

## The 6th International Conference on Civil and Building Engineering Informatics (ICCBEI 2025)

*Time: 8-11 January 2025*

*Venue: Crowne Plaza Kowloon East Hotel, Tseung Kwan O, Hong Kong*

### PROGRAM

8 Jan 2025, Wednesday	
Time	Technical Visits to HKUST & CIC
13:45-14:00	Registration (Lobby of Crowne Plaza Kowloon East Hotel)
14:00-18:00	Technical Visits to HKUST & CIC (HKUST, CIC CITAC, CIC-Zero Carbon Park, MiC Resources Centre and CIC Digital Twin Hub)
Time	Venue: 47/F, Cielo Restaurant and Bar, Crowne Plaza Kowloon East Hotel
18:00 – 19:00	Registration (1/F, Crowne Plaza Kowloon East Hotel)
18:00 – 20:00	<b>Pre-Conference Welcome Reception</b>
9 Jan 2025, Thursday	
Time	Venue: Grand Ballroom II-III (1/F)
08:30 – 09:00	Registration
09:00 – 09:30	Welcome Speeches <b>Ir John KWONG Ka-Sing, BBS</b> (Vice-President for Development, HKUST) <b>Prof. Hong Kam LO, JP</b> (Dean of Engineering, HKUST) <b>Prof. Jack Cheng</b> (Conference Chair; Professor and Associate Head, HKUST) <b>Prof. Nobuyoshi YABUKI</b> (Conference Chair; President of AGCEI, Professor, Osaka University)
09:30 – 09:45	Opening Speech by Guest of Honor <b>Ir Ricky LAU Chun-kit, JP</b> (Permanent Secretary for Development (Works), HKSAR)
09:45 – 10:00	Group Photos
10:00 – 10:15	Opening Keynote Presentation <b>Ir Prof Thomas HO</b> (Chairman, Construction Industry Council, Hong Kong)
10:15 – 10:25	<b>Networking Break with Coffee</b>

10:25 – 12:15	<b>Keynote Presentations (Chairs: Prof. Nashwan DAWOOD, Prof. Markus KONIG)</b> <i>“Opportunities and Trends of Computing in Civil and Building Engineering”</i> <ul style="list-style-type: none"> <li>- <b>Prof. Kincho H. LAW</b> (Stanford University, USA)</li> </ul> <i>“Enhancing Construction Safety with CBS and AI”</i> <ul style="list-style-type: none"> <li>- <b>Prof. Dongping FANG</b> (Tsinghua University, China)</li> </ul>		
10:25 – 12:15	<i>“Let’s Build a Better World, and Future-proof Our Smart Cities Through Digital Transformation!”</i> <ul style="list-style-type: none"> <li>- <b>Ar Prof. Ada FUNG</b> (Hong Kong, China Chapter of buildingSMART International)</li> </ul> <i>“Transforming Construction: The Shift from Traditional Practices to Intelligent Systems”</i> <ul style="list-style-type: none"> <li>- <b>Prof. Xiangyu WANG</b> (Curtin University, Australia)</li> </ul> Q&A Session for Keynote Speakers		
12:15 – 13:30	<b>Luncheon (The Chef’s Table I/F)</b>		
<b>Time</b>	<b>Grand Ballroom I (1/F)</b>	<b>Grand Ballroom II (1/F)</b>	<b>Grand Ballroom III (1/F)</b>
13:20 – 15:05	Technical Paper Presentation Session 1 <b><i>Digital Twins and BIM Technologies</i></b>	Technical Paper Presentation Session 2 <b><i>Construction Safety and Worker Well-being</i></b>	Technical Paper Presentation Session 3 <b><i>Innovations for Operation and Maintenance</i></b>
15:05 – 15:15	<b>Networking Break with Coffee</b>		
15:15 – 17:00	Technical Paper Presentation Session 4 <b><i>XR (VR/AR/MR), Visualization, and Simulation</i></b>	Technical Paper Presentation Session 5 <b><i>Construction Robotics and Human-Robot Collaboration</i></b>	Technical Paper Presentation Session 6 <b><i>Large Model and Intelligent Building Operation and Maintenance</i></b>
17:15 – 18:15	<b>Bus Tour to Conference Banquet Dinner</b>		
18:30 – 21:00	<b>Conference Banquet Dinner</b>		

10 Jan 2025, Friday	
Time	Venue: Grand Ballroom II-III (1/F)
08:30 – 09:00	Registration
09:00 – 09:05	Opening by <b>Prof. Nobuyoshi YABUKI</b> (Conference Co-chair) and <b>Prof. Yantao YU</b> (Conference Co-chair)
09:05 – 10:55	<p><b>Keynote Presentations</b> (Chairs: <b>Prof. Koji MAKANAE</b>, <b>Prof. Veerasak LIKHITRUANGSILP</b>)</p> <p><i>“Construction 5.0 in the Age of Digital Transformation: Current Trends and Future Research”</i></p> <ul style="list-style-type: none"> <li>- <b>Prof. Mirosław SKIBNIEWSKI</b> (University of Maryland, USA)</li> </ul> <p><i>“AI-based Digital Twinning the Built Environment”</i></p> <ul style="list-style-type: none"> <li>- <b>Prof. Ioannis BRILAKIS</b> (Cambridge University, UK)</li> </ul> <p><i>“From Blueprint to Greenprint: Challenges and Opportunities in the Digital Transformation of Construction Industry for Sustainability”</i></p> <ul style="list-style-type: none"> <li>- <b>Prof. Shang-Hsien HSIEH</b> (National Taiwan University, Taiwan)</li> </ul> <p><i>“Integrated BIM, Blockchain, and Multimodal Data-Driven Digital Twins for AEC Industry Digitalization”</i></p> <ul style="list-style-type: none"> <li>- <b>Prof. Farzad RAHIMIAN</b> (Teesside University, UK)</li> </ul> <p>Q&amp;A Session for Keynote Speakers</p>
10:55 – 11:05	<b>Networking Break with Coffee</b>
11:05 – 12:55	<p><b>Keynote Presentations</b> (Chairs: <b>Prof. Guangbin WANG</b>, <b>Prof. Calvin KAM</b>)</p> <p><i>“Intelligent Safety Assurance for Scaffold Systems”</i></p> <ul style="list-style-type: none"> <li>- <b>Prof. Hyoungkwan KIM</b> (Yonsei University, Korea)</li> </ul> <p><i>“Navigating Complexity: Advanced Robotics for Dynamic Construction Environments”</i></p> <ul style="list-style-type: none"> <li>- <b>Prof. Yong Kwon CHO</b> (Georgia Institute of Technology, USA)</li> </ul> <p><i>“Formalizing Complex Engineering Knowledge with Computational Methods - Art or Science”</i></p> <ul style="list-style-type: none"> <li>- <b>Prof. Timo HARTMANN</b> (Technische Universität Berlin, Germany)</li> </ul> <p><i>“AI Meets Geospatial: Transforming Building Operations and Management”</i></p> <ul style="list-style-type: none"> <li>- <b>Prof. Yelda TURKAN</b> (Oregon State University, USA)</li> </ul> <p>Q&amp;A Session for Keynote Speakers</p>
12:55 – 14:10	<b>Luncheon</b> (Grand Ballroom I, 2/F)

Time	Grand Ballroom II (1/F)	Grand Ballroom III (1/F)	Diamond Room 3 (2/F)
14:10 – 15:25	Technical Paper Presentation Session 7 <i>Sustainable Construction and Development</i>	Technical Paper Presentation Session 8 <i>OpenBIM and Generative Design</i>	<b>AGCEI Board Meeting</b> [14:10-15:50]
Time	Diamond Room 1-2 (2/F)	Diamond Room 5-6 (2/F)	
14:10 – 15:25	Technical Paper Presentation Session 9 <i>AI for Safety and Health in Building Environment</i>	Technical Paper Presentation Session 10 <i>Information Management in Design and Maintenance</i>	
15:25 – 15:35	Networking Break with Coffee		
Time	Grand Ballroom II (1/F)	Grand Ballroom III (1/F)	
15:35 – 16:50	Technical Paper Presentation Session 11 <i>AI in Construction: Innovations, Risks, and Best Practices</i>	Technical Paper Presentation Session 12 <i>Digital Twins for Building and Infrastructure Maintenance</i>	
Time	Diamond Room 1-2 (2/F)	Diamond Room 5-6 (2/F)	
15:35 – 16:50	Technical Paper Presentation Session 13 <i>Education and Training in Construction</i>	Technical Paper Presentation Session 14 <i>Digital Campus</i>	
16:50 – 17:10	Networking Break with Coffee		
17:10 – 17:25	Closing Ceremony and Presentation of Best Student Paper Awards		
11 Jan 2025, Saturday			
Time	Technical Visit / Excursion in Macau (Optional)		
08:45– 9:00	Registration Venue: Lobby of Crowne Plaza Kowloon East Hotel		
09:00 – 18:00	(Optional) Excursion – Hong-Kong-Zhuhai-Macau Bridge, Macau University of Science and Technology, etc.		

## Technical Session

9 Jan 2025, Thursday 13:20PM - 15:05PM					
Start	End	Duration	Grand Ballroom I (1/F)	Grand Ballroom II (1/F)	Grand Ballroom III (1/F)
			Technical Paper Presentation Session 1 <i>Digital Twins and BIM Technologies</i> (Prof. Jun Wang, Prof. Cheng Zhang)	Technical Paper Presentation Session 2 <i>Construction Safety and Worker Well-being</i> (Prof. Hung Lin Chi, Prof. Jun Ma)	Technical Paper Presentation Session 3 <i>Innovations for Operation and Maintenance</i> (Prof. Yang Zou, Prof. Xinming Li)
13:20	13:30	0:10	ID: 125 Topic: A Digital Twin-Driven Approach for Detecting Overbreak and Underbreak in Drill-and-Blast Tunnels Author: <b>Zhiyang Pan</b> , Yichong Zhang, Yujie Lu and Bing Tang	ID: 60 Topic: Back Exoskeletons for Construction Workers: Investigation of Human-Exoskeleton Interaction Forces Author: <b>Ting Lei</b> , Kelvin Holam Heung and Joon Oh Seo	ID: 69 Topic: Semantic-Enriched Image Retrieval for Bridge Damage Assessment. Author: <b>Chengzhang Chai</b> , Jiucui Liu, Yan Gao, Guanyu Xiong and Haijiang Li
13:30	13:40	0:10	ID: 33 Topic: BIM to FEM Model Conversion of Low-Rise Residential Buildings for Debris Flow Damage Analysis Author: <b>Xuhong Huang</b> and Yantao Yu	ID: 85 Topic: EEG Technology in Construction Safety Research: Current Trends, Challenges, and Future Directions. Author: <b>Tanghan Jiang</b> , Jiayu Chen and Yihai Fang	ID: 94 Topic: A Study on the Performance Comparison of Sediment Movement Detectors Using Unet-based Models and the Sliding Partitioning Method. Author: <b>Xiaosong Liu</b> , Makoto Oda, Kei Kawamura and Tsuyoshi Wakatsuki
13:40	13:50	0:10	ID: 42 Topic: BIM Adoption and Implementation Challenges in Mongolia Author: <b>Khuvilai Erdene</b> , Sung Hoon Kim and Sang-Ho Lee	ID: 90 Topic: Enhancing Traffic Safety in Smart Cities Through Perceived Risk Analysis for Vulnerable Road Users Author: <b>Yuting Zhang</b> , Xinyu Pan and Jiayu Chen	ID: 23 Topic: Lightweight Transfer Learning for Water Body Segmentation Using Adaptor-Based Fine-Tuning Author: <b>Jiapei Zhao</b> , Nobuyoshi Yabuki and Tomohiro Fukuda
13:50	14:00	0:10	ID: 24 Topic: Heterogeneous Graph Neural Networks-Based Paper Drawings Automatic Layering Method Author: <b>Xun Lu</b> and Yantao Yu	ID: 4 Topic: Creation of a Web-Based Tool for the Visual Inspection of Building Equipment. Author: <b>Angelina Aziz</b> and Markus Koenig	ID: 131 Topic: Intelligent Design for Component Size of Reinforced Concrete Frame Structures Using Diffusion Models. Author: Yi Gu, Sizhong Qin, Wenjie Liao, <b>Siqi Chen</b> and Xinzheng Lu

14:00	14:10	0:10	ID: 58 Topic: Intelligent Geometric Quality Inspection of Multiple Prefabricated Components in Large-Scale Spaces Based on BIM-LiDAR-UAV/UGV. Author: <b>Limei Chen</b> , Zhigang Guo, Yi Tan and Penglu Chen	ID: 40 Topic: Effects of a Passive Back Support Exoskeleton on Balance While Walking Author: <b>Masood Khan</b> , Joonoh Seo, Maxwell Fordjour Antwi-Afari and Yuan Zhou	ID: 99 Topic: Development of 'Voices of Bridges' for Infrastructure Management. Author: <b>Yota Chinen</b> , Kei Kawamura and Shuji Sawamura
14:10	14:20	0:10	ID: 28 Topic: Investigating Solutions to the Shortage of Construction Site Managers in Japan: A Research Study on the Introduction of Young BIM Engineers from China Author: <b>Sucheng Rui</b> , Koji Makanae, Jun Liu, Makoto Fujiu and Yuma Morisaki	ID: 101 Topic: An Improved Safety Management Method for Welding Operations Based on Gaze Estimation and Object Detection Author: <b>Ying Liang</b> , Yi Tan and Dong Jia	ID: 120 Topic: Developing a Markov decision process model to support ESG decision-making in the international construction market. Author: <b>Yuting Duan</b> , Meng Ye and Penglin Dai
14:20	14:30	0:10	ID: 89 Topic: BIM-Based Discrete Event Simulation for Embodied Carbon Assessment Author: <b>Yuqing Xu</b> , Xingbo Gong, Helen H.L. Kwok and Jack C.P. Cheng	ID: 27 Topic: Automatic Ergonomic Assessment Considering Awkward Posture and External Load Author: <b>Fei Tian</b> and Yantao Yu	ID: 82 Topic: Advancing Blockchain and Smart Contracts from Academia to Industry: Insights into the Construction Sector. Author: <b>Xuling Ye</b> , Liu Liu and Markus König
14:30	14:40	0:10	ID: 96 Topic: Enhancing Scan-To-BIM In Bridge Engineering Through Point Cloud Completion Author: <b>Tao Yang</b> , Yang Zou and Enrique del Rey Castillo	ID: 132 Topic: Approaching an Interactive Resolution on New Citizens' Job-Housing Balance and Vacant Housing Reduction in Guangzhou Author: <b>Ziyao Dong</b> , Yangbing Zhang, Yuejiang Su, Yingqiao Fang, Yilin Huang and Siyang Zheng	ID: 115 Topic: CB-YOLOV5: Streetlight Detection Based on Low-Light Images in High-Interference Environment Author: <b>Shiqi Zhang</b> , Jingyuan Tang and Jingke Hong
14:40	14:50	0:10	ID: 104 Topic: Developing Defect Embedded Masonry H-Bim Using Deep Learning-Based Detection and Segmentation. Author: <b>Xinyu Tong</b> , Jingyu Zhou, Cheng Zhang and Yiping Dong	ID: 97 Topic: Enhancing the Performance of Multi-Object Tracking in Traffic Stream Videos Through Initial Velocity and Frame-Skipping Strategies Author: <b>Chia-Chun Lin</b> and Albert Y. Chen	ID: 133 Topic: Constructability-Based Multi-Objective Optimization for Reinforcing Bar Design in Rectangular Concrete Beams Author: <b>Luis Fernando Verduzco Martinez</b> and Jack C.P. Cheng
14:50	15:05	0:15	Q&A	Q&A	Q&A
15:05	15:15	0:10	<b>Networking Break with Coffee</b>		

## 9 Jan 2025, Thursday 15:15PM - 17:00PM

Start	End	Duration	Grand Ballroom I (1/F)	Grand Ballroom II (1/F)	Grand Ballroom III (1/F)
			Technical Paper Presentation Session 4 <b><i>XR (VR/AR/MR), Visualization, and Simulation</i></b> (Prof. Mingzhu Wang, Prof. Sang-Ho Lee)	Technical Paper Presentation Session 5 <b><i>Advancing Construction through Robotics and Human-Machine Collaboration</i></b> (Prof. Long Chen, Prof. Charinee Limsawasd)	Technical Paper Presentation Session 6 <b><i>Large Model and Intelligent Building Operation and Maintenance</i></b> (Prof. Jiarui LIN, Prof. Yujie Lu)
15:15	15:25	0:10	ID: 17 Topic: Automatic Detection of Building Equipment Using Laser Intensity of MLS Point Cloud Author: <b><u>Arisa Kobayashi</u></b> and Tomohiro Mizoguchi	ID: 19 Topic: An Experimental Study for Multi-Robot Coordination in Multi-Story Building Construction site Author: <b><u>Haojun Luo</u></b> and Yantao Yu	ID: 83 Topic: An LLM Agent-Based Approach for Calculating Floor Areas via BIM IFC Files Author: <b><u>Xueying Zhu</u></b> and Jun Ma
15:25	15:35	0:10	ID: 46 Topic: 3D Indoor Reconstruction Based on Spatial Layout Estimation Using Panoramic Inspection Video from Building Sites Author: <b><u>Shuo Wang</u></b> , Yujie Lu, Tao Zhong, Lijian Zhong and Yufan Chen	ID: 66 Topic: Towards Higher Information Density in Image Transmission: Learned Image Compression for Construction Site Monitoring Author: <b><u>Jiucui Liu</u></b> , Chengzhang Chai, Linghan Ouyang and Haijiang Li	ID: 134 Topic: Heritage Building Information Management and Intelligent Querying by Multimodal Large Language Models and Knowledge Graph. Author: <b><u>Jiaying Zhang</u></b> , Jeff Chak Fu Chan, Ziyu Zhao and Jack Cheng
15:35	15:45	0:10	ID: 63 Topic: Semantic Segmentation of MEP With Deep Learning and Synthetic Point Clouds Author: <b><u>Hongzhe Yue</u></b> and Qian Wang	ID: 73 Topic: Teaching Robot End Effectors to Grasp Construction Tools Based on Deep Reinforcement Learning Author: Xiaohu Yu, Yantao Yu and <b><u>Zaolin Pan</u></b>	ID: 108 Topic: An Interactive LLM-Based Framework for Spatial Relationship Query on OpenBIM Elements with IFC4 Schema Author: <b><u>Ang Li</u></b> , Peter Kok-Yiu Wong, Xingyu Tao and Jack C.P. Cheng
15:45	15:55	0:10	ID: 128 Topic: Virtual Scanning Method Based on BIM and Ray Tracing for Occlusion Evaluation and Geometry Extraction. Author: <b><u>Siwei Lin</u></b> , Liping Duan, Bin Jiang and Jincheng Zhao	ID: 79 Topic: Multi-Objective Optimization of Tower Crane Layout Planning in Modular Integrated Construction Considering Efficiency, Cost, And Lifting Safety Author: <b><u>Fangzheng Li</u></b> , Hung Lin Chi, Rongyan Li, Roy Dong Wang, Tarek Zayed and Bo Xiao	ID: 9 Topic: Enhancing Knowledge Capture and Reuse for Offsite Construction Through a Container-Based Knowledge Approach Author: <b><u>Zhen Zhang</u></b> , Yang Zou, Brian H.W. Guo, Lixin Jiang, Johannes Dimyadi and Roy Davies

15:55	16:05	0:10	ID: 61 Topic: A Real-world Visual SLAM Dataset for Indoor Construction Sites. Author: <b>Wenyu Li</b> , Xinyu Chen and Yantao Yu	ID: 48 Topic: Assessment of Automation Potential in Construction Tasks. Author: <b>Bing Sun</b> , Chao Mao, Wen Yi and Tingpeng Wang	ID: 117 Topic: Optimized Language-Embedded 3DGS for Realistic Modeling and Information Storage of Historical Buildings Author: <b>Zhenyu Liang</b> , Jeff Chak Fu Chan, Jiaying Zhang, Zhaolun Liang, Boyu Wang, Mingzhu Wang and Jack C.P. Cheng
16:05	16:15	0:10	ID: 45 Topic: Enhanced Curtain Wall Construction Progress Monitoring via Tower Crane Perspective and Integrated 3D Reconstruction. Author: <b>Tao Zhong</b> , Yujie Lu, Shuo Wang and Xuanjun Li	ID: 59 Topic: A Simulation-based Genetic Algorithm Schedule Optimization Method for Bridge Construction. Author: <b>Yuan Yao</b> , Vivian Tam, Jun Wang, Khoa Le, Anthony Butera and Wenchi Shou	ID: 137 Topic: Sustainable Development Management Method for Construction Projects Using Large Language Model Author: <b>Xingbo Gong</b> , Yuqing Xu, Helen H.L. Kwok, Xingyu Tao and Jack C.P. Cheng
16:15	16:25	0:10	ID: 80 Topic: HTunnel-HLS: A 3D Point Cloud Dataset for Benchmarking Construction Highway Tunnel Segmentation Methods Author: <b>Lizhuang Cui</b> , Lei Kou, Hanming Zhang, Yusen Wang, Feng Guo and Jian Liu	ID: 91 Topic: A Study of Human-robot Collaborative Construction Task Allocation Problem Considering the Level of Task Danger Author: <b>Yilin Wang</b> , Chao Mao and Tingpeng Wang	ID: 100 Topic: Human-UAV Collaboration for Bridge Inspection Using a Multi-Modal Vision Language Model Author: <b>Zhengxing Chen</b> , Yang Zou, Vicente González, Jason Ingham and Liam Wotherspoon
16:25	16:35	0:10	ID: 98 Topic: A Scan-to-BIM Approach for Renovating Existing Building Rooms using Surface Reconstruction and Deep Learning. Author: <b>May Thin Zar Soe</b> , Nobuyoshi Yabuki, Tomohiro Fukuda and Yoshiro Hada	ID: 44 Topic: Understanding Workers' Acceptance of Robotics in Construction Author: <b>Zhida Zhang</b> , Fanfan Meng, Munon Wong and Mi Pan	ID: 20 Topic: Automated Text Classification of Construction Inspection Report: A Small Samples Training Approach. Author: <b>Kai Li</b> , Chao Dong, Xueqing Fang and Da Li
16:35	16:45	0:10	ID: 18 Topic: BIM-AR Driven Collaborative Management of Complex MEP Equipment Installation Author: <b>Youde Zheng</b> , Liyun Yao, Silin Li, Yugui Zhou and Yi Tan	ID: 102 Topic: Energy Consumption Modeling for A Robot Arm in 3D Concrete Printing. Author: <b>Tong Liu</b> , Song Du, Fei Teng and Yiwei Weng	ID: 145 Topic: Automatic Compliance Checking of BIM Models for Architecture and Fire Protection Based on Knowledge Graphs and Machine Learning Author: <b>Sihao Li</b> , Guangyao Chen, Yangze Liang and Zhao Xu
16:45	17:00	0:15	Q&A	Q&A	Q&A



## 10 Jan 2025, Friday 14:10PM - 15:25PM

Start	End	Duration	Grand Ballroom II (1/F)	Grand Ballroom III (1/F)	Diamond Room 1-2 (2/F)	Diamond Room 5-6 (2/F)
			Technical Paper Presentation Session 7 <i>Sustainable Construction and Development</i> (Prof. Jingyuan TANG, Prof. Wen Yi)	Technical Paper Presentation Session 8 <i>OpenBIM and Generative Design</i> (Prof. Brian Guo, Prof. Chao Mao)	Technical Paper Presentation Session 9 <i>AI for Safety and Health in Building Environment</i> (Prof. Vincent Gan, Prof. Albert Y. Chen)	Technical Paper Presentation Session 10 <i>Information Management in Design and Maintenance</i> (Prof. Yi Tan, Prof. Yiwei WENG)
14:10	14:20	0:10	ID: 62 Topic: Developing GNN-based surrogate models for multi-objective sustainable performance predictions of residential blocks Author: <b>Zhaoji Wu</b> , Wenli Liu, Jack C. P. Cheng, Zhe Wang, Helen H. L. Kwok, Cong Huang and Fangli Hou	ID: 146 Topic: The Role of Digital Economy in The High- quality Development of The Construction Industry: Evidence from China Author: <b>Aoqi Huang</b> , Hongjuan Wu and Taozhi Zhuang	ID: 118 Topic: Visual-Driven Inspection for Collecting the Status of Fire Safety Equipment Status in Building Spaces Author: <b>Fangzhou Lin</b> , Zhengyi Chen, Xiao Zhang, Boyu Wang and Jack C.P. Cheng	ID: 47 Topic: Probability Map Guided Point Rendering Technique for Refined Segmentation of High- Resolution Crack Images. Author: Honghu Chu, <b>Weiwei Chen</b> and Lu Deng
14:20	14:30	0:10	ID: 77 Topic: Geospatial Graph Attention Network for High-Resolution Building Façade Photovoltaic Potential Prediction Author: <b>Zheng Li</b> and Jun Ma	ID: 139 Topic: IFC-Based Indoor Space Extraction with Topological Graph Modeling Author: <b>Zheng Zhao</b> , Zhiyuan Guo, Weiya Chen and Wenming Jiang	ID: 56 Topic: A Self-Attention Fusion-Based Bi-LSTM Framework for Occupant- Centric Prediction of Indoor Environmental Factors Author: <b>Min Jae Lee</b> and Ruichuan Zhang	ID: 136 Topic: Exploring Construction 5.0 Paradigms in the AEC Sector of New Zealand: Conceptual Foundations and Implications for Practice. Author: <b>Xichen Chen</b> , Ali Ghaffarianhoseini and Amirhosein Ghaffarianhoseini
14:30	14:40	0:10	ID: 110 Topic: Mapping Air Pollution Concentrations on Sidewalks in Central Business Districts Based on Mobile	ID: 87 Topic: Multi-Story Floor Plan Generation from Building Volumetric Design Using Graph Neural Network	ID: 149 Topic: A Knowledge Graph Based Common Data Environment Solution for	ID: 122 Topic: Maintenance Management - A Module in Asset Management in A Medium-sized German City as

			Monitoring Author: <b>Xujing Yu</b> and Jun Ma	Author: <b>Atsuya Ogura</b> , Tomohiro Fukuda, Nobuyoshi Yabuki and Taro Narahara	Building Seismic Loss Estimation Author: <b>Zeyu Pan</b> and Jianyong Shi	An Example. Author: <b>Alexander Buttgerit</b> and Stefan Gomolluch
14:40	14:50	0:10	ID: 84 Topic: Real-Time Sensor-Based Characterization of Recycled Coarse Aggregates (RCA): Advancing Sustainable Construction Through Automated Quality Assessment Author: <b>Cheng Chang</b> , Francesco Di Maio and Peter Rem	ID: 52 Topic: Efficient Accessibility Integrated Multi-Occupancy Building Layout Generation Using Constrained Diffusion Models Author: <b>Haolan Zhang</b> and Ruichuan Zhang	ID: 78 Topic: Integrated Framework for Compliance Checking and Performance Evaluation in Building Design Author: <b>Jin Han</b> , Zhe Zheng, Zhen Xu, Xin-Zheng Lu and Jia-Rui Lin	ID: 147 Topic: Research on A Methodology of AI-driven Substation Layout Design Based on Large Language Model Author: <b>Jianyong Shi</b> , Zeyu Pan, Longfei Pan and Junpeng Hu
14:50	15:00	0:10	ID: 103 Topic: Exploring Riverine Litter Detection by Developing Comprehensive Dataset and Deep Learning Author: <b>Xiaohan Xu</b> , Cheng Zhang, Yunfei Xia, Xiaohui Zhu and Peter Burgess	ID: 31 Topic: Leveraging Transformers for Improved Decision-Making in Road Maintenance Author: <b>Rui Kang</b> , Stephen Green and Ioannis Brilakis	ID: 54 Topic: Trajectory Forecasting for Worker Safety in Construction using Transformer and Graph Attention Networks Author: Mohammed Alduais, <b>Xinming Li</b> and Qipei Mei	ID: 124 Topic: Examining Factors of Human-AI Trust: Comparing Human- and AI-Related Factors Author: Xinyue Zhou and <b>Sheng Xu</b>
15:00	15:10	0:10	ID: 135 Topic: Blockchain-Driven Transparency in Construction Tenders: Smart Contracts and Sustainable Waste Management Author: Silvia Meschini, Daniele Accardo, <b>Lavinia Chiara Tagliabue</b> , Stefano Rinaldi, Andrea Bracciali, Rosa Meo and Giuseppe Martino Di Giuda	ID: 1 Topic: Streamlining Sensor Registration and Updating Process in a BIM-based Digital Twin Author: <b>Cheng-Wen Fu</b> , Tzong-Hann Wu, Yun-Tsui Chang and Shang-Hsien Hsieh	ID: 138 Topic: Vision LLM-Driven Operational Hazard Recognition for Building Fire Safety Compliance Checking. Author: Dayou Chen, <b>Long Chen</b> , Yiheng Zeng, Craig Hancock, Russell Lock and Simon Sølvesten	ID: 86 Topic: A Domain Knowledge-Enhanced Large Vision-Language Model for Construction Site Safety Monitoring. Author: <b>Chak-Fu Chan</b> , Xiaowen Guo, Peter Kok-Yiu Wong, Jolly Pui-Ching Chan, Jack C.P. Cheng, Pak-Him Leung and Xingyu Tao
15:10	15:25	0:15	Q&A	Q&A	Q&A	Q&A
15:25	15:35	0:10	<b>Networking Break with Coffee</b>			

10 Jan 2025, Friday 15:35PM - 16:50PM						
Start	End	Duration	Grand Ballroom II (1/F)	Grand Ballroom III (1/F)	Diamond Room 1-2 (2/F)	Diamond Room 5-6 (2/F)
			Technical Paper Presentation Session 11 <i>AI in Construction: Innovations, Risks, and Best Practices</i> (Prof. Bo Xiao, Prof. Jiayu Chen)	Technical Paper Presentation Session 12 <i>Digital Twins for Building and Infrastructure Maintenance</i> (Prof. Weiwei Chen, Prof. Botao Zhong)	Technical Paper Presentation Session 13 <i>Education and Training in Construction</i> (Prof. Jingfeng Yuan, Prof. JoonOh SEO)	Technical Paper Presentation Session 14 <i>Digital Campus</i> (Prof. Jack C.P. Cheng, Prof. Lavinia Chiara Tagliabue)
15:35	15:45	0:10	ID: 141 Topic: Exploring the Risks of Integrating Generative Artificial Intelligence into Construction Risk Management: Insights from A Systematic Literature Review Author: <b>Mohamed Mohamed</b> , M.K.S Al-Mhdawi, Farzad Rahimian, Udechukwu Ojiako, Alan O'Connor and Charf Mahammedi	ID: 12 Topic: Optimizing Hydropower Operations: A Tailored Digital Twin Framework for Hydropower Plant Author: <b>Weiwei Chen</b> and Yang Su	ID: 119 Topic: Enhancing Tower Crane Operation Skills in Aerial Construction Factories through Virtual Reality Training: A Controlled Study. Author: <b>Jingfeng Yuan</b> , Lingxiao Wang, Feixiang Hu, Yang Su, Chen Li, Hao Tian and Weidong Lin	ID: 34 Topic: A Scheme and Application of a Digital Twin-based Road Pavement Management System. Author: <b>Koji Makanae</b> , Yugo Kurokawa, Kiyotaka Suda, Jevica and Nurulnajwa Binti Khamis
15:45	15:55	0:10	ID: 95 Topic: Trans-Dimensional Bayesian Inversion for Estimating Earth Pressures on In-Service Underground Structures Author: <b>Zhiyao Tian</b> and Xianfei Yin	ID: 13 Topic: Proposal for a Simple Inspection Tool Using HoloLens2 Author: <b>Tomohiro Mizoguchi</b>	ID: 106 Topic: Evaluating the Impact of Problem-Based Learning and Digital Models on Civil Engineering Education. Author: <b>Hamidreza Alavi</b> , Brian Sheil and Ioannis Brilakis	ID: 65 Topic: Development and Validation of the Game Engine-Based Digital Twin App "CONNECTIA" for Practical Use in the Construction Phase Author: <b>Tomohide Yuasa</b> and Kodai Yamamoto

15:55	16:05	0:10	ID: 140 Topic: The Great Misalignment in Construction Contracting: Best Practices and Software Author: Matt Stevens, <b><u>Wei Zhou</u></b> and Babatunde Ogunbayo	ID: 70 Topic: A Practice in China for Computer Aided Design and Construction of Prefabricated Enclosure Walls Author: <b><u>Wei Shen</u></b> , Tao Liu, Guangjian Wang, Hu Yu, Hang Gao	ID: 41 Topic: Limited Data-oriented Worker Intent Recognition Method in Worker-Robot Collaboration for Construction Author: <b><u>Zhaoxin Zhang</u></b> , Zaolin Pan, Yantao Yu and Liang Liu	ID: 107 Topic: Real-Time On-Site Indoor Modeling and Quality Visualization Using Mixed Reality Device with ToF Sensor Author: Norihiko Goto, <b><u>Hiroaki Date</u></b> and Satoshi Kanai
16:05	16:15	0:10	ID: 127 Topic: Proposal of the Use of Differential Render in Rebar Inspections Author: <b><u>Yoshihiro Yasumuro</u></b> , Youta Tanaka, Takeshi Takai, and Satoshi Kubota	ID: 126 Topic: A Distributed Twin System for Managing Asset-process Interactions in Highway Infrastructure Systems Author: <b><u>Mengtian Yin</u></b> , Tom Kelly, Pieter Pauwels, Liming Xu, Brian Sheil, Junxiang Zhu, Yue Xie and Ioannis Brilakis	ID: 121 Topic: Cybersecurity-Aware Decentralized Machine Learning Framework for Construction Equipment Motion Recognition Using Blockchain Author: Chengliang Zheng, Xingyu Tao, Moumita Das, <b><u>Wenchi Shou</u></b> and Jack Cheng	ID: 92 Topic: Design Strategies for Enhancing Spatial Vitality through the Integration of Sports Venues and Commercial Spaces. Author: <b><u>Xuefei Yuan</u></b> , Benchen Fu, Shan Man and Yuanyuan Wei
16:15	16:25	0:10	ID: 129 Topic: Rubberized Concrete Reinforced with Fibres: Performance Analysis and Prediction for 3D Printing Applications. Author: <b><u>Junbo Sun</u></b> , Yufei Wang, Xianda Liu, Jiajie Shang and Xiangyu Wang	ID: 143 Topic: Finite Element Model Updating Enhanced by Deep Learning for Reinforced Concrete Containment Vessel Digital Twin Author: <b><u>Jiaji Wang</u></b> , Si Fu and Chawit Kaewnuratchadasorn	ID: 93 Topic: Simulation of Response Time Reduction of OHCA Considering Drone Base Selection for AED Delivery Author: <b><u>Yu Wu</u></b> , Kuan-Chen Chin, Jen-Tang Sun, Ying-Chih Ko, Wen-Chu Chiang, Matthew Huei-Ming Ma and Albert Y. Chen	
16:25	16:50	0:25	ID: 88 Topic: Cloud Type Classification Through Semantic Segmentation for Analysis of Earth's Radiative Balance Author: <b><u>Yu-Wen Wu</u></b> , Nofel Lagrosas, Sheng-Hsiang Wang and Albert Chen	ID: 72 Topic: A BIM Component-centered Bridge Digital Twin for Smart and Practical Bridge Maintenance Author: <b><u>Guanyu Xiong</u></b> , Yan Gao, Chengzhang Chai, Haijiang Li and Kehong Chen	ID: 148 Topic: Building Decay in Hong Kong: Assessing and Mapping Building Condition Index using ChatGPT and Airborne Point Clouds Author: <b><u>Wai Hung Lee</u></b> and Fan Xue	
			Q&A	Q&A	Q&A	Q&A