Singapore ISARC 2026

34 IGLC Singapore 2026

CONFERENCE BOOKLET

43RD INTERNATIONAL SYMPOSIUM ON AUTOMATION AND ROBOTICS IN CONSTRUCTION &

34TH ANNUAL CONFERENCE OF THE INTERNATIONAL GROUP FOR LEAN CONSTRUCTION

NUS College of Design and Engineering | 21 - 26 JUNE 2026
Block EA, Level 1
9 Engineering Drive 1 Singapore 117575

FOREWORD

On behalf of the Local Organising Committee, it is our great pleasure to welcome you to the co-located ISARC 2026 / IGLC34 conferences, hosted by the National University of Singapore in partnership with Kajima Corporation. The journey to this event began more than five years ago, when the first ideas for bringing ISARC to Singapore emerged over drinks among colleagues at NUS. We were delighted when that vision became reality with a successful bid in France. As planning progressed, members of our committee who are also active in IGLC proposed the idea of a joint event, recognizing the strong rapport between the two communities and the many researchers and practitioners who contribute to both domains.

This co-located conference highlights the broad reach and multidisciplinary nature of our field, while creating opportunities for deeper collaboration and new synergies. This is epitomised in the conference theme, **"Constructing the Future: Sustainable, Smart and Lean."**

We are proud to share that the two conferences received a combined total of 652 paper submissions, of which 492 were accepted for presentation and publication at this joint event. These numbers reflect the scientific rigor and dedication of the technical and scientific committees of ISARC and IGLC respectively. We are also excited to welcome about 500 participants from academia, industry, and government, representing 40 countries. We extend our sincere thanks to our sponsors, volunteers, authors, reviewers, and all participants. We wish everyone a productive conference and a memorable stay in Singapore.

ABOUT THE CONFERENCE

The International Symposium on Automation and Robotics in Construction (ISARC) is a premier global forum for advancing robotic automation, artificial intelligence, sensing systems, information modelling techniques, and their innovative applications across the built environment.

The Annual Conference of the International Group for Lean Construction (IGLC) is a leading international platform for lean construction research and practice, promoting innovation in areas including digitalisation, production planning, supply chain management, and modular off-site construction.

This year's co-located ISARC–IGLC Conference brings together two leading communities and provides a global platform for researchers and practitioners from the architecture, engineering, and construction sector to present emerging research, exchange practical insights, and discuss innovations shaping a productive, sustainable, and future-ready built environment.

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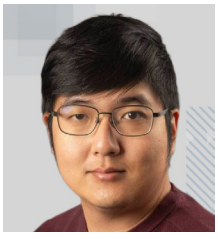


Asst Prof Ci-Jyun (Polar) Liang
Stony Brook University
Co-Chair

CONFERENCE TRACKS

The joint ISARC2026–IGLC34 conference brings together researchers, practitioners, and industry leaders from the AEC industry and related fields to exchange knowledge and advance research and practice across the following areas and themes.

ISARC

- Sensing Systems & Data Infrastructures
- Information Modelling Techniques
- Human-machine Interface, Mixed Realities
- Automated/Robotic devices, machines and end-effectors
- Construction Management Techniques
- Services and Business Applications
- Technology Management, Entrepreneurship and Innovation
- Lean Enablers for Digitalization and Automation

IGLC

- Contract and Cost Management
- Digitalization and Lean Construction
- Lean Theory
- Health, Safety, and Quality
- Learning and Teaching Lean
- People, Culture, and Change
- Product Development, Value, and Design Management
- Production Planning and Control
- Production System Design
- Lean and Green
- Supply Chain Management and Procurement
- Modular and Off-Site Construction

GETTING HERE

By MRT (Circle Line)

- Alight at **Kent Ridge MRT Station (CC24)**
- Take **Exit A**
- Walk to the bus stop outside **National University Hospital (Bus Stop No. 18335)**
- **Board either:**

  NUS Shuttle Bus A1
  - Alight at **NUS Yusof Ishak House (Bus Stop 11)**
  - Walk 10 minutes to **NUS CDE**

  NUS Shuttle Bus K*
  - Alight at **The Japanese Primary School (Bus Stop 9)**
  - Cross the overhead bridge to **NUS CDE bus stop**

  Public Bus 95 (SBS Transit)
  - Alight at **NUS Yusof Ishak House (Bus Stop No.: 16171)**
  - Walk 10 minutes to **NUS CDE**

*Note that Shuttle Bus 'K' interval is approximately 40 minutes. You may download the NUS NextBus app on Apple Store or Google Play to check the bus arrival timing.

By Public Bus

- **From Clementi MRT (EW23):**
  - Go to **Clementi Bus Interchange**
  - Board **Bus 96** (Tower Transit)
  - Alight at **NUS CDE (Bus Stop No: 16159)**
- **From Buona Vista MRT (EW21/CC22):**
  - Take **Exit D**
  - Board **Bus 95** (SBS Transit) from Bus Stop No: 11369
  - Alight at **NUS Yusof Ishak House (Bus Stop No: 16171)**
  - Walk 10 minutes to **NUS CDE**

By Foot (from NUS CDE Bus Stop)

- Follow **campus signage** into the CDE/ Engineering complex
- The **Engineering Auditorium** is located centrally within the engineering blocks, near **Blocks E1/E2**

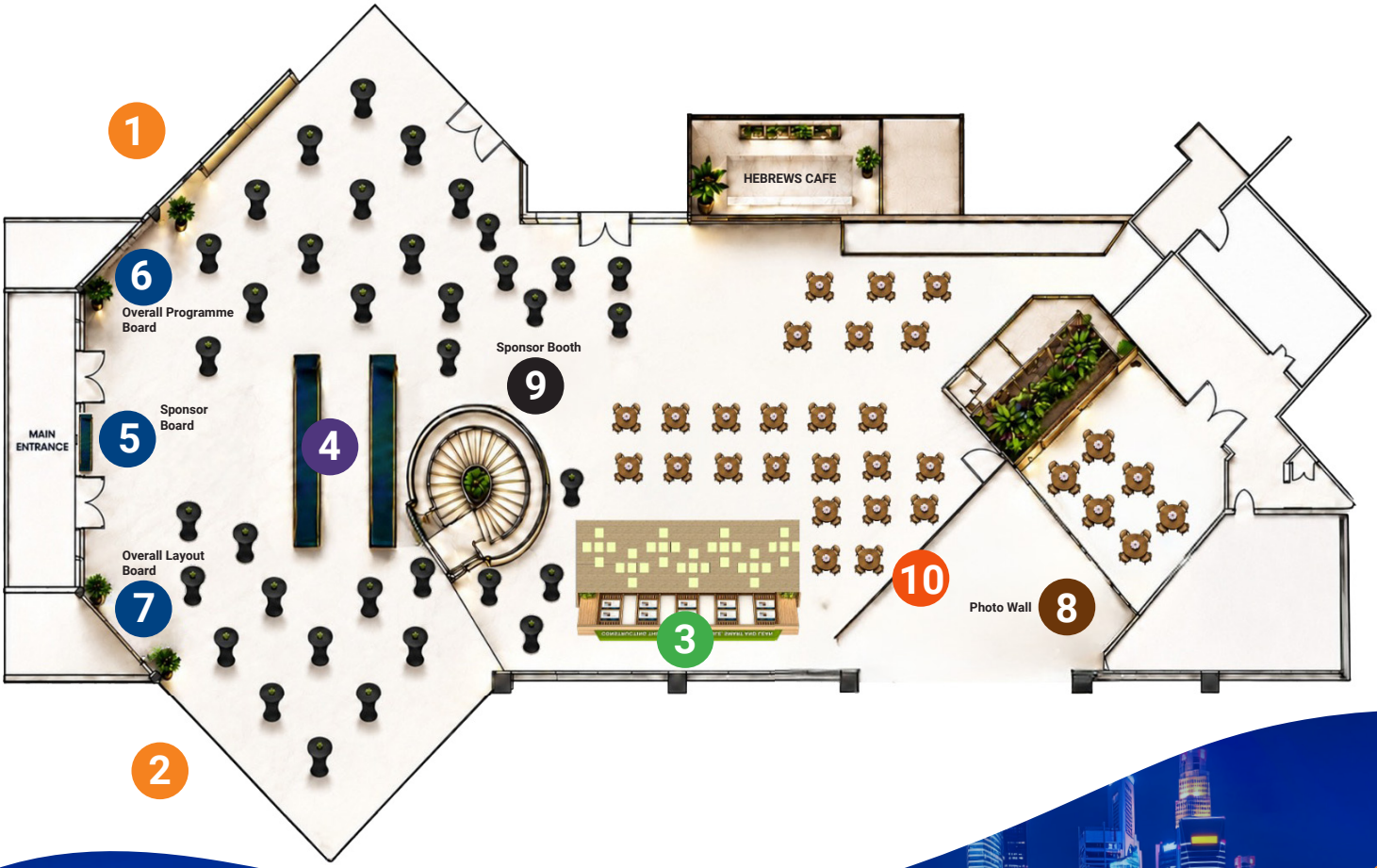
By Car

- Park at **Carpark 2A**
- Walk 3 minutes to **NUS CDE lobby**

VENUE MAP

Level 1

1. LT7A Lecture Theatre 7A
2. Engineering Auditorium(EA)
3. Cafe
4. Registration and Goodie Bag Distribution
5. Sponsor Board
6. Overall Programme Board
7. Overall Layout Board
8. Photo Wall
9. Sponsor Booth
10. Stage



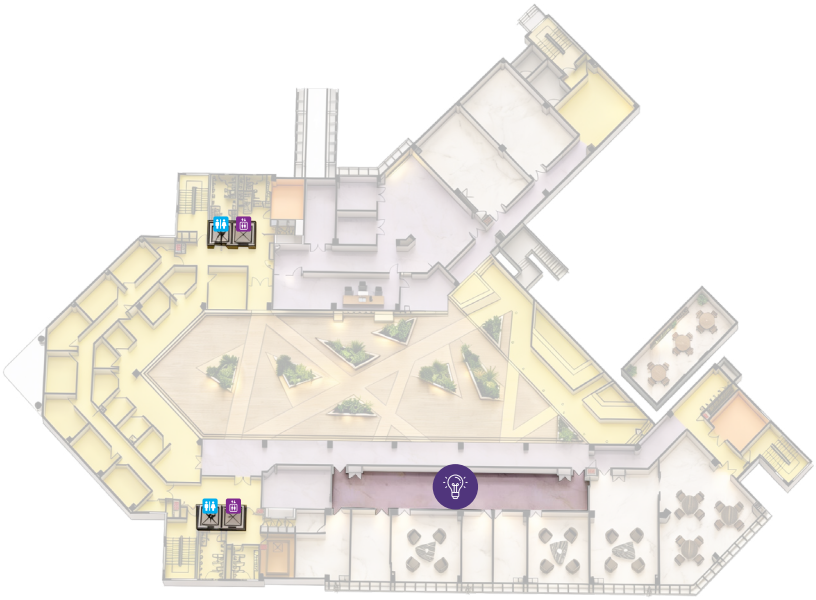
VENUE MAP

Level 2

1. **Executive Seminar Room 11** (EA-02-11)
2. **Seminar Room 14** (EA-02-14)
3. **Seminar Room 15** (EA-02-15)
4. **VIP F&B Area**

Level 4

Innovation & Design Hub Sandbox (EA-04-06)



Level 6

1. **Seminar Room 2** (EA-06-02)
2. **Seminar Room 3** (EA-06-03)
3. **Seminar Room 4** (EA-06-04)
4. **Seminar Room 5** (EA-06-05)
5. **Seminar Room 6** (EA-06-06)
6. **Seminar Room 7** (EA-06-07)

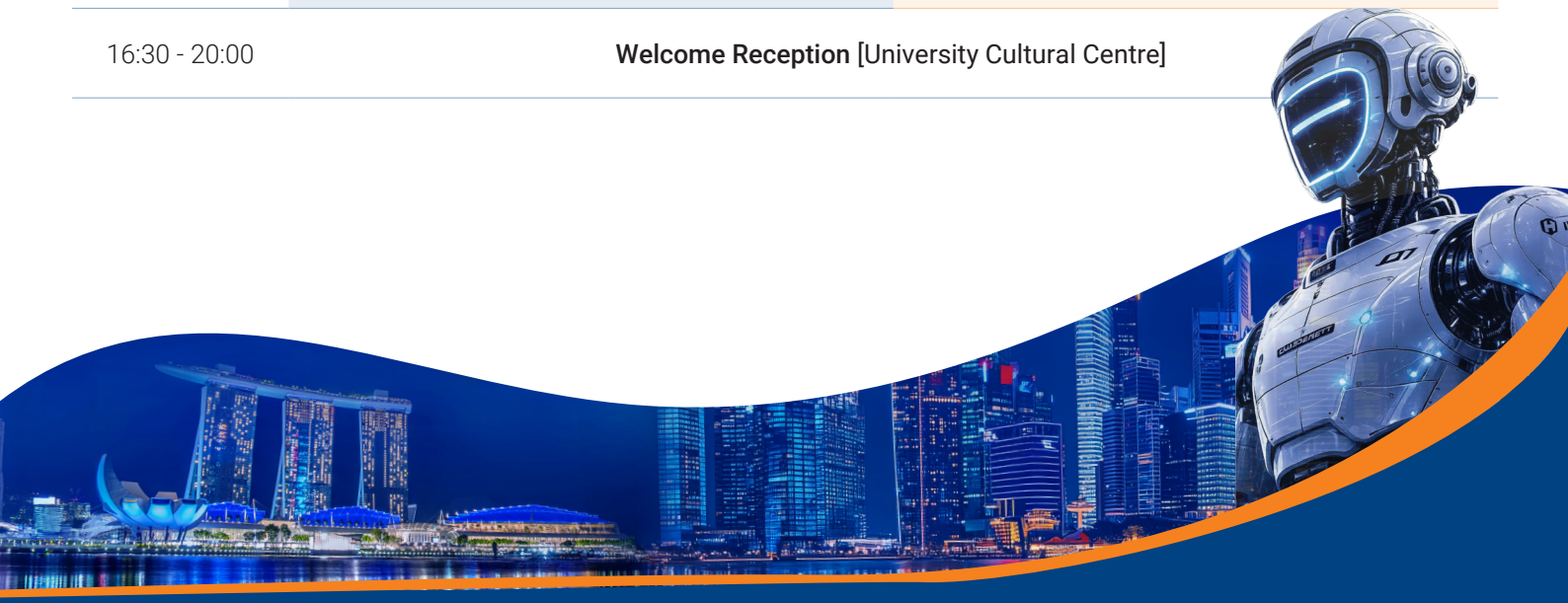
Toilet

Elevator

PROGRAMME

Day 0 — 22 June 2026 (Mon)

Time	Programme	
	ISARC	IGLC
9:00 – 10:00	Refreshments and Registration	
10:00 - 12:00	Joint Workshop Sessions Workshop 1: Digital Robotic Prefabrication: From North America to Asia [EA-06-02] Workshop 2: Construction Site of the Future: Human Robot Collaboration Simulation Game [EA-06-06] Workshop 3: Modelling for Construction Capacity and Capability: Portfolio Planning, Lean Philosophy, and Lessons from CanConstructNZ [EA-06-07] Workshop 4: Process Analysis for Construction: Practical Simulation Methods and Emerging Applications [EA-06-05]	
12:00 - 13:00	Lunch	
13:00 - 15:00	Joint Workshop Sessions Workshop 5: To Inspire: A Game Playtesting Workshop for a Prototype that Stimulate Tangential Learning of Knowledge-Intensive Areas of Expertise [EA-06-03] Workshop 6: From Line of Balance to Takt: A Hands-On Wind Turbine Assembly Simulation Using LEGO [EA-06-06] Workshop 7: Translating Automation-Enabled Intelligent Construction Systems into Practice [EA-06-05] Special Workshop: IAARC Chapters and Innovation Hubs Assembly [EA-06-04]	
15:00 - 19:00	IAARC Board Of Directors Meeting [EA-06-07]	
16:30 - 20:00	Welcome Reception [University Cultural Centre]	



PROGRAMME

Day 1 — 23 June 2026 (Tue)

Time	Programme	
	ISARC	IGLC
8:00 - 8:30	Registration	
8:30 – 10:15	ISARC-IGLC Joint Opening Ceremony [LT7A & Engineering Auditorium]	
10:15 - 10:30	Break	
10:30 - 12:00	**ISARC Parallel session:** ISARC-1-1 [Engineering Auditorium] ISARC-1-2 [EA-06-02] ISARC-1-3 [EA-06-03] ISARC-1-4 [EA-06-04] ISARC-1-5 [EA-06-05] ISARC-1-6 [EA-06-06] ISARC-1-7 [EA-06-07] ISARC-1-8 [EA-04-06 Sandbox]	**IGLC Plenary session** [LT7A]
12:00 - 13:00	Lunch	
13:00 - 13:45	**ISARC Keynotes** [LT7A]	**IGLC Parallel session** IGLC-1-1 [Engineering Auditorium] IGLC-1-2 [EA-02-11] IGLC-1-3 [EA-06-05] IGLC-1-4 [EA-02-15]
13:45 - 14:30		**IGLC Parallel session** IGLC-1-5 [Engineering Auditorium] IGLC-1-6 [EA-02-11] IGLC-1-7 [EA-06-05] IGLC-1-8 [EA-02-15]
14:30 - 15:00	Coffee break	
15:00 - 15:45	**ISARC Plenary Session** [LT7A]	**IGLC Parallel session** IGLC-1-9 [Engineering Auditorium] IGLC-1-10 [EA-02-11] IGLC-1-11 [EA-06-05] IGLC-1-12 [EA-02-15]
15:45 - 17:00		**IGLC Special Session** Lean Transformation of Global Construction Industry [Engineering Auditorium]
17:00 - 17:15	Break	
17:15 - 18:00	**ISARC Parallel session** ISARC-1-9 [LT7A] ISARC-1-10 [EA-06-02] ISARC-1-11 [EA-06-03] ISARC-1-12 [EA-06-04] ISARC-1-13 [EA-06-06] ISARC-1-14 [EA-06-07] ISARC-1-15 [EA-02-14] ISARC-1-16 [EA-04-06 Sandbox]	**IGLC Parallel session** IGLC-1-13 [Engineering Auditorium] IGLC-1-14 [EA-02-11] IGLC-1-15 [EA-06-05]

PROGRAMME

Day 2 — 24 June 2026 (Wed)

Time	Programme	
	ISARC	**IGLC**
8:30 - 9:15	**ISARC Parallel session:** ISARC-2-1 [LT7A] ISARC-2-2 [EA-06-02] ISARC-2-3 [EA-06-03] ISARC-2-4 [EA-06-04] ISARC-2-5 [EA-06-06] ISARC-2-6 [EA-06-07] ISARC-2-7 [EA-02-14] ISARC-2-8 [EA-04-06 Sandbox]	**IGLC Parallel session** IGLC-2-1 [Engineering Auditorium] IGLC-2-2 [EA-02-11] IGLC-2-3 [EA-06-05] IGLC-2-4 [EA-02-15]
9:15 - 10:00		**IGLC Parallel session** IGLC-2-5 [Engineering Auditorium] IGLC-2-6 [EA-02-11] IGLC-2-7 [EA-06-05] IGLC-2-8 [EA-02-15]
10:00 - 10:30	**Coffee break**	
10:30 - 11:15	**ISARC Parallel session** ISARC-2-9 [LT7A] ISARC-2-10 [EA-06-02] ISARC-2-11 [EA-06-03] ISARC-2-12 [EA-06-04] ISARC-2-13 [EA-06-05] ISARC-2-14 [EA-06-07] ISARC-2-15 [EA-02-11] ISARC-2-16 [EA-04-06 Sandbox]	**IGLC Parallel session** IGLC-2-9 [Engineering Auditorium] IGLC-2-10 [EA-02-11] IGLC-2-11 [EA-02-14] IGLC-2-12 [EA-02-15]
11:15 - 12:00		**IGLC Simulation session [until 12:30]** IGLC-2-Simulation 1 [EA-02-14/EA-02-15] IGLC-2-Simulation 2 [EA-06-06] IGLC-2-13 [Engineering Auditorium]
12:00 - 13:30	**Lunch + ISARC Poster Session** [Engineering Auditorium]	
13:30 - 15:30	**ISARC – IGLC Joint Session** [LT7A & Engineering Auditorium]	
15:30 - 15:45	**Break**	
15:45 - 16:30	**ISARC Parallel session** ISARC-2-17 [LT7A] ISARC-2-18 [EA-06-02] ISARC-2-19 [EA-06-03] ISARC-2-20 [EA-06-04] ISARC-2-21 [EA-06-06] ISARC-2-22 [EA-06-07] ISARC-2-23 [EA-02-14] ISARC-2-24 [EA-04-06 Sandbox]	**IGLC Parallel session** IGLC-2-14 [Engineering Auditorium] IGLC-2-15 [EA-02-11] IGLC-2-16 [EA-06-05]
16:30 - 17:15		**IGLC Parallel session** IGLC-2-17 [Engineering Auditorium] IGLC-2-18 [EA-02-11] IGLC-2-19 [EA-06-05]
17:15 - 18:15	**Transition from conference venue to Gala Dinner venue @ The Star Gallery - Star Vista**	
18:15	**Start Registration for Gala Dinner**	

PROGRAMME

Day 3 — 25 June 2026 (Thu)

Time	Programme	
	ISARC	**IGLC**
8:30 - 9:15	**ISARC Parallel session:** ISARC-3-1 [LT7A] ISARC-3-2 [EA-06-02] ISARC-3-3 [EA-06-03] ISARC-3-4 [EA-06-04] ISARC-3-5 [EA-06-06] ISARC-3-6 [EA-06-07] ISARC-3-7 [EA-02-14] ISARC-3-8 [EA-04-06 Sandbox]	**IGLC Parallel session** IGLC-3-1 [Engineering Auditorium] IGLC-3-2 [EA-02-11] IGLC-3-3 [EA-06-05]
9:15 - 10:00		**IGLC Parallel session** IGLC-3-4 [Engineering Auditorium] IGLC-3-5 [EA-02-11] IGLC-3-6 [EA-06-05]
10:00 - 10:30	**Coffee break**	
10:30 - 11:15	**ISARC Parallel session** ISARC-3-9 [LT7A] ISARC-3-10 [EA-06-02] ISARC-3-11 [EA-06-03] ISARC-3-12 [EA-06-04] ISARC-3-13 [EA-06-06] ISARC-3-14 [EA-06-07] ISARC-3-15 [EA-02-14] ISARC-3-16 [EA-04-06 Sandbox]	**IGLC Parallel session** IGLC-3-7 [Engineering Auditorium] IGLC-3-8 [EA-02-11] IGLC-3-9 [EA-06-05]
11:15 - 12:00		**IGLC Parallel session** IGLC-3-10 [Engineering Auditorium] IGLC-3-11 [EA-02-11] IGLC-3-12 [EA-06-05]
12:00 - 12:30	**Lunch**	
12:30 - 14:30		**IGLC Business Meeting** [Engineering Auditorium]
14:30 - 15:00	**Transit to Site Visit**	
15:30 - 18:00	**Site Visits:** **1. Integrated Construction Prefabrication Hub - Integrated Precast Solutions Pte Ltd** **2. The Gear Building - Kajima Technical Research Institute Singapore (KaTRIS)**	

FEATURED WORKSHOPS

Red - Automation/Robotics in Construction / Green - Hybrid Lean - Automation/Robotics in Construction / Blue - Lean Construction

Workshop #1:
Digital Robotic Prefabrication: From North America to Asia

Speakers:

- **Dr. Ci-Jyun (Polar) Liang,** Assistant Professor, Department of Civil Engineering, Stony Brook University;
- **Dr. Shang-Hsien (Patrick) Hsieh,** Professor, Department of Civil Engineering, National Taiwan University;
- **Dr. Cheng-Hsuan (Jason) Yang,** VP Robotics, RoBIM Technologies;
- **Mr. Liang-Ting (Tim) Tsai,** VP Software, RoBIM Technologies"

Date & Time: 22nd June 2026 (Monday) 10am – 12nn

Venue: EA-06-02

Requirements: Up to a maximum of 50 participants

Synopsis:

The objective of this workshop is to explore how multifunctional robotic fabrication systems can be adapted to distinct material and building cultures in different regions. In North America, dimensional lumber is the predominant building material, especially for the prefabrication construction industry. The multifunctional robotic systems (one robot with multiple end-effectors) are being developed with this focus. However, the building materials and prefabrication construction methods in Asia are very different from those in North America, which raises the adoption challenge for research and development of digital robotic prefabrication systems across the two regions. This workshop will first introduce one of the multifunctional robotic systems, RoBIM simulator (https://www.robimtech.com/hive), and provide hands-on sessions to explore the capabilities. Then, the participants will form small groups to discuss several prefabrication scenarios in Asia and identify opportunities for robotic adoption. The expected outcomes include a roadmap for research on multifunctional robotic systems and conceptual robotic workflows tailored to regional needs.

Workshop #2:
Construction Site of the Future: Human Robot Collaboration Simulation Game

Speakers:

- **Yifan Xu,** The University of Manchester, UK
- **Kota Fujimoto,** Kyoto Institute of Technology, Japan
- **Clara Cheung,** The University of Manchester, UK
- **Akilu Yunusa Kaltungo,** The University of Manchester, UK
- **Tsukasa Ishizawa,** The University of Tokyo, Japan
- **Ming Shan (Charmaine) Ng,** Kyoto Institute of Technology, Japan

Date & Time: 22nd June 2026 (Monday) 10am – 12nn

Venue: EA-06-06

Requirements: Up to a maximum of 30 participants

Synopsis:

This interactive workshop presents a simulation game designed based on target value design principles, inviting participants to take on the roles of various construction project professionals and explore how humans and robots can effectively work together on site. Through a hands on simulation game, teams will make decisions about deploying workers and robotic systems while navigating key constraints such as cost, safety, productivity and workers' well-being. Participants will work in small groups and take part in two structured rounds. The first round focuses on cost driven decision making, while the second introduces a broader perspective, encouraging teams to balance multiple performance criteria and think in terms of overall project value. Throughout the session, each team will select different collaboration strategies and experiment with varying types and numbers of robots, observing how these choices influence project outcomes. It is designed to be both accessible and reflective. It provides a practical way to explore trade offs in human robot collaboration, while also encouraging discussion on what information and tools are needed to support better decision making in practice. Participants will have the opportunities to reflect on their choices and compare approaches across teams, stimulating insights regarding how industry professionals engage with emerging construction technologies.

FEATURED WORKSHOPS

Red - Automation/Robotics in Construction / Green - Hybrid Lean - Automation/Robotics in Construction / Blue - Lean Construction

Workshop #3:
Modelling for Construction Capacity and Capability: Portfolio Planning, Lean Philosophy, and Lessons from CanConstructNZ

Speakers:

Associate Professor Mostafa Babaeian Jelodar (Lead Speaker)

Date & Time: 22nd June 2026 (Monday) 10am – 12nn

Venue: EA-06-07

Requirements: Bring a smartphone or laptop. Paper based questionnaires/surveys may be circulated during the workshop.

Synopsis:

This workshop presents CanConstructNZ; a Ministry of Business, Innovation and Employment (MBIE) Endeavour Fund programme (~NZD 10 million incl. GST); as a unique national initiative developing a "comparator mechanism" to understand construction demand (projects within the construction pipeline) alongside the supply-side sector's capacity and capability to deliver. Framed through lean philosophy at the portfolio level, the workshop demonstrates how modelling and decision-support tools can strengthen flow, reliability, and coordinated planning across programmes and project pipelines. Participants will be introduced to the CanConstructNZ-developed platform and associated tools, including relational modelling, agent-based modelling (ABM), dashboards (e.g., Power BI), optimisation approaches (including genetic algorithms), and a composite index that synthesises multiple indicators into decision-ready signals. Through short demonstrations and an interactive co-design exercise, participants will identify key portfolio constraints and map them to appropriate modelling approaches, while defining practical dashboard outputs tailored to different users (clients, contractors, regulators, and supply chains). The workshop will generate transferable use cases, a lean-informed modelling template, and a practical roadmap for capacity and capability enhancement that can be adapted across regions and countries.
Further information: https://canconstructnz.org.nz/

Workshop #4:
Process Analysis for Construction: Practical Simulation Methods and Emerging Applications

Speakers:

- **Dr. Joseph Louis,** Oregon State University, USA
- **Tim Berhard,** Doctoral Researcher, Technical University of Munich, Germany

Date & Time: 22nd June 2026 (Monday) 10am – 12nn

Venue: EA-06-05

Requirements: No laptop required, but participants with Windows laptop may be able to

Synopsis:

This workshop introduces practical process analysis methods, especially discrete event simulation, to help construction organizations move beyond improving isolated tasks and address broader system-level challenges such as logistics constraints, sustainability targets, circular construction, and multi-project coordination. Participants will learn how simulation can reveal workflow inefficiencies, bottlenecks, variability, and operational trade-offs across connected construction systems. The session also shows how these methods support lean construction principles by improving flow, reducing waiting, minimizing unnecessary movement, and enabling more reliable planning through testing alternatives before implementation. In addition, the workshop explores circular construction strategies including material reuse, component recovery, reverse logistics, and matching reclaimed materials to future demand, while addressing real-world uncertainties like timing, transport, storage, and coordination. Through guided exercises and practical examples, participants will gain an accessible introduction to simulation for lean improvement, circular economy initiatives, GIS-enabled planning, and regional resilience.

FEATURED WORKSHOPS

Red - Automation/Robotics in Construction / Green - Hybrid Lean - Automation/Robotics in Construction / Blue - Lean Construction

Workshop #5:
To Inspire: A Game Playtesting Workshop for a Prototype that Stimulate Tangential Learning of Knowlesge-Intensive Areas of Expertise

Speakers:

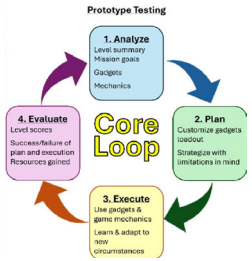
- **Jack Tam,** Kyoto Institute of Technology, Japan
- **Yifan Xu,** The University of Manchester, UK
- **Clara Cheung,** The University of Manchester, UK
- **Tsukasa Ishizawa,** The University of Tokyo, Japan
- **Akilu Yunusa Kaltungo,** The University of Manchester, UK
- **Ming Shan (Charmaine) Ng,** Kyoto Institute of Technology, Japan

Date & Time: 22nd June 2026 (Monday) 1pm – 3pm

Venue: EA-06-03

Requirements: None

Synopsis:



What if dismantling a building was a puzzle worth solving? Temple Rescue Cat is a hands-on game prototype where players must deconstruct a heritage structure carefully, salvaging members as treasures and navigating structural risks, without bringing the whole thing down. Collapse the temple, and the old cat trapped inside is lost.

Inspired by the logic of Japanese timber joinery puzzle games, the prototype challenges players to rethink deconstruction not as demolition, but as a skilled, methodical process of disassembly, material recovery, and decision-making under constraint. Scoring rewards players for cats saved, heritage preserved, smart technology use, animal and worker safety, and environmental impact.

Designed with K-12 accessibility in mind, the game requires no prior knowledge of construction. Players of all ages, backgrounds, and professions are welcome, and those working in built environment, heritage, robotics, or sustainability fields are especially encouraged to participate and share their perspective. Come play, then tell us what you really think about how we take buildings apart.

Workshop #6:
From Line of Balance to Takt: A Hands-On Wind Turbine Assembly Simulation Using Lego

Speakers:

- **Bernardo Etges,** Climb Group
- **Racquel Reck,** Climb Group

Date & Time: 22nd June 2026 (Monday) 1pm – 3pm

Venue: EA-06-06

Requirements: Maximum of 24 participants. No prior experience in Takt Planning or Lean Construction is required. Basic familiarity with production concepts is recommended. Participants are expected to bring a mobile device with a stopwatch function to support data collection during the simulation.

Synopsis:

This hands-on workshop uses a LEGO-based wind turbine assembly simulation to help participants explore the transition from Line of Balance to Takt Planning in a structured and practical way. Through a two-round production exercise, participants first run a baseline system and collect structured production data to build a Line of Balance and assess system performance. In the second round, a new deadline is introduced, requiring participants to calculate takt time and redesign the production system accordingly. This redesign includes not only sequencing and crew allocation, but also logistics decisions such as material delivery setup, kit-based supply, and workstation layout changes. The workshop concludes with a comparison of the two production configurations, enabling participants to understand how planning and logistics decisions affect flow stability and overall performance while supporting data-driven decision-making through a simplified digital representation of the system.

FEATURED WORKSHOPS

Red - Automation/Robotics in Construction / Green - Hybrid Lean - Automation/Robotics in Construction / Blue - Lean Construction

Workshop #7:
Intelligent Construction Systems:
From Digital Innovations to Real-World Practice

Speakers:

- **Dr Bing Lu, Lead Scientist,** Advanced Materials Technology Centre, Singapore Polytechnic
- **Assistant Professor Fu Yuguang,** Nanyang Technological University
- **Assistant Professor Nguyen Thi Qui,** Singapore Institute of Technology
- **Assistant Professor Cao Wenjun,** University of Hong Kong
- **Dr Liu Qinjun (Lavender),** Lecturer in Construction Management, Productivity and Lean Construction, Western Sydney University

Date & Time: 22nd June 2026 (Monday) 1pm – 3pm

Venue: EA-06-05

Requirements: None

Synopsis:

This workshop examines the practical deployment of digital technologies in construction, including sensing, AI-based modelling, robotics, and data platforms, with attention to both local realities and international perspectives. Although many of these technologies have shown promise in controlled settings, their use in real projects remains limited. Grounded in actual project conditions, the session considers challenges such as regulatory requirements, climate, and site constraints in dense, tropical urban environments such as Singapore, while drawing lessons from global experiences. The workshop will begin with opening presentations by invited speakers both local and international, who will share case-based insights on implementation, integration, and performance validation. A moderated panel and structured discussion segments will then invite participants to contribute their own examples and challenges. Overall, the session aims to identify practical barriers, compare approaches, and explore directions for wider deployment and future collaboration.

CONFERENCE AGENDA FOR ISARC & IGLC

Day 0 — 22 June 2026 (Mon)

Time	Programme	
	ISARC	IGLC
09:00 - 10:00	Refreshments and Registration	
10:00 - 12:00	Joint Workshop Session	
	Workshop 1: Digital Robotic Prefabrication: From North America to Asia (EA-06-02)	
	Workshop 2: Construction Site of the Future: Human Robot Collaboration Simulation Game (EA-06-06)	
	Workshop 3: Modelling for Construction Capacity and Capability: Portfolio Planning, Lean Philosophy, and Lessons from CanConstructNZ (EA-06-07)	
	Workshop 4: Process Analysis for Construction: Practical Simulation Methods and Emerging Applications (EA-06-05)	
12:00 - 13:00	Lunch	
13:00 - 15:00	Workshop 5: To Inspire: A Game Playtesting Workshop for a Prototype that Stimulate Tangential Learning of Knowledge-Intensive Areas of Expertise (EA-06-03)	
	Workshop 6: From Line of Balance to Takt: A Hands-On Wind Turbine Assembly Simulation Using LEGO (EA-06-06)	
	Workshop 7: Translating Automation-Enabled Intelligent Construction Systems into Practice (EA-06-05)	
	Special Workshop: IAARC Chapters and Innovation Hubs Assembly (EA-06-04)	
15:00 - 16:30	IAARC Board Of Directors Meeting (EA-06-07)	
16:30 - 19:30	Welcome Reception (University Cultural Centre)	

CONFERENCE AGENDA FOR ISARC

Day 1 — 23 June 2026 (Tue)

Time	Programme							
08:00 - 08:30	Registration							
08:30 - 10:15	ISARC-IGLC Joint Opening Ceremony (LT7A & Engineering Auditorium)							
10:15 - 10:30	Break							
10:30 - 10:45	ISARC-1-1: Automated/robotic machines, devices, and end-effectors (1) (Engineering Auditorium) Chair: Anantharaam Ramasamy **Modelling for Feedforward Control of Vehicle Velocity in Autonomous Bulldozers** Taro Abe, Genki Yamauchi, Takeshi Hashimoto	ISARC-1-2: Automated/robotic machines, devices, and end-effectors (2) (EA-06-02) Chair: Ahmed Bouferguene **LLM-Driven Adaptive Recovery for Multi-Agent Systems in Dynamic Environments** Beril Yalcinkaya, Carlos A. P. Pizzino, Micael Couceiro, Salviano Soares, Antonio Valente	ISARC-1-3: Construction managment techniques (1) (EA-06-03) Chair: Yantao Yu **A Multimodal Visual Retrieval Framework for Construction Site Management via High-Dimensional Vector Embeddings** Qiao Zheng, Zhiqiang Wei, Minjin Fang, Rui Jin, Xia Lei	ISARC-1-4: Human factors & human-system collaboration(1) (EA-06-04) Chair: Bo Xiao **Towards Safer Human-Robot Collaboration in Construction: A Scoping Review of Ergonomic Factors and MSD Risks** Yuan Liu, Carol Hon, Glenda Caldwell, Muge Belek Fialho Teixeira, Jasper Vermeulen, Timothy Rose	ISARC-1-5: Information modelling techniques (1) (EA-06-05) Chair: Jong Won Ma **Opportunities and Challenges of the Adoption of Artificial Intelligence in Steel Fabrication for Construction*** Roxana Poushang Baghery, Kereshmeh Afsari	ISARC-1-6: Information modelling techniques (2) (EA-06-06) Chair: Jinwoo Kim **Less is More: Reinforcement Learning-powered Training Data Quality Evaluation and Sampling for Enhancing Computer Vision in Construction** Ziqing Wang, Jinwoo Kim	ISARC-1-7: Information modelling techniques (3) (EA-06-07) Chair: Daeho Kim **Knowledge-Enhanced Point Cloud Classification Model for Bridge Components** Tao Yang, Yang Zuo, Enrique del Rey Castillo, Weiwei Chen, Ajay Kumar Agrawal	ISARC-1-8: Sensing systems & data infrastructures (1) (Innovation & Design Hub Sandbox EA-04-06) Chair: Hongjo Kim **Trial of Point Cloud Registration Method at Excavation Sites and Implementation of Machine Guidance System** Kai Sato, Takashi Yokoshima, Yuki Miyashita, Aoi Tarutani, Keisuke Imoto, Fuku Himuro, Yutaro Kukase, Yusuke Nishida, Yusuke Shibata, Toshiki Aizawa

Time	Programme							
10:45 - 11:00	**Assessment of Motion Planning Complexity for Rebar Placement Tasks Capturing Geometric, Spatial and Computational Aspects** Anantharaam R, Bilo Sebastian, Koshy Varghese	**Real-time Quality Control for Offsite LGS Frames Manufacturing using Vision-Based Deep Learning** George Nader, Djamel Eddine Touil, Sai Praneeth Chandra Balla, Ahmed Bouferguene, Mohamed Al-Hussein, Simaan AbouRizk	**LLM-based Exploration of BIM Clash Information using Semantic Knowledge Graph*** Donguk Shin, Wonbok Lee, Hyunwoo Lee, Yoonjae Sung, Woosung Jeong, Yurim Jeong Bonsang Koo	**REBA_VLM: Enhanced risk mitigation in construction via Pose guided visual instruction tuning** Mohammad Danivalur Rahman, Likhith Kumara, Sivakumar	**Hierarchial Embodied Carbon Calculation Workflow and Verification for the Entire Building and Elements** Ming-Yu Huang, I-Chen Wu	**Automated tape-target centering based on template matching for construction measurement tasks using robotic total stations*** Joshua Harrington, Nolan W Hayes, Diana Hun	**Training-Free Element Classification Aligned with BIM-driven Automated Construction Schedule Generation** Steven Hueng, Christoph Sydora, Eleni Stroulia	**An Integrated Product-Process Representation for Deriving Robotic Task Structures using Graph Transformations** Maikel Jean Silvo Brinkhoff, Sebastian Esser, Andre Borrmann
11:00 - 11:15	**Terrain-Adaptive Mobile 3D Printing with Hierarchical Control*** Nors Shuagshan Li, J, Nathan Kutz	**3-DoF Four-Cable-Driven Parallel Robot for Precision Alignment of Prefabricated Components** Wenjie Tang, Xiangsheng Chen, Silin Li, Yi Tan	**Knowledge Graph-Driven Reasoning for Automated Crane Lift Monitoring** Junlin Wang, Songbo Hu, Yihai Fang, Hongling Guo	**Unsupervised Clustering of Team Situation Awareness Via Cross Recurrence Quantification Analysis of Psychphysiological Metrics** Ching-Yu Cheng, Liuchuan Yu, Lap-Fai Yu, Behzad Esmaeili	**FloorPlan2Nav: Sematic-Topological Navigation from Floor Plan Images as Prior Maps** Yan Gao, Qian Zheng, Fuji Hu, Yiwei Weng	**An integrated workflow based on UAS, GIS, and BIM for building envelope maintenance management** Caio Lima, Vanessa Pacheco, Alisson Silva, Rafael Sena, Danton Almeida, Marcos Lorenzo, Dayana Costa	**BIM Design Assistant Driven by LLM Agents** Jin Han, Sining Zhoubian, Xin-Zheng Lu, Zhen-Zhong Hu, Jun Ma, Jia-Rui Lin	**Near-Field Laser-Line Pose Sensing for Absolute Localization of Mobile Robots and Handheld Tools in Construction** Pok Yin Victor Leung, Alvaro Cassinelli, Miu Ling Lam
11:15 - 11:30	**LaserCoPilot: A Transferable Multimodal Co-pilot for Closed-Loop Installation and Assembly Guidance via Step-Indexed Laser Projection** Mengjun Wang, Ruiren Mei, Fan Xu, Shuai Li	**Assessing the wider impact of fully autonomous equipment for earthworks and land remediation projects** Emmanuel Manu, Thomas Mellor	**A BIM-Based Automated System for Estimating Structural Temporary Support Cost and Schedule** Tantri N. Handavani, Angga T. Yudhistira, Rezki Pertiwi, Risma Amelia, Veerasak Likhitruangsilp	**Material-Aware Contextual Intention Inference for Adaptive Human-Robot Collaborative Timber Assembly** Yiqing Wang, Zhengyi Chen, Xingyu Tao	**Digital Assessment of Initial Geometric Imperfections in Full-Scale 3D Concrete Printed Walls Using Terrestrial Laser Scanning and Eurocode 2 Evaluation** Ng Jun Liang Ben, Du Hongjian, J Y Richard Liew, Meiling Dai, Dongqi Jlang, Ivan Seng Wei Liang	**Bridge concrete spalling recognition based on generative AI synthetic weather and YOLOv11** Rong-Lu Hong, KiWon Lee, Seo Young Park, Seunghyeon Wang, Ju-Hyung Kim	**An Automated Optimization Framework for Hierarchical Access Road Design in Onshore Wind Farm Construction*** Yuxuan Cheng, Fumiya Matsushita, Sheng Lian, Takahiro Sayama, Takumi Kaneko	**A Comparative Study of Mobile Device and Terrestrial Laser Scanning-Based Scan-to-BIM Workflows** Ahmet Bahaddin Ersoz, Frederic Bosche

Time	Programme							
11:30 - 11:45	**Imitation Learning-Base Physical AI for Small-Scale Construction Robotics Tasks** Abdullah Rasul, Daeho Kim	**Resillient Schedulling for Urban Infrastructure Maintenance and Inspection Fleets: A Potential-Guided MARL Approach** Shuyang Zhang	**Embodied carbon and cost variation of steel modules by using low-carbon steel considering carbon price's influence** Yang Zhang, Wei Pan, Vorada Kosaian	**Capturing Human-Centric Adaptation in Human-Robot Collaboration for Prefabricated Construction: Empirical Modelling of Mental and Physical Effort Dynamics** Yifan Wang, Bo Xiao Shane Mueller, Wen Yi	**Automating BIM Change Certification with Blockchain: A Case Study in Residential Building Design** Reinaldo Valdebenito, Peter Waher, Eric Forcael, Eder Martinez, Franciso Orozco, Carlos Mulchi, Caroll Francesconi	**Automated Cycle Time Analysis in Prefabricated Construction Using Hybrid Vision-Language Models and Motion Heuristics** Mohamed Sabek, Baseel Andres Ammar, Haitao Yu, Farook Hamzeh, Vicente A. Gonzalez	**BIM-based Hybrid Knowledge Graph based on DSL for Computational Design Rule Formalization** Huzhou Deng, Dian Zhuang	**A BIM-IoT Based Digital Twin Framework for Real-Time Indoor Environmental Quality Optimization in Educational Buildings** Yashvi Rajendrakumar Unadkat, Varun Kumar Reja, Arnab Jana
11:45 - 12:00	**Constraint-Based Planning and Control of a Differential-Drive Robot for Navigation in Cluttered Environments** Zemerart Asani, Mohayad Omaer, Bitlan Gheor-ghe, Aaron Mahaudens Ouassim Benhamouche, Bram Vanderborght, Emanuele Garone, Greet Van de Perre	**An Automated Content Generation Framework in Extended Reality Based Safety Training in Construction** Yulun Wu, Gaang Lee, Qipei Mei, Claudio Mourgues, Vicente A. Gonzalez	**Cradle-to-Grave Sustainability Analysis: Comparing Prefabricated High-Rise and Cast-in-Place Building Construction** Muhammad Huzaifa Raza, Sichi Han, Svetiana Besklubova, Shuaming Su, Ray Y. Zhong	**Effects of Drone Distraction on Roofing Sites: A Quantitative Assessments of Roofers' Balance During Critical Stooping Task** Mahfuza Maisha Mouri, Wei Han, Liqun Xu, Alireza Ghasemi, Wei-Yin Loh, Zhenhua Zhu, Fei Dai	**Building Evacuation Parameter Benchmarking: From Multi-Camera Video to Multi-Area 2D/3D Evacuation Trajectory and Congestion Analysis** Diran Yu, Abdul-Majeed Mahamadu, Weiwei Chen, Yang Su, Fujia Lyu, Lieyu Chen, Jiaxu Huang, Nan Li	**Zero-Shot Vision-Language Models for Automated Construction Activity Recognition: From Ensemble Methods to Neuro-Symbolic Reasoning** Amit Kumar Jha, Aritra Pal, Danny Murguia	**DS4Net: Pseudo-Depth Injection and Spectral-Spatial State Space Modeling for Label-Efficient Crack Segmentation** Xiaohu Chen, Ruiqiang Xiao, Hongyuan Liao, Wei Li, Mingzhu Wang	**An Integrated Unmanned Aerial Vehicle-Based Framework for Crack Detection and Classification of Bridge Infrastructure** Saleh Abu Dabous, Fatma Hosny, Bharadwaj R. K. Mantha, Sainab Feroz
12:00 - 13:00	**Lunch**							
13:00 - 14:30	**ISARC Keynotes (LT7A)**							
	13:00 - 13:30	**A Plug-and-Play Semantic Execution Framework for Reusable Cross-Domain Automation in Digital Twins** Chien-Pu Huang, Shang-Hsien Hsieh						
	13:30 - 14:00	**Control of a Robotic Telehandler for Sandwich Panel Assembly: High-Fidelity Digital Twin and Fractional Predictive Controller** Lucas Costa, Joao Alves, Nuno Ferreira, Micael Couceiro						
	14:00 - 14:30	**Learning Humanoid Loco-Manipulation for Transporting Unwieldy Construction Objects** Zaolin Pan, Yantao Yu, Zhengbo Zuo						

Time	Programme	
14:30 - 15:00	**Coffee Break**	
15:00 - 17:00	**ISARC Plenary Session (LT7A)**	
	15:00 - 15:15	**Hybrid Scene Graph Generation Framework for Structural Construction Activity Understanding Leveraging Human-Object Interaction and Vision-Language Models** Bryan D. Tan, Aureley Pradipta, Jacob J. Lin
	15:15 - 15:30	**MRAG-Based Generative AI Framework for Infrastructure Maintenance Decision Support** Juyoung Jang, Seungsoo Lee, Mingeon Cho, Gichun Cha, Solmoi Park, Seunghee Park
	15:30 - 15:45	**Towards RL Control for Flexible Robotic Applications in Construction: Grasping Static Objects** Mohab Hassaan, Florian Noichi, Andre Borrmann
	15:45 - 16:00	**Experimental Validation of a Real-Time Digital Twin for Latency and Performance Analysis in Automated Wood-Framing** Djamel Eddine Touil, Jordan Kolb, Ahmed Bouferguene, Yasser Mohamed, Mohamed Al-Hussein, Simaan AbouRizk
	16:00 - 16:15	**Exploring the relationship between robot dogs 'behavior and workers' attentional distraction** Heejae Ahn, Qipei Mei, Francis Baek, Yeseul Kim, Gaang lee
	16:15 - 16:30	**An Automated Decision Support System for Pre-planning of Precast Bridge Installation using Heuristic-Bases Simulation and Invariant Signatures** Meta Soy, Zirui Hong, Fan Yang, Jiansong Zhang, Hubo Cai
	16:30 - 16:45	**A Multi-Embodied-Agent-Based Dual-Level VLM Framework for Construction Safety Inspection** Chak Fu Chan, Shuang Du, Yang Miang Goh
	16:45 - 17:00	**Feasibility-Aware Sequential Synthesis of Structural Support Assemblies: a Canonical Formulation for Automated MEP Support Design** Lavinia Pedrollo, Torben Graeber, Martin Fischer
17:00 - 17:15	**Break**	

Time	Programme							
	ISARC-1-9: Automated/robotic machines, devices, and end-effectors (4) (LT7A) Chair: Yiwei Weng	ISARC-1-10: Construction management techniques (2) (EA-06-02) Chair: Jurgen Hackl	ISARC-1-11: Human factors & human-system collaboration (2) (EA-06-03) Chair: Thomas Linner	ISARC-1-12: Information modelling techniques (4) (EA-06-04) Chair: Jacob J Lin	ISARC-1-13: Information modelling techniques (5) (EA-06-06) Chair: Yang Zou	ISARC-1-14: Information modelling techniques (6) (EA-06-07) Chair: Ibukun Awolusi	ISARC-1-15: Sensing systems & data infrastructures (2) (EA-02-14) Chair: Fan Xue	ISARC-1-16: Automated/robotic machines, devices, and end-effectors (3) (Innovation & Design Hub Sandbox EA-04-06) Chair: Xinming Li
17:15 - 17:30	**A Strongly Typed Assembly Agent for Construction Integrating Rhino and Multimodal Large Language Models** Song Du, Wei Tong, Yiwei Weng	**BIM-Enabled On-Site Defect Detection for Tower-Crane Traction Wire Ropes via Transfer-Learned Lightweight YOLOv8 with GSConv-SE-SimAM** Yongchao Xie, Wenhao Li, Chenrun Dong, Yichuan Deng	**Investigation of Spraying process: a Simulation-based Comparison of Human Approach and Robotic Application** Anne-Sophie Saffert, Gabriel Kosara, Thomas Linner	**Generating Schedule Knowledge Graphs for Structural Activites by Resource Linking Using Retrieval-Augmented Generation** Raynard Vincent Elsantio, Jacob J. Lin	**Retrieval Augmented Generation and Multi-Agent Arbitration for Construction Code Compliance in AEC*** Hao Yin, Xichen Chen, Yang Zhou, Liupengfei Wu	**Identification and Predication of Heat-Related Illnesses in Construction** Mehdi Torbat Esfahani, Jonathan Gayechuway, Ibukun Awolusi	**Assessing Network Level Reconnaissance Risks in ROS2 Enabled Service Robots for Smart Infrastructure Operations** Abdul Shakir, Hiba Jomaa, Bharadwai R. K. Mantha	**Autonomous Drone Navigation for Structural Inspection Using 3D Gaussian Splatting and Optimization-based Path Planning** Hui Zuo, Thasanka Kandage, Hongyang Xu, Nima Shirzad-Ghaleroudkhani, Qipei Mei, Jose Fiestas, Luis A. Bedrinana
17:30 - 17:45	**Situated Perception: Spatial AI-Enabled Scene- and Object-level Localisation for Mobile Robotic Assembly** Begum Saral, Hanzhi Chen, Stefan Leutenegger, Kathrin Dorfler	**Integrating AI Image Recognition and LINE BOT to Develop Dynamic Construction Safety Information Management** Cheng Yu-Jen, Lu Pin-Tsang, Chen Shih-Sin, Chang Chen-Han, Weng Shao-Wei, Wang Wei-Chih	**An sEMG-Enhanced Fuzzy REBA for Forearm Risk Assessment** Jiale Zhu, Yuzhang Li, Xinming Li	**A domain ontology for representing core modular building components aligned with Linked Building Data and Design for X principles** Salik Ahmed Khan, Yang Zou, Minh Kieu	**An automated approach to quantify exposure of informal urban settlements using UAV and Scan-to-BIM** Mirian Ruth Merma Onofre, Christopher Joseph Nuñez Varillas, Carlos Francisco Davila de la Cruz, Miguel Luis Estrada Mendoza, Marck Steewar Regalado Espinoza, Raul Oswaldo Gonzalez Ortiz, Kenny Arnold Sebastian Requelme Cotrina, Ángel Martín Quesquén Ramírez	**Information-Theoretic Uncertainty Quantification for Vision-Based Construction Ergonomic Assessment** Roy Lan, Ibukun Awolusi	**Field Evaluation of a Wearable Framework for Worker Motion Recognition and Zone-Level Localization** MinJun Chang, Sai Machiraju, Yong K. Cho	**SemantI-Nav: Human-Guided Imitation Learning for Safe Quadruped Navigation on Contruction Sites** Liqun Xu, Dharmaraj Veeramani, Zhenhua Zhu

Time	Programme							
17:45 - 18:00	**Collaborative Block Stacking with Non-Prehensile Catching** Brendan Pousett, Johan Ubbink, Wilm Decre, Herman Bruyninckx	**Understanding Cost Estimate Evolution: Phase-to-Phase Dynamics and Project Size Effects in Transportation Infrastructure** Yeiee Paik, Baaabak Ashuri	**Reducing Schema Dependency in Natural Language Interfaces for Infrastructure Digital Twins through Automated Reader and Parser Generation** Peihang Lu, Linjun Lu, Ya Wen, Erika Parn, Lavindra de Silva, Borja Garcia de Soto, Ioannis Brilakis	**Construction of BIM-FM Data Linkage Methods Based on Real Estate Ownership Forms and Implementation in Management Systems** Ryoyu Tanaka, Kosei Ishida, Toshimasa Itaya, Kenji Ishihara	**Smart Bridge Sensing for Automated Vehicle Weight Estimation in Complex Traffic Scenarios** Dawid Piotrowski, Marcin Jasinski, Artur Nowoswiat, Piotr Lazinski, Qian Chen, Tony Yang	**From Worker Narratives to Safety Intelligence: Extracting Construction Health Risks Using NLP and Knowledge Graphs** Karen DSouza, Yuting Chen, Gongfan Chen, Lingguang Song, Don Chen	**Reconstructing Ground-Penetrating Radargrams into 3D Point Cloud Format for Building Inspection: A Web AR Approach Evaluated by Technology Acceptance Model** Meng Sun, Longyong Wu, Ying Katherine Deng, Xiao Li, Fan Xue	**A Framework Architecture for the Information Backbone for Robotic Construction** Tamira Wrabel, Sebastian Esser, Andre Borrmann

CONFERENCE AGENDA FOR ISARC

Day 2 — 24 June 2026 (Wed)

Time	Programme							
	ISARC-2-1: Automated/robotic machines, devices, and end-effectors (5) (LT7A) Chair: Chien-Pu Huang	ISARC-2-2: Automated/robotic machines, devices, and end-effectors (6) (EA-06-02) Chair: Weiwei Chen	ISARC-2-3: Construction management techniques (3) (EA-06-03) Chair: Ming Shan Ng (Charmaine)	ISARC-2-4: Human factors & human-system collaboration (3) (EA-06-04) Chair: Xingyu Tao	ISARC-2-5: Information modelling techniques (7) (EA-06-06) Chair: Minh-Tu Cao	ISARC-2-6: Information modelling techniques (8) (EA-06-07) Chair: Heejae Ahn	ISARC-2-7: Information modelling techniques (9) (EA-02-14) Chair: Francis Xavier Duorinaah	ISARC-2-8: Sensing systems & data infrastructures (3) (Innovation & Design Hub Sandbox EA-04-06) Chair: Francis Baek
08:30 - 08:45	**Digital Evaluation of Morphological and Visual Surface Characteristics of 3D-Printed Concrete** Jens Otto, Florian Haertel	**Towards Autonomous Bricklaying Using Boston Dynamics Spot** Karl-Johan Sørensen, Nico Vom Hofe, Frank Fitzek	**Artificial Intelligence for Design for Safety in Construction: A Critical Review and Research Agenda** Jaewook Jeong, Louis Kumi, Jiwon Hwang	**Toward Understanding Fire Hazard Recognition in Construction: An immersive VR and Eye-Tracking Pilot Study** Kexin Liu, Gaang Lee, Max Kinateder, Vicente A. Gonzalez	**Bridging Building Information Modelling and Natural Language Processing: A Systematic Review on Current Applications and Limitations** Tessa Marie Oberhoff, Julian Cloos, Sven Mackenbach, Katharina Klemt-Albert	**Automatic Geometry Extraction from Design Drawings and Design Compliance Checking for Steel Scaffolds** Bing Sun, Boyu Wang, Chao Yin, Borja García de Soto, Jack C. P. Cheng	**Defect Specification Modeling Enabled Comprehensive Rating System with Individual and Collective Impact Analysis** Youheng Guo, Xuesong Shen, Khalegh Barati, James Linke	**From satellite images to urban-scale air temperatures: A Multi-Layer Perceptron approach** Geunchan Song, Azarakhsh Rafiee, Martín Mosteiro Romero
08:45 - 09:00	**Automating Tolerance-Critical Window Installation via Installer-in-the-Loop Interactive Reinforcement Learning** Zekai Jin, Huiguang Wang, Jiaduo Xing, Yi Shao	**Cooperative Motor-Thruster Vertical Orientation Control for Suspended Modules in Modular Construction Assembly** Yuxuan Lan, Xiao Li, Ruiqi Jiang, Shichen Sun	**LLM-Based BIM-DfS Framework for Phase-Specific Safety Mitigation Recommendations during the Design Stage** Jaewook Jeong, Minsang Gu, Louis Kumi	**Construction Task Scheduling for Human-Robot Collaboration Considering Human Behavior Uncertainty** Yilin Wang, Chao Mao, Jue Li, Xingyu Tao	**Bridging Simulation and Practice: Surrogate-Based Production Scheduling for Stochastic Modular Construction** Nima Moghimi, Sahar Shamaee, Qipei Mei, Vicente A. Gonzalez, Farook Hamzeh	**Intelligent Automation and Optimization of Structural Design in BIM-Based Workflows: Case Studies** Tafraout Salim, Bourahla Nouredine	**A Systematic Study on Instance-Level Bridge Point Cloud Segmentation under Cross-Type and Synthetic–Real Training Conditions*** Jeong Kyu Lee, Ui Chan Lee, Jong Won Ma	**A Survey-Controlled Photogrammetric Framework for Consistent Multi-Floor Geometry Estimation in Robotic Facade Installation** Danya Liu, Niki Kentroti, Kepa Iturralde

Time	Programme							
09:00 - 09:15	**A Mobile Robotic Concrete Additive Manufacturing System Toward Underwater Applications** Guanqin Guo, Hongjian Du	**Autonomous Docking for Rebar Tying Robots: A Structure-Aware Perception Framework** Feng Zhang, Jingjing Guo, Xiaoyi Lyu, Lu Deng, Yuning Yan, Bo Jin, Jichao Hou	**Impact of Robot Autonomy on Workers' Stress: Evidence from Virtual Reality and Physiological Measures** Yonger Zuo, Brian Guo, Yang Miang Goh, Bowen Ma	**ExecHOI: Planning-grade 3D Simulation of Long-Horizon Human Object Interaction Tasks for Proactive Musculoskeletal Disorder Risk Forecast** Kangrui Ren, Gaang Lee	**AI Agent–based Component Rescheduling Framework for Industrialized Construction** Huayu Zhong, Hui Lu, Ke Chen	**Hybrid simulation in construction: Trends and design framework** Xuming Zhu, Jinchi Han	**PFAB: A Generic Software Framework for Predictive Fabrication in Construction** Luca Bettermann, Sebastian Esser, Martin Slepicka, André Borrmann	**Real-Time Temporal Convolution based Worker Motion Recognition with Three IMU Sensor Combinations** MinJun Chang, Sai K. Machiraju, Francis Baek, Yong K. Cho
09:15 - 09:30	**Toward Crane–Robot Cooperative Manipulation in Curtain Wall Installation: A State-of-the-Art Analysis and Methodological Perspective** Vincenzo Orlando, Kepa Iturralde	**A VTA–ADM Framework for Real-Time Alignment Deviation Measurement in Precast Column Assembly Using Point Cloud–Image Fusion** Lizhi Long, Lu Deng, Weiwei Chen, Honghu Chu	**Crane Accident Investigation via LLM Reasoning: A System Thinking-guided Chain-of-Thought Approachs** Junyu Chen, Hung-lin Chi	**Democratizing Construction Robotics: A Neuro-Symbolic Framework for Semantic Spatial Adaptation and Intuitive Control** Hui-yu lin, Liang-Ting Tsai, Cheng-Hsuan Yang, Tzong-Hann Wu, Shang-Hsien Hsieh	**Multi-Horizon Forecasting of Indoor $PM_{2.5}$ Using Machine Learning in a Digital Twin Environment** Zihao Zheng, Karunakar Reddy Mannem, Borja Garcia de Soto	**A VLM-Driven Workflow for Generating Context-Specific Fire Hazards for VR Construction Safety Training** Kexin Liu, Mohamed Sabek, Gaang Lee, Max Kinateder, Vicente A. Gonzalez	**Text-enriched graph embeddings for HVAC-related maintenance triage** Sajith Wettewa, Lei Hou, Kevin Zhang	**Vision-Enabled Supervisory Feedback Loop for Extrusion Failure Mitigation in Robotic Additive Manufacturing** Hendrik Benz, The Vinh Nguyen Trong, Kunaljit Chadha, Massimo Visonà, Katharina Klemt-Albert
09:30 - 09:45	**Synthetic Data Generation and Visual Servoing Simulation for Vision-Guided Robotic Rebar Tying** Chethiya Prasanga Wadumesthri, Aritra Pal	**Super-Resolution-Enhanced Binocular Vision for Accurate Positioning of Prefabricated Wall Panels via Multi-Scale Ellipse Center Detection** Lizhi Long, Honghu Chu, Lu Deng, Weiwei Chen	**The Economic Paradox of Design and the integration of Artificial Intelligence (AI) within Building Information Modelling (BIM)** Guilherme Quinilato Baldessin, Silvio Melhado	**Human-Centered Design and Development of a UAV-UGV Hybrid Robotic System for Confined Space Inspection in Lean Construction 4.0** Zhong Wang, Qipei Mei, Gaang Lee, Thomas Bock, Vicente A. Gonzalez	**Energy-Intelligent Forecasting for Taiwanese Office Buildings: Developing a BIM-Derived Dataset and Integrating Advance AI Models** Ngoc-Mai Nguyen, Minh-Tu Cao, Wei-Chih Wang	**An Automatic Update Framework for As-designed Pipeline BIM Model Based on Laser Scanning Point Cloud** Xinru Wang, Bin Yang, Tianjia Lu	**Ensembled Machine Learning-Based Cost Prediction Model for Modular and Offsite Construction Projects in Canada*** Qudrati Al Wasiew, Amirhossein Mehdipoor, Aryan Hojjati, SangHyeok Han	**AI-Based Internal Structural Modeling Using Muon Tomography and Few-shot Parameter Calibration** Mudan Wang, Erika Parn, Sihan Liu, Borja García de Soto, Soheila Kookalani, Sander Sein, Tengiz Pataraia, Ioannis Brilakis

Time	Programme							
09:45 - 10:00	**DfX-based Design of a Multi-Robot Cell for Light Gauge Steel Panel Assembly and Manufacturing Operations** Misha Afaq, Arash Hosseini Gourabpasi, Farzad Jalaei, Rafiq Ahmad	**Digital Twin Framework for Humanoid Robotics in Construction: A Conceptual Approach for Scene and Task Simulation** Xuling Ye, Liu Liu, Markus König	**Analysing Construction Robotics Safety Standards for Safety Modelling and Simulation** Yifan Xu, Clara Cheung, Ming Shan Ng, Akilu Yunusa Kaltungo, Tsukasa Ishizawa, Kota Fujimoto	**Co-Adaptation in Human-Robot Collaborative Construction: A Case Study on Timber Joint Assembly** Michihiro Abe, Arastoo Khajehee, Yasushi Ikeda	**Legged locomotion Control for Low-cost Quadruped Robots Using reinforcement learning** Rajech Tiwari, Shailesh Khapre, Avantika Singh	**Optimal Transport Theory-based Framework for Affective Design Revision in BIM Environment** Jin-Bin Im, Rong-Lu Hong, Chang-Hyun Choi, Jung-Eun Ha, Ju-Hyung Kim	**A Synergized LLM-KG Framework for Domain Knowledge Cognition** Ruiyan Zheng, Jinying Xu	**UAV Surveying for Emergency Facility Construction: Recent Advances in Data Collection and Processing** Congzhen Yang, Gengrong Zhang, Ke Chen
10:00 - 10:30	**Coffee Break**							
10:30 - 10:45	**ISARC-2-9: Automated/robotic machines, devices, and end-effectors (8) (LT7A)** Chair: Rongbo Hu	**ISARC-2-10: Construction management techniques (4) (EA-06-02)** Chair: Gabriel Castelblanco	**ISARC-2-11: Human factors & human-system collaboration (4) (EA-06-03)** Chair: Yihai Fang	**ISARC-2-12: Information modelling techniques (10) (EA-06-04)** Chair: Christian Schlette	**ISARC-2-13: Information modelling techniques (11) (EA-06-05)** Chair: Lynn Shehab	**ISARC-2-14: Information modelling techniques (12) (EA-06-07)** Chair: Yujie Lu	**ISARC-2-15: Sensing systems & data infrastructures (4) (EA-02-11)** Chair: Jinying Xu	**ISARC-2-16: Automated/robotic machines, devices, and end-effectors (7) (Innovation & Design Hub Sandbox EA-04-06)** Chair: Benjamin Sanchez
	Enhanced YOLOv10 for Small-Object Rebar Detection in UAV Images on Construction Sites Seunghyeon Wang, Sungkon Moon, Yuanzhe He, Rong-Lu Hong, Ke-Ting Pan, Ju-Hyung Kim	**A Digital Twin Simulation Framework for Conveyor-Based Construction Waste Sorting Using RGB-Derived Mesh Assets** Shanuka Dodampegama, Avish Singh, Lei Hou, Ehsan Asadi, Kevin Zhang, Sujeeva Setunge	**Feasibility of a Personalized Stress Appraisal Monitoring Technique in Construction Using Wearable PPG and Physiology-Informed Hierarchial Machine Learning** Francis Xavier Duorinaah, Ghanim Saqib, Vicente A. Gonzalez, Gaang Lee	**A Graph-RAG Framework for Natural Language Interaction with Dynamic Construction Project Graphs** Mohammad Saeed Heidary, Xuesong Shen, Milad Mousavi, Khalegh Barati, James Linke	**A Framework for 3D Reconstruction of Concrete Box-Girder Interiors from Point Cloud Data** Taegyu Kim, Seunghun Im, Duho Chung, Sungwoo Cho, Ilhyeong Shin, Hyeongu Ji, Hyoungkwan Kim	**Semantic Point-of-Interest–Driven IFC-Based Robot Navigation in Indoor Environments** Muhammad Shoaib Khan, Zhihao Ren, Ho Jin Lee, Seonghyeun Kim, Woo-yong Jung, Jung In Kim	**A Generative AI-based Platform for Construction Education: Development and User Study** Xiaoyu Hou, Anusha Kannan, Bo Xiao, Shane Mueller	**Autonomous Port Area Safety Inspection Using a Multimodal Sensor-Integrated UGV** Jen-Hao Liu, Wei-Ping Hung, Chun-Ying Lee, Jacob J. Lin, Jen-Yu Han

Time	Programme							
10:45 - 11:00	**A BIM-Driven Robotic Framework for Autonomous 3D Projection of Construction Layouts** Zikang Wang, Huaquan Ying	**Understanding the Causal Relationship of Lead Time on Material Cost Patterns with Machine Learning Models** Daniela Correa-Caselles, Gabriel Castelblanco	**Few-shot SOP-Grounded Vision–Language–Action Policy for Proactive Human–Robot Collaborative Construction Assembly via Structured Semantic Prompts** Jiabao Liao, Qiao Zheng, Xingyu Tao	**Safe and Robust Imitation Learning for Drone Navigation in Cluttered Construction Environments** Yun Seok Gwon, Heung Jin Oh	**Mitigating Overheating and Improving Ventilation in Dense Taiwanese Townhouses Using a Termite-Mound-Inspired Hybrid Stack System** Ngoc-Mai Nguyen, Happy Mareta, Fadhilah Rahma Miftahul Jannah	**Process-Aware Reward Modeling for Automated Construction Planning** Akarsth Kumar Singh, Shang-Hsien Hsieh	**The information backbone of robotized construction: Principles, procedures, and software architecture** Andre Borrmann, Tobias Bruckmann, Kathrin Dörfler, Timo Hartmann, Kay Smarsly, Maikel Brinkhoff, Avishek Das, Sebastian Esser, Mohab Hassan, Christoph Jeziorek, Nayun Kim, Mohammad Reza Kolani, Ankita Maurya, Stavros Nousias, Panagiotis Petropoulakis, Aditya Tandon, Tamira Wrabel	**Towards Construction 4.0 Spraying Technologies: Development of an Automated Modular Spraying System (AMSS) for Varying-Viscosity Coating Applications** Rajesh Ranjan Nayak, Masoud Shakoorianfard, Christian Richter, Frank Will
11:00 - 11:15	**Enhancing Water-Ponding Detection in Housekeeping Using Generative AI Inpainting–Based Synthetic Data** Quang Duy Dinh, Xuming Zhu, Jing Tian, Yang Miang Goh	**From Sensing to Scheduling: Deviation-Based Framework for Sensor-Aware Progress Monitoring and Schedule Control** Shabtai Isaac, Gunnar Lucko	**OperaSimVR: An Immersive XR Interface for Cyber-Physical Systems in Construction** Kota Akinari, Yuichiro Kasahara, Tomoya Kouno, Akinosuke Tsutsumi, Genki Yamauchi, Daisuke Endo, Taro Abe, Takeshi Hashimoto, Keiji Nagatani, Ryo Kurazume	**A Particle System Approach to Simulating Construction Sprays: Shotcrete, Painting, and Abrasive Blasting** Mohammad Reza Yazdi Samadi, Ralf Waspe, Ali Muhammad, Christian Schlette	**Incremental IFC updates with 'why' and 'how': A case of IFC extension for LLM agent-enhanced simulation-based optimization for building energy efficiency** Lingming Kong, Qianyun Zhou, Fan Xue	**Large-Scale Point Clouds Registration Using Equivariant Graph Neural Network with Building Features** Jinyi Shi, Yujie Lu	**Beyond Geometric Conversion: Enriching Industrial CAD Models for BIM-Based Design** Davide Avogaro, Maximilian Maria Wurm, Johan Wickström, Carlo Zanchetta	**VR Embodied Robot System: A Novel Approach to Investigating Crowd Crush** Song Lu, Zichao Liang, Nan Li

Time	Programme							
11:15 - 11:30	**Unifying Design and Execution: A Hybrid Digital Twin for Robotic Fabrication in Construction** Zi Jie Tan, Hongjie Cai, Rongbo Hu, Soungho Chae, Keiji Tanaka	**Assessing Material and Labor Cost Indices Impacts on Construction Firms' Financial Performance: A Machine Learning Comparison with Feature Engineering** Jin-Bin Im, Seong-Jun Ye, Enlian Zhang, Kyung-Tae Lee, Kang-Moo Lee, Ju-Hyung Kim	**AI-assisted Voice Control in Human–Robot Collaboration during Scaffold Assembly Tasks: A Controlled Evaluation Using Questionnaires and Motion-Tracking Indicators** Tanghan Jiang, Erol Cemiloglu, Yihai Fang	**Structural Semantic Segmentation and Fine-Grained Surface Feature Extraction in Heritage Buildings** Jingxuan Li, Jian Bi, Vincent Gan, Michael Chew	**Automated Subway Tunnel Leakage Segmentation: A Data-Efficient Fine-Tuning Strategy Based on Large Vision Foundation Models** Longfei Dai, Zhiyao Tian, Shunhua Zhou	**A Multimodal Late-Fusion Framework for Reliable Crane Hand Gesture Recognition in Low-Light Environments** Zhihao Wei, Moein Maleki, Ghulam Muhammad Ali, Xinming Li	**A Generative AI-Based Construction Safety Assistant Using Retrieval-Augmented Generation** Xiaoyu Hou, Aakash Walavalkar, Bo Xiao	**Geometry-Structured Perception for Topology-Agnostic Robotic Rebar Tying** Huiguang Wang, Zekai Jin, Yi Shao
11:30 - 11:45	**Distraction-Aware Drone Path Planning for Construction Safety** Wei Han, Liqun Xu, Mahfuza Maisha Mouri, Wei-Yin Loh, Fei Dai, Zhenhua Zhu	**Applying Quality Diversity Algorithms to Construction Site Layout Planning** Ping Chai, Lei Hou, Guomin Zhang	**Reconceptualising Human-Robot Collaboration in AEC: A PRISMA Scoping Review** Jasper Vermeulen, Timothy Rose, Glenda Caldwell, Müge Teixeira, Yuan Liu, Carol Hon	**A scalable reinforcement learning framework for task allocation in flexible construction scenarios** Yifan Wang, Bin Yang	**Experimental Design and Field Validation of a 3DGS-based Rebar Inspection Testbed for Infrastructure Projects** Kumar Adarsh, Ashwani Jaiswal, Nikhil Bugalia	**Knowledge-driven Performance-based Design for Residential Buildings Fire Safety: A Case Study of Fire Scenario Generation** Xianghui Zeng, Liu Jiang, Yu Chen, Chao Su	**A Two-Stage Blind Source Separation Method for Structural Health Monitoring Signals Integrating Deep Kernel Regression and Wavelet Multiresolution Analysis** Boqiang Xu, Xiuzhen Tian, Junhui Han, Chao Liu, Qian-Cheng Wang	**Robot assisted selective disassembly for buildings** Kara Williams, Anupam Satumane, Shayan Shayesteh, Benjamin Sanchez
11:45 - 12:00	**A Curved Mortise-Tenon Timber Joint for Robotic Non-sequential Assembly with Reinforcement Learning** Lingyue Wu, Anja P. R. Lauer	**Scene Coordinate Regression–Based Visual Localization for Advanced Multi-Crane Safety Monitoring in Construction Sites** Tran Dang Khoa Vo, Tan-Dat Pham, Sujin Jin, Pa Pa Win Aung, Solmoi Park, Seunghee Park	**Survey-Based Data-Driven Dashboard for Planning Off-Site Construction Projects: Wall Framing Case Study** Sena Assaf, Tadesse Zelele, Xue Chen, Mohamed Assaf, Sangjun Ahn, Joon Ha Hwang, Ahmed Bouferguene, Mohamed Al-Hussein	**A Framework for Multi-scale Quantitative Defect Inspection of Concrete Bridge Surface Using Multi-view RGB-D Data*** Sungwoo Cho, Seunghun Im, Taegyu Kim, Duho Chung, Ilhyoung Shin, Hyeongu Ji, Hyoungkwan Kim	**A structured Prompt Engineering Framework for Modular Construction Design Using Generative AI** Zaid Alwashah, Bo Xiao, Hexu Liu, Xiaoyun Shao, Xiaoman Wang	**Skeleton-enhanced vision-language framework for intent recognition of construction workers** Wenting Mo, Fanfan Meng, Mi Pan, Miroslaw J. Skibniewski	**Construction Site Layout Monitoring Using Instance Segmentation** Vimal Bharathi, Jochen Teizer	**A Multi-Modal 6DoF Pose Estimation Framework of Rebar Intersections Based on Fuzzy-Oriented Foundation Pose** Bolong Shu, Lu Deng, Jichao Hou, Jingjing Guo
12:00 - 13:30	**Lunch + Poster Session** (Engineering Auditorium)							

Time	Programme
13:30 - 15:30	**ISARC-IGLC Joint Session** (LT7A & Engineering Auditorium) **Chair: Vicente A. Gonzalez, Rafael Sacks**
	Knowledge-Based Emergency Decision Support with Large Language Models and Structured Graph Fangzhou Lin, Zhengyi Chen, Mingkai Li, Boyu Wang, Xiao Zhang, Jack C.P. Cheng
	A minimal-data toolkit for diagnosing loss of flow resilience in interior fit-out work Ashan Senel Asmone, Danny Murguia, Zhengyang Ling, Asitha Rathnayake, Campbell Middletone
	Rethinking Automation in Construction: an exploratory study of Lean for Robotics in Mobile Factories Ming Shan Ng, Qian Chen, Benjamin Dillenburger, Rongbo Hu
	A proactive digital twin framework for dynamic pull scheduling in modular construction factories Nima Moghimi, Sahar Shamaee, Qipei Mei, Vicente A. Gonzalez, Faarook Hamzeh
	A Hybrid Semantic Web and Data-Driven Framework for Spatial Constraint-Aware Construction Planning Zeyu Mao, Evob Mengiste, Borja García de Soto, Vicente A. Gonzalez
	The lean construction visual taxonomy (lcvt): bridging the semantic gap Mohamed Sabek, Qipei Mei, Gaang Lee, Ami Golabchi, Vicente A. Gonzalez
15:30 - 15:45	**Break**

Time	Programme							
	ISARC-2-17: Automated/robotic machines, devices, and end-effectors (9) (LT7A) Chair: Benny Raphael	ISARC-2-18: Automated/robotic machines, devices, and end-effectors (10) (EA-06-02) Chair: Ryoko Arashida	ISARC-2-19: Human factors & human-system collaboration (5) (EA-06-03) Chair: Xianfei Yin	ISARC-2-20: Information modelling techniques (13) (EA-06-04) Chair: Mingzhu Wang	ISARC-2-21: Information modelling techniques (14) (EA-06-06) Chair: Frederic Bosche	ISARC-2-22: Information modelling techniques (15) (EA-06-07) Chair: Boyu Wang	ISARC-2-23: Lean Enablers for Digitalization and Automation (1) (EA-02-14) Chair: Aritra Pal	ISARC-2-24: Lean Enablers for Digitalization and Automation (2) (Innovation & Design Hub Sandbox EA-04-06) Chair: Danny Murguia
15:45 - 16:00	**ConRobo-Nav: A Quadruped Robot Navigation System for Construction Sites via End-to-End Reinforcement Learning** Qi Yin, Meida Chen, Yangming Shi	**AI-Driven Autonomous Construction Machinery for Enhanced Productivity and Safety** Milan Jovin, Igor Pesko, Vladimir Mucenski	**A Performance Benchmarking Framework for Remote-Controlled Tower Cranes Toward Standardized Specifications** Yifan Wu, Peter Kok-Yiu Wong, Jack C.P. Cheng, Kenji Chi-Kin Wong, Colin Chi-Hang Fong, Esther Tung-Yan Yim	**A Tri-Stage Approach for Predicting Construction and Demolition Waste Disposal: Hong Kong Case** Shuaiming Su, Xinjie Feng, Svetlana Besklubova, Muhammad Huzaifa Raza, Ray Y. Zhong	**A proof-of-concept framework for LLM-augmented semantic web technologies for knowledge sharing and reuse in construction** Zhen Zhang, Yang Zou, Johannes Dimyadi, Brian Guo	**Zero-Shot Instance Segmentation of Shield Tunnel Linings via Adaptive SAM and Generative Inpainting** Chengxin Shi, Jiepeng Liu, Dongsheng Li, Pengkun Liu, Yongjing Wang, Shan Huang	**Towards Practical Digital Twin Construction Systems** Timson Yeung, Rafael Sacks	**Robot-Oriented Lean Construction: A Toolkit Primer and the Pathway Forward** **Rongbo Hu, Hiroki Yajima, Jiazhen Mao, Keiji Tanaka, Soungho Chae, Thomas Bock**
16:00 - 16:15	**Intelligent Stone Masonry Robot for Sustainable Construction: Opportunities and Challenges** Qianqing Wang, Jingwen Wang, Bryan G. Pantoja-Rosero, Stefana Parascho, Katrin Beyer	**A Prototype of Construction-CAM for Automated Earthwork with Multiple Construction Machines** Rikuto Takahashi, Yuichiro Kasahara, Shou Kurebayashi, Genki Yamauchi, Takeshi Hashimoto, Ryo Kurazume, Hiromitsu Fujii, Keiji Nagatani	**From Crowdsourced Noise to Resilient Intelligence: Reliable Social Media Flood Image Localization for Real-time Situational Awareness** Zihua Zhu, Xianfei Yin, Qihua Chen	**Quantifying Cognitive Development in Tower Crane Operators through VR Training: A Longitudinal Study Using the SEEV Model** Furui Man, Junyu Chen, Hung-lin Chi	**A Distributed Simulation Framework Using HLA for Circular Economy Modeling in Road Construction** Tim Bernhard, Omar Abbasi, Joseph Louis, Johannes Fottner	**Automatic Semantic Parsing of Structural Drawings and Rebar Schedules Based on a Hybrid Deep Learning Framework** Rong-Lu Hong, Jin-Bin Im, Lijing Xu, Wooshin Shim, Seunghyeon Wang, Ju-Hyung Kim	**Disaster Response Report Generation System** Ming-Lu Liu, James Yichu Chen	**Schedule-Driven Lightweight 4D Simulation for the Setup Phase: Enabling Practitioner-Led Construction Planning** Yuko Ishizu, Kota Yoshifuji, Shun Matsumoto, Muneyuki Ohigarshi, Hiroaki Yamasaki

Time	Programme							
16:15 - 16:30	**Evaluating Incremental Automation Strategies in Concrete 3D Printing** Abhishek Patel, Benny Raphael	**Quantum Computing for Construction Robots: Challenges and Opportunities** Ci-Jyun Liang, Logan Norton-Lapsley, Zhaofeng Hu	**Enhancing Human–Robot Collaboration Through Augmented Reality Guidance: A Phase-Based Evaluation** Yizhe Wang, Songbo Hu, Yihai Fang, Yu Bai	**A Hybrid Physics-Informed and Deep Adversarial Transfer Learning Network for Cross-Domain Fault Diagnosis of High-Speed Train Bearings** Hule Li, Xiaohui Zhang, Naichen Shi, Zhengyao Wang, Yanrui Liu	**As-is Modelling of Deformed Linear Objects from 3D Point Clouds using Inverse Kinematics -based Iterative Closest Point** Jumana Dayeh, Frédéric Bosché	**Influences of artificial intelligence and blockchain technology on construction supply chain** Bryce Meekes, Melissa Chan, Wei Yang, Vaughan Coffey, Bambang Trigunarsyah	**Real-Time Carbon Intelligence for Modular Buildings: An IoT-BIM Approach** Yu Wang, Yue Teng, Yucheng Guo, Geoffrey Qiping Shen	**Permission Blockchain-BIM Framework for Construction Dispute Prevention** Hani Alzraiee, Abdelrahman Madkour, Elbethel Muluye, Shiwam Singh
16:30 - 16:45	**BIM-Integrated Generation of Safety-Aware, Georeferenced Occupancy Grid Maps for Autonomous Masonry Robots** Masoud Shakoorianfard, Jan Deubner, Christian Richter, Frank Will	**Reinforcement Learning–Driven Intelligent Path Planning for Dual Tower Cranes in Modular Construction Sites** Shanshan Jiang, Yifan Wang, Bin Yang, Zhaozheng Shen	**A Modular High-Fidelity Simulation Framework for Human–UAV Interaction Research in Built Environments** Guohao Wang, Abdul-Majeed Mahamadu, Vijay M. Pawar, Honghu Chu, Diran Yu	**Accurate Geometric Reconstruction and High-Fidelity Photorealistic Rendering of Reflective Glass Façades using Gaussian Splatting with a Novel Reflection MLP** Zhenyu Liang, Xiao Zhang, Boyu Wang, Ang Li, Zhaolun Liang, Jeff Chak Fu Chan, Mingzhu Wang, Jack Chin Pang Cheng	**An Ontology-Guided Attribute-Based Model for Automated Construction Hazard Description** **Wen-der Yu, Wen-ta Hsiao, Tao-ming Cheng**	**FIM-Based Task and Motion Planning for Robotic Bricklaying** Martin Slepicka, Canberk Yalçıklı, Mohammad Reza Kolani, Stavros Nousias, André Borrmann	**BIM-LPS® Integration Case Study in MEP sector: Automating Phase Schedule Generation*** Maroua Sbiti, Djaoued Beladjine, Abinandana Boodi, Lionel Chevalier, Karim Beddiar	**Activity-Flow–Based Modeling and Simulation for Construction Process Visualization** Diego Rojas Marinkelle, Nelly P Garcia-Lopez, Luis C Galvan Vergel
16:45 - 17:00	**Training and Simulation of Quadrupedal Robot in Adaptive Stair Climbing and Descending for Indoor Firefighting: An End-to-End Reinforcement Learning Approach** Baixiao Huang, Baiyu Huang, Yu Hou	**Quality Inspection of Additive Construction: A Parametric Approach for Automated Scanning of 3D Printed Walls** Jorge Rojas, Sogand Hasanzadeh	**From Site Plans to a Tangible Teaching Artefact: A Physical Construction Site Model for Construction Education** Zoubeir Lafhaj, Soufiane Zoumehri, Rida Zerrari	**An Algorithmic Framework for the Automated Synchronization of Multi-Domain BIM Representations via Canonical Clustering** Justin S. Lee, Ghang Lee	**Scan-to-BIM: Edge-driven Pipeline to Facade Reconstruction** Maxime Queruel, Stefan Bornhofen, Pierre Martin, Aymeric Histace	**Towards Automated Scaffold Inspection Using 3D Gaussian Splatting and Vision-Language Models** Boyu Wang, Borja García de Soto	**From On-Site Video to Crew Balance Charts: A Computer Vision Approach for Worker Productivity Analysis** Sai Kumar Titti, Aritra Pal, Varun Kumar Reja, Koshy Varghese	**Mapping Digital Solutions for Productivity and Disruption Monitoring in Construction** Zhengyang Ling, Danny Murguia, Ashan Senel Asmone, Sam Brooks, Campbell Middleton

Time	Programme							
17:00 - 17:15	**Adaptive Human–Robot Collaboration for Masonry Construction Under Material and Assembly Uncertainty** Jutang Gao, Arash Adel	**Vision-Language Navigation for Indoor Construction Site Inspection using Quadruped Robots** Qihua Chen, Xianfei Yin, Zeying Gong, Zihua Zhu	**Ergonomic Risk Assessment Technology for Scaffolding Workers Using Real-Time Monocular 3D Pose Estimation** Seungsoo Lee, Kyoungmin Kim, Juyoung Jang, Minsoo Park, Gyounghoon Chun, Seunghee Park	**Investigating Artificial Intelligence Commercial Scheduling Software for Construction Projects** Tarek Salama, Atefeh Mohammadpour, Mohammed Alsharqawi	**An Automated Framework for Railway Sleeper Detection and Spacing Assessment using UAV Imagery** Bhanu Pratap Singh, Sahil Grag	**Domain-specific Large Language Model Pretraining for Construction Specification Review** Shuyi Wang, Jinwoo Kim	**AI-based Dynamic Quiz System: Disaster Knowledge King** Chen-Hao Tseng, James Yichu Chen	
17:15 - 18:15	**Transition from conference venue to Gala Dinner venue @ The Star Gallery - Star Vista**							
18:15	**Start Registration for Gala Dinner**							

CONFERENCE AGENDA FOR ISARC

Day 3 — 25 June 2026 (Thu)

Time	Programme							
	ISARC-3-1: Automated/robotic machines, devices, and end-effectors (11) (LT7A) Chair: Emrullah Koca	ISARC-3-2: Automated/robotic machines, devices, and end-effectors (12) (EA-06-02) Chair: Marcel Suiker	ISARC-3-3: Construction management techniques (5) (EA-06-03) Chair: Alessandra Corneli	ISARC-3-4: Technology management and innovation (1) (EA-06-04) Chair: Zhong Wang	ISARC-3-5: Information modelling techniques (16) (EA-06-06) Chair: Yitong Li	ISARC-3-6: Information modelling techniques (17) (EA-06-07) Chair: Qipei Mei	ISARC-3-7: Information modelling techniques (18) (EA-02-14) Chair: Mudan Wang	ISARC-3.8: Sensing systems & data infrastructures (5) (Innovation & Design Hub Sandbox EA-04-06) Chair: Johnson Xuesong Shen
08:30 - 08:45	**6-DoF Robotic 3D Printing of Martian Habitat Components: Scaled Fabrication Model-Based Experimental Validation** Emrullah Koca, Ahmet Türer	**Model-based adaptive controller for fast and restricted swing control in Tower Cranes** Mohammad Reza Kolani, Ali Mirhaghgoo, Stavros Nousias, André Borrmann	**Collaborative Safety Intelligence in Construction Sites through Agentic RAG Systems** Alessandra Corneli, Tommaso Pieroni, Alessandro Carbonari, Berardo Naticchia	**Four-Dimensional Fire Safety Knowledge–Enhanced Large Language Model for BIM Compliance Checking** Yicheng Zhao, Zhoupeng Wang, Xingbo Gong, Xingyu Tao	**Multi-Dimension Simulation Framework for Operating Room Construction Using Omniverse** Chia Ying Lin, Lung-Hsiang Su, I-Chen Wu	**Research on the Structure and Transmission of Enhanced IFC for LLM-Driven Intelligent Design** Yuwen Chen, Ziyang Jiang, Zhou Kaifeng, Zhao Xu	**A Traceable Clause-Level Retrieval and Evidence-Based Question Answering System for Tunnel Specifications** Yafei Sun, Xuesong Shen, Sisi Zlatanova, Khalegh Barati, Milad Mousavi, James Linke	**Trajectory-Based Activity Recognition for Earthmoving Operations Using Finite-State Machines** Kepeng Hong, Jochen Teizer
08:45 - 09:00	**Exploring Optimal Geometric Shapes for Martian Habitat Design: A Comparative Analysis and Structural Evaluation Learning** Ahmet Türer, Emrullah Koca	**Task Planning for Autonomous Drilling Excavators Under Terrain Constraints** Marcel Suiker, Jörg Husemann, Karsten Berns	**Digital Games about Technology and Sustainability in the Human-centred Built Environment: a literature review** Ming Shan Ng, Tsz Kiu Tam, Clara Cheung, Tsukasa Ishizawa, Yifan Xu, Akilu Yunusa Kaltungo	**Development of a Prototype AI-Driven Career Guidance System for the Australian Construction Industry** Diya Yan, Yi Ding, Cynthia Changxin Wang, Riza Yosia Sunindijo, Xushuo Tang, Ziyao Lu, Wenqian Zhang, Zhengyi Yang	**A Computational Pipeline for Design and Fabrication of Building Slab Units with 3D Printing and Robotic Production Cells** Yuchen Tang, Emad Shakour, Oded Amir, Rafael Sacks	**Exploiting Point Cloud Semantic Segmentation for Automatic Geometric Measurement in Modular Construction** Hongxu Chen, Tingtian Li, Jie Hong, Xiao Li	**Automated BIM-Ready 3D Reconstruction from Muon Flux Tomography Data: An IFC-Based Integration Pipeline for Bridge Inspection** Soheila Kookalani, Ioannis Brilakis, Sander Sein, Tengiz Pataraia, Ya Wen, Mudan Wang, Xiaofang Wen	**A Care-Centered Vision–Language Model Framework for Evaluating Urban Under-Bridge Spaces for Older Adults** Zian Huang, Siwei Zhang, Xingyu Tao

Time	Programme							
09:00 - 09:15	**A Time-Based Comparison of Manual and Robotic Manufacturing Processes for Nail-Laminated Timber Panels** Paolo Pancho-Ramirez, Mauricio Arredondo-Soto, Rafiq Ahmad	**BIM-Integrated AR for MEP field inspection: A Multi-modal Approach** Zhidong Xu, Zhenan Feng, Nan Li, Mostafa Babaeian Jelodar, Brian H.W. Guo	**An Incentive-Compatible Blockchain Consensus Mechanism for Construction Carbon Markets Based on Verified Carbon Credit Sales** Yanjiang Lu, Yue Teng, Geoffrey Qiping Shen	**Tackling Site-Based Challenges: The Mitigating Role of Construction 4.0 in Advancing Women's Participation** Aba Essanowa Afful, Cynthia Changxin Wang, Riza Yosia Sunindijo	**A Hybrid Retrieval-Augmented Generation Driven Multi-Agent System for Quality Control in Off-Site Construction** Fanfan Meng, Mi Pan, Wei Pan	**In-Context Trajectory Learning for Construction Scheduling Using Large Language Models** Shanika Manamperi, Wei Peng, Guomin Zhang	**Real-time Animal Intervention Detection in Roadways Using Quantum Enhanced YOLOv11 framework for CCTV Images and Inclement Visibility Conditions** Prasanna Venkatesan Ramani, Sugeerthi MS, Naresh Kumar V	**BIM-Integrated UAV Workflow for Automatic Façade Inspection Using IR Imagery and Component-Level Thermal Analysis*** Enrique Aldao, Gálata Martínez-Alonso, Gabriel Fontenla-Carrera, Higinio González-Jorge
09:15 - 09:30	**Development of Multi-robot 3D Thermal Modeling System for Built Environments** Jula Marzouk, Kadin Sales, Fanru Gao, Ci-Jyun Liang, Jacob J. Lin	**Force-feedback Cable-driven Leveling System for Modular Construction Installation** Shichen Sun, Xiao Li, Yuxuan Lan, Ruiqi Jiang, Qianru Du	**GraphRAG for Multi-Modal Construction and Demolition Waste Data Integration Toward Traceable Disposal Recommendations** Yu Gao, Tak Wing Yiu, Xuesong Shen, Vivian W.Y. Tam	**Strategies to Overcome BIM Barriers in the AEC Industry of Iran** Tahere Asghari, V Paul C Charlesraj	**Multi-granularity infrastructure-BIM object classification and decomposition for highway project delivery** Mengtian Yin, Junxiang Zhu, Xingbo Gong, Fengqiao Zhang, Yixiong Jing, Ioannis Brilakis	**RAG-LLM-Enhanced BIM for Automated Fall Hazard Detection and Prevention** Mudasir Hussain, Tan Tan, Zhuoran Zhang, Yalan Mei	**VLM-Based Component-Level Task Planning for Adaptive Bricklaying: Integrating 3D Models and 2D Shop Drawings** Nayun Kim, Florian Noichl, André Borrmann	**Hyperledger Fabric-Based Blockchain Application in Modular Construction Manufacturing** Angat Bhatia, Vafa Rostamiasl, Osama Moselhi
09:30 - 09:45	**A Shared Autonomy Framework for Construction Robot Teleoperation Using Mixed Reality** Yuezhen Gao, Ali Golabchi, Qipei Mei	**Remote operation of two construction machines from a location 900 km away using a single Starlink Mini and 10 HD video streaming** Yasuyuki Nakajima, Yasukazu Hontama, Daisuke Endo, Genki Yamauchi, Takeshi Hashimoto, Yasuyuki Jitsuta, Hitoshi Itoh, Masayuki Okamura	**Optimization of Temporary Modular Unit Logistics with Circular Flow** Ipek Kivanc, Nico Dellaert, Claudia Fecarotti	**Decision-Support Framework for Evaluating Steel Connection Systems for Adoption in Construction** Tolulope Oyeyipo, Ibukun Awolusi, Arturo Schultz, Debra Laefer, Salam Al-Sabah	**Probabilistic Flood Damage Cost Estimation for Residential Buildings Using Bayesian Information Updating** Yitong Li, Jie Gong	**A Decision-Oriented Synthesis of AI-Based Assembly Sequence Planning for Construction Automation** Anas Itani, Mohamed Al-Hussein, Simaan AbouRizk	**Deep Learning-Based Multi-Task Recognition of Objects and Text in Engineering Drawings** Jyun-Yu You, Ying-Hua Huang	**RepCA-GCN: A Lightweight and Efficient Method for Real-Time Construction Worker Action Recognition via Structural Re-parameterization** Jinhui Liang, Hui Deng, Zhou Zhang, Wenhao Li, Yichuan Deng

Time	Programme							
09:45 - 10:00	**Measuring Cognitive Stability and Recovery in Construction Work: Insights from Field Eye-Tracking Data** Amira Eltahan, Gaang Lee, Farook Hamzeh	**Dual-Robot Anchor-Bracket Installation: Coordination Challenges and Requirements for Learning-Based Adaptation** Niki Kentroti, Kepa Iturralde	**From 2D Drawings to BIM Models: An LLM-Assisted Approach** Jean Viaunel Victor, Pavan Kumar, Shang-Hsien Hsieh	**Development and Implementation of an OpenBIM–LCA Workflow for Factory Planning** Leonie Große-Wilde, Luca Philipp, Tina Esmaeilzadeh, Hannah Leisten, Sven Mackenbach, Matthias Schmidt, Katharina Klemt-Albert	**A hybrid RAG approach for generating ontology-based information containers from building permit application submissions using text-based LLMs** Philipp Hagedorn, Jayesh Adlinge, Judith Fauth, André Borrmann	**Cognitive Scan-to-BIM: LLM-Driven Hyperparameter Optimization for Robust MEP Primitive Fitting in Complex Construction Environments** Muhammad Talha, Rafiq Ahmad, Yitong Li, Omair Shafiq, Qipei Mei	**Neural Implicit Representations for IFC Objects: A Coordinate-Preserving Approach for Volumetric Spatial Reasoning** Sang Du, Lei Hou, Guomin (Kevin) Zhang, Haosen Chen	**Automatic Concrete Pipe Material Detection from Mobile Laser Scanning Data Using Transfer Learning** Kartika Nur Rahma Putri, Khalegh Barati, Xuesong Shen, James Linke
10:00 - 10:30	**Coffee Break**							
10:30 - 10:45	ISARC-3-9: Information modelling techniques (19) (LT7A) Chair: Dongmin Lee	ISARC-3-10: Information modelling techniques (20) (EA-06-02) Chair: Rodrigo F. Herrera	ISARC-3-11: Information modelling techniques (21) (EA-06-03) Chair: Honghu Chu	ISARC-3-12: Information modelling techniques (22) (EA-06-04) Chair: Kexin Liu	ISARC-3-13: Services and business applications / industry & Short Papers (EA-06-06) Chair: Haibo Feng	ISARC-3-14: Human factors & human-system collaboration (6) (EA-06-07) Chair: Wawan Solihin	ISARC-3-15: Technology management and innovation (2) (EA-02-14) Chair: Yuqing hu	ISARC-3.16: Automated/robotic machines, devices, and end-effectors (13) (Innovation & Design Hub Sandbox EA-04-06) Chair: Jinasong Zhang
	Flood Impact Assessment on Highway Networks Considering Socioeconomic Vulnerability: Evidence from Harris County Beixuan Dong, Lingzi Wu, Xinming Li	**Artificial Intelligence and Computer Vision for Construction Progress Monitoring: A Bibliometric and Thematic Review (2005–2026)** Kevin Daniel Torres Garcia, Luis Angel Cristancho, Omar Sanchez, Rodrigo F. Herrera, Karen Milady Castañeda Parra	**Multi-fidelity surrogate-integrated modelling framework: Application to tall energy structures** Wuhua Xie, Ke Ke, Guohao Wang, Honghu Chu	**A Time- and Memory-Efficient Method for Axis Alignment of Very Large Point Clouds using Orthogonality in Buildings** Longyong Wu, Sou-Han Chen, Meng Sun, Fan Xue	**A Multi-Camera Human Tracking Framework for Safe Human-Robot Collaboration in Construction-Site Robotic Arm Operations** Ren-Jie Li, Meng-Han Tsai, Liang-Ting Tsai, Yuxiang Chen, Ci-Jyun Liang	**A Comparative Usability Analysis of Instant Messaging and Online Forms for Crowdsourcing Disaster Image Collection** Shih Hien Yang, Zih-Jing Yang, Hao-Yung Chan, Meng-Han Tsai	**A Spatial Multi-Criteria Framework for Assessing Last-Mile Delivery Resilience in Modular Construction Supply Chains: A Network-Based Analysis of Lille** Saad El babidi, Zoubeir Lafhaj	**An Automated Pipeline for Generating a Multi-Layered Spatial Map for Indoor Robot Navigation from BIM Data** Festus Basimtaal Ayembilla, Taeyoung Kim, Min-Koo Kim, JoonOh Seo, Jung In Kim

Time	Programme							
10:45 - 11:00	**BIM-Align: An Automatic Framework for BIM to As-Built Alignment with Multi-View Imagery and 3D Gaussian Splatting** Guangan Chen, Michiel Vlaminck, Gianni Allebosch, Wilfried Philips, Hiep Luong	**Development of Feature Extraction Using High-Resolution RGB images and Homography Transformation to Inspect RC Walls Rebar Works** Young-Gun Baek, Rong-Lu Hong, Il-Gyo Choi, Kyung-Ho Lee, Ju-Hyung Kim	**Automated Scan-to-BIM Method for City-Scale Building Roof Reconstruction Using UAV Photogrammetry and Geospatial Building Footprints** Boan Tao, Frédéric Bosché, Jiajun Li	**Inferring Spatial Interface Dependencies from Co-change Records in Civil Infrastructure Design Models** Ryoko Arashida, Masahide Horita	**Modern Methods of Construction and IoT Adoption in New Zealand School Buildings: A Descriptive Multiple-Case Study** Odinaka Chukwu, Tochukwu Nnaji, Mostafa Babaeianjelodar, Eziaku Rasheed, Yijun Zhou, Lilian Obi-George	**Human Preference-Aligned Construction Scheduling using Reinforcement Learning and Direct Preference Optimization** Ajay Kumar Agrawal, Yang Zou, Tao Yang	**Event-based Subsurface Utility Data Collection Framework** Vignesh Vijayalakshmi Palanisamy, Senthilkumar Venkatachalam	**Vision-Language Based Semantic Navigation in Construction** Saika Wong, Shaobin Zhou, Zihan Zhou, Mi Pan
11:00 - 11:15	**Real-Time Risk Assessment for Underground Space Using IoT, Online Learning, and Bayesian Networks** Milad Mousavi, Xuesong Shen, Zhigang Zhang, Khalegh Barati, Binghao Li	**Towards Predicting Blockages in Urban Stormwater Drainage Systems with Machine Learning** Ashen Krishantha, Palaneeswaran, Ekambaram, Morshed Alam, Iqbal Hossain, Menggi Huang, Abdul Aziz	**Feasibility Assessment of a BIM-Driven Robotic Rebar Cage Assembly Framework for Ballastless Railway Track Slab Construction*** Ashritha Reddy, Yeddula, Samson Mathew	**Optimizing High-Mix Low-Volume Prefabrication: A Hybrid Simulation-Bases Optimization Framework for Dual-Resource Constrained Systems** Nima Moghimi, Sahar Shamaee, Gipei Mei, Vicente A. Gonzalez, Farook Hamzeh	**Identifying and Classifying Residents' demand for Smart Community Development: An Empirical Analysis from China** Yujia Shan, Tiantian Gu	**Bridging Materials Science and Human Factors for Construction Worker Health and Safety: An Integrated Framework** Usama Khan, RezaulKarim, Xingzhou Guo	**MR-based Immersive Co-Design of Housing for Climate Displacement** Viktoriia Bezverkhnia, Bo Su, Muhammad Fawad, Qian Chen	**Design of an UWB Based Real Time Locating System for Sem-Autonomous Crane Operation** Marius Kühn, Martin Starke, Tom Volz, Frank Will
11:15 - 11:30	**Interpretable Real-Time Construction Safety Monitoring via Video-Text Retrieval** Sejun Park, Jaehoo Kim, Dongmin Lee	**Automating Electrical Outlet and Circuit Assignment in BIM through AI-Assisted CAD-BIM Interoperability** Luis Angel Cristancho, Kevin Daniel Torres Garcia, Omar Sanchez, Rodrigo F. Herrera, Karen Castaneda	**Attention-Based Deep Reinforcement Learning for Task Sequence Optimization of Robotic Connection Operations** Yizhe Wang, Cong Zhang, Yihai Fang	**Design for Repair and Reuse, and Digital Fabrication of Traditional Japanese Timber Joinery: a Daimochi Tsugi case study** Ming Shan Ng, Akaneh Wang, Esmaeil Ghorbani, Jürgen Hackl	**An LLM-Integrated BIM Workflow for Rapid Early-Stage Layout Generation of Worksite Trailers** Pan Chao-Hsu, Li Ren-Jie, Tsai Liang-Ting, Tang Cheng-Hsuan, Tsai Meng-Han	**Wearable Edge-AI Assistant for Mulitilingual Safety Communication on Construction Sites: A Heat Stress Prevention Application** Yuting Chen, Gongfan Chen, Lingguang Song, Don Chen	**Methods for finding photos of parts of buildings in virtual space** Kosei Ishidawa	**Universal Robot-Tool Coupling for Construction: A Systematic Review of Cross-Platform Flange Interfaces and End-Effector Adaptation*** Angel F. Castillo Aldaco, Jiansong Zhang, Luis C Felix-Herran

Time	Programme							
11:30 - 11:45	**NUS3D: A BIM-Synthetic, Mobile-Scan and TLS Point Cloud Dataset for Robotic 3D Scene Understanding in Built Environment** Vincent Gan, Mingkai Li, Jingxuan Li, Chao Yin, Boyu Wang	**Industrial3D: A Large-Scale Industrial MEP Point Cloud Dataset and Benchmark for Complex Industrial Scene Understanding** Chao Yin, Bing Sun, Difeng Hu, Boyu Wang, Mingkai Li, Jack C.P. Cheng	**Reflective twins for deep excavation using physics-informed machine learning** Nandeesh Babanagar, Brian Sheil	**MiCRoadDiff: AI-driven generative design of on-site haul road for modular constructions using fine-tuned diffusion models** Fangzheng Li, Rongyan Li, Hung-Lin Chi	**Prompt Engineering and Video Segmentation Strategies for VLM-Based Action Recognition in Prefabrication Workflows** Chien-Wen Chen, Ren-Jie Li, Liang-Ting Tsai, Cheng-Hsuan Yang, Meng-Han Tsai	**Understanding Pedestrian Safety Compliance in Smart Traffic Systems: A Multimodal Data Approach** Yuting Zhang, Jiayu Chen, Tao Cui, Yichen Liu, Mingxuan Liang	**Systems Engineering for Adapting General-Purpose Robots for Construction Project Operations** Hadrien Roy, Rongbo Hu, Satwik Arawalli, Shubham Singhal, Sanjiv B N, Zi Jie Tan, Hongjie Cai, Keiji Tanaka, Soungho Chae	**Evaluation of Technical Readiness Level for Intelligent Construction Robots*** Hongrui Yu, Somin Park
11:45 - 12:00	**Optimizing Time Buffer Allocation in Space-Constrained Modular Construction Factories** Nima Moghimi, Sahar Shamaee, Leonard Irerih, Qipei Mei, Vicente A. Gonzalez, Farook Hamzeh	**Evaluating Carbon Payback Period in Parametric Façade Optimization Using Genetic Algorithms and Multi-Criteria Decision-Making** Dian Sapitri, Yun-Tsui Chang, Shang-Hsien Hsieh	**Smartphone-Only High Accuracy Indoor Self-Localization and Navigation system for Non-GPS Environments with Patrol Free Floor Plan Based Map Creation** Bikash Lamsal, Masato Higo, Ryota Toki, Masato Oka, Bimal Kumar KC, Matteo Sardellitti, Naofumi Matsumoto	**A BIM-based Ontology Method for Knowledge Representation in Light Gauge Steel Panel Assembly** Mariana Marines Alvarado, Arash Hosseini Gourabpasi, Farzad Jalaei, Rafiq Ahmad	**SAGE: A Knowledge-Grounded Multi-Agent Framework for Automated MEP Drawing Interpretation** Vivek Vishwas Vichare, Pratik Khandelwal, Aditya Debnath, Divya Singh Rathore, Gauri Lamb, Paul O'Neill	**XR-assisted semantic scene understanding of building interiors via AI segmentation and photogrammetric reconstruction** Bryan G. Pantoja-Rosero		
12:00 - 12:30	**Lunch**							
14:30 - 15:00	**Transit to Site Visit**							
15:30 - 18:00	**Site Visits:** **1. Integrated Construction Prefabrication Hub - Integrated Precast Solutions Pte Ltd** **2. The Gear Building - Kajima Technical Research Institute Singapore (KaTRIS)**							

ISARC POSTER SESSION

Day 2 — 24 June 2026 (Wed)

Time	Programme
12:00 - 13:30	**ISARC Poster Session** (Engineering Auditorium)
	Phase-Adaptive Large Language Models for Multi-Robot Task Allocation in Dynamic Construction Evironment Shyam Prasad Reddy Kaitha, Hongrui Yu
	Imitation Learning for Construction Robot Timber Assembly using Demonstrations from Leader–Follower Teleoperation Xinhe Yang, Lei Huang, Zhengbo Zou
	Dynamic Collision-Avoiding Trajectory Planning for Tower Crane Operations via Configuration Space Optimization Beiyu You, Boyu Ma, Keyu Chen
	AI-Enabled Climate–Health Nexus Framework for Decision-Support in Sustainable Urban Green Infrastructure Phoebe Xu, Jinying Xu, Jeff Clark, Ravi Shankar
	Drone-Based Façade Defect Detection via Decision-Level Fusion of Thermal Infrared and Visible Images Jiaqi Li, Qingrui Yue, Zezhi Ding, Haofeng Yan, Nan Jin, Xincong Yang
	Color-Enhanced Local Feature Fusion for FPFH-Based Point Cloud Registration Zezhi Ding, Jiaqi Li, Xincong Yang*, Yangfan Wu, Ruinan Tan
	Riverbed Depth Measurement Method Combining Visual SLAM-Based Camera Pose and Ultrasonic Slant Range Norihito Kishi

CONFERENCE AGENDA FOR IGLC

Day 1 — 23 June 2026 (Tue)

Time	Programme
08:00 - 08:30	**Registration**
8:30 - 10:15	**ISARC-IGLC Joint Opening Ceremony** (LT7A & Engineering Auditorium)
10:15 - 10:30	**Break**
10:30 - 12:00	**Plenary Session** (LT7A) **Chair: Carlos T. Formoso**
	Making people performance visible: connecting socio-emotional competencies and lean indicators Gabriel Millon, Gabriela Alvarado, Edison Atencio, Rodrigo F. Herrera
	Manifesting cognitive load theory in lean construction: a framework for human-centered task design Amira Eltahan, Gaang Lee, Farook Hamzeh
	Mapping AI and lean construction integration: a network analysis framework for construction productivity Ali Bidhendi, Sina Golsorkhi, Mani Poshdar, Mostafa Jelodar
	Generative design as an integrated value delivery tool Diego Rojas Marinkelle, Nelly P Garcia-Lopex, Santiago Lara
	33 years of Lean Construction: Community evolution and authorship patterns Paul Christian John, Bernard Sun, Atle Engebø, Ola Lædre, Shervin Haghsheno, Frode Drevland
12:00 - 13:00	**Lunch**

Time	Programme			
	IGLC 1-1: People, Culture, and Change (Engineering Auditorium) Chair: James Packer Smith	**IGLC 1-2: Digitalization and Lean Construction (EA-02-11)** Chair: Claudio Mourgues	**IGLC 1-3: Production Planning and Control (EA-06-05)** Chair: Karina Bertotto Barth	**IGLC 1-4: Modular and Off-Site Construction (EA-02-15)** Chair: Xinming Li
13:00 - 13:15	**When you meet lean construction gurus - Beware!** Eelon Mikael Lappalainen, Antti Ainamo, Dominic Desmarais, Ana Reinbold	**A boundary-spanning playbook for digital construction innovation** Diana Salhab, Farook Hamzeh, Yasser Mohamed, Simaan AbouRizk	**Tactical obeyas for production control: Visual Management with Kaizen, Takt & LPS** Jon Lerche, Bernardo Martim Beck da Silva Etges	**Understanding performance limits in offsite structural frame construction** Asitha Rathnayake, Danny Murguia, Ashan Senel Asmone, Campbell Middleton
13:15 - 13:30	**Hiring for lean under labor shortages: rethinking "right people" through cognitive diversity** Lynn Shehab	**Semantic blindness in the digital Last Planner System** Raquel Hoffmann Reck, Eduardo Luis Isatto	**Digital material flow management in takt production** Jaakko Markus Riekki, Olli Seppänen, Antti Peltokorpi	**A lean framework for modern methods of construction workforce transition in Australia** Laura Gutierrez Bucheli, Duncan Maxwell
13:30 - 13:45	**Contents-procedures-human relationships triad: reconceptualizing lean implementation** Maggie Y. Gao, Damian L. Balingit, Bak Koon Teoh, Robert L. K. Tio	**A digital Lean framework for early-stage urban regulatory decision-making** Caroll Francesconi, Eric Forcael, Reinaldo Valdebenito	**Data-Driven Decision Support System for Resource allocation to Cast in-situ Piles of Linear Projects** Anantharaam R	**An adaptive WIP controller framework for dynamic buffer management in modular construction** Nima Moghimi, Sahar Shamaee, Haitao Yu, Qipei Mei, Vicente A. Gonzalez, Farook Hamzeh
	IGLC 1-5: People, Culture, and Change (Engineering Auditorium) Chair: Rodrigo F. Herrera	**IGLC 1-6: Digitalization and Lean Construction (EA-02-11)** Chair: Olli Seppänen	**IGLC 1-7: Production Planning and Control (EA-06-05)** Chair: Iris D. Tommelein	**IGLC 1-8: Modular and Off-Site Construction (EA-02-15)** Chair: Ivanka Iordanova
13:45 - 14:00	**Workforce readiness: the need for a competency framework in offsite construction to support lean transformation** Dana Sobh, Lynn Shehab, Farook Hamzeh	**Aligning digital safety technolgies with lean construction principles** Nelson Claudio Salim, Phuong-Linh Le, Jacob Je-Chian Lin	**The WIP-Push-Wave: a leading indicator for project production control** Doron S. Gabai, Eran Haronian, Rael Sacks, Mark K. Miera, Tabitha D. Cloyd	**Aligning lean project delivery with industrialized construction: a project-level requirements-based analysis** Jesús Ortega, Harrison Mesa, Zulay Mercedes Giménez Palavicini, Alejandro Vásquez-Hernández
14:00 - 14:15	**Democratizing Lean: development of an AI-augmented cultural transformation** Dan Alfassi	**AI-Based safety monitoring using SKOPIA for preventing accidents in heavy equipment operations at Jragung Dam construction project** Andrianto Widhi Nugroho, Ayu Nindya Atiekasari, Satria Maulana Akbar, Adi Tisna Rayadi, Natasya Stiefani, Bagus Hendri Setyawan	**Evaluating lean construction impacts on waste, lead time, rework, and cost: a case study of a commercial building project** Mohammed Alsharqawi, Atefeh Mohammadpour, Tarek Salama	**Safety risk factors associated with a lean wood-framing prefabrication facility: a case study** Vishal Sharma, Don Mah, Neetu Sharma, Mohamed Al-Hussein, Ahmed Bouferguene, Haitao Yu
14:15 - 14:30	**Epc pre-execution planning communication: a comparative analysis of four approaches** Gerardus Blesto, Richardus Kasih, Budi Utomo, Gregory Saragih	**Balancing decarbonisation and climate resilience through lean and digital twins** Adnan Muzaffar, V. Paul C.Charlesraj	**Governing stochastic service demands in Lean Construction: A hybrid LPS-Scrum model** João Vieira, Raquel Reck, Bernardo Etges, Mayara Sousa, Wesley Costa	**Identifying dynamic bottleneck in modular construction using simulation and probabilistic analysis** Nima Moghimi, Muge Tetik, Qipei Mei, Vicente A. Gonzalez, Farook Hamzeh

Time	Programme			
14:30 - 15:00	Coffee Break			
	IGLC 1-9: People, Culture, and Change (Engineering Auditorium) Chair: Canlong Liu	**IGLC 1-10: Digitalization and Lean Construction (EA-02-11)** Chair: Lynn Shehab	**IGLC 1-11: Production Planning and Control (EA-06-05)** Chair: Danny Murguia	**IGLC 1-12: Modular and Off-Site Construction (EA-02-15)** Chair: Thi Qui Nguyen
15:00 - 15:15	**From lean projects to a lean enterprise: using hoshin kanrito make lean construction stick** Richardus N. Kasih, Iris D.Tommelein, Rafael V. Coelho, Richardus B. Utomo, Gerardus B.Kasih	**Integrating lean construction and BIM for enhanced planning in construction projects** Milan Jovin, Igor Pesko	**Integrating flow and leadership in production planning and control** Felix Archibald Enge, Lars Eric Mentrup, Björn Bernhard Vauk	**Variation management in prefabricated MEP installations: challenges and opportunities** Tuomas Tapio Valkonen, Olli Seppänen
15:15 - 15:30	**Revealing lean-aligned practices in Indonesian small contractors: A preliminary study** Muhamad Abduh, Budi Hasiholan, Eliza Puri, Anang Wirdianto, Hudan Linas, Patar Nainggolan	**Prototyping a Construction-Stage Platform for as-built Sustainability Data Management** Ergo Pikas, Ranar Pügi, Tarmo Robal, Kädi-Riin Vendel, Müge Tetik, Lauri Koskela	**Strategic risk management through business-as-usual and lean construction mitigation:the sitinjau lauik flyover project, indonesia** Rifki Alfrianto, Achmad Luthfi Naufal, Fitriana Prahastiwi Pramono, Arif Rahman, Amy Rachmadhani Widyastuti, Halim Wiranata, Gunadi Soekharjo, Sastria Wresniwira, Iwan Hermawan	**A digital-twin based CONWIP framework for work in progress (WIP) management in modular construction** Nima Moghimi, Sahar Shamaee, Haitao Yu, Qipei Mei, Vicente A. Gonzalez, Farook Hamzeh
15:30 - 15:45	**A cross-country analysis of lean construction maturity in japan and germany using the lcmm** Claus Nesensohn, Jeferson Shigaki, Yamasaki Hiroaki	**Lean AI-driven defect management framework** Tolulope Akande, Shang Gao, Mehran Oraee	**Integrating SCRUM with The Last Planner System: AI-enhanced lean framework** Guillermo Prado Lujan, Felipe Engineer-Manriquez	**Social Sustainability and Human-Centered Lean Practices in Modular and Off-Site Construction** Helia Rasouli, Amirhossein Mehdipoor, Silvio Melhado, Ivanka Iordanova
15:45 - 17:00	IGLC Session: Lean Transformation of Global Construction Industry (Engineering Auditorium)			
17:00 - 17:15	Break			
	IGLC 1-13: People, Culture, and Change (Engineering Auditorium) Chair: Kristen Parrish	**IGLC 1-14: Digitalization and Lean Construction (EA-02-11)** Chair: Qipei Mei	**IGLC 1-15: Production Planning and Control (EA-06-05)** Chair: Farook Hamzeh	
17:15 - 17:30	**33 years of Lean Construction research: Academia-industry links and global contributions** Paul Christian John, Bernard Sun, Atle Engebø, Ola Lædre, Shervin Haghsheno, Frode Drevland	**Enabling Lean Production through digital planning systems** Kevin McHugh, Patricia Tzortzopoulos, Emmanuel Manu	**Portfolio change governance and lean control cadence: Evidence from 44 projects** Emilia Rahmawati, Hezekiel Karunia Putra, Halwati Najwa, Anang Wirdianto, Aminullah Thalib, Media Persada	

Time	Programme		
17:30 - 17:45	**Pressure capacity - a revolutionary benchmark for promoting healthy work environments** Matthew Seiji Araki, James Packer Smith, Robert Loose, Matt Lechtenberg, Rachel Eigen, Erick Faro, Maria Paula Alfaro	**Green and digital innovations for managing construction supply chain in the net zero economy** Ali Al-Zaini, Melissa Chan, Victor Arowoiya, Saeed Aramesh, Asrul Masrom	**Performance measurement in takt production: an exploratory study on metrics, practices and challenges** Carlos T. Formoso, Carolina M. Zani, Karina B. Barth, Jeferson S. Shigaki, Gregory F. Saragih, Iris D. Tommelein
17:45 - 18:00	**Beyond the jobsite: adapting make-ready logic to managerial decision-making in construction** Yovi Arsianto	**Integrating lean Construction, lean Office, and business intelligence in a Panamanian sanitation project** Cristian Camilo Osorio-Gomez, Bernado Martim Beck Da Silva Etges, Enrico Pieta	**Implementation of the Last Planner System on a port project - evidence from Ireland** William Power, Emmanuel Daniel, Eddie O'Keeffe

CONFERENCE AGENDA FOR IGLC

Day 2 — 24 June 2026 (Wed)

Time	Programme			
	IGLC 2-1: People, Culture, and Change (Engineering Auditorium) Chair: Paz Arroyo	IGLC 2-2: Digitalization and Lean Construction (EA-02-11) Chair: Eyob T Mengiste	IGLC 2-3: Production Planning and Control (EA-06-05) Chair: Shervin Haghsheno	IGLC 2-4: Lean and Green (EA-02-15) Chair: Jesús Ortega
08:30 - 08:45	**Accelerating construction of public infrastructures leveraging lean concepts: A case study** Dr. Subhash Rastogi, Manoranjan Misra, Narendra Kumar Ghadhai, Tony Jacob	**The symphony of construction: A data-driven comparison of takt and traditional construction** Mawara Khan, Paulina Gollee, Jaakko Riekki, Christopher Görsch, Olli Seppänen	**Impacts of Waiting-Type Non-Physical Waste on Schedule Deviation in Lean-Managed Building Projects in Indonesia** Abdhy Gazali, Anang Wirdianto, Aminullah Aminullah, Anisah Anisah, Refia Alaida, Lintang Tirta Sari	**Nexus between lean construction and construction 6.0 for the management of construction and demolition wasteION WASTE (CDW)** Kurauwone Maponga, Partson Paradza, Lungie Maseko, Zamageda Zungu
08:45 - 09:00	**Understand the relationships between communication behaviors and team performance in last planner system implementation** Canlong Liu, Vicente A. Gonzalez, Gaang Lee	**Integrating metaverse-based training frameworks for concrete 3D printing construction** Mohamed Ait Gacem, Saleh Abu Dabous	**Systematising the creation of line of balance: an automated tool for multi-storey building** Bruna Milán Goncalves, Fabiano Rogério Corrêa	**Ecofix- a PyRevit prototype for a lean and sustainable renovation decision support tool** Narmada Bharadwaj, Prasanna Venkatesan Ramani, Mushrifa Ali, Saran Somapalli Sureshkumar, Harshitha Tumma
09:00 - 09:15	**Team Building Workshop Series: Laying the foundation of a Lean Construction transformation** Jeferson Shin-Iti Shigaki, Satomi Yokoyama, Koichi Ishikawa, Shojiro Taira, Hiroaki Yamasaki	**Prediction of logistics performance and allocation optimization in construction projects using CatBoost, LightGBM, and XGBoost based on Lean Construction principles** Arif Haidar Nur Shidqi, Mochamad Agung Wibowo, Adian Fatchur, Alfain Ramdhan	**Lean practices and the governance of modern methods of construction: articulation of planning horizons in mmc-based production systems** Bernardo Martim Beck da Silva Etges, Marcus Fireman, Raquel Reck	**Exploring the potential of lean sustainable construction 4.0: a reflexive analysis** Gonzalo Garcés, Eric Forcael
	IGLC 2-5: People, Culture, and Change (Engineering Auditorium) Chair: Eelon Mikael Lappalainen	IGLC 2-6: Digitalization and Lean Construction (EA-02-11) Chair: Jinying Xu	IGLC 2-7: Production Planning and Control (EA-06-05) Chair: Olli Seppänen	IGLC 2-8: Lean and Green (EA-02-15) Chair: Müge Tetik
09:15 - 09:30	**Recognition as an engagement mechanism in kaizen programs in construction** Melissa Freitas, Raquel Reck, Pedro Bonkowski, Marcus Fireman	**Operationalizing lean project control through data-driven weekly reasoning** Eyob T Mengiste, Borja Garcia de Soto	**The need to better manage information in field rework** Mohammed Albarrami, Frederic Bosche, Simon Smith	**Enhancing sustainability in Indonesian dam construction: a lean optimization approach** Ferdinand Napitupulu, Edilrtanto

Time	Programme			
09:30 - 09:45	**Understanding barriers to IPD adoption in construction SMEs: Insights from a collaborative workshop** Andrea Sanchez, Farook Hamzeh, Vicente A. Gonzalez	**A Lean-BIM operational traceable model for 5D cost–schedule integration in structural works** Gerardo Adolfo Becerra Pino, Jesús Ortega, Italo Gerald Sepúlveda Solari, Beda Barkokebas, Luis Fernando Alarcón Cardenas	**Operationalising Transformation–Flow–Value in Lean Construction via SMART-enabled awareness** Prajwal Prabhu, Vishal Singh	**Towards a circu-lean construction economy through standardisation** Nathan Johns, Saeed Talebi, Mike Kagioglou
09:45 - 10:00	**Integrity assurance architectures for lean construction - the case of Seriøsitet in Norway** Jardar Lohne, Frode Olav Drevland, Morten Engeset-Nordanger, Ola Lædre	**Speech-to-update BIM: a lean, voice-enabled workflow for real-time site progress capture** Avi Singhal, Sahil Garg	**Beyond Lean Production: interpreting the Last Planner System from a Resilience Engineering perspective** Douglas Comassetto Hamerski, Carlos Torres Formoso, Tarcisio Abreu Saurin, Eduardo Luis Isatto	**Relating non-physical waste in lean construction to carbon emissions during project execution** Adbhy Gazali, Muhammad Sapto Nugroho, Wildan Nachy, Annisa Nurrahmawati Wibowo
10:00 - 10:30	**Coffee Break**			
	IGLC 2-9: People, Culture, and Change (Engineering Auditorium) Chair: Annett Schöttle	**IGLC 2-10: Digitalization and Lean Construction (EA-02-11)** Chair: Melissa Chan	**IGLC 2-11: Health, Safety, and Quality (EA-02-14)** Chair: Shang Gao	**IGLC 2-12: Lean and Green (EA-02-15)** Chair: Nathan Johns
10:30 - 10:45	**From Tools to Behaviors: How a VDC Implementation Influence in a Construction Company** Frederick M. Gutierrez Lazarte, Karina Piña Lozada, Lizzet Macedo Valladares, Jorge L. Izquierdo Ramirez	**A multi-agent data-to-model workflow for Make-Ready assessment** Ruixuan Qi, Jinying Xu, Ruiyan Zheng	**Translating 5s planning into physical site practices through BIM-based Visualization: a case study of the bri-ragunan building project** Wisnu Wardana, Andika Hendry Nugroho, Wisnu Dewantoro, Rivaldo Adam, Nadhila Afiati Rachman, Mardiansyah Boestamar, Andung Damar Sasongko, Robby Kurniawan, Achmad Luthfi Naufal	**Validating location-based carbon emissions forecasting** Martin Veis Marxen, Andreas Hougaard hansen, Kristian Birch Pedersen, Soren Wandahl
10:45 - 11:00	**Evaluation categories to measure the lean adoption for organizations** Nozomi James Hirata, Robert Leicht, John Messner	**Lean post-typhoon recovery: multi-agent look-ahead and constraints for the last planner system** Xianghui Zeng, Liu Jiang, Zhiy uan Cheng, Yu Chen	**Analysis of suicide rates in construction and how Lean can help reverse the trends** Min Liu, Thais Alves, Weilin He	**A decision-support framework for prioritising lean construction techniques in the planning stage of indonesian construction projects** I Putu Artama Wiguna, Tri Joko Wahyu Adi, Yusroniya Eka Putri Rachman Waliulu, Prastyo Satriyo Agus Adi
11:00 - 11:15	**Agile-lean hybridisation in construction** Pearl Li Ng, Farshid Rahmani, Tiendung Le, Tayyab Maqsood	**Embedded Machine Learning as an Enabler of Lean Construction** Bjorn Bernhard Vauk, Lars Eric Mentrup, Felix Archibald Enge	**Safety climate in a state-owned construction company : gap analysis and practical recommendations** Nia Dwi Handayani, Alfina Hapsari, Willem Luturmas, Muhamad Abdi, Fafan Khoirul Fanani	**Decarbonizing construction through logistics: insights from cold climates** Müge Tetik, Ergo Pikas, Kädi-Riin Vendel, Nima Moghimi, Farook Hamzeh

Time	Programme		
	IGLC 2-13: People, Culture, and Change (Engineering Auditorium) Chair: Ola Lædre	IGLC 2-Simulation 1 / Hands-on 1 (EA-02-14/EA-02-15) Chair: Zofia Kristina Rybkowski	IGLC 2-Simulation 2 / Hands-on 2 (EA-06-06) Chair: Ganesh Devkar
11:15 - 11:30	**Immigrant mental health and lean construction - a bibliographic analysis** Erick Faro, Ian G. Hale, Matthew S. Araki, James P. Smith, Maria A. Alfaro		
11:30 - 11:45	**A general contractor's Lean journey** Paz Arroyo, Chris Dierks, Thais Alves		
11:45 - 12:00	**Choosing by Advantages for better Decision Quality in Construction Procurement: a Case Study** Annett Schöttle		
12:00 - 12:15	**Lean-based Dynamic Capability: Case studies of pluripotential team in field thinking** Ryusuke Kojio, Ming Shan Ng		
12:15 - 12:30	**To improve performance in Complex Environments, you must first understand ambiguity** Jared Chesterman, Cecilla da Rocha		
12:30 - 13:30	Lunch		

Time	Programme		
13:30 - 15:30	**ISARC-IGLC Joint Session** (LT7A & Engineering Auditorium) **Chair: Vicente A. Gonzalez, Rafael Sacks**		
	Knowledge-Based Emergency Decision Support with Large Language Models and Structured Graph Fangzhou Lin, Zhengyi Chen, Mingkai Li, Boyu Wang, Xiao Zhang, Jack C.P. Cheng		
	A minimal-data toolkit for diagnosing loss of flow resilience in interior fit-out work Ashan Senel Asmone, Danny Murguia, Zhengyang Ling, Asitha Rathnayake, Campbell Middletone		
	Rethinking Automation in Construction: an exploratory study of Lean for Robotics in Mobile Factories Ming Shan Ng, Qian Chen, Benjamin Dillenburger, Rongbo Hu		
	A proactive digital twin framework for dynamic pull scheduling in modular construction factories Nima Moghimi, Sahar Shamaee, Qipei Mei, Vicente A. Gonzalez, Faarook Hamzeh		
	A Hybrid Semantic Web and Data-Driven Framework for Spatial Constraint-Aware Construction Planning Zeyu Mao, Evob Mengiste, Borja García de Soto, Vicente A. Gonzalez		
	The lean construction visual taxonomy (lcvt): bridging the semantic gap Mohamed Sabek, Qipei Mei, Gaang Lee, Ami Golabchi, Vicente A. Gonzalez		
15:30 - 15:45	**Break**		
	IGLC 2-14: People, Culture, and Change (Engineering Auditorium) **Chair: Frode Drevland**	**IGLC 2-15: Digitalization and Lean Construction & Lean and Green (EA-02-11)** **Chair: Mani Poshdar**	**IGLC 2-16: Product Development, Value and Design Management (EA-06-05)** **Chair: Kristen Parrish**
15:45 - 16:00	**Language action perspective and its influence on communication practices in construction project teams** Jason David Klous, Emmanuel Manu, Ehsan Asnaashari, Zakwan Arab	**Digital transformation in construction: evidence from Brazil** Luara Lopes de Araujo Fernandes, Dayana Bastos Costa	**Lean-digital-place integration for circular housing design** Samira Awwal, Patricia Tzortzopoulos, Esmaeel Fatahian, Catherine Hill, Rakesh Mishra, Leigh Fleming

Time	Programme		
16:00 - 16:15	**Aligning research and adoption through agile road mapping in construction innovation** Anas Itani, Ali Golabchi, Gaang Lee, Yasser Mohamed, Simaan AbouRizk	**Digital optimization for green construction-reducing rebar waste and carbon emission** Yura Rizaldi, Akbar Ashari, Adi Permadi, Bayu Putro, Aminullah Thalib, Anang Wirdianto	**Mind the chasm: integrating facility management requirements in design** Oldouz Arshang, Moslem Sheikhkhoshkar, Farook Hamzeh
16:15 - 16:30	**Interpreting and operationalizing enterprise agility in construction: a safe-based case study** Chun-Ying Lee, Bryan D. Tan, Jacob J. Lin	**Digital twins as a catalyst for sustainable construction transport policies? A critical review** Müge Tetik, Nicolas Brusselaers, Ergo Pikas	**What limits effective Target Value Delivery implementation in construction projects?** Zulay Mercedes Giménez Palavicini, Alejandro Vásquez-Hernández, Jesús Ortega, Harrison Mesa, Jhonattan Martínez, Luis Fernando Alarcón
	IGLC 2-17: People, Culture, and Change (Engineering Auditorium) Chair: Ming Shan Ng	IGLC 2-18: Learning and Teaching Lean (EA-02-11) Chair: Zofia Kristina Rybkowski	IGLC 2-19: Product Development, Value and Design Management (EA-06-05) Chair: Patricia Tzortzopoulos
16:30 - 16:45	**Carpenters' workday: Between value-adding work and physical strain** Fillip Holth, Roar Fosse, Frode Drevland	**The catalysts for learning and innovation in takt production** Eelon Lappalainen, Antti Peltokorpi, Olli Seppänen	**Metrics-based process mapping for MEPF design process efficiency analysis** Silambarasan C, Ragavi Prabaharan, Ganesh Devkar
16:45 - 17:00	**Continuous improvement in project-based construction organizations** Eder Martinez, Caroline Beyerle, Louis Pfister, Eric Forcael	**Sync or Sink: a simulation to expose variation, mitigate impacts, and improve flow** Dana Sobh, Dominic Desmarais, Ryan Budiab, Jason Russell, Farook Hamzeh	**Tiered application of DQ and CBA across managerial project levels** Jon Lerche, Annett Schöttle
17:00 - 17:15	**AI-impacted construction people readiness via skill valuation and talent trajectories** Yaxian Dong, Sangaa Chatterjee, Zijun Zhan, Yuqing Hu, Daniel Mawunyo Doe, Zhu Han	**Lean construction building capability programme: an australian experience** Shang Gao	**Target value delivery for railway infrastructure - a semi-systematic literature review** Ragnhild Svarva Lædre, Albert Lau, Olav Torp
17:15 - 18:15	Transition from conference venue to Gala Dinner venue @ The Star Gallery - Star Vista		
18:15	Start Registration for Gala Dinner		

CONFERENCE AGENDA FOR IGLC

Day 3 — 25 June 2026 (Thu)

Time	Programme		
	IGLC 3-1: People, Culture, and Change (Engineering Auditorium) Chair: Emmanuel Manu	**IGLC 3-2: Health, Safety, and Quality (EA-02-11)** Chair: Ganesh Devkar	**IGLC 3-3: Production System Design (EA-06-05)** Chair: Vincent Gan
08:30 - 08:45	**Strategies to overcome integrated project delivery implementation barriers: a peruvian case study** Omar Alfaro Felix, Ronald Roosvelt Nuñez Quispe, Isaac Moises Ccoyllar Escobar, Josep Jesus Abregu Gonzales, Shirley Rubi Choqueno Herrera, Pamela Alexandra Vigo Bueno	**Enhancing lean-oriented safety management through BIM: a sociotechnical perspective** Osman Hulusi Turkyilmaz, Tiendung Le, Behzad Abbasnejad, David Oswald	**Toward an Industry Standard for LPS maturity using a company-grounded framework** Guillermo Prado Lujan, Nick Loughrin
08:45 - 09:00	**The pulse of production: Correlating PPS and team health** Anthony Munoz, John Cleary	**Developing a mistake-proofing mindset to increase safety capacity** Eugene Hon Cheung, Tim Eigendorf, Tomisin Kehinde, Gregory Foranda Saragih, Iris Tommelein	**Dual takt area design: effects on production flow** Tobias Liavaag Christoffersen, Ola Lædre
09:00 - 09:15	**Work Skills Required for Success as a Frontline Supervisor** Sulaiman Al Sultan, Timothy Becker, Ricardo Eiris, Kristen Parrish	**Lean construction and the "good house" value system in China: developing a synergistic framework** Yanqing Fang, Shang Gao	**Production implications of large-scale wildfire reconstruction** Kenneth D Walsh
	IGLC 3-4: People, Culture, and Change (Engineering Auditorium) Chair: Paulos Abebe Wondimu	**IGLC 3-5: Production Development, Value and Design Management (EA-02-11)** Chair: Jhonattan Guillermo Martinez Ribon	**IGLC 3-6: Production System Design & Production Planning and Control (EA-06-05)** Chair: Kenneth D Walsh
09:15 - 09:30	**The role of lean leadership in enabling data sharing across industry-academia boundaries** Amira Saleh, Etienne Vezina, Vicente A.Gonzalez	**Understanding value generation attributes from the healthcare built environment and services** Giulie Baldissera, Carlos Formoso, Patricia Tzortzopoulos	**Parade of trades with transfer batching** Gregory F. Saragih, Iris D. Tommelein

Time	Programme		
09:30 - 09:45	**Integration of the Lean Thinking principles into the owners' project management** Paul Christian John, Shervin Haghsheno	**Pitfalls in Value optimisation: corridor decisions in a Norwegian hospital** Frode Drevland	**How Distributed Construction reshapes Production systems: defining a Hybrid Delivery Model** Tran Duong Nguyen, Pardis Pishdad, Akshath R. Udumula, Todd Ullom
09:45 - 10:00	**LLM-based Action Learning model for construction robotics: an industry-academia co-design** Atefeh Aali, Ruoyu Yan, Reza Maalek, Xinyu Zheng		**Takt planning and control in Indonesia: structure project twin tower undip pttp** Rina Asri Aisyah, Fifi Farida, Ardhianto Gutomo, Prama Putra, Pundjung Setya Brata
10:00 - 10:30	**Coffee Break**		
	IGLC 3-7: Lean and Green & Production Planning and Control (Engineering Auditorium) Chair: Eric Forcael	IGLC 3-8: Lean Theory (EA-02-11) Chair: Patricia Tzortzopoulos	IGLC 3-9: Modular and Off-Site Construction (EA-06-05) Chair: Anas Itani
10:30 - 10:45	**Resident-facing renovation decision support tool for collaborative decision-making** Kädi-Riin Vendel, Ergo Pikas, Müge Tetik, TiitTammaru	**A conceptual framework for evidence-based design and choosing by advantages synergy** Evans Zoya Kpamma, Stephen Agyefi-Mensah, Justice K. Offei-Nketiah	**A systematic design for assembly assessment of prefabricated facade panels** Sahar Taheripour, Hind Bril El-Haouzi, Moslem Sheikhkhoshkar
10:45 - 11:00	**Analysis of key success factors of lean construction performance** I Putu Artama Wiguna, Tri Joko Wahyu Adi, Yusroniya Eka Putri Rachman Waliulu, Devita Candraningtyas	**The Cultural Dialectics of Standardization and Innovation from the Japanese Ethosto the Global Practice of Lean Construction** Zhong Wang, Walter Davis, Qipei Mei, Gaang Lee, Thomas Bock, Vicente A. Gonzalez	**Can lean construction improve site readiness to facilitate modern methods of construction integration?** Emmanuel Daniel, William Power
11:00 - 11:15	**Dynamics of creative problem-solving within Last Planner Sessions** Shoib Khan, Ivan Mutis	**Application of Lean Construction: A multilevel and multidimensional perspective** Paul Christian John, Marco Binninger, Shervin Haghsheno	**Industrialized construction index (ICI): A project level indicator for industrialization assessment** Daniel Felipe Sanchez Ruiz, Emna Attouri

Time	Programme		
	IGLC 3-10: Supply Chain Management & Contract and Cost Management (Engineering Auditorium) Chair: Zulay Mercedes Gimenez Palavicini	IGLC 3-11: Lean Theory (EA-02-11) Chair: Nelly Paola Garcia-Lopez	IGLC 3-12: Learning and Teaching Lean (EA-06-05) Chair: Eelon Mikael Lapppalainen
11:15 - 11:30	**Value stream mapping in machine allocation for construction logistics – A case study** Franz-Ferdinand Gloser, Jörn Welle, Nico Wursthorn, Paul Christian John, Shervin Haghsheno	**Lean construction epistemology: human-centered insights from plato and aristotle** Rubén Romo, Eric Forcael, Francisco Moreno, Francisco Orozco	**Lean construction learning process based on corporate roadmap and LCPD implementation at PT Wijaya Karya (Persero) Tbk** Aminullah Aminullah, Hermawan Hermawan,Masayu Amalina Andini, Bernike Natalie Christie, Tan Susanto
11:30 - 11:45	**Supply chain performance for lean construction: a scor 14.0 evaluation of a toll road project** Arif Haidar Nur Shidqi, Mochamad Agung Wibowo, Alfain Ramdhan, Reynastasya Syahra Athilla, Salma Rahima Ahmad, Maulida Asri, Gunadi, Mardiansyah, Arif Rahman, Amy Rachmadhani Widyastuti	**Critical infrastructures interdependences during extreme weather events: the lean perspective** Guilherme Luiz Canzian Marion, Tarcisio Abreu Saurin, Daniela Dietz Viana	**Developing balanced production flow: A simulation on Mura reduction via Line of Balance** Fazel Nasserzadeh, Manik suresh Karkare, Saeel yogin Kulkarni, Travis Long, Chahana Hegde, Zofia Rybkowski, Ganesh Devkar, Dev hiren Naik, Harikrishna Goudar, Ashwin mahavir Durugkar, Faisal Khan
11:45 - 12:00	**Contractor experiences with competitive dialogue in a Norwegian road infrastructure project** Joakim Røksland, Ola Lædre, Paulos Abebe Wondimu, Jardar Lohne	**Schedule delay in construction delivery methods under extreme uncertainty** Junting Song, Daniel Esmeral Jaramillo, Yu-Peng Lu, David Eskew, Christopher Abandoh, Tran Nguyen, Pardis Pishdad, Qinghao Zeng	
12:00 - 12:30	Lunch		
12:30 - 14:30	IGLC Business Meeting (Engineering Auditorium)		
14:30 - 15:00	Transit to Site Visit		
15:30 - 18:00	Site Visits: 1. Integrated Construction Prefabrication Hub - Integrated Precast Solutions Pte Ltd 2. The Gear Building - Kajima Technical Research Institute Singapore (KaTRIS)		

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