to direct structural damage, but also to blast overpressure, ground vibration, fragmentation, fire, and post-damage environmental deterioration. This presentation examines post-blast damage mechanisms and emergency protection challenges observed during the 2026 conflict affecting heritage sites and historic urban contexts. Based on field observations, preliminary emergency assessments, and photographic documentation, the study analyses how blast effects interact with architectural configuration and material vulnerability in historic structures.

The findings show that damage affects both structural and non-structural elements, while the most irreversible losses often occur in decorative layers such as tilework, frescoes, mirror-work, stucco, timber joinery, and painted surfaces. Enclosed historic volumes tend to intensify internal pressure effects, whereas more open configurations may reduce structural failure. Damage is grouped into structural, non-structural, decorative, and contextual categories, including cracking of masonry, loss of finishes, and disruption of historic spatial coherence. The presentation also reviews emergency protection measures such as rapid documentation, temporary stabilisation, restricted access, fire mitigation, and relocation of movable heritage. It concludes by arguing for integrated heritage security frameworks that combine blast-resilient approaches, digital documentation, and interdisciplinary cooperation.

8:00-9:00 REJESTRACJA UCZESTNIKÓW**9:00-9:30 POWITANIE**

Sławomir Rogowski, Podsekretarz stanu w Ministerstwie Kultury i Dziedzictwa Narodowego

Jerzy Fedorowicz, Senator RP

Józef Polikowski, Dyrektor Departamentu Bezpieczeństwa i Zarządzania Kryzysowego MKiDN

Bogdan Benczak, Prezes Zarządu PZU S.A.

Tomasz Kosecki, Dyrektor Muzeum Lotnictwa Polskiego w Krakowie

Robert Wojtas, Dyrektor Instytutu Bezpieczeństwa Dziedzictwa

9:30-9:45 OTWARCIE OBRAD

Sławomir Rogowski, Podsekretarz stanu w Ministerstwie Kultury i Dziedzictwa Narodowego

9:45-10:30 SESJA I

Działalność administracji rządowej w zakresie ochrony dóbr kultury na czas wojny

Moderator: dr **Katarzyna Góralczyk**

Józef Polikowski, Dyrektor Departamentu Bezpieczeństwa i Zarządzania Kryzysowego MKiDN

Mariusz Mojek, Naczelnik Wydziału Zarządzania Kryzysowego DBZK MKiDN

Marta Uzdowska-Lis, Naczelnik Wydziału Administracyjno-Analitycznego DBZK MKiDN

10:30-11:15

Wyzwania współpracy administracji publicznej w zakresie zapewnienia bezpieczeństwa regionalnego oraz ochrony zasobów państwa w sytuacji kryzysowych

Moderator: dr hab., prof. AWSB **Marek Walancik**

dr inż. **Krzysztof Jan Kłęczar**, Wojewoda Małopolski

dr **Jacek Brzozowski**, Wojewoda Podlaski

Radosław Król, Wojewoda Warmińsko-Mazurski

11:20-12:50 SESJA II

Ochrona dóbr kultury w świetle zadań własnych gmin i powiatów

Moderator: **Tomasz Kosecki**, Dyrektor Muzeum Lotnictwa Polskiego

Monika Gubała, Dyrektor Departamentu Kultury i Dziedzictwa Narodowego Urząd Marszałkowski Województwa Małopolskiego
dr **Katarzyna Piotrowska**, Urząd Miasta Krakowa, *Miejsce światowego dziedzictwa w kryzysie*

Michał Krasucki, Stoleczny Konserwator Zabytków w Warszawie
prof. **Mehrdad Hejazi**, University of Isfahan, *Heritage Security in Armed Conflict: Post-Blast Assessment and Emergency Protection Lessons* (on-line)

prof. dr hab. inż. **Arkadiusz Kwiecień**, Politechnika Krakowska im. Tadeusza Kościuszki, *Nowe możliwości szybkiego zabezpieczenia obiektów zabytkowych zagrożonych stanem katastrofalnym*

dr **Dariusz Subocz**, Uniwersytet Artystyczny im. Magdaleny Abakanowicz w Poznaniu, *Wsparcie służb konserwatorskich w obliczu zagrożenia wojennego – szanse i zagrożenia*

12:50-13:50 SESJA III

Dobra kultury w cyberprzestrzeni

Moderator: płk rez. dr hab. inż. **Piotr Maśloch** prof. AMW

Jerzy Smoliński, Dyrektor Ośrodka Analizy Informacji Collegium Civitas, doradca Ministra Obrony Narodowej

Patryk Gęborys, Dyrektor Biura Cyberbezpieczeństwa, Grupa PZU

Łukasz Ściebior, Mobile MS

Marta Uzdowska-Lis, Naczelniczka Wydziału Analityczno-Informacyjnego, DBZK MKiDN

13:50-14:40 Obiad

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DZIEŃ PIERWSZY
08.06.2026

29TH INTERNATIONAL WEBINAR

BASIC INFORMATION

Date: 24 June 2026

Title: Global Lessons in Protecting Cultural Heritage from Blast Impacts: the 2026 Iran Conflict

Speaker: Prof. Mehrdad Hejazi, Faculty of CET, University of Isfahan

Host: Prof. Toshikazu Hanazato, ICOMOS Japan, Japan

Abstract:

The vulnerability of cultural heritage in modern warfare extends far beyond direct artillery impacts, creating complex and cascading threats that challenge conventional preservation frameworks. In addition to visible structural destruction, historic environments are exposed to blast overpressure, fragmentation, ground vibration, and rapid environmental deterioration after the breach of protective building envelopes. The 2026 conflict in Iran has highlighted major gaps in disaster risk management for heritage sites located within deeply layered historic urban fabrics.

This presentation draws on field observations and preliminary emergency assessments from the 2026 conflict to extract globally applicable lessons for heritage security. By examining damage patterns across monumental masonry, religious complexes, and palatial ensembles, the study assesses how blast overpressure interacts with historical materials and traditional structural systems.

A key finding is the contrast between structural resilience and decorative vulnerability. While load-bearing masonry often shows limited localised damage, shockwaves can cause severe and irreversible loss to fragile architectural layers such as tilework, stucco, mirror-work, and timber components. Spatial geometry is also important: enclosed historic volumes may intensify internal blast pressure, whereas open and permeable layouts can help dissipate energy.

For broader application, damage mechanisms are grouped into four interrelated categories: structural, non-structural, decorative, and contextual. The study also emphasises long-term deterioration after impact, as secondary effects may continue to weaken authenticity and integrity long after the initial event.

Finally, the presentation reviews emergency stabilisation, rapid documentation, and risk-zoning measures used under crisis conditions. It argues for a shift from conventional monument protection toward proactive, blast-resilient, digitally supported heritage security frameworks, and highlights the need for cross-disciplinary cooperation among engineers, conservation specialists, emergency responders, and military authorities.

ICOMOS Japan Webinar

Cultural Heritage in 2026 Iran Conflict

This presentation examines the vulnerability of cultural heritage in modern armed conflict, with particular attention to blast overpressure, ground vibration, fragmentation, and secondary environmental deterioration. Using field observations and preliminary emergency assessments from the 2026 Iran conflict, it highlights how different heritage typologies, including monumental masonry, religious complexes, and palatial ensembles, respond in distinct ways to blast effects.

The analysis shows that while structural systems may exhibit limited localised resistance, fragile decorative and architectural elements such as tilework, frescoes, mirror-work, stucco, and timber components are highly susceptible to irreversible loss. The presentation also discusses the influence of spatial configuration on damage patterns, as enclosed volumes may intensify internal pressure effects while more open layouts can help dissipate energy.

By categorising damage into structural, non-structural, decorative, and contextual forms, the talk proposes a clearer framework for assessing post-blast heritage damage. It concludes by emphasising the need for emergency stabilisation, rapid documentation, risk zoning, and blast-resilient heritage protection strategies supported by interdisciplinary cooperation.