Committee on Disaster Risk Management (CDRM)

> For the past 40 years, global programs intend to reduce damage and losses caused by natural and man-made hazards. However, major disasters still occur every year; therefore, more needs to be done. The CDRM is committed to contributing from the engineering perspective, promoting best practices, including the intensive use of AI tools.
>
> **José Macharé,**
> **Chair of CDRM,**
> **Peruvian Engineers Association**

Over the past two years, the main focus has been on capacity building for urban resilience, disaster risk management, and cultural heritage protection through a series of international webinars.

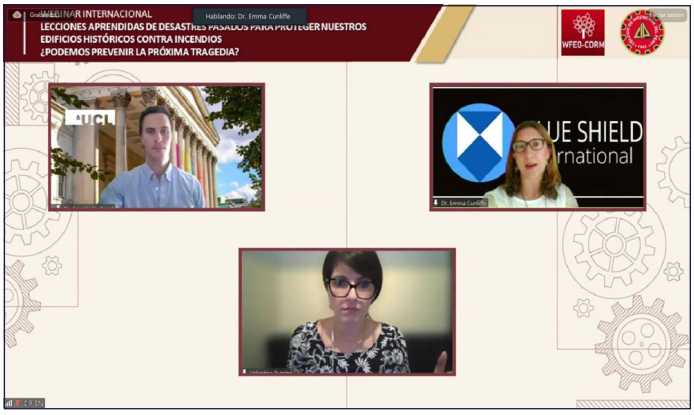
These events have brought together experts, researchers, and key stakeholders in urban development and risk reduction, addressing emerging issues such as resilient infrastructure, protracted post-disaster displacement, risk governance and the vulnerability of the green economy to natural hazards.

These efforts have significantly contributed to highlighting international best practices, facilitating technical exchange, and promoting the incorporation of risk into urban planning, heritage protection, and public infrastructure.

The CDRM acknowledges and appreciates the selfless contribution of all the speakers, working teams and institutions that participated in these meetings.

Here is a glimpse of the topics covered:

Lessons learnt from past disasters to protect our historic buildings from fire
This seminar addressed fire protection in historic buildings and heritage conservation, highlighting the Blue Shield movement and the challenges of emergencies during conflicts and disasters. Strategies for improving fire response in these contexts were proposed.



SUSTAINABLE DEVELOPMENT GOALS

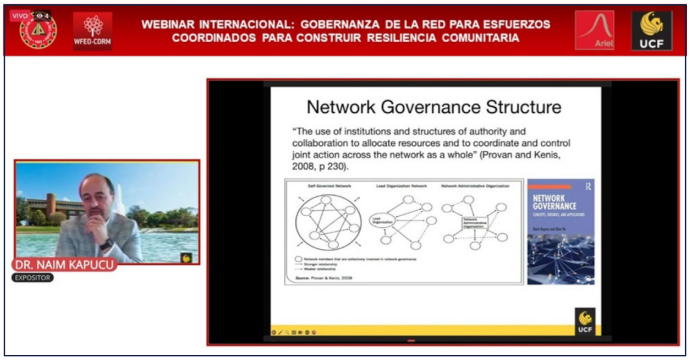
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

The construction of bridges using locally produced materials, with community labor and adaptive engineering input, has been a major achievement on innovative infrastructure, shared by the Committee. These bridges have achieved greater resilience and a particular symbolism of community unity through them.

11 SUSTAINABLE CITIES AND COMMUNITIES

The Tomorrow Cities concept is presented as a model from which each city can design its own development strategy. It proposes a robust decision-support environment as an adaptable and efficient engineering system, in which risk management plays a fundamental role, with a highly engaged population.

Network governance for coordinated efforts in building community resilience
This seminar examined how interdependent governance systems strengthen community resilience to disasters. It focused on developing organizational capacity and networks in urban contexts.



Resilient cultural heritage to build capacity and reduce disaster risks
This talk addressed the role of cultural heritage in disaster risk management, both as a vulnerable element and as a resource for resilience. Best practices, lessons learned, and methodologies for strengthening community capacity at the international level were presented.

Household displacement and return after disasters
This presentation addressed the protracted displacement of households following disasters, its negative impacts, and the lack of data on its duration. Recent research was presented that integrates key factors into risk models to improve understanding of return after events such as earthquakes or hurricanes.

Risk informed and participatory planning for resilient future cities: showcasing the Tomorrow's Cities Decision Support Environment (TCDSE) implementation in tomorrow's Rapti, Nepal
This presentation showcased how the TCDSE promotes resilient urban development through participatory and risk-informed planning. Its application in Nepal, integrating multi-hazard risks, climate change, and community participation will be highlighted.

Creating and implementing a decision support environment for risk-sensitive, pro-poor urban planning and development of tomorrow's cities
This talk presented the implementation of the TCDSE in Nablus, Palestine, highlighting its potential to reduce urban risks in contexts lacking formal planning. Its capacity to influence policies toward more resilient urban development will be discussed.

Building bridges: how resilient infrastructure empowers communities and drives economic growth
This session presented how Bridges to Prosperity's strategic partnerships with African governments are transforming infrastructure into a key tool for climate resilience and economic development. Through real-life case studies, the impact on rural connectivity, technological innovation, and contribution to the SDGs were highlighted, inviting new collaborations to close access gaps.

Frameworks for natural hazard fragility assessment
This session presented innovative approaches to assessing structural risks: from reinforced concrete structures exposed to granular flows to tunnel-like buildings in seismic zones and wind turbines exposed to natural disasters. Advanced methodologies, numerical analyses, and challenges in resilience and infrastructure were discussed.

Key achievements

- The dissemination of innovative approaches such as the Tomorrow's Cities Decision Support Environment, applied in contexts such as Palestine and Nepal.
- The presentation of cutting-edge research, such as the analysis of reinforced concrete structures against granular flows and the seismic vulnerability of tunnel buildings in Turkey.
- The strengthening of strategic partnerships, such as those developed by Bridges to Prosperity in Africa, showcasing the transformative role of infrastructure in climate resilience and economic empowerment.
- The integration of cultural heritage into risk management, with methodological contributions that link traditional knowledge with community action.

Disaster risk reduction in Switzerland – strategy and management
The presentation outlined the Swiss natural risk management strategy, highlighting the use of its management matrix to reduce risks. It was illustrated with concrete examples applied in different project phases. A few weeks following this seminar, the system was successfully tested: early warning and subsequent preventive evacuation saved the lives of more than 300 inhabitants of the Swiss village of Blatten, which was buried by an avalanche on 28 May 2025.

From scenario selection to vulnerability and recovery models of coastal infrastructure systems
This seminar covered a series of studies aimed at performing quantitative analyses spanning the entire catastrophe modeling and resilience assessment spectrum, including scenario selection, vulnerability, and functional recovery, at multiple scales of analysis. The focus will be on the particular case of power transmission systems subjected to hurricanes. However, the application of the discussed techniques to other hazards (e.g., earthquake, storm surge) and other types of assets (e.g., residential, transportation) was briefly discussed as well.

Unveiling the 2024 Noto province, Japan earthquake – insights from seismology, engineering, and insurance
This talk presented the results of the preliminary survey following the 1st January earthquake in Noto-Hanto, Japan, which left 240 dead. The structural damage observed, especially in reinforced concrete buildings, was analyzed, and solutions were proposed.