CONFERENCE PROGRAM

2025 ICCEA

2025 8th International Conference on Civil Engineering and Architecture

ICEEI 2025

2025 7th International Conference on Engineering Education and Innovation

December 6-8, 2025 | Jakarta, Indonesia

CONFERENCE PROGRAM

ICCEA 2025

The 8th International Conference on Civil Engineering and Architecture

ICEEI 2025

The 7th International Conference on Engineering Education and Innovation

December 6-8, 2025 | Jakarta, Indonesia

Holiday Inn & Suites Jakarta Gajah Mada by IHG

Add: Jl. Gajah Mada No. 211 Jakarta 11120, Indonesia

Co-sponsor

Technical Support

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WELCOME MESSAGE

We are pleased to welcome you to attend the 2025 8th International Conference on Civil Engineering and Architecture (ICCEA 2025), along with 2025 7th International Conference on Engineering Education and Innovation (ICEEI 2025), to be held in Jakarta, Indonesia on December 6-8, 2025, co-sponsored by Bandung Institute of Technology, and technically supported by Innovation Center for Engineering Education at Seoul National University.

This event will provide a unique opportunity for international scholars, researchers and practitioners working in a wide variety of scientific areas with a common interest in civil engineering and architecture & engineering education and innovation.

This year's conferences will be composed of 4 keynote speeches successively delivered by *Prof. Thomas Kang* (Seoul National University), *Prof. Dr. Ir. Herlien D. Setio* (Institut Teknologi Bandung), *Prof. Young (Youngchul) Kim* (Korea Advanced Institute of Science & Technology), *Dr.-Ing. Andry Widyowijatnoko* (Institut Teknologi Bandung), 4 invited speeches given by *Prof. Ken S. Sivakumaran* (McMaster University), *Prof. Atef Badr* (The Military Technological College, Muscat, Oman), *Assoc. Prof. Lapyote Prasittisopin* (Chulalongkorn University), *Assoc. Prof. Sungjoo Hwang* (Ewha Womans University), followed by 6 oral sessions, and 4 online sessions.

We would like to deeply express our heartfelt appreciation to all our delegates, keynote speakers, invited speaker, session chairs, international reviewers as well as all the committee members involved in the technical evaluation of conference papers and in the conference organization for your time, effort, and great contributions. Apart from that, we'd like to extend our thanks to all the authors and external reviewers for your contribution. It is your high competence, enthusiasm, valuable time and expertise that have enabled us to prepare the final program with high quality and make the conference a great success.

We wish to thank all attendees for participating in the conferences and hope you have a fruitful and memorable experience at ICCEA & ICEEI 2025.

Finally, we wish you a very successful conference! Hope you will enjoy your stay in Jakarta!

With Warmest Regards,

Conference Organizing Committee

ICCEA & ICEEI 2025

Jakarta

GENERAL INFORMATION

Onsite Registration

Registration desk→ Inform the staff of your paper ID→ Sign-in→ Claim your conference kit.

Devices Provided by the Organizer

Laptops (with MS-Office & Adobe Reader) / Projectors & Screen / Laser Sticks

Materials Provided by the Presenter

Oral Session: Slides (pptx or pdf version). Format 16:9 is preferred.

Official language: English.

Duration of Each Presentation

Keynote Speech: 40min, including 5 min Q&A. Invited Speech: 25min, including 5 min Q&A.

Oral & Online Session: 15min, including 3min Q&A. Poster: A1 size

Notice

- Please wear your delegate badge (name tag) for all the conference activities. Lending your participant card to others is not allowed.
- Please take good care of your valuables at any time during the conference. The conference organizer does not assume any responsibility for the loss of personal belongings of the participants during conference day.
- Program Time: **GMT+7** / **Time in Jakarta**. Please be aware of time difference between this and your region/country.

Online Presentation via Zoom Meeting Platform

Meeting ID: 890 9232 3118

Meeting Link: https://us02web.zoom.us/j/89092323118

Zoom Background: https://www.iccea.org/zoom-background.jpg

Note:

Participants who are going to do an online presentation are required to join the **rehearsal** in ZOOM on Saturday, Dec. 6. Duration: 2-3min apiece. Feel free to leave after you finish the test.

We recommend to install the Zoom platform beforehand. New users can login the Zoom meeting without registration.

Please set your display name before joining the online meeting. For instance,

Author/Presenter: Paper ID-Name < C001-Full Name >

Session Chair: <Session Chair-Full Name>

GENERAL INFORMATION

Conference Venue

Holiday Inn & Suites Jakarta Gajah Mada by IHG

Add: Jl. Gajah Mada No. 211 Jakarta 11120, Indonesia

T: +62 21 2977 6800 +18778595095

www.holidayinn.com/gajah-mada

Date	Type of Room	Standard Room
Dec 2025	Standard Room	IDR 1.100.000 net/pax/night
Dec 2025	Premium Room	IDR 1.281.500 net/pax/night

Room Reservation

Ms. Vidara Ruth | E-mail: vidararuthsatya.christianti@ihg.com | Tel.: +62 813 2392 0461

*Please kindly inform that you are participant of **ICCEA 2025** in order to get the group special rate.*

Meetings Rooms

7F Harmony 1

8F Batavia 3, Batavia 4

Dinning

3F Duta Café

CONFERENCE COMMITTEE

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V. V. N. Prabhakara Rao, VR Siddhartha Engineering College, India
Gunalaan Vasudevan, Tunku Abdul Rahman University of Management and Technology, Malaysia

AGENDA OVERVIEW

December 06, 2025 (Sat.)

14:00-18:00	On-site Registration/Sign-in	1F Hotel Lobby <Holiday Inn & Suites Jakarta Gajah Mada by IHG>
14:00-16:00	Zoom Test for Online Presenter	Zoom ID: 890 9232 3118 Link: https://us02web.zoom.us/j/89092323118

Timetable for Zoom Test

14:00-14:30	C068, C062, C092, C502, C526-A, C527, C185, C508-A, C528, C541
14:30-15:00	C015-A, C091, C139, C089, C099, C116, C123, C084
15:00-15:30	C001, C152, C193, C153-A, C041, C002, C161, C043, C151-A, C145, C104
15:30-16:00	C003, C096, C098, C039, C111, C117, C134, C140, C095, C162, C183

AGENDA OVERVIEW

December 07, 2025 (Sun.) Plenary Meeting

Harmony 1, 7th Floor

08:30-09:00	On-site Registration/Sign-in	
09:00-	Chairman: Prof. Thomas Kang, Seoul National University, South Korea	
09:00-09:50	Opening Remarks & Keynote Speech I	**Prof. Thomas Kang** Seoul National University, South Korea *Speech Title: Maximizing Carbon Neutrality and Circularity: Discovery of the Fifth Construction Element*
09:50-10:30	Keynote Speech II	**Prof. Dr. Ir. Herlien D. Setio** Institut Teknologi Bandung, Indonesia *Speech Title: Forensic Engineering for Infrastructure Quality Improvement*
10:30-10:50	Group Photo & Coffee Break	
10:50-11:30	Keynote Speech III	**Prof. Young (Youngchul) Kim** Korea Advanced Institute of Science & Technology, South Korea *Speech Title: Using Artificial Intelligence for Urban Analytics*
11:30-12:10	Keynote Speech IV	**Dr.-Ing. Andry Widyowijatnoko** Institut Teknologi Bandung (ITB), Indonesia *Speech Title: From Simple Bamboo Structures to the Invention of a New Structural System: The Journey from Reciprocal Frame to Rection*
12:10-13:30	Buffet Lunch < Duta Café, 3rd Floor >	

This year's plenary meeting/keynote speeches will not be live in Zoom meeting platform.
The conference organizer will share the recordings after the meeting is finished.
Thank you for your understanding.

AGENDA OVERVIEW

December 07, 2025 (Sun.) Parallel Oral Session

TIME	ACTIVITY	VENUE
13:30-15:50	**Oral Session 1:** Lean and Inclusive Built Environments for Urban Resilience *Chairperson:* Invited Talk: Lapyote Prasittisopin, Atef Badr C082, C101, C177, C174-A, C020, C120	Harmony 1 7th Floor
13:30-15:55	**Oral Session 2:** Intelligent Computing for Civil and Urban Systems *Chairperson:* Invited Talk: Sungjoo Hwang C070, C023-A, C119-A, C510, C044-A, C144, C150, C176-A, C178	Batavia 3 8th Floor
13:30-15:40	**Oral Session 3:** Resilience of Structures and Geotechnical Systems under Extreme Hazards *Chairperson:* Invited Talk: Ken S. Sivakumaran C005, C029, C063, C1006, C190, C007	Batavia 4 8th Floor
15:40-16:00	Coffee Break	
16:00-18:15	**Oral Session 4:** Sustainable Civil Materials and Environmental Geotechnics *Chairperson:* C075, C105, C173, C171, C165-A, C182, C179, C166, C180	Harmony 1 7th Floor
16:00-18:30	**Oral Session 5:** Advanced Cementitious Materials and Concrete Structural Performance *Chairperson:* C024-A, C112, C163, C164-A, C146, C160, C118, C181, C184	Batavia 3 8th Floor
16:00-18:45	**Oral Session 6:** Learner-Centered Innovation and Intelligent Technologies in Engineering Education *Chairperson:* C506, C515, C507, C516, C1003-A, C503, C514, C517, C518, C521, C520	Batavia 4 8th Floor
18:30-20:30	Buffet Dinner < Duta Café, 3rd Floor >	

AGENDA OVERVIEW

December 07, 2025 (Sun.) GMT+7 Online Session

Zoom Meeting ID: 890 9232 3118

TIME	ACTIVITY
13:30-16:00	**Online Session 1:** Smart Construction, Digital Technologies, and Engineering Education Innovation *Chairperson:* C068, C062, C092, C502, C526-A, C527, C185, C508-A, C528, C541
16:00-16:10	Breaktime
16:10-18:10	**Online Session 2:** Structural Engineering and Infrastructure Resilience *Chairperson:* C015-A, C091, C139, C089, C099, C116, C123, C084

December 08, 2025 (Mon.) GMT+7 Online Session

Zoom Meeting ID: 890 9232 3118

TIME	ACTIVITY
09:00-11:45	**Online Session 3:** Performance and Sustainability of Advanced Concrete Materials *Chairperson:* C001, C152, C193, C153-A, C041, C002, C161, C043, C151-A, C145, C104
11:45-12:30	Breaktime
12:30-15:15	**Online Session 4:** Climate-Responsive and Health-Oriented Sustainable Spatial Design *Chairperson:* C003, C096, C098, C039, C111, C117, C134, C140, C095, C162, C183

Note

* Online Meeting conference room will be open 15 mins before scheduled time.

* Online presenters are required to join the Zoom Test on **Saturday, Dec. 6.** If you are very familiar with Zoom, you can skip this step after confirmation with the conference secretary.

KEYNOTE SPEAKER

Prof. Thomas Kang

Seoul National University, South Korea

Dr. Thomas Kang, P.E., is a Professor at Seoul National University (SNU). He earned his Ph.D. from the University of California, Los Angeles (UCLA) and his B.S. from SNU. Dr. Kang is a Fellow of the American Concrete Institute (ACI), the Post-Tensioning Institute (PTI), and the Korean Academy of Science and Technology (KAST), and is a member of the National Academy of Engineering of Korea (NAEK).
He has received numerous prestigious awards, including the T.Y. Lin Award from the American Society of Civil Engineers (ASCE) in 2025, the Kenneth B. Bondy Award for Most Meritorious Technical Paper from PTI (twice, in 2012 and 2023), the Wason Medal for Most Meritorious Paper from ACI in 2009, and the Martin P. Korn Award from the Precast/Prestressed Concrete Institute (PCI) in 2023.
Dr. Kang currently serves as Editor-in-Chief of the Journal of Wind & Structures and as Associate Editor of the PTI Journal. His research focuses on the design and behavior of concrete structures and structures incorporating recycled plastics, as well as dynamic effects on structures, including wind, seismic, shock, and fire.

Speech Title: Maximizing Carbon Neutrality and Circularity: Discovery of the Fifth Construction Element

Abstract. Throughout human history, construction has relied on four foundational materials: wood, stone, cement-based composites, and steel. While fibers, polymers, and alloys have found niche applications, none have matched the scale or structural significance of these traditional materials.
This keynote speech introduces a transformative innovation: recycled plastic blocks, envisioned as the fifth construction material redefining the evolution of the built environment. Produced from mixed waste plastics recovered from oceans, rivers, and landfills, these blocks are manufactured without complex sorting or chemical separation. The plastics are melted at temperatures up to 250 °C and cast into interlocking units. Despite this simple process, the blocks achieve exceptional mechanical performance, a compressive strength of 24 MPa (comparable to concrete) and a tensile strength of 10 MPa (four to five times higher than concrete), allowing them to serve as structural substitutes for reinforced concrete.
Engineered for landscape structures, retaining and seawalls, embankments, housing, and vertical enclosures, these blocks combine versatility, resilience, and environmental innovation. By converting plastic waste into durable construction components, they offer a practical pathway toward Maximizing Carbon Neutrality and Circularity in the global construction sector.
This pioneering material has been internationally recognized, earning a Silver Medal in the Advanced Engineering Infrastructure Solutions category at the 2025 Edison Awards and being named a CES Innovation Awards 2026 Honoree, underscoring its potential to redefine sustainable infrastructure. Beyond mitigating

pollution and reducing the carbon footprint of conventional materials, the technology enables future remanufacturing and chemical upcycling, ensuring long-term adaptability and value retention.

Guided by the vision of a long-sought fifth element, this innovation marks a pivotal step toward a regenerative built environment—one that unites structural performance, ecological restoration, and design freedom in a single, enduring material system.

KEYNOTE SPEAKER

Prof. Dr. Ir. Herlien D. Setio

Institut Teknologi Bandung (ITB), Indonesia

Professor Dr. Ir. Herlien D. Setio is a professor in Structural Dynamics and Control and Head of the Structural Engineering Research Group at the Faculty of Civil and Environment Engineering Institut Teknologi Bandung (FCEE-ITB), Indonesia. She graduated from the Civil Engineering Department at Institut Teknologi Bandung (ITB) in 1981 and received her doctoral degree in Structural Dynamics from Ecole Centrale de Lyon, France, in 1990. She has been a lecturer at Institut Teknologi Bandung since 1982, where Structural Dynamics and Control are her main specialties. She is also active as a guest lecturer in the field of infrastructure forensics engineering in relation to corruption cases at the University of Indonesia (UI) for a Magister Collaboration Program of the Faculty of Law UI with the Indonesian Police Department. Throughout her service as a lecturer and government officer at ITB, Professor Setio has held various positions, including Head of the Civil Engineering Department, Head of the Structural Engineering Research Group FCEE-ITB, member of the Academic Senate ITB, and Head of the Senate FCEE-ITB. In addition, she is a member of AARGI, the Indonesian Earthquake Engineering Association. For her expertise, in 1994, she was awarded "The Best Paper Award" from the Society of Experimental Mechanics, USA, based on her publication in The International Journal of Analytical and Experimental Modal Analysis. Professor Setio's research focuses on Structural Dynamics and Control, where stabilizing structures excited by dynamic loading is the main interest. She has published more than fifty papers in various national and international journals, including the Journal of Sound and Vibration, the Journal of Applied Mechanics, the ASME Transactions, the Journal of the American Institute of Aeronautics and Aerospace (AIAA), The International Journal of Analytical and Experimental Modal Analysis, and the Society for Experimental Mechanics, Inc., USA. Prof. Setio is also active as a researcher in the field of Forensic Infrastructure Engineering, which is a branch of engineering that combines technical, legal, and forensic principles to investigate and analyse infrastructure failure. Over the last 10 years, she has served as an invited expert for the Indonesian Anti-Corruption Commission (Komisi Pemberantasan Korupsi-KPK), providing critical insights into infrastructure projects, especially in Infrastructure Forensic Engineering.

Speech Title: Forensic Engineering for Infrastructure Quality Improvement

Abstract. Infrastructure failures persist as a significant problem in Indonesia. Corrup-tion, technical incompetence, and weak governance in project implementa-tion are the main factors contributing to the poor quality of national infra-structure. The construction industry is among the sectors with the highest risk of fraud and project failure due to the large project values and the com-plexity of implementation. Therefore, a robust mechanism for preventing, monitoring, analyzing, diagnosing, and responding to fraudulent activities is essential to effectively mitigate these risks.

This research employs both qualitative and quantitative approaches, utilizing primary and secondary data obtained from investigations of various cases of structural failures and fraudulent practices in infrastructure

projects over the past decade. The findings indicate that infrastructure failures and poor con-struction quality are largely the result of widespread and systematic fraudu-lent practices involving multiple stakeholders across all project stages, from initiation and feasibility studies through planning, tendering, and construc-tion execution to project supervision and laboratory material testing. Corrupt practices significantly increase construction costs and reduce project quality, ultimately leading to higher infrastructure maintenance expenses.

This study proposes a preventive framework to eliminate or at least minimize the occurrence of corrupt practices in infrastructure development in Indone-sia through a forensic approach based on Root Cause Analysis (RCA) and Failure Mode Analysis (FMA).

KEYNOTE SPEAKER

Prof. Young (Youngchul) Kim

Korea Advanced Institute of Science & Technology, South Korea

Prof. Young (Youngchul) KIM, Ph.D. is an urban designer, licensed architect, researcher and educator, currently serving as an associate professor of urban design at KAIST (Korea Advanced Institute of Science and Technology) in South Korea. He teaches theory and design in architecture and urbanism. His current research interests include investigating planning and design strategies within the context of smart cities and climate change and employing deep learning and artificial intelligence approaches for urban analytics to capturing urban invisible characteristics. His urban research and urban design practice both explore roles of built environments in human being's daily challenges to continuously sustain their urban life. He leads the KAIST Smart City Research Center and KAIST Urban Design Lab.

Speech Title: Using Artificial Intelligence for Urban Analytics

Abstract. This keynote presentation delivers research outcomes from the KAIST Smart City Research Center and the KAIST Urban Design Lab, demonstrating urban analytic methods and applications from urban sensing to decision supports. First, a compute-vision method using street-view images is proposed to detects neighborhood growth and decline at a street level. Second, a decision support system is developed to identify vulnerable areas exposed to disaster risk in small declining urban districts for enhancing urban regeneration capacity. Third, an explainable artificial intelligence method is demonstrated to reveal vulnerable populations and interpretable features using a random-forest model of heat-related mortality with SHapley Additive exPlanations (SHAP). Fourth, an AI advisor is proposed to develop conceptual land-use planning for understanding contexts in a city. These studies illustrate how we have adopted machine and deep learning approaches to analyze urban space for accelerating equitable, resilient urban environments. This presentation concludes by reflecting on these methodological advances and a call of open dialogue of the widespread adoption of AI, which is expected to bring about a paradigm shift for urban analytics.

KEYNOTE SPEAKER

Dr.-Ing. Andry Widyowijatnoko

Institut Teknologi Bandung (ITB), Indonesia

Dr.-Ing. Andry Widyowijatnoko is an architect, lecturer, and researcher at the School of Architecture, Planning, and Policy Development, Institut Teknologi Bandung, Indonesia. He has been working with bamboo since 1999, initially focusing on using bamboo for low-cost housing. In 2006, he was sponsored by the Environmental Bamboo Foundation to travel to Colombia to learn about bamboo construction techniques. This experience transformed his approach, leading him to promote bamboo by designing high-end buildings to increase its perceived value. One of his notable achievements is the award-winning Great Hall OBI, an oval bamboo structure with spans ranging from 20 to 30 meters. He earned his doctoral degree in 2012 from the Chair of Structures and Structural Design, Faculty of Architecture, RWTH Aachen University, Germany. His dissertation, titled Traditional and Innovative Joints in Bamboo Construction, focused on bamboo joints. It began with a classification of bamboo construction types, followed by a detailed classification of bamboo joints, and concluded with a proposal for customized lashing-based bamboo joints with exceptional tensile strength. The patented joint, known as the Bamboo Radial Compression Joint (Barcom Joint) and its variation with multi-knots, was applied to improve the renowned Three Mountain Building in Bali. He is regarded as a pioneer of tensegrity structures in Indonesia, combining them with bamboo construction. Drawing on his experience with tensegrity and reciprocal frames, he invented a new structural system called Rection (Reciprocal Tension). Unlike conventional reciprocal frames, where rigid elements touch, Rection features elements that lift each other reciprocally without direct contact, similar to tensegrity principles. Two temporary bamboo Rection domes were built: one at Indonesialand in 2016 with a 13-meter diameter, and another at ITB in 2017 with a 10-meter diameter, followed by additional structures in Lampung and Malang. To promote proper bamboo construction techniques to architecture students and professionals worldwide, he cofounded the AA-ITB BambooLab Course with John Naylor in 2018, a joint workshop between ITB and the AA School of Architecture, London. He has delivered numerous lectures and conducted hands-on workshops on bamboo construction across Asia, Australia, Europe, and the Americas.

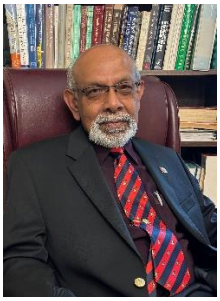
Speech Title: From Simple Bamboo Structures to the Invention of a New Structural System: The Journey from Reciprocal Frame to Rection

Abstract. Bamboo has long been recognized as a sustainable material with good strength-toweight ratio, rapid renewability, and resilience under compression and tension. Its potential is particularly significant for architectural and structural applications in postdisaster reconstruction, where eNiciency, adaptability, and environmental compatibility are essential. This study examines the progressive exploration of bamboo structures, beginning with simple post-disaster shelter prototypes employing low-technology construction methods.

The investigation revisits the reciprocal frame (RF) as an ancient self-supporting system characterized by mutual interdependence among structural elements. A combination of literature review and field practice reinforced the proposition that there is a structural and conceptual correlation between the reciprocal frame and tensegrity structures, leading to the formulation that the reciprocal frame can be understood as a collapsed tensegrity. While tensegrity systems emerged in the 1940s, their conceptual application in Indonesia remained unknown until the early 2013.

Further structural experimentation led to the development of a new hybrid system, termed Rection, in 2016. The Rection system integrates key principles of both reciprocal and tensegrity structures, establishing a transitional typology with highly improved material eNiciency. Full-scale workshops and empirical testing demonstrate its applicability in bamboo construction, highlighting potential benefits in modular assembly, lightweight performance, and educational implementation. This practice contributes to the broader discourse on innovative structural systems derived from traditional materials, oNering insights into sustainable architectural practice and the evolution of spatial-structural design.

INVITED SPEAKER



Prof. Ken S. Sivakumaran

Department of Civil Engineering, McMaster University, Canada

Prof. Ken Sivakumaran is currently a Professor Emeritus at the Department of Civil Engineering, McMaster University, Canada. He obtained his Ph.D. in Solid Mechanics (Civil Engineering) from the University of Calgary, Alberta, Canada. He supervised several graduate students and published over 150 journal and conference papers in the area of steel structures in general, and cold-formed steel structures in particular. He is a member of Canadian Technical Committee on Cold Formed Steel Structural Members- CSA-S136 and he is a member of several committees of the American- AISI-North American Cold-Formed Steel Specification. He had been in the editorial boards of several international journals, including Canadian Journal of Civil Engineering, Steel and Composite Structures, An International Journal, etc.

Speech Title: Effect of flange fastener holes on strength and rotational capacity of steel i-beams

Abstract. Bolted moment connections of steel frames require flange holes which may compromise the strength and the rotational capacity of the beam ends. The objectives of the research program were: (i) to investigate the effects of flange holes and flange fastener holes on the strength and rotation capacity of steel I-beams made of ASTM A992 steel, and (ii) to assess the validity of exemption rules currently provided in international codes for moment connections having flange holes. This paper presents an experimental investigation, involving twenty-five steel beam specimens, on the effects of flange holes on the flexural behaviour of steel I-beams. Circular holes of various diameters (0% to 48% of the gross flange area) are under consideration. The four test groups are: (1) tests with solid flanges, (2) tests with holes in tension flanges only, (3) specimens with holes in both tension and compression flanges, and (4) beams with flange holes in both flanges but with fasteners placed in these holes. The experiments reveal that the beam specimens having the AfnFu/AfgFy $\geqslant$ 1.0 were able to reach the gross-section plastic moment and exhibit substantial inelastic rotation capacity (Ry of more than 9). If AfnFu/AfgFy <1.0 then the beam specimens failed primarily due to a rupture of tension flange through the flange holes which substantially reduced the inelastic deformation capacity. This research study recommends a design approach analogous to the axial tension member provisions. The comparison of the proposed design procedure with the corresponding international code provisions reveals that the current code provision is unnecessarily conservative for steel grades such as A992 steel. On the other hand, the current code provision may not be adequate for higher strength steels such as HSLA 80 steel, ASTM A913 Gr: 60 and HPS-485W having the minimum yield-to-ultimate strength ratio of more than 0.85.

INVITED SPEAKER

Assoc. Prof. Lapyote Prasittisopin

Chulalongkorn University, Thailand

Dr. Lapyote Prasittisopin is Director of Center of Excellent on Green Tech in Architecture, Chulalongkorn University and Associate Professor in Department of Materials Science, Faculty of Science, Chulalongkorn University. He received his MS degree in Material Science (Polymer) and his PhD in Civil Engineering (Structural Material) from Oregon State University, USA as well as B.Eng. Chemical Engineering from Chulalongkorn University and LL. B. Law from Sukhothai Thammathirat University. He was former a researcher at Siam Cement Group, Thailand and O.H. Hinsdale Wave Research Laboratory, USA to launch several structural products. He has published 14 patents and more than 100 academic articles. His research interests include Architecture Engineering, Digital Construction, Building Materials, Sustainability, and Circular Design.

Speech Title: ARCHITECTURE 5.0: Bridging the Human-Centric Gap in Industry 5.0 for Sustainable and Resilient Innovation in the Architecture, Engineering, and Construction Sector

Abstract. As the Architecture, Engineering, and Construction (AEC) sector evolves with technologies from Industry 4.0—such as Building Information Modeling (BIM), robotics, the Internet of Things (IoT), and big data—there is growing interest in transitioning toward Industry 5.0, also called as "Architecture 5.0", which emphasizes human-centricity, sustainability, and resilient innovation aligned with the United Nations Sustainable Development Goals (UN SDGs). However, the application of Architecture 5.0 within AEC sector remains very limited, particularly in addressing human-centered approaches. This review and thematic analysis determined 140 peer-reviewed articles from the Scopus database to assess current research trends and identify gaps. The analysis reveals that energy efficiency (38 occurrences), urban design (30), and project management (21) dominate the discourse, while critical areas such as decision-making (15), air quality (11), sensor integration (7), and deep learning (7) are significantly underrepresented. These findings present an imbalance in research efforts, suggesting the need for expanded focus on technologies and strategies that prioritize human well-being, real-time feedback, and adaptive resilience. This paper offers a conceptual framework and actionable recommendations of Architecture 5.0 for policymakers, planners, designers, and other stakeholders to guide the AEC sector toward a more human-centric, sustainable, and resilient future.

INVITED SPEAKER

Assoc. Prof. Sungjoo Hwang

Ewha Womans University, South Korea

Dr. Sungjoo Hwang is an associate professor in the Department of Architectural & Urban Systems Engineering at Ewha Womans University. His research centers on the application of information and communication technologies (ICT) to urban systems and infrastructure management, with a particular focus on urban safety, environmental comfort, quality of life, and disaster risk reduction. He leads the Urban Informatics and Intelligent Infrastructure Lab, where his team develops ICT-based solutions—such as wearable sensing, computer vision, machine learning, and geospatial data analytics—to enhance everyday urban experiences. His interdisciplinary work spans smart city systems, emergency response modeling, and AI-enabled monitoring of the built environment. By bridging architectural engineering, urban systems design, and data-driven technologies, Dr. Hwang seeks to advance the development of responsive, inclusive, and resilient cities that improve the lives of their residents.

Speech Title: Vision AI for Assessing Pedestrian Path Quality: Integrating Environmental Perception, Safety, and Accessibility

Abstract. Ensuring safe, comfortable, and accessible pedestrian environments is essential for promoting urban well-being and resilience. This study proposes an integrated AI-based framework for assessing pedestrian path quality, combining analyses of environmental perception, walking safety, and physical accessibility. First, environmental pleasantness is evaluated through component-based analysis of streetscape images using computer vision and machine learning models, which not only detect the presence of visual elements such as greenery and pavement but also infer their qualitative characteristics—such as density, continuity, and maintenance conditions—that influence perceived comfort in the walking environment. Second, walking barriers are detected by identifying abnormal pedestrian gait patterns through OpenPose-based keypoint tracking and LSTM autoencoder models applied to urban CCTV video data, enabling real-time safety monitoring. Lastly, physical accessibility is assessed by estimating road widths using GIS-based road polygon data and morphological image processing, complemented by 3D object detection of obstacles such as illegally parked vehicles to extract effective road widths and evaluate the mobility of disaster response vehicles in narrow alleys. This integrated approach offers an automated solution for monitoring, assessing, and improving the quality of pedestrian infrastructure in terms of comfort, safety, and accessibility, thereby supporting data-driven interventions in high-risk or underserved urban areas.

INVITED SPEAKER

Prof. Atef Badr

Department of Civil Engineering & Quantity Surveying,

The Military Technological College, Muscat, Oman

Professor Atef Badr is a resolute academic leader with a strong record of academic, industrial and management experience across the globe, including UK, Egypt, Oman, Saudi Arabia, and Kazakhstan. He is a Chartered Manager, a Chartered Civil Engineer (CEng) and a Fellow of the Institution of Civil Engineers (FICE) with expertise in construction materials, structures, concrete technology, water engineering, renewable energy, and sustainable construction. His research on concrete technology was acknowledged by the Institution of Concrete Technology (ICT) and, therefore, he has been honored with its fellowship (FICT), in 2017. Professor Badr is a regular Invited/Keynote Speaker in international conferences including, The Concrete Solutions series (International Conference on Concrete Repair), Neville Symposium on Advances in Concrete Technology, and Arab Engineering Conference. Professor Badr is the Chairman of the ICSBC series (International Conference on Sustainable Buildings and Construction) and the Editor in Chief of the proceedings of its three editions. The first was the 2017 International conference on Cement and Concrete Technology "Concrete for the Modern Age: Developments in Materials and Processes", published by Whittles publishing, Scotland, UK. The second was in 2021 on the Water Engineering and Management of Water Resources "Towards a Sustainable Water Future", published by Tomas Telford, Institution of Civil Engineers (ICE), UK. This year he is chairing the ICSBC2025 "Towards a Sustainable Construction – Building the Future".

Speech Title: The Role of the Construction Industry in Global Development, Social Security and Adapting to Climate Change

Abstract. The construction industry is a vital sector contributing significantly to the economic growth, social security, and national prosperity, particularly in developing countries. In addition, the construction industry provides the world population with accommodations, comfortable living spaces, workplaces, facilities for everyday activity, infrastructure, educational institutions, and healthcare establishments. Thus, protecting their health and wellbeing. Unfortunately, these desirable economic and social benefits are often eclipsed by its impact on the environment. The adverse impact of the construction processes on the environment is widely acknowledged, although in many cases the adverse impact is related to the operation of the facility or buildings after the completion of the construction. This paper aims to provide a balanced perspective of the construction industry and address the role of the construction industry in global development, social security and adapting to climate change. At one hand, the contributions of the construction industry to the economic growth and social security were demonstrated by quantifying the contribution to the gross domestic product (GDP) and the employment within the sector. On the other hand, the paper provided critical appraisal of the adverse effect of the construction industry on the environment. Finally, the paper highlighted the importance of sustainable construction as a driving force for a greener future and helping all countries in meeting their obligation to reduce the emission of greenhouse gases (GHG) and adapting to climate change, in compliance with, legally binding, Paris Agreement on climate change.

ORAL SESSION 1

December 07, 2025 (Sun.) 13:30-15:50	Harmony 1, 7th Floor

Oral Session 1: Lean and Inclusive Built Environments for Urban Resilience

Chairperson:

Time	Paper ID	Speech Title & Presenter
13:30-13:55	Invited Speaker	Architecture 5.0: Bridging the Human-Centric Gap in Industry 5.0 for Sustainable and Resilient Innovation in Architecture, Engineering, and Construction Sector ***Assoc. Prof. Lapyote Prasittisopin, Chulalongkorn University, Thailand***
13:55-14:20	Invited Speaker	The Role of the Construction Industry in Global Development, Social Security and Adapting to Climate Change ***Prof. Atef Badr, Department of Civil Engineering & Quantity Surveying, The Military Technological College, Muscat, Oman***
14:20-14:35	C082	Analysis of the Application of Lean Supply Chain Management in Construction Projects: Case Study of the Coastal Protective Embankment Project, NCICD Phase A, Location 1, Package 2 *Arif Luqman Hakim, Hasanuddin University, Indonesia*
14:35-14:50	C101	Urban Resident Preference Toward Four-story Flat Residence in Jakarta *Nina Nurdiani, BINUS University, Indonesia*
14:50-15:05	C177	Optimizing Bus Stop Design through Simulation for Sustainable Public Transport in the Philippines *Charles Galang Lim, Pampanga State University, Philippines*
15:05-15:20	C174-A	Analyzing the Long-Term Effects of Grey Infrastructure and the role of Green infrastructure as Coastal Defenses Against Extreme Weather Events in a Climate Change Scenario *S Rashina, Indian Institute of Technology, Kharagpur, India*
15:20-15:35	C020	Impacts of Global Warming and Fine Particulate Matter on Semi-Prefabricated House Design and Construction *Suphichaya Suppipat, Chulalongkorn University, Thailand*
15:35-15:50	C120	Reinventing Placemaking Through Tactical Urbanism *Neha Jaiswal, Indian Institute of Technology Kharagpur, India*

ORAL SESSION 2

December 07, 2025 (Sun.) 13:30-15:55	Batavia 3, 8th Floor

Oral Session 2: Intelligent Computing for Civil and Urban Systems

Chairperson:

Time	Paper ID	Speech Title & Presenter
13:30-13:55	Invited Speaker	Vision AI for Assessing Pedestrian Path Quality: Integrating Environmental Perception, Safety, and Accessibility ***Assoc. Prof. Sungjoo Hwang, Ewha Womans University, South Korea***
13:55-14:10	C070	Comparative Study of CatBoost, LightGBM, XGBoost, and Random Forest for Multi-Criteria Vendor Selection in Construction Project *Arif Haidar Nur Shidqi, Diponegoro University, Indonesia*
14:10-14:25	C023-A	Experimental Investigation on the Applicability of Image-Based Combined Nondestructive testing method *Yeongtaek Yoon, University of Seoul, South Korea*
14:25-14:40	C119-A	Spatial Interpolation Methods using GIS in Urban Noise Mapping: A Review of Techniques and Performance *Alice Tongbram, Indian Institute of Technology Kharagpur, India*
14:40-14:55	C510	Predicting Civil Engineering Licensure Examination Success Using J48 Decision Tree Classification *Jasmine A. Tulin, Cebu Institute of Technology-University, Philippines*
14:55-15:10	C044-A	Investigating the Potential of Biometric Data for Real-Time Assessment of Excavator Operators' Situation Awareness *Minji Choi, Inha University, South Korea*
15:10-15:25	C144	Production of Informal Social Space in Jakarta High-Density Residential: A Computational Space Syntax Investigation *Luqman Kamaluddin, Universitas Indonesia, Indonesia*
15:25-15:40	C150	A Computational Workflow for Balancing Daylight and Thermal Comfort Using Sensitivity Analysis and Multi-Objective Optimization in Tropical Climates *Vine Novia and Miktha Farid Alkadri, Universitas Indonesia, Indonesia*
15:40-15:55	C176-A	Modal Shift Analysis of Road-based Transportation to Rail-based Public Transport: A case study prior to implementation of MRT7 in Quezon City, Philippines *Eric John Laron, De La Salle University, Manila, Philippines*

ORAL SESSION 3

December 07, 2025 (Sun.) 13:30-15:25	Batavia 4, 8th Floor

Oral Session 3: Resilience of Structures and Geotechnical Systems under Extreme Hazards

Chairperson:

Time	Paper ID	Speech Title & Presenter
13:30-13:55	Invited Speaker	Effect of Flange Fastener Holes on Strength and Rotational Capacity of Steel I-beams ***Prof. Ken S. Sivakumaran, McMaster University, Canada***
13:55-14:10	C005	2023 Turkey Earthquake and Damages on Reinforced Concrete Buildings *Hasan Husnu KORKMAZ, Necmettin Erbakan University, Turkiye*
14:10-14:25	C029	Site-Tailored Rebar Optimization for Diaphragm Walls in Deep Excavation: A Case Study from an MRT Station *Daniel Darma Widjaja, Department of R&D, Earth Turbine, Co., Ltd., South Korea*
14:25-14:40	C063	Advances in Vibratory Probe Compaction Techniques for Loose Ground Improvement *Zhongxun Zhuang, Southeast University, China*
14:40-14:55	C1006	Blast Load Resistance of Bridge Columns *Lan Lin, Concordia University, Canada*
14:55-15:10	C190	FEM-Based Study on the Coupled Burst – Seismic Behaviour of FRP-Reinforced Offshore Pipelines *Mohd Hairil Mohd, Center for Offshore Renewable Energy (CEFORE), Universiti Malaysia Terengganu, Malaysia*
15:10-15:25	C007	Integrated Optimization-Based Assessment of Infinite Slope Stability Under Seepage and Seismic Loading *Primož Jelušič, University of Maribor, Slovenia*

ORAL SESSION 4

December 07, 2025 (Sun.) 16:00-18:15	Harmony 1, 7th Floor

Oral Session 4: Sustainable Civil Materials and Environmental Geotechnics

Chairperson:

Time	Paper ID	Speech Title & Presenter
16:00-16:15	C075	Assessment of Water Absorption Behaviour in Eco-Friendly rHDPE and Bamboo Fibre Composites Under Immersion Exposure *Norakmar Ahmad Sabri, National Defence University of Malaysia, Malaysia*
16:15-16:30	C105	A multifaceted analysis of rheology, performance, and sustainability on various warm mix asphalt technology *Putri Adhitana Paramitha, National Central University, Taiwan*
16:30-16:45	C173	Experimental Study on Compressive Strength of Concrete Cylinder Retrofitted by Fiberglass Net Mesh *Francis Cayanan, Pampanga State University, Philippines*
16:45-17:00	C171	Analysis of the Compression and Bending Moment Connection between Laminated Bamboo Dowel Connector and Paraserianthes falcataria Laminated Veneer Lumber (LVL) *Sri Praba Aditya, Hasanuddin University, Indonesia*
17:00-17:15	C165-A	Effect of Coal Gasification Slag on the Durability of Steam-Cured Mortar *Rikito Takahashi, Tokai University, Japan*
17:15-17:30	C182	Innovative approaches for sediment management and material recovery: A case study of the Fergoug dam in western Algeria *Nassima Ittou, University of Science and Technology Houari Boumediene (USTHB), Algeria*
17:30-17:45	C179	Surface morphology evaluation of geosynthetics subjected to installation damage and aggressive soil environments *Linda NAGA, University of Science and Technology Houari Boumediene (USTHB), Algeria*
17:45-18:00	C166	Composition and Characteristics of Brick for Conservation and Restoration Materials of Heritage Buildings as an Inspiration for Sustainable Construction *Hana Warden Puruhita, Sebelas Maret University Surakarta, Indonesia*
18:00-18:15	C180	Comparative Evaluation of Granular and Mineral Additives for Enhancing the Compaction Performance of Fine-Grained Soils Under Low Moisture Conditions *Yousra HOCINI, University of Science and Technology Houari Boumediene (USTHB), Algeria*

ORAL SESSION 5

December 07, 2025 (Sun.) 16:00-18:15	Batavia 3, 8th Floor

Oral Session 5: Advanced Cementitious Materials and Concrete Structural Performance

Chairperson:

Time	Paper ID	Speech Title & Presenter
16:00-16:15	C024-A	Ultrasonic Attenuation-Based Prediction of Yield Stress and Viscosity in Fresh Concrete for 3D Printing *Su Min Yoon, University of Seoul, South Korea*
16:15-16:30	C112	Effect of Rubber size and W/C on the Splitting Tensile Strength of Rubberized Concrete *Yu Qiu, University of Toyama, Japan*
16:30-16:45	C163	Fundamental Study on Hardening Properties at Early age of Steam-Curing of Mortar Using Coal Gasification Slag *Koya Ogata, Tokai University, Japan*
16:45-17:00	C164-A	Effect of Secondary Curing Using Foam on Strength Development and Surface Appearance of Steam-Cured Mortar *Riku Tsukiura, Tokai University, Japan*
17:00-17:15	C146	Characterization On The Mechanical Properties Of Concrete Using Fly Ash – Based Geopolymer Mortar As A Repair Material *John Paul Nathaniel U. Baltazar, Technological University of the Philippines, Manila, Philippines*
17:15-17:30	C160	The Effect of Water Sprinkling Curing Using Surfactants on Strength Development of Steam-Cured Mortar *Yuka Fujisaki, Tokai University, Japan*
17:30-17:45	C118	Experimental Study of Fatigue Performance of SM490 Bridge Steel Against Corrosion Effects: Testing Around Threshold Stress Range *Fauzri Fahimuddin, Politeknik Negeri Jakarta, Indonesia*
17:45-18:00	C181	Performance of Hydraulic Cement Substituted Concrete with Microfiber, Superplasticizer, and Silica Fume under Aggressive Environments *Nunung Martina, Politeknik Negeri Jakarta, Indonesia*
18:00-18:15	C184	Flexural Behaviour of Reinforced Lightweight Aggre-gate Concrete Using OPC and LC3 Concretes *Tehmina Ayub, NED University of Engineering and Technology, Pakistan*

ORAL SESSION 6

December 07, 2025 (Sun.) 16:00-18:45	Batavia 4, 8th Floor

Oral Session 6: Learner-Centered Innovation and Intelligent Technologies in Engineering Education

Chairperson:

Time	Paper ID	Speech Title & Presenter
16:00-16:15	C506	Developing ChatGPT application solution to enhance interaction and learning motivation for engineering students at FPT University *Nhi Danh Thi, FPT University, Vietnam*
16:15-16:30	C515	Clustering Learning Strategies, Challenges, and Support Systems in Introductory Programming: Insights from Non-Computer Engineering Undergraduates *Nikko D. Alferez, Cebu Institute of Technology - University, Philippines*
16:30-16:45	C507	Assessing Usability and Engagement Across IDEs and Interactive Programming Platforms in Engineering Education *Johnalyn Langi Figueras, Cebu Institute of Technology University, Philippines*
16:45-17:00	C516	Exploring Emotional Responses and Reflective Experiences of Non-Computer Engineering Undergraduate Students in Introductory Programming: Implications for Students' Learning and Teaching Practices *Engr. Nash Uriel A. Tapayan, Cebu Institute of Technology - University, Philippines*
17:00-17:15	C1003-A	Empowering her journey: A peer led mentorship model for women in engineering education *Ghada Salama, Texas A&M University, Qatar*
17:15-17:30	C503	Diagnostic Profiling of First-Year Computer Engineering Students at Cebu Institute of Technology – University: Insights for Targeted Math Interventions and Curriculum Development *Lindl Michael Enario, Cebu Institute of Technology University, Philippines*
17:30-17:45	C514	Assessing Computer Engineering Students' Perceptions of OJT Outcomes: Insights for Internship Enhancement and Career Preparation *Engr. Jundith D. Alterado, Cebu Institute of Technology - University, Philippines*
17:45-18:00	C517	Proposal of a Generative AI Approach to Aid in Program Comprehension *Katsuyuki Umezawa, Shonan Institute of Technology, Japan*

18:00-18:15	C518	Connecting What Students Believe to How They Learn: Effects of Epistemological Beliefs on Learning Approaches and Academic Performance *Mervin John C. Tampus, Cebu Institute of Technology - University, Philippines*
18:15-18:30	C521	The Current Situation of ChatGPT Application in Learning of Technology Students at FPT Can Tho University *Linh La Thi Mong, FPT University, Việt Nam*
18:30-18:45	C520	User Satisfaction with an Integrated University Financial Information System: A Survey Across Seven Modules *SAYED/ZALEHA, Universiti Pendidikan Sultan Idris, Malaysia*

ONLINE SESSION 1

December 07, 2025 (Sun.) GMT+7	**Zoom Meeting ID: 890 9232 3118**
13:30-16:00	Link: https://us02web.zoom.us/j/89092323118

Online Session 1: Smart Construction, Digital Technologies, and Engineering Education Innovation

Chairperson:

Time	Paper ID	Speech Title & Presenter
13:30-13:45	C068	An AOA-Optimized XGBoost Approach for Rapid and Accurate Cooling Load Prediction of Double-Skin Facades for Enhanced Energy Efficiency *Meng Liu, Shanghai Urban Construction Vocational College, China*
13:45-14:00	C062	Optimization Analysis of Key Process Quality of Assembled Composite Floor Slab Based on BIM Technology *Haodong Liu, Gansu Seventh Construction Group Co., LTD., Lanzhou, China*
14:00-14:15	C092	Procedural Design for Interwoven Structures using SL Blocks: A Computational Framework for Modular Architecture *Tsung-Wei Cheng, National Taiwan University of Science and Technology, Taiwan*
14:15-14:30	C502	Effects of Giving and Receiving Advice on Manual Task Performance and Brain Activity *Takashi Usuzaka, Kochi University, Japan*
14:30-14:45	C526-A	Digital Twin Technology Empowering the Transformation of Teaching Models in Vocational Education: A Comparative Study of Cases from Germany and Switzerland *Yinan Lu, Tongji University, China*
14:45-15:00	C527	From Virtual Classrooms to Marketplaces: Online Engineering Education for Entrepreneurial and Market-Oriented Mindset Development *Hong Minh Ngoc Tran, FPT University, Vietnam*
15:00-15:15	C185	Selecting an Appropriate Method for Risk Response Strategies in Construction Projects *Dhafer Alqahtani, King Khalid University, Saudi Arabia*
15:15-15:30	C508-A	Designing Success: Teaching Engineering Design in Vocational Higher National Qualifications – A Classroom Case Study *Sindhu Pudipeddi, Cardiff and Vale College, UK*
15:30-15:45	C528	Enhancing Innovation Capacity in Engineering Education through Artificial Intelligence Integration: A Case Study of Higher Education in Can Tho City, Vietnam *Anh Nguyen Thi Van, FPT University, Vietnam*
15:45-16:00	C541	Engineering Education Research Worldwide: Intellectual Structure, Collaboration, and Emerging Directions from a *Bibliometric* Perspective *Basri Omac, Munzur University, Turkiye*

ONLINE SESSION 2

December 07, 2025 (Sun.) GMT+7	**Zoom Meeting ID: 890 9232 3118**
16:10-18:10	Link: https://us02web.zoom.us/j/89092323118

Online Session 2: Structural Engineering and Infrastructure Resilience

Chairperson:

Time	Paper ID	Speech Title & Presenter
16:10-16:25	C015-A	Bamboo Bending for Architectural Structure: A Case-Based Exploration *Rutchanoophan Kumsingsree, Mahasarakham University, Thailand*
16:25-16:40	C091	Seismic Fragility Assessment of High-Rise Reinforced-Concrete Buildings with Torsional Irregularity Based on Incremental Dynamic Analysis *Joshua E. Vacaro, Mapúa University, Philippines*
16:40-16:55	C139	Optimization of Timber Pile – Reinforced Foundations with Compact Sand and Geotextile Improvement in Weak Soil Conditions *Vo Nguyen Phu Huan, Ho Chi Minh City Open University*
16:55-17:10	C089	Spatial, Temporal, and Highway Type Investment Analysis of TxDOT Construction Projects *Hemraj Parate, James Construction Group, LLC, United States*
17:10-17:25	C099	Predicting strength of high-performance concrete using extreme gradient boosting machine learning: A comparative analysis between Optuna and Grid Search Cross-validation hyperparameter tuning *Ryan Tyler, University of South Africa, South Africa*
17:25-17:40	C116	Numerical Investigation of a Wedge-Sleeve Connection for Demountable Steel Structures *Alexandru Chira, University of Applied Sciences and Arts Western Switzerland HES-SO, Switzerland*
17:40-17:55	C123	Determination of flood extent using google earth engine: Case of the Saldanha Bay Local Municipality, South Africa *Niclas khawulani Magagula, University of South Africa, South Africa*
17:55-18:10	C084	Influence of seismic characteristics on the dynamic response of shallow buried highway tunnel lining structure *Zhe Bai, Chongqing Vocational Institute of Engineering, China*

ONLINE SESSION 3

December 08, 2025 (Mon.) GMT+7	**Zoom Meeting ID: 890 9232 3118**
09:00-11:45	Link: https://us02web.zoom.us/j/89092323118

Online Session 3: Performance and Sustainability of Advanced Concrete Materials

Chairperson:

Time	Paper ID	Speech Title & Presenter
09:00-09:15	C001	Meso-scale Analysis Crack Resistance of Dam Concrete *Kailai Zhang, China Three Gorges Corporation, China*
09:15-09:30	C152	Effect of Heat Transfer of Formwork on Morter *Shugo Nagamatsu, Tokai University, Japan*
09:30-09:45	C193	Study on preparation and performance of cement mortar board for absorbing SO_2- NO gas *Ronghua Wang, Beijing University of Technology, China*
09:45-10:00	C153-A	The effect of dosing CfFA on various properties of precast concrete products *Kotaro Ishikawa, Tokai University, Japan*
10:00-10:15	C041	Graphene Oxide in Concrete: A Review of Key Factors Determining the Optimal Dosage for Enhancing Mechanical Strength *Gabriela Vallejos-Kam, Peruvian University of Applied Sciences, Peru*
10:15-10:30	C002	Analysis of the Crack Resistance Capacity of hydraulic Concrete Considering Autogenous Volume Deformation *Kailai Zhang, China Three Gorges Corporation, China*
10:30-10:45	C161	Effect of cellulose nanofibers additive on Properties of Shotcrete *Yuzuto Nomura, Tokai University, Japan*
10:45-11:00	C043	Mechanical Performance and Durability of a Sustainable Concrete Using Coffee Husk Ash as Partial Cement Replacement *Kimberly Crispin-Flores, Peruvian University of Applied Sciences, Peru*
11:00-11:15	C151-A	Effect of Thermal Stimulation on Various Properties of Mortar Containing Blast Furnace Slag *Yuto Hidai, Tokai University, Japan*
11:15-11:30	C145	Experimental Study on the Effect of Cement Grouting Length on the Shear Capacity of Reinforced Concrete Beams without Stirrups *Rendy Thamrin, Universitas Andalas, Indonesia*
11:30-11:45	C104	Proposed Mechanical Design of Hydraulic Concrete Cobblestones with the Addition of Coconut Fiber *Ada S.Rodriguez, Universidad Tecnológica Centroamericana, Honduras*

ONLINE SESSION 4

December 08, 2025 (Mon.) GMT+7	**Zoom Meeting ID: 890 9232 3118**
12:30-15:15	Link: https://us02web.zoom.us/j/89092323118

Online Session 4: Climate-Responsive and Health-Oriented Sustainable Spatial Design

Chairperson:

Time	Paper ID	Speech Title & Presenter
12:30-12:45	C003	Study on Micro-Renewal Design of Outdoor Sports Areas in Cold Region Universities Guided by Health Promotion: A Case Study of Harbin Institute of Technology (HIT) *Chen Jin, Harbin Institute of Technology, China*
12:45-13:00	C096	Optimization of External Spatial Form in Historical Districts Based on Microclimate Improvement *Shuyao Ren, Southeast University, China*
13:00-13:15	C098	A Comparative Analysis of SCS-CN and SCS-SA Rainfall Runoff Models Using Geospatial Intelligence in the City of Mbombela Local Municipality, South Africa *Shimane Phemelo Phahlamohlaka, University of South Africa, South Africa*
13:15-13:30	C039	The harmonious relationship between public space and surrounding buildings in the historical city of Lugoj, Romania *Cristina Draghici, Polytechnic University of Timisoara, Romania*
13:30-13:45	C111	Modeling of Service Quality Factors of Construction Contractors Affecting Project Owner Satisfaction in Housing Development Projects in Thailand *Kornvisith Silarom, Sukhothai Thammathirat Open University, Thailand*
13:45-14:00	C117	A Rural Settlement Generation Design Model Based on Shape Grammar Theory A Case Study of Renli Village in Jinan *Guo Daoyi, Independent Researcher, Shanghai, China*
14:00-14:15	C134	Study on Design Optimization of Community Walking Greenways Guided by Health Promotion: A Case Study of the Nanyuan Community of Xi'an University of Architecture and Technology (XAUAT) *Chen Jin, Harbin Institute of Technology, China*
14:15-14:30	C140	Statistical Modelling of Coastal Evacuation Center Compliance with Refuge Site Standards: A Framework for Sustainable Urban Disaster Planning *Eden Gay Mingullo Deabanico, National University, Philippines*
14:30-14:45	C095	Applicability of Sponge City Concept for Improved Design of Drainage Systems using EPA SWMM to Control Severe Flooding Around Padre Burgos Avenue (Near Manila City Hall), Manila City *Joaquin Rafael Casim, Mapúa University, Philippines*

14:45-15:00	C162	Impact of Climate and Land Use Changes on Water Quality in the Upper Vaal River Basin *Samukelisiwe Nokuthula Mathenjwa, Tshwane University of Technology, South Africa*
15:00-15:15	C183	Vertical Cemeteries as Urban Land-Use Solutions: Redevelopment Strategy for La Filipina Public Cemetery, Tagum City *Alexandra B. Malcampo, Mapúa Malayan Colleges Mindanao, Philippines*

POSTER DISPLAY

December 07, 2025 (Sun.) **13:30-18:00**		**Harmony 1, 7th Floor**
#1	C109-A	Numerical Investigation of Fireproof Door Resistance to Internal Explosive Threats in Nuclear Facilities *Hyeona Kwon, Korea National University of Transportation, South Korea*
#2	C107-A	Quantitative Estimation of Pothole Area Using a Black-Box Approach Based on Mask R-CNN *Arim Gwon, Korea National University of Transportation, South Korea*
#3	C114-A	Strength Enhancement of Cementitious Composites Using Carbon Nanotubes: A Comprehensive Review *Seungyeol Oh, Korea National University of Transportation, South Korea*

NOTE

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