



a Joint Symposium

National Graduate Institute for Policy Studies

Building Research Institute



## **Utilization of Digital Technology in Future Disaster Prevention and Mitigation, in Housing, Architecture, and Urban Fields**

Purpose: The future vision of disaster prevention and mitigation in Society 5.0, promoted by the Cabinet Office, is set in the context of (a) increasing and intensifying wind and water disasters resulting from climate change, and (b) the heightened risk of massive earthquakes such as those occurring directly under the capital and in the Nankai Trough. The vision calls for "finely predicting, collecting, and analyzing disaster and disaster victim information before and after a disaster, considering the characteristics of the region," and "enabling personalized disaster prevention and evacuation support, quick rescue and material provision by local governments, and emergency responses, in collaboration with private companies, based on the results of information analysis." It is expected that digital technology will be applied in the formulation of these responses.

This symposium will provide a matrix for (a) the exchange of information in the form of examples of digital technology applications in disaster prevention and mitigation in housing, architecture, and urban fields, and (b) discussion of future technology trends and issues to be addressed.

Date & time: Tuesday, February 13, 2024, 13:30–17:00

Venue: Online (Zoom webinar: Pre-registration required)

**Languages: Japanese and English**

Organizers: National Graduate Institute for Policy Studies, National Research and Development Corporation Building Research Institute

Supporters (to be confirmed):

National Institute for Land and Infrastructure Management of the Ministry of Land, Infrastructure, Transport and Tourism, Urban Renaissance Agency, Japan Housing Finance Agency, Japan Federation of Architects & Building Engineers Associations, The Japan Institute of Architects, Japan Association of Architectural Firms, Japan Structural Consultants Association, Japan Federation of Construction Contractors, Condominium Management Companies Association, Japan Federation of Housing Organizations, Architectural Institute of Japan, The Japan Building Disaster Prevention Association, Center for Better Living, Consortium for Building Research & Development, Japan Academic Network for Disaster Reduction.

Program

Moderator: Koji Katayama (Professor, National Graduate Institute for Policy Studies)

13:30–13:40 Introduction

Tatsuya Azuhata (Head of Department of Structural Engineering, Building Research Institute)

13:40–14:00 Keynote Lecture

Koichi Kusunoki (Professor, Earthquake Research Institute, The University of Tokyo)

"Initiatives and Prospects for Disaster Prevention and Mitigation through Digital Technology in Housing, Architecture, and Urban Fields"

14:00–15:20

Part 1: Use of Digital Technology in Disaster Prevention in Japan and Overseas.

Chair: Koichi Kusunoki (Professor, Earthquake Research Institute, University of Tokyo; Head of International Seismic Engineering Center, Architectural Research Institute)

(1) Lectures:

TEO Hui Ying (Deputy Director (Survey & Geomatics) at Singapore Land Authority)

"Efforts in Disaster Prevention through Digital Technology in Singapore(TBD) "

Filip Biljecki (Assistant Professor, National University of Singapore )

"Challenges of Urban Digital Twins"

Shinichiro Masuda (Future City Planning Office Team, Shizuoka Prefecture)

"Using 3D Point Cloud Data for Disaster Damage Assessment"

(2) Discussion

15:20–15:30 Break

15:30–17:00

Part 2: Current and Future Perspectives on Digital Technologies such as IoT in Disaster Prevention

Chair: Miho Makatayama (Head of Department of Production Engineering, Building Research Institute)

(1) Lectures:

Toshio Yabe (Mori Building Co., Ltd.), Yoshitaka Suzuki (Kobori Research Complex Inc.)

"Development of a Ranking System for Relative Comparison of Shaking Performance of Land and Buildings"

Yusuke Maida (Japan Architectural Drone Association)

" Study on the Utilizing Drones for Disaster Investigations of Buildings "

Masaki Muto (Building Research Institute)

"Application of BIM in Disaster Prevention"

(2) Discussion

17:00 Closing

This symposium can be viewed on PC, smartphone, etc (please install the ZOOM app in advance). Please register by February 12, 2024 via URL below or the QR code.

[https://grips-ac-jp.zoom.us/webinar/register/WN\\_nyTBVm0sSHuBVPOnitbKXg](https://grips-ac-jp.zoom.us/webinar/register/WN_nyTBVm0sSHuBVPOnitbKXg)

Free of charge

Contact: National Graduate Institute for Policy Studies (E-mail: [grips.sympto@gmail.com](mailto:grips.sympto@gmail.com))

Subject to JSCA building structural engineer renewal evaluation points

There is a possibility that some of the content may be subject to change.



## Presenter Profiles

	<p><b>Koichi Kusunoki (Professor, Division of Disaster Mitigation Science, Earthquake Research Institute, The University of Tokyo)</b></p> <p>Completed Ph.D. at the University of Tokyo in 1997. Worked as an assistant at the University of Tokyo's Institute of Industrial Science. Became senior researcher at the Independent Administrative Institution Building Research Institute in 2000. Assistant professor at Yokohama National University since 2006, and professor at the University of Tokyo Earthquake Research Institute since 2018. His primary research theme is structural health monitoring; he currently serves as a Principal Investigator in SIP Phase 3.</p>
	<p><b>TEO Hui Ying (Deputy Director (Survey &amp; Geomatics) at Singapore Land Authority)</b></p> <p>Hui Ying is a Deputy Director in the Survey &amp; Geomatics Division of the Singapore Land Authority (SLA). She is responsible for leading the capture, creation, and maintenance of 3D digital geo-information. Together with her team, they produce national maps to support public agencies in their planning, risk management, operations, and policy formulation. Hui Ying has past experience in both the public and private sectors in areas of cadastral, tunnelling and engineering surveys and has been a Registered Surveyor in Singapore since 2006.</p>
	<p><b>Filip Biljecki (Assistant Professor, National University of Singapore )</b></p> <p>Filip Biljecki is Assistant Professor at the National University of Singapore, where he established the Urban Analytics Lab, a multidisciplinary research group focusing on geospatial technologies and urban informatics. He has a background in Geomatic engineering &amp; GI science amplified with computational and data science skills. He holds an MSc and PhD from Delft University of Technology in the Netherlands, specializing in 3D city modelling/digital twins.</p>
	<p><b>Shinichiro Masuda (Chief, Future City Planning Office Team, Shizuoka Prefecture)</b></p> <p>Joined Tokyo Metropolitan Government in 1991; Shizuoka Prefecture Government in 1993; appointed senior researcher at the Japan Construction Information Center (JACIC) in 2003. In 2017, assumed the role of chief at the Urban Planning Section of Hamamatsu Civil Engineering Office, and in 2019, became Acting Chief of the Construction Technology Planning Section. Currently serving as the Chief of Future City Planning Office Team, Shizuoka Prefecture.</p>
	<p><b>Toshio Yabe (Associate, Urban Development Division, Mori Building Co., Ltd.)</b></p> <p>Graduated from the Faculty of Civil Engineering at Tokai University. Joined Mori Building Co., Ltd. in 1998, now an associate in the Planning and Media Planning Department of the Urban Development Division. Involved in developing communication tools for urban development and city sales. Practices dual residency between Chino City, Nagano Prefecture, and Tokyo, and participates in various local revitalization projects related to government agencies.</p>
	<p><b>Yoshitaka Suzuki (KOBORI RESEARCH COMPLEX INC.)</b></p> <p>Completed master's program in architecture at Kyoto University in 1993. Currently serves as the Head of the Structural Research Department at KOBORI RESEARCH COMPLEX INC., specializing in seismic analysis, seismic performance evaluation of high-rise and base-isolated buildings, and seismic isolation device development. Expertise includes earthquake response evaluation and seismic safety assessment of structures.</p>

	<p><b>Yusuke Maida (Japan Architectural Drone Association)</b></p> <p>Completed doctoral program at Tokyo Institute of Technology in 2015. Held positions like Assistant Professor at Chiba University, Researcher at Building Research Institute, and Senior Researcher at National Institute for Land and Infrastructure Management. Served as Assistant Professor in the School of Environment and Society at Tokyo Institute of Technology before becoming Associate Professor at Earthquake Research Institute, the University of Tokyo in 2022. Expertise in structural engineering and reinforced concrete structures.</p>
	<p><b>Masaki Muto (Building Research Institute)</b></p> <p>Born in Aichi Prefecture in 1968. Served as a Special Research Fellow at the Japan Society for the Promotion of Science, Lecturer at Tokushima University, and Researcher at the National Institute for Land and Infrastructure Management before joining the Building Research Institute in 2000. He has held his current position since 2016. He is an ISO TC10SC8 and TC59SC13 expert, a buildingSMART International Fellow, and the leader of the Building BIM Environment Development Subcommittee.</p>