

CBC2023: IOT, BLOCKCHAIN, AND SMART ENVIRONMENTS



4th Construction Blockchain Conference (CBC 2023) - IoT, Blockchain, and Smart Environments - Programme

5th - 8th November 2023 | HongKong | #CBC2023

Conference website: <https://www.constructionblockchain.org/cbc2023>

CBC website: [constructionblockchain.org](https://www.constructionblockchain.org)

CBC Twitter: [@CBC_UCL](https://twitter.com/CBC_UCL)

CBC LinkedIn: [Construction Blockchain](https://www.linkedin.com/company/construction-blockchain)

Day 0 – November 5th, 2023 (Sunday)

Time (HKT)	Technical Visit
9:00 - 18:00	Technical Excursion To Macau (including a travel through Hong Kong-Zhuhai-Macau Bridge, a world-recognized mega infrastructure project)

Open to Public to Join (HK\$1,800 each participant, covering the round-trip transportation from HK – Macau & Lunch)

Day 1 – November 6th, 2023 (Monday)

Time (HKT)	Session	Speaker/Participant	Organisation	Length
9:00 – 9:30	Registration	N/A	N/A	30 min
9:30 – 12:30	Forum of Digital Transformation for Architecture, Engineering, Construction and Operation (AECO) Applications with Blockchain Technology @ HKUST			
9:30 – 10:10	“Approaches to Digital Transformation with Blockchain” 1 st Presentation on Procurement, BIM, and Blockchain (David Greenwood) (Recorded) 2 nd Presentation on Asset Management (Ryan Howsam) (Live Online)	David Greenwood Ryan Howsam	Northumbria University BLDX.io	40mins
10:10 – 10:40	Discussion Workshop and Sharing (Brainstorming the pain points, opportunities, solutions, and potential approaches of digitalization in the AECO industry)	Chaired by Jack Cheng and Ioannis Brilakis	The Hong Kong University of Science and Technology, University of Cambridge	30 mins
10:40 – 11:00	Networking Break with Coffee	NA	NA	20 mins
11:00 – 11:20	“Strategies to Digital Transformation Adoption” 3 rd Presentation on IP, Start-up, Technology Usage	Philippe Rixhon	UCL London	20 mins

	(Live Online)			
11:20 – 11:50	Discussion Workshop and Sharing (Brainstorming the experiences, barriers and strategies of commercialization of digital solutions and innovations in the AECO industry)	Chaired by Abel Maciel and Markus Konig	University of College London,Ruhr-Universität Bochum	30 mins
11:50 – 13:20	Lunch @ HKUST	NA	NA	1.5 hr
13:20 – 13:45	Travel to CIC Zero Carbon Park from HKUST Campus	NA	NA	25 mins

Lunch Break

13:45- 14:00	Registration for CIC iHub Site Visit	N/A	N/A	30 min
14:00 - 17:00	Technical Visit to CIC iHub: Demonstration of Digital Twin, Construction Digitalization, Modular Integrated Construction (MiC), Green Buildings, Sustainable Built Environment, and Smart Cities Development	CIC Staff	Hong Kong Construction Industry Council (CIC)	3 Hrs
19:00 – 21:00	Welcome Dinner	N/A	N/A	N/A

Day 2 –November 7th, 2023 (Tuesday)

Time (HKT)	Block Title	Speaker	Organisation	Length
8:30 – 9:00	Registration	N/A	N/A	30 min
9:00 – 9:10	Introduction and Guidance	Abel Maciel	University College London	10 min

Conference Opening Session

9:10 – 9:30	Opening Keynote: Blockchain for Full Lifecycle Management: From Design, Construction, to Facility Management	Jack C.P. Cheng	The Hong Kong University of Science and Technology	20 min
9:30 – 9:40	Group Photo Taking Session	NA	NA	10 mins
9:40 – 10:00	Session Keynote: Revolutionizing MiC Lifecycle using AI BIM-enabled Blockchain & IoT Technologies	Rosana Wong	Yau Lee Holdings Ltd.	20 min
10:00 – 10:20	Session Keynote: Breaking Boundaries: Smart Contracts combining with Other Tech	May Winfield	Burro Happold	20 min
10:20 – 10:40	Break	N/A		20 min

Session 1 : Visions and Business Strategy (Chair: Yuri Caldato)

10:40 – 11:00	Session Keynote: Towards a blockchain-enabled automated construction contract	David Greenwood	Northumbria University	20 min
11:00– 11:20	Session Keynote: Building Blocks of Success: Exploring Real-World Applications of Blockchain	Yuri Caldato	Autodesk	20 min
11:20 – 11:30	Bridge the Gap: Market Demand and Business Case Studies for Blockchain Technology's Application in the Built Environment	Xiao Sunny Li	University of Cambridge	10 min
11:30 – 11:50	Discussion Panel	N/A	N/A	20 min
11:50 – 13:00	Lunch	N/A	N/A	1 Hr 10 min

Session 2: Circular Sustainable Economy (Chair: Lavinia Chiara Tagliabue)

13:00 – 13:20	Session Keynote: Re-imagining Trustworthy Construction Ecosystems with Emerging Technologies	Max Soyref	KPMG, Australia	20 min
13:20 – 13:30	Provenance-related applications of blockchain technology to enable circular economy in the construction industry	Guillermo Piquer Perez	University College London	10 min

13:30 – 13:40	A Novel Incentive Mechanism for Blockchain-based Carbon Emission Reduction in Construction	Juan Wang, Xiao Li	The University of Hong Kong	10 min
13:40 – 13:50	Blockchain for a Circular Digital Built Environment	Jens Hunhevicz	Swiss Federal Laboratories for Materials Science and Technology	10 min
13:50 – 14:05	Discussion Panel	N/A	N/A	15 min
14:05 – 14:20	Break	N/A	N/A	15 min

Session 3: Smart Law and Lifecycle Management (Chair: Wilson Lu)

14:20 – 14:40	Session Keynote: Going beyond “BIM, Blockchain and I-Core-enabled Logistics and Supply Chain Management for Modular Integrated Construction”: Several thoughts ahead	Wilson Lu	The University of Hong Kong	20 min
14:40 - 15:00	Session Keynote: Contract Management in the Construction Industry by Integrating Building Information Modelling and Blockchain-Based Smart Contracts	Markus Konig	Ruhr-Universität Bochum	20 min
15:00 – 15:10	Whether project bank accounts (PBAs) can be hosted on the blockchain to improve cash flow performance (Live Online)	Denis Scott	University College London	10 min
15:10 – 15:20	Dispute Prevention in Construction Megaprojects using Smart Legal Contracts: A Case Study	Purva Gupta	Indian Institute of Technology, Delhi	10 min
15:20 – 15:35	Discussion Panel	N/A	N/A	10 min
15:35 – 15:50	Break	N/A	N/A	15 min

Session 4: Intelligent Environments (Chair: May Winfield)

15:50 – 16:10	Session Keynote: AI and design: Sources of “truth”?	Sean Hanna	University College London	20 min
16:10 – 16:20	Predictive Maintenance for Civil Infrastructure - Digital Twin-IoT-Blockchain Framework	Gabriele Fredduzzi	University of Ferrara	10 min
16:20 – 16:30	Trust and Intelligent Environment	Darya Bahram	King’s College London	10 mins
16:30 – 16:40	Secure Digital Twin Framework Leveraging Blockchain Technology and Event-Sourcing	Xingyu Tao	Hong Kong University of Science and Technology	10 min
16:40 – 16:50	Discussion Panel			15 min
16:50- 16:50	Day 1 Ends			0 min
19:00 – 21:00	Conference Banquet	N/A	N/A	3 hrs

Day 3 – 8th, November 2023 (Wednesday)

Time (HKT)	Block	Speaker	Organization	Length
8:30 – 9:00	Registration	N/A	N/A	30 min
9:00 – 9:05	Introduction and Guidance	Jack C.P. Cheng	The Hong Kong University of Science and Technology	5 min
Session 5: Data Strategies, Project Delivery, and Payments (Chair: Session 5: Sean Hanna)				3 Hrs

9:05 – 9:25	Session Keynote: Improving the Delivery of Constructed Facilities Using Digital Twins and Blockchains(Live Online)	Chimay Anumba	University of Florida	20 min
9:25 – 9:45	Session Keynote: BIM validation and Smart Contracts to shorten payments and enhance Green Public Procurement in the construction industry	Lavinia Chiara Tagliabue	University of Turin	20 min
9:45 – 9:55	Data, Information, and Knowledge Integration for Effective Decision-Making in the Construction Sector: Leveraging Blockchain Technology (Live Online)	Chenchumurali Krishna	Indian Institute of Technology, Delhi	10 min
9:55 – 10:05	Enhancing Data Integrity and Confidentiality in Construction Cost Management Using Blockchain and Proxy Re-Encryption Techniques(Live Online)	Hao Liu	The Hong Kong University of Science and Technology	10 min
10:05 – 10:15	Blockchain in the Construction Industry: Developing a Conceptual Model for a Resource Sharing Decentralised Application (DApp)(Live Online)	Eduardo Castillo	University College Lonson	10 min
10:15 – 10:30	Discussion Panel	N/A	N/A	15 min
10:30 – 10:45	Break	N/A	N/A	15 min
Session 6: Integrated Secure Projects(Chair: Sean Chen)				
10:45 - 11:05	Session Keynote: Collective Digital Factories for Buildings: Stigmergic Collaboration Through Cryptoeconomics	Davide Lombardi	Xi'an Jiaotong-Liverpool University	20 min
11:05 – 11:25	Session Keynote: Blockchain Adoption and Opportunities in Hong Kong	Sean Chen	Red Date Technology	20 min
11:25 – 11:35	Enhancing Construction Project Collaboration and Transparency: An Integrated Contract Management System with BIM and Smart Contract(Recorded)	Xuling Ye, Liu Liu	Ruhr-Universität Bochum	10 min
11:35 – 11:45	Blockchain and knowledge-driven model for machine-readable construction standards	Wen Wang	Shanghai Jiao Tong University	10 mins
11:45 – 11:55	IPFS Enabled Transaction Data Structure for E-Tendering System Using Blockchain	Xingbo Gong	The Hong Kong University of Science and Technology	10 min
11:55 – 12:10	Discussion Panel	N/A	N/A	15 min
12:10 – 13:30	Lunch	N/A	N/A	1 hr 20 min
Session 7: Secure Construction Process Automation (Chair : Davide Lombardi)				
13:30 – 13:50	Session Keynote: Digital Twinning the Built Environment	Ioannis Brilakis	University of Cambridge	20 min
13:50 – 14:10	Session Keynote: Reconsidering Processes in the Building Life Cycle using Blockchain (Live Online)	Marijana Sreckovic	Vienna University of Technology, Wien	20 min
14:10 – 14:20	Two-layer Blockchain-IPFS Information Sharing Model in Precast Construction: Whole Supply Chain Perspective	Shishu Ding	Shanghai Jiao Tong University	10 min
14:20 – 14:30	A Blockchain-based Carbon Auditing Framework for Construction Material and Product (CMP) Certification	Yuqing Xu	The Hong Kong University of Science and Technology	10 min
14:30 – 14:40	Decentralised Common Data Environment: prototype demonstration and evaluation	Klaudia Jaskula	University College London	10 min
14:40 – 14:55	Discussion Panel			15 min
14:55 – 15:10	Break	N/A	N/A	15 min

Session 8: Intelligent Supply Chains (Chair: Max Soyref)

15:10 – 15:30	Session Keynote: How open is the blockchain innovation ecosystem in construction (Live Online)	Eleni Papadonikolaki	University College London	20 min
15:30 – 15:50	Session Keynote : Project Delivery and the Crypto Commons (Live Online)	Daniel Hall , Jens Hunhevicz	University of Delft	20 min
15:50 – 16:00	Multi-blockchain enabled framework for quality information tracing in prefabricated construction supply chain	Xueyan Zhong, Xing Pan	National Center of Technology Innovation for Digital Construction	10 min
16:00– 16:10	Blockchain-Enhanced Carbon-Efficient Scheduling Model for Off-Site Construction Supply Chain	He Zhou	Chongqing University	10 min
16:10-16:25	Discussion Panel			15 min
Conference Closing				
16:25 – 16:45	Closing Keynote and Future Conferences	Abel Maciel	University College London	20 min
16:45 – 17:00	Closing Speech	Jack C.P. Cheng	The Hong Kong University of Science and Technology	15 mins
17:00	Conference Ends	N/A	N/A	0 mins