IRIDeS faculty member visited India and delivered a special lecture at the CSIR-Central Building Research Institute （2025/2/25-26）

Theme: GP-RSS, CSIR-CBRI, Irrigation system
Venue: CSIR-CBRI（Roorkee, Uttarakhand, India）

Prof. Osamu Murao of International Strategy for Disaster Mitigation Lab visited India from February 25th to 26th, 2025, as part of the International Joint Graduate Program in Resilience and Safety Studies (GP-RSS). During his stay, he visited the CSIR-Central Building Research Institute (CSIR-CBRI) in Roorkee, Uttarakhand. Tohoku University was certified as a Designated National University Corporation in 2017. It has positioned “Disaster Science & Safety Studies” as one of the world's leading research clusters. GP-RSS is operated as part of an initiative that promotes international education and research in collaboration with prominent overseas universities. This visit aimed to foster mutual understanding and sustain and develop ongoing relationships between the institutions.

Prof. Murao first met with the institute's director, Prof. Ramancharla Pradeep Kumar, to discuss future research collaboration and DRR strategies. Following this meeting, he conducted an inspection of the Upper Ganges Canal and the Solani Aqueduct. Constructed in the mid-19th century, the Upper Ganges Canal plays a crucial role in regional agriculture as an irrigation system utilizing water from the Ganges River. The Solani Aqueduct, which allows the canal to cross the Solani River, is a historic structure that has made significant contributions to the modern civil engineering of India. During the site visit, Prof. Murao was briefed on the construction techniques of the time and the current management system, providing valuable insights into the maintenance and disaster resilience challenges of historical infrastructure.

On February 25, Prof. Murao delivered a special lecture at CSIR-CBRI titled “Reconsideration on Urbanization in the Tokyo Metropolitan Area Since the 1923 Great Kanto Earthquake from the Perspective of Exposure.” His lecture addressed urban vulnerabilities following the Great Kanto Earthquake and discussed seismic and disaster mitigation measures in anticipation of potential future earthquakes, such as a Tokyo inland earthquake or a Nankai Trough earthquake.

Through this visit, stronger collaborative ties were established with research institutions in India, exploring potential avenues for joint research in DRR. Efforts will be made to further strengthen the partnership with CBRI to advance academic initiatives in disaster-resilient urban development, seismic-resistant architectural technologies, and post-disaster urban reconstruction. These endeavors aim to contribute to the progress of disaster science.

Photo with the Director of CSIR-CBRI

Photo with the participants of the lecture

Text and photos：Osamu Murao

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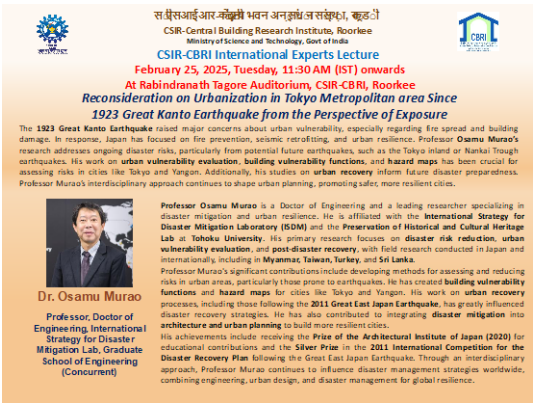
Upper Ganges Canal



सी.एस.आई.आर-केंद्रीय भवन अनुसंधान संस्थान, रूड़की
CSIR-Central Building Research Institute, Roorkee
Ministry of Science and Technology, Govt of India

CSIR-CBRI International Experts Lecture

February 25, 2025, Tuesday, 11:30 AM (IST) onwards

At Rabindranath Tagore Auditorium, CSIR-CBRI, Roorkee

Reconsideration on Urbanization in Tokyo Metropolitan area Since 1923 Great Kanto Earthquake from the Perspective of Exposure

The **1923 Great Kanto Earthquake** raised major concerns about urban vulnerability, especially regarding fire spread and building damage. In response, Japan has focused on fire prevention, seismic retrofitting, and urban resilience. Professor **Osamu Murao's** research addresses ongoing disaster risks, particularly from potential future earthquakes, such as the Tokyo inland or Nankai Trough earthquakes. His work on **urban vulnerability evaluation**, **building vulnerability functions**, and **hazard maps** has been crucial for assessing risks in cities like Tokyo and Yangon. Additionally, his studies on **urban recovery** inform future disaster preparedness. Professor Murao's interdisciplinary approach continues to shape urban planning, promoting safer, more resilient cities.

Dr. Osamu Murao

Professor, Doctor of Engineering, International Strategy for Disaster Mitigation Lab, Graduate School of Engineering (Concurrent)

Professor Osamu Murao is a Doctor of Engineering and a leading researcher specializing in disaster mitigation and urban resilience. He is affiliated with the **International Strategy for Disaster Mitigation Laboratory (ISDM)** and the **Preservation of Historical and Cultural Heritage Lab** at **Tohoku University**. His primary research focuses on **disaster risk reduction**, **urban vulnerability evaluation**, and **post-disaster recovery**, with field research conducted in Japan and internationally, including in **Myanmar, Taiwan, Turkey**, and **Sri Lanka**.

Professor Murao's significant contributions include developing methods for assessing and reducing risks in urban areas, particularly those prone to earthquakes. He has created **building vulnerability functions** and **hazard maps** for cities like Tokyo and Yangon. His work on **urban recovery** processes, including those following the **2011 Great East Japan Earthquake**, has greatly influenced disaster recovery strategies. He has also contributed to integrating **disaster mitigation** into **architecture and urban planning** to build more resilient cities.

His achievements include receiving the **Prize of the Architectural Institute of Japan (2020)** for educational contributions and the **Silver Prize** in the **2011 International Competition for the Disaster Recovery Plan** following the Great East Japan Earthquake. Through an interdisciplinary approach, Professor Murao continues to influence disaster management strategies worldwide, combining engineering, urban design, and disaster management for global resilience.

Summary of the Special Lecture