

BULLETIN

September 2023

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Membership Announcements

A. Honorary Member

Gürün Arun - Turkey

B. New Expert members: Andrew Salter – United Kingdom

C. New Associate member: Rafael Ramirez Eudave –Portugal/Mexico

Leonard Iho Nnabuife – Nigeria

Maryam Rahimli – Azerbaijan

D. Non-ICOMOS member: Carlos Andres Arce Campos –Costa Rica

Prof. Giorgio Macchi: In Memoriam 12 January 1930 – 04 August 2023



*Seminar on Archaeology and Monuments. Metro Line C in Rome (2008).
Credit: https://it.wikipedia.org/wiki/Giorgio_Macchi*

Giorgio Macchi, an honorary member of ISCARSAH, and professor emeritus of construction techniques at University of Pavia, Italy passed away on Friday 4th August 2023 in Milan. He was a student of Franco Levi at Turin Polytechnic, after which he began his academic career at his alma mater, followed by IUAV, Venice and finally at University of Pavia in 1973, where he helped establish the Faculty of Engineering and the Department of Structural Mechanics, leading the former as its dean. Over his nationally and internationally acclaimed and long scientific career, his interests and contributions varied from non-linear analysis of reinforced and prestressed concrete to design criteria for masonry structures, and finally to the study of structural problems and safeguard of historical constructions. He was considered as one of the leading international experts in the field of analysis and conservation of historical structures.

He was involved in the drafting of ISCARSAH's recommendations and was part of numerous national and international committees for the safeguard of historical constructions. Giorgio Macchi's seminal approach to the study of historical constructions aimed at overcoming the sharp separation between "the two cultures" as he called them: human sciences on one side (art history...) and mathematical and physical sciences (structural engineering...) on the other, echoing a central principle of ISCARSAH. He led numerous landmark projects such as the restoration of the Cathedral and Medieval Towers of Pavia, that of the Leaning Tower of Pisa, St. Marks Bell Tower of Venice, the Minarets of Herat and Jam in Afghanistan, the Chapel of the Holy Shroud in Turin, the wall containing da Vinci's Last Supper in Milan, and the façade of the Basilica of St. Peters in Vatican, all of which are outstanding examples of diagnosis, structural analysis and innovative restoration techniques, true to the unique approach he expounded for the safeguard of historical structures.



*Prof. Macchi describing restoration works at the Cathedral of Pavia during a field visit for a course at ROSE, School, Pavia (2005).
Credit: Arun Menon*

Giorgio Macchi's ingenuity is reflected in the considered solutions based on years of rigorous structural analysis in monuments such as Cathedral of Pavia or Tower of Pisa on the one hand, and on the other to emergency structural interventions designed for the 5th Minaret of Herat in the face of severe resource constraints during 2002-03. Many of these projects are recorded in detail in a book published in 2019 in Italian entitled Giorgio Macchi Progetti. Giorgio Macchi was also actively involved in the design and construction of numerous bridges, including Bolu Viaduct (Turkey), Modena Viaduct for a highspeed railway line, and the Autostrada del Sole. Giorgio Macchi also played a keen role in numerous international technical committees such as Comité Euro-International du Béton (CEB) and International Association for Bridge and Structural Engineering (IABSE), as vice president, as well as in Eurocode committees. In his passing, the world has lost an exceptional and innovative structural engineer and designer, a visionary researcher, a passionate teacher, and above all a caring mentor.

His former colleagues, and generations of students, many of whom are academics around the world, fondly remember him as they pay their obeisance and convey their heartfelt condolences to Ms. Maria Luisa Escoffier.

Portraits of Iscarsah



President between
2014-2023

Prof. Dr. Görün Arun

Görün Arun is an architect that worked at Yıldız Technical University most of the professional career. Subsequently, she became Dean of the Faculty of Fine Arts and Architecture at Hasan Kalyoncu University (HKU) in Gaziantep, Turkey. Her research area is on diagnosing problems of existing structures including masonry, timber,

early concrete and steel structures in seismic areas with a specialization in foundation and drainage systems. She was a Vice-President of ISCARSAH between 2008 and 2014. She then became President between 2014 and 2023. Among the multiple activities in the period as President, the Bureau recognizes exceptional services rendered to ISCARSAH and of activities in favor of its objective, including fostering the development of the expert database, organization of joint workshops in Philippines, Korea and Iran, revision of the committee statutes, preparation of guidelines for National ISCARSAH Committees and organization of success webinars. Past-President Stephen Kelley, between 2005 and 2014, referred to Görün as "my sultana" during his tenure as Secretary-General. "Görün has been a generous President and had numerous successful initiatives. I always thought that she was more effective as President than I was."

The Bureau sincerely thanks the Past President for the dedication, particularly, in the last 15 years.



Election of the new 2023-2026 ISCARSAH Bureau

After a duly conducted nomination process and the receipt of nominations from expert members, with great pleasure we announce the results of the election of the new 2023-2026 ISCARSAH Bureau. The ISCARSAH Bureau for the 2023-2026 triennium will be the following:

President - Paulo Lourenço (Portugal)

Secretary General - Tom Morrison (Canada)

Vice Presidents :

Meltem Vatan (Turkey)

Rebecca Napolitano (USA)

Arun Menon (India)

Mehrdad Hejazi (Iran)

Radu Cazamir (Romania)

Treasurer - Tim Michiels (Belgium)

MESSAGE FROM THE NEW BUREAU 2023 -2026

*"We thank our Emeritus Secretary-General ISCARSAH, **Stephen J. Kelley**, for having led the election and the announcement of the new Bureau. We also thank the past Bureau and the President **Görün Arun** for the 9 years and the good cooperation among the ISC. We thank the outgoing Bureau members Vice Presidents **In-Souk Cho** (Korea), **Khalid El Harrouni** (Morocco) and **Marcela Hurtado Saldias** (Chile) and thank the continuing Bureau members Secretary General **Tom Morrison** (Canada), **Mehrdad Hejazi** (Iran) and **Radu Cazamir** (Romania)."*

"We are honored and enthusiastic to be a part of this triennial Bureau. We will do our best to serve the ISCARSAH members and advance our collective efforts to strengthen the role of conservation of heritage structures around the world. We also thank you all for the many congratulations received and are grateful for your trust. Over the next few months, we will be working to establish roles and responsibilities for the Bureau members, which we will announced at the 2023 annual general meeting (AGM) in Kyoto. We will also be developing a draft triennial action plan to bring to the members."

MESSAGE FROM THE PRESIDENT

The Annual General Meeting (AGM) of ISCARSAH is to be held in Kyoto, at the time of issue of this Bulletin. A big thank you to our Japanese hosts for the local organization, Professors Yohei Endo and Toshikazu Hanazato! The 2023-26 Bureau is pleased to announce that the ISCARSAH Guidelines review is now in conclusion and will be distributed to all members for comments. This is a major achievement and we thank Professor Pere Roca for leading this initiative. The Bureau has been consolidating several initiatives for the current term, aiming at stronger participation from ISCARSAH members and a more active community, including finding ways to promote integration of new members and emerging professionals, and to strengthen the image and outreach of our activities outside ISCARSAH. The initiatives include a set of working groups that will be announced, regarding Masonry materials across the world, Examples of interventions with a discussion, and Buildings codes and safety. These working groups resulted from proposals of our colleagues and we are thrilled to encourage such actions. The Bureau would like also to lead a working group on Climate change and adaptation, which poses enormous challenges for the existing built environment, and on Emerging professionals, which can benefit from the mentoring of senior members and are the future of our community.

We also plan to boost the ISCARSAH webinars to twice-a-year events, while analyzing our presence in social networks in order to increase outreach. The Bulletin is part of the communication effort and aims at providing a short and regular means to interact with ISCARSAH members (also expected to be published twice a year). I deeply thank Radu Cazamir and Meltem Vatan for the kick-off of this first issue.

Paulo B. Lourenco

ISCARSAH Letters

Preserving Heritage Buildings in the Era of Climate Change

by: Radu Cazamir

A few examples to illustrate the impact of climate change on heritage buildings:

1. ***Humidity and Deterioration.*** Historic buildings made of materials like wood and plaster can suffer from increased humidity caused by changing climate patterns. This can lead to the deterioration of delicate carvings, paintings, and ornamental features on facades and interiors;
2. ***Rising Sea Levels.*** Coastal heritage structures, such as lighthouses, forts, and old waterfront buildings, are at risk due to rising sea levels. Increased flooding and erosion can damage foundations and structural integrity over time;
3. ***Extreme Heat and Monument Preservation.*** Heritage sites with stone structures, such as ancient temples and castles, can experience accelerated weathering due to extreme heat caused by climate change. Stone can crack, erode, or even disintegrate under prolonged exposure to high temperatures;
4. ***Threat of Wildfires.*** Historic villages and towns surrounded by forests are vulnerable to the growing threat of wildfires exacerbated by climate change. These fires can destroy centuries-old structures and unique architectural features;
5. ***Efficiency Upgrades and Authenticity.*** When renovating heritage buildings to improve energy efficiency, there's a delicate balance to be struck between preserving the original architecture and introducing modern technologies like solar panels or energy-efficient windows;
6. ***Cultural Sites and Tourism.*** Many heritage sites draw tourists, contributing to local economies. Climate change impacts like extreme weather events can disrupt tourism and affect the economic sustainability of these areas;
7. ***Historic Landmarks in Urban Areas.*** Climate change can exacerbate urban heat islands in cities, leading to increased temperatures. This heat can accelerate the decay of historical facades and delicate stonework on buildings;
8. ***Adaptation Challenges.*** Adaptation measures such as reinforcing structures to withstand stronger storms or retrofitting for energy efficiency can be complex for heritage buildings, requiring careful planning to maintain their historical significance;
9. ***Documentation and Research.*** Climate change may result in the loss of valuable records, photographs, and documents related to heritage sites due to flooding or other weather-related events, affecting future restoration and research efforts;

These examples highlight how heritage buildings, with their unique vulnerabilities and cultural significance, face distinct challenges in the context of climate change. Finding solutions that preserve their historical value while ensuring resilience to changing climatic conditions is a critical task for preservationists and communities.

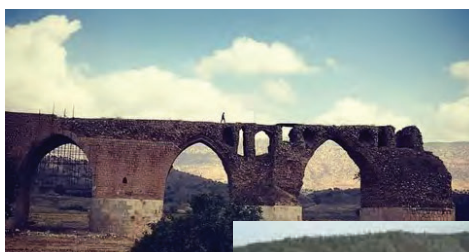
Climate change doesn't just affect modern buildings; it also has a significant impact on heritage buildings. These historic structures, often characterized by unique architecture and cultural value, face specific challenges in the face of climate change and extreme weather events.

One crucial aspect of heritage buildings is their sensitivity to humidity and temperature changes. Traditional materials used in constructing these buildings, such as stone, brick, and wood, can be vulnerable to deterioration when exposed to prolonged moisture and temperature fluctuations. With the rising sea levels and the occurrence of floods, buildings located in coastal areas may be at risk of erosion and degradation.

To protect heritage buildings, it's essential to take conservation and restoration measures that consider the impact of climate change. These measures may include waterproofing foundations, reinforcing structures, and using modern materials with resistance properties to humidity and temperature variations. Additionally, energy efficiency is a significant concern for heritage buildings. Balancing the preservation of architectural authenticity with the adoption of technological solutions to improve energy efficiency can be challenging. Therefore, it's important to find solutions that respect the original characteristics of the buildings while enabling a reduction in energy consumption.

Ultimately, awareness and education are vital in efforts to safeguard heritage buildings in the era of climate change. Both the owners of these buildings and local communities need to understand the importance of conservation and support restoration and adaptation initiatives to the new climate conditions. Overall, preserving heritage buildings in the face of climate change represents a complex yet essential challenge for maintaining the cultural and architectural identity of a community. By combining efforts in conservation, restoration, and innovation, we can ensure that these architectural gems remain alive and relevant despite the increasing climate challenges.

Kaskkan bridge was built in 999 A.D. and is one of the greatest bridges across the IRAN country. The length of this nationally registered bridge over the Kashkan river is more than 330 m and it is about 30 m high in some locations.



Iscarsah expert Radu Cazamir inspecting the Kaskkan bridge in IRAN October 2018.



Kaskkan bridge in IRAN, affected by floods March 2019.

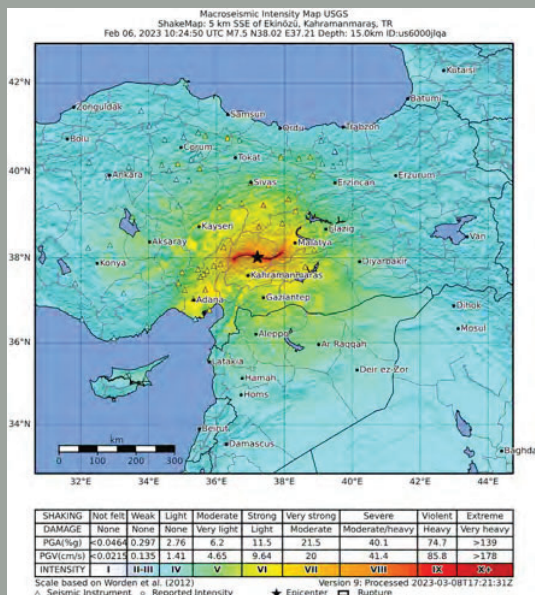
ISCARSAH Letters

The Earthquakes in Turkey: Threat to Heritage Buildings

by: Dr. Emre Kishali

Illustrate the impact of 2023 Earthquake in Turkey on heritage buildings:

One of the most recent significant earthquakes in Turkey occurred on 6 February 2023. The epicenter was located near a populated area, which had a major impact on communities and buildings in the region. Heritage buildings often represent the cornerstones of a country's culture and history. These structures bring unique value through their architecture, artistic design, and deep-rooted cultural significance. However, many factors, including earthquakes, jeopardize these fragile and precious buildings. Heritage buildings are often more vulnerable to earthquakes due to their age, traditional construction, and materials used. Many heritage buildings in Turkey are constructed from brick, wood, and other natural materials, making them more susceptible to damage in the event of a strong earthquake. Additionally, past construction techniques did not always consider modern seismic safety factors.



The earthquake in Turkey has once again underscored the vulnerability of heritage buildings to the forces of nature. However, through continuous efforts in protection, restoration, and awareness, Turkey can safeguard its valuable cultural heritage and ensure that future generations will be able to admire and learn from this rich architectural history.

Kocaeli University, Faculty of Architecture and Design, Department of Architecture, member of ICOMOS International and ICOMOS Turkey, member of ICOMOS ISCARSAH Turkey, Assoc. Prof. Dr. Emre Kishali conducted damage assessment studies on February 16-17, 2023, in Adiyaman (Center), Besni (Adiyaman), Suruç, and Birecik (Şanlıurfa) with the permission and support of the General Directorate of Foundations (VGM). In the observed damages in Adiyaman, the inadequacy of the stone connections, especially in minarets and body walls, has been noted. Cracked rubble masonry behavior has been observed in structures damaged by in-plane and out-of-plane mechanisms (especially in Adiyaman Grand Mosque). The wooden ties that are interrupted along the wall, seen in Kab Mosque, have influenced the ductile behavior of the structure. Authentic materials should be sorted out in the rubbles.



The collapse of the masonry walls and roof observed in Adiyaman Ulu Mosque on 17 February 2023 (Emre Kishali archive).



Out-of-plane mechanism observed in Adiyaman Kab Mosque on 17 February 2023 (Emre Kishali archive).



The collapse of the minaret observed in Adiyaman Eski Saray Mosque on 17 February 2023 (Emre Kishali archive).