



CCC2026
**CREATIVE CONSTRUCTION
CONFERENCE**
28 June - 1 July 2026 | Sopron, Hungary

Book of Abstracts

Monday - 29 June 2026 – Morning

8:00	8:20	Welcome and Introductions: Miklós HAJDU, Chair of the International Organizing Committee		
8:20	9:10	Keynote speech Vivien W.Y. TAM: Pathway to Net Zero: Driving Sustainable Transformation for the Future		
9:10	9:40	BREAK with anniversary cake		
9:40	11:00	Artificial Intelligence in Construction: Žiga TURK <i>Lecture Hall I.</i>	Sustainable and Resilient Construction: István HAJNAL <i>Lecture Hall II.</i>	Automation and Robotics in Construction: Miroslaw SKIBNIEWSKI <i>Lecture Hall III.</i>
		<u>Dongchi YAO</u>, Borja GARCÍA DE SOTO: Phishing Risk Assessment in Construction Projects: A Bayesian Network Framework	<u>Fadi SHAHIN</u>: Innovative Models for Optimizing Steel Formwork Weight in Concrete Column Construction: A Case Study	<u>Andrew SHAW</u>: Health-Responsive Smart Flooring: Integrating Low-Voltage Heating and Pressure Sensing for Retrofit Safety and Comfort
		<u>Xianrui LUO</u>, Beiyang YU, Weili FANG, Botao GU, Dongping FANG: 3D Subsurface Reconstruction from Sparse Boreholes with a Multi-Scale Local Inference Framework	<u>Marina GRIGOROVITCH</u>, Grigor VLAD, Erez GAL: Orientation Focused Envelope Micro Retrofits and Data-Driven Calibration of Night Ventilation in Educational Buildings	<u>Gili LIFSHITZ SHERZER</u>, Igal M. SHOHET: From Field Surveys to Structural Simulations: An Integrated Methodology for Culvert Lifecycle Optimization
		<u>Chao CHEN</u>, Philip Richard TOWN, Limao ZHANG: Multi-Source Data Fusion for Building Carbon Emission Control Using Online Optimization	<u>Hajar EL AMMARI</u>, Annie GUERRIERO, Calin BOJE: Automating circular design assessment through BIM checking rules	<u>Alexandros V. E. IOANNOU-NAOUM</u>, Cedric KORNACKI, Iva KOVACIC: IFC2Material - Bridging IFC Semantics and Material Databases: An AI-Based Material Matching Approach
		<u>Maks ALIČ</u>, Anja BRELIH, Aleksander SRDIĆ, Robert KLINC: Optimization of Subcontractors Procurement	<u>Christian KOCH</u>: Managing Flow of Materials in New Build - Technological Opportunities	<u>István VIDOVSZKY</u>: Development Options of Robotic End-Effectors Regarding Some Requirements of the Robot-Oriented Design in the Case of Construction with Small Blocks
11:00	11:20	Coffee break with poster		

Monday - 29 June 2026 – Noon

11:20	12:40	Artificial Intelligence in Construction: Žiga TURK <i>Lecture Hall I.</i>	Sustainable and Resilient Construction: Árpád HORVÁTH <i>Lecture Hall II.</i>	Automation and Robotics in Construction: István VIDOVSZKY <i>Lecture Hall III.</i>
		Alon URLAINIS, Amichai MITELMAN: Evaluation of Multimodal GenAI for Construction Documentation and Monitoring	Linna GENG, Liupengfei WU, Vivian W.Y. TAM: Beyond Hard Hats: Reimagining Safety in Human-Robot Collaboration for Construction Through a TOE Perspective	Takuya FUJISAWA, Genki FURUSHO: Workflow for Estimating Concrete Volume During Placement Using iPad LiDAR Point Clouds
		Bikash LAMSAL, Ryota TOKI, Masato OKA, Bimal KUMAR KC, Matteo SARDELLITTI, Naofumi MATSUMOTO: Development of a Smartphone- Based, Non-Contact Physical Condition Detection System Using Facial Feature Information for Construction Site Safety	Christian KOCH: Structuring Regenerative Data	Yinhao SONG, Junpeng TIAN, Hanbin LUO, Lieyun DING, Zhenggang YUAN: Research on Lifting Operation Methods for Tower Crane Robots Based on Multi-modal Data Representation and Fusion Analysis
		Kassem BDEIR, Kinda BDEIR, Samer MANSOUR, Christopher NASR, Marc KANAAN, Kristy ESTEPHAN, Hiam KHOURY Evaluating ML Models to Predict Truck Travel Speed in Construction Earthwork Operations	Ryoyu TANAKA, Kosei ISHIDA: Dynamic Resource Allocation Method for Circular Facility Management: Minimizing LCA and Establishing Optimal Stock Strategy Via Cascading Updates	Andrew TRAILL, Laura FLOREZ-PEREZ: Design for Manufacture, Assembly, and Improved Productivity in Bridge Construction
		Ahmet Arif YAKUPOGULLARI, Mikael JOHANSSON, F Mattias ROUPÉ, Max BERGSTRÖM: GEMMS: A Vision–Language Framework for Automated Construction Safety Auditing Using 360° Site Imagery	Saurav DIXIT, Vijayanandh RAJA, Anna STEFAŃSKA, Małgorzata KURCJUSZ, Sujeet KUMAR: Design and Optimization of an Advanced Multirotor UAV System for Smart Monitoring and Maintenance in Residential Built Environments	Yanyuan HU, Xiang WANG, Ming ZHANG, Xiaowei LUO: Multimodal Feedback for Takeovers in Automated Tower Crane Teleoperation: An fNIRS Investigation
12:40	14:00	Lunch		

Monday - 29 June 2026 – Afternoon

14:00	14:50	Keynote speech Farzad Pour RAHIMIAN: Integrated BIM, Blockchain, and Multimodal Data-Driven Digital Twins for AEC Industry Digitalization		
14:50	15:00	Disperse to sessions		
15:00	16:20	Artificial Intelligence in Construction: Hiam KHOURY <i>Lecture Hall I.</i>	Sustainable and Resilient Construction: Farzad Pour RAHIMIAN <i>Lecture Hall II.</i>	Scheduling and Project Control: Adel FRANCIS <i>Lecture Hall III.</i>
		<u>María MENA, Leonardo CAAMAÑO, Andrés PRIETO:</u> Diagnosing Early Stakeholder Integration in Construction Projects: Development and Validation of the IntegrIA Model	<u>Bibhas Bhattacharjee TANMOY, Mohamed ABDELRAHEEM:</u> Comparative Life-Cycle Cost Analysis of Residential Greywater Reuse Systems Under Urban Utility Conditions	<u>Miklós HAJDU, Levente MÁLYUSZ:</u> PERT-Beta Distribution Revisited
		<u>Frederica MADASCHI, Gabriele NEGRO, Giorgio PLUCHINO, Gabriele NEGRO, Marco Lorenzo TRANI:</u> Bridging Design Safety Plans & Site Inspections Through a Hybrid NLP–LLM Pipeline for Structured Observation Statement Generation	<u>Bibhas Bhattacharjee TANMOY, Mohamed ABDELRAHEEM:</u> Economic Sensitivity of Household Greywater Systems to Key Financial Parameter Variations	<u>Yanjie ZHANG, Yujie LU, Man CUI, Renchi GU, Tao ZHONG:</u> Simulation-Driven Scheduling and Optimization of Vertical Material Transportation in High-Rise Construction
		<u>Jialin CHEN, Hanbin LUO:</u> A Framework for Steel Structure Weld Evaluation: Explainable Vision Evidence Enhance Diagnosis and Parameters Optimization	<u>Miklós HAJDU, István HAJNAL:</u> Designing for Adaptability: Regulatory Approaches to Office-To-Residential Conversion in a Carbon-Constrained Era	<u>Dragana VESELINOVIC, Igor PEŠKO, Milan JOVIN, Vladimir MUČENSKI:</u> A BIM-Based Framework for Assessing Circularity in Buildings
		<u>Zhuohao ZHANG, Hanbin LUO, Weiya CHEN, He YI:</u> M-SOS Architecture for Complex Metro MEP: Bottom-Up Modular Reconstruction and Intelligent Lifecycle Applications	<u>Cecilia PAPP, Hajnalka SZEPESSY:</u> Technical and Financial Feasibility of Sensor-Based, Data-Driven Diagnostics for Life-Cycle Value Preservation of Hungary's Prefabricated Building Stock	<u>Adel FRANCIS:</u> Deliverable-Driven Agile Management Enhanced by 4D Chronographical Spatiotemporal Modeling for Construction Project Control
16:20	16:50	Coffee break with poster		

Monday - 29 June 2026 – Afternoon

16:50	17:50	Artificial Intelligence in Construction: Žiga TURK <i>Lecture Hall I.</i>	Resilience of Critical Infrastructure: Alon URLIANIS <i>Lecture Hall II.</i>	Automation and Robotics in Construction: István VIDOVSZKY <i>Lecture Hall III.</i>
		István HAJNAL, Adrienn LEPEL, Zsuzsa PÁLFALVI: New Competencies in The Facility Management in The Age of The Artificial Intelligence	David ORNAI, Robert LEVY, Danny SHAFFRY, Gal SHANY, Barak TAVRON, Igal M. SHOHET: Resistance, Risk Assessment and Mitigation of Tunneled SMR NPP Exposed to Earth Penetrating Weapons' Hits	Machi ZAWIDZKI, Jacek KATZER: Weaving of continuous Extremely Modular Truss-Z structures
		Yichong ZHANG, Yujie LU: DVI-Net: Bidirectional Cross-Modal Attention for Tunnel Seepage Segmentation Under Asymmetric Degradation	Raquel MERMELSTEIN, Igal M. SHOHET: Analytical Probabilistic Framework of HV Power Transmission Lines Resilience.	Minseung CHA, Sebeen YOON, Kangmin BAE, Sangmin LEE, Taehoon KIM: Monocular RGB-Based Work-Area Recognition and Camera Pose Estimation for Automated Fireproofing Spray
		Leonardo CAAMAÑO, Andrés PRIETO: Expert Panel Validation of Fuzzy Logic and LLM For Modern Methods of Construction Selection Under Multi-Stakeholder Decision-Making	Gal SHANY: Transforming Degraded Areas into Flood Control Facilities: The Shkhoret Quarry Case Study	Kangmin BAE, Sangmin LEE, Minseung CHA, Sebeen YOON, Taehoon KIM: Simulation-Based Optimization of Spray Strategy for Fireproofing Spray Robots

Tuesday - 30 June 2026 – Morning

9:00	09:50	Keynote speech Hanbin LUO: Intelligent Platform for Shield Construction		
9:50	10:00	Disperse to sessions		
10:00	11:00	Health and Safety Practices, and Cyber Security in Construction: Anoop SATTIENI <i>Lecture Hall I.</i>	Visualization, BIM and Additive Manufacturing: Laura FLOREZ-PEREZ <i>Lecture Hall II.</i>	Management Practices in Construction: Zoltán SEBESTYÉN <i>Lecture Hall III.</i>
		<u>Lei LIU, Vivian W.Y. TAM, Khoa LE:</u> Governance-Based Safety Risk Recognition for Cust Governance-Based Safety Risk Recognition for Customer Energy Resources Deployment in New South Wales, Australia	<u>Tomohiro YOSHIDA, Hiromitsu SONE:</u> A Study on BIM Data Collaboration Between Designers and Contractors	<u>Žiga TURK:</u> The BIM Cost Disease: Rethinking Productivity in Construction
		<u>Yinon MARGALIT, Igal M. SHOHET:</u> Methodology for Accident Prevention of Scaffoldings Using AI Expert System	<u>Reem ZEIBAK SHINI, Anan SOLIMAN, Ghassan ARRAM, Igal M. SHOHET:</u> Spatial Deviation Analysis for Fit Up Quality Assurance in Heterogeneous As-Built–To–BIM Assemblies	<u>Milan JOVIN, Igor PEŠKO, Sara KOPRIVICA:</u> A Codifiability Framework for Smart-Contract Milestone Payments in Construction Projects
		<u>Dario ŠOKIĆ¹, Mario GALIĆ:</u> Mapping Data Exchange and Skills for Construction 4.0: A Systematic Review to Overcome On-Site Implementation Barriers	<u>Rita E. AWWAD, Zeina THABET:</u> Driving Sustainability Forward: Building Information Modeling (BIM) Integration in Project Management	<u>Andrés Flores, Ximena FERRADA, Claudia VALDERRAMA-ULLOA, Felipe HERRERA:</u> Implementation of Construction 5.0: Challenges and Opportunities in the Construction Industry
11:00	11:40	Coffee break with poster		

Tuesday - 30 June 2026 - Noon

11:40	13:00	Health and Safety Practices, and Cyber Security in Construction: Igal M. SHOHET <i>Lecture Hall I.</i>	Visualization, BIM and Additive Manufacturing: Mirosław SKIBNIEWSKI <i>Lecture Hall II.</i>	Management Practices in Construction: Zoltán SEBESTYÉN <i>Lecture Hall III.</i>
		Eliezer MOUNITZ, Fadi Shahin, Igal M. SHOHET: An Analytical Empirical Model and Root Cause Analysis and Mitigation of Construction Accidents	Zhipeng GUO, Yu LI, Xi CHEN, Benmei CHEN: Structured Systematic Approach for Autonomous Scan-to-BIM: A Case Study on Hong Kong Public Rental Housing	Davor DELIĆ, Hrvoje MEŠTROVIĆ, Domagoj KNEŽEVIĆ, Mariela KNEŽEVIĆ: Structuring Bim Information for Unit-Price Contracts: Conceptual Foundations and Risks
		Zuzanna WOŹNIAK, Bożena HOŁA: Modeling the Escalation Potential of Near-Miss Incidents into Workplace Accidents in The Construction Industry Using Machine Learning	Jiayi LI, Zihan YANG, Zhiliang MA, Guangtai LIN, Yiqiong YANG, Zhiqiang ZHAO, Yufeng CHEN: Automated Scan-to-BIM Method for Construction Progress Monitoring of Pavement Structural Layers	Tim BERNHARD, Adrian HUBER, Felix TOP, Cynthia BROSQUE, Johannes FOTTNER: Total Cost of Ownership Analysis of Autonomous and Conventional Dumpers: Decoupling Productivity and Cost
		Ayodele A. FASOYINU, Lauren REDDEN, Anoop SATTINENI, Jonathan DOWDELL: Coping Strategies for Managing Job Stress Among Office-Based Construction Professionals in The United States	Andrew TRAILL, Laura FLOREZ-PEREZ: Design for Manufacture, Assembly, and Improved Productivity in Bridge Construction	István VIDOVSZKY, Balázs TÓKÉS: Innovation and Design of Small Construction Elements: Experimental Course Task for the Education of Construction Technology and Management
		Ayodele A. FASOYINU, Lauren REDDEN, Anoop SATTINENI, Jonathan DOWDELL: Job Stressors Among Office-Based Construction Professionals in The United States	Higo MASATO, Sota KOARASHI, Bimal KUMAR KC, Matteo SARDELLITTI, Naofumi MATSUMOTO, Bikash LAMSAL: NAV & SNAP Based Localized Indoor Photography and Nerf Driven 3D Model Generation for Construction Digitalization	Yi HE: The Form of Acquaintance Society in xTraditional Historic Blocks
13:00	14:30	Lunch		

Tuesday - 30 June 2026 - Afternoon

14:30	15:30	Approaches to Education and Training in Construction: Miklós HAJDU <i>Lecture Hall I.</i>		
		<u>Ximena FERRADA</u>, Claudia VALDERRAMA-ULLOA: From Disciplinary Boundaries to Genuine Collaboration: An Interdisciplinary Module Based on Sustainability Challenges		
		Felipe Herrera, <u>Ximena FERRADA</u>, Fanny ORDÓÑEZ: Board Game Based Learning for Teaching Construction Management in Civil Engineering		
		<u>Miljan MIKIČ</u>, Mohammed Abdelmegid, Gerard DUFF, Ian FOUWEATHER: Peer Learning Across Borders: Developing Management Capability through a Global Online Engineering Management MSc		
15:30	16:30	Coffee break		
17:00-23:30		Gala dinner		

Posters

P-01	Myungjin CHAE , Jiyong CHOI, Wonil LEE Fuzzy Logic Framework for Converting Infrastructure Performance Measures Into Level of Service
P-02	Sangyoon JUNG, Leenseok KANG : Comparison of 3D Object Segmentation Accuracy Using Vertex Data and BSP Tree Algorithms
P-03	Gyöngyi BERTA, Zoltán SEBESTYÉN Stakeholder Engagement in Project Management - A Comparative Analysis of Existing Frameworks
P-04	Gergely LÜLÖK, Máté KECSKÉS, Gyöngyi BERTA, Zoltán SEBESTYÉN : Artificial Intelligence-Based Process Integration and Decision Support in Agile Project Planning
P-05	Enikő FARAGÓ, Gergely LÜLÖK, Zoltán SEBESTYÉN Investigating Artificial Intelligence for Time-Based Predictions in Diverse Project Management Environments
P-06	Wang LULU, Mao KANG, Zhang LIMAO Integrating Random Forest and GIS for Risk Assessment of High-Speed Rail Delays Under Freezing Rain Hazards
P-07	Milan JOVIN , Vladimir MUČENSKI, Igor PEŠKO, Dragana VESELINOVIĆ: A BIM-Integrated Site Digital Twin Proof-of-Concept for Early Schedule Deviation Detection
P-08	Bonsang KOO , Wonbok LEE, Hyunwoo LEE, Yoonjae SUNG, Donguk SHIN, Woosung JEONG, Yurim JEONG Automated Translation of Korean Design Standards into Executable Code Using Template-based LLMs for Automated Code Checking
P-09	Zhuang XIA , Limao ZHANG: Machine Learning-Driven Process Simulation for Proactive Cutter Maintenance in Mechanized Tunneling