

PhD, MSc, BEng (Hons.), SCEM, GMAP, ACLP



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PROFESSIONAL/ ACADEMIC QUALIFICATIONS:

- Advanced Certificate in Learning and Performance 2.0 (ACLP 2.0) (2024), Institute for Adult Learning Singapore, Singapore
- PhD (Engineering) (2021), Singapore University of Social Sciences, Singapore
- Master of Science (Building Performance and Sustainability) (2013), National University of Singapore, Singapore
- Bachelor of Engineering (Building Services Engineering) (2010), Northumbria University at Newcastle, UK
- Diploma in Intelligent Building Technology, Temasek Polytechnic, Singapore

EMPLOYMENT RECORDS:

- Senior Lecturer, Department of the Built Environment, College of Design and Engineering, National University of Singapore (May 2024 – Present)
- Technical Consultant, buildingSMART China (bSC) (Jan 2023 – Present)
- Visiting Scientist, School of Civil and Environmental Engineering, Nanyang Technological University Singapore (Mar 2023 – Mar 2024)
- Lecturer, School of Science and Technology, Singapore University of Social Sciences (May 2022 – Apr 2024)
- Senior Manager/Senior Building Information Modelling (BIM) Consultant, Digitalisation Department, Built Environment Research and Innovation Institute (BERII), Building and Construction Authority (BCA) (2017 Apr – Apr 2022)
- Executive Manager/Executive BIM Consultant, Centre for Construction IT (CCIT), BERII, BCA (2013 Apr – 2017 Apr)

ACCREDITATIONS AND MEMBERSHIPS:

- Singapore Certified Energy Manager (SCEM) – 0758
- Green Mark Accredited Professional (GMAP) – 0522

UNDERGRADUATE TEACHING:

- PF3209 Building Information Modelling
- PF4212 Advanced Building Information Modelling

RESEARCH INTERESTS:

- Building Information Modelling

SELECTED PUBLICATIONS:

- Solihin, W., Liu, Z.,* Lu, Y., Wei, L., (2024). BIM-based automated rule-checking in the AECO industry: Learning from semiconductor manufacturing. *Automation in Construction*. 162, 105406. <https://doi.org/10.1016/j.autcon.2024.105406>
- Liu, Z., Hwang, B.-G.,* Lim, J.M., (2023). Prefabricated and prefinished volumetric construction: assessing implementation status, perceived benefits, and critical risk factors in the Singapore built environment sector. *ASCE Journal of Management in Engineering*. 39, <https://doi.org/10.1061/JMENEA.MEENG-5455>.
- Qiu, Q., Wang, M., Guo, J., Liu, Z., Wang, Q.,* (2022). An adaptive down-sampling method of laser scan data for scan-to-BIM. *Automation in Construction*. 135, 104135. <https://doi.org/10.1016/j.autcon.2022.104135>.
- Liu, Z., Lu, Y., Shen, M., * Peh, L.C., (2021). Transition from building information modelling (BIM) to integrated digital delivery (IDD) in sustainable building management: A knowledge discovery approach-based review. *Journal of Cleaner Production*. <https://doi.org/10.1061/j.jclepro.2020.125223>.
- Liu, Z.,* Lu, Y., Nath, T., Wang, Q., Tiong, L.K., Peh, L.C., (2021). Critical success factors for BIM adoption during construction phase: a Singapore case study. *Engineering, Construction and Architectural Management*. <https://doi.org/10.1108/ECAM-12-2020-1072>.
- Su, S., Wang, Q., Han, L., Hong, J., Liu, Z., (2020). BIM- DLCA: An integrated dynamic environmental impacts assessment model for buildings. *Building and Environment*. 183, 107218. <https://doi.org/10.1016/j.buildenv.2020.107218>.
- Liu, Z.,* Lu, Y., Peh, L.C., (2019). A review and scientometric analysis of global Building Information Modelling (BIM) research in the Architecture, Engineering and Construction (AEC) industry. *Buildings*. 9(10), <https://doi.org/10.3390/buildings9100210>.

INVITED CONFERENCE AND SEMINAR PRESENTATIONS

- “Proven Strategies to Build a Skilled, Future-ready Construction Workforce” Autodesk Construction Cloud APAC, Online Webinar, Aug 2023
- “The digital Journey of the Built Environment Industry in Singapore: from BIM to IDD”, BIM UP Vietnam 2022: Inspired BIM as New Normal, Vietnam, Sep 2022
- “Transition from Building Information Modelling (BIM) to Integrated Digital Delivery (IDD): IDD as an enabler for MEP modularisation process”, BCA – Specialists Trade Alliance of Singapore (STAS) Industry Sharing on Prefabricated MEP System, Singapore, Feb 2022
- “Transition from Building Information Modelling (BIM) to Integrated Digital Delivery (IDD): Singapore Construction Industry’s Digitalisation Journey”, The 4th Digital China Summit, Fujian, China, Apr 2021
- “Singapore BIM Journey”, China BIM Standardization Conference, Sichuan, China, Dec 2015
- “Mandatory BIM e-Submission: MEP requirement”, CAD to BIM seminar, held by Institution of Engineers Singapore (IES), Singapore 2014
- “Singapore BIM MEP e-Submission”, From CAD to BIM hands-on workshop, jointly held by Association of Consulting Engineers Singapore (ACES), BCA Academy and Autodesk, Singapore, Jan 2013

AWARDS:

- Best Paper Award – Honorable Mention (Transformative Delivery Category) for the paper entitled “Driving Digital Transformation for the Built Environment Industry: A Proposed Holistic Digital Transformation Framework in Cost Management,” presented at the Pacific Asia Quantity Surveyor Congress, Singapore, September 2022.
- Long Service Award (10 Years), Building and Construction Authority, Singapore July 2021

- Best Paper Award – First Award for paper entitled “A Review and Scientometric Analysis of Global Building Information Modeling (BIM) Research in the Architecture, Engineering and Construction (AEC) Industry”
Basel, Switzerland, March 2021
- Special COVID-19 Recognition Award, Ministry of National Development (MND), Singapore, December 2020
- Long Service Award (5 Years), Building and Construction Authority, Singapore, July 2016