Curriculum Vitae

Chao Yuan

Professor Chao Yuan is a Dean's Chair in the Department of Architecture at the National University of Singapore (NUS), where he leads the Urban Climate Design Lab as Principal Investigator. His work bridges climate science, urban design, and sustainability, and has earned him several prestigious honors, including the Presidential Young Professorship at NUS, the NRF Investigatorship from Singapore's National Research Foundation, and the 2025 Timothy Oke Award from the International Association for Urban Climate, in recognition of his cross-disciplinary leadership in urban climate science and design.

Prof. Yuan's research focuses on advancing climate-sensitive strategies for high-density tropical cities, with core expertise in urban wind environments, air pollution, anthropogenic heat, passive cooling technologies, and urban greenery. He leads interdisciplinary initiatives that integrate science, technology, and design to tackle complex urban sustainability and resilience challenges.

His work is highly collaborative, involving international partners such as ETH Zurich, the University of Cambridge, and MIT with whom he co-develops cutting-edge research on urban climate adaptation and future cities. At NUS, he also serves as Co-Director of NUS Sustainable Futures, a university-level institute dedicated to advancing integrative sustainability research across disciplines.

Prof. Yuan is an Editorial Board Member of *Landscape and Urban Planning* and *Urban Climate* (Elsevier) and has published widely in both scientific and design domains. He is also the author of the acclaimed book *Urban Wind Environment* (Springer Nature), which synthesizes empirical evidence and design approaches for shaping urban microclimates.

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Website: https://cde.nus.edu.sg/arch/staffs/yuan-chao-dr/

EDUCATION

2010. 08 – 2014. 06	**PhD in Architecture,** School of Architecture, The Chinese University of Hong Kong (CUHK), Hong Kong.
2006. 09 – 2009. 01	**MPhil in Architecture,** School of Architecture and Urban Planning, Beijing University of Civil Engineering and Architecture, Beijing, China.

EXPERIENCE

2026. 01 - Present	**Dean's Chair,** College of Design and Technology (CDE), National University of Singapore (NUS), Singapore.
2024. 09 - Present	**Co-Director,** NUS Sustainable Futures, NUS, Singapore.
2024. 07 – 2025.12	**Deputy Head in Research,** Department of Architecture (DOA), NUS, Singapore.
2023. 09 – 2025.06	**Director of Research,** NUS Cities, CDE, NUS, Singapore.
2023. 07 - Present	**Associate Professor with Tenure,** DOA, CDE, NUS, Singapore.
2019. 10 – 2023. 06	**Assistant Professor (Presidential Young Professor),** DOA, CDE, NUS, Singapore.
2016. 08 – 2019. 09	**Assistant Professor,** DOA, School of Design and Environment (SDE), NUS, Singapore.
2015. 11 – 2016. 07	**SUTD/MIT Postdoctoral Fellow**, Architecture and Sustainable Design, Singapore University of Technology and Design (SUTD), Singapore.
2014. 10 – 2015. 10	**SUTD/MIT Postdoctoral Fellow**, Department of Architecture, Massachusetts Institute of Technology (MIT), Cambridge, USA.
2009. 08 – 2010. 07	**Junior Research Assistant**, School of Architecture, The Chinese University of Hong Kong (CUHK), Hong Kong.

2009. 01 – 2009. 07 **Architect,** Zhejiang University of Technology Engineering Design Group CO, LTD, Hang Zhou, China.

VISITING

2026. 02 – 2026. 07 **Visiting Professor,** Department of Architecture, University of Cambridge, UK.
2023. 05 – 2023. 08 **Visiting Professor,** Department of Mechanical and Process Engineering, Department of Architecture, ETH Zurich, Switzerland.
2013. 09 – 2014. 01 **Exchange Student**, Department of Architecture, MIT, Cambridge, USA.

CONSULTANCY

2023. 09 – Present Cooling Urban Heat Islands, Mitigating Urban Heat Island Effect in Bangkok, World Bank Consultant

TEACHING

Modules and Design Studios

2017 - Present **Topics in Design Technology 3 --- Integrated Urban Wind Environment (AR5953C),** Department of Architecture (DOA), School of Design and Environment (SDE)/College of Design and Engineering (CDE), NUS, Singapore.
2017 - Present **M.ARCH Thesis (AR5103/04),** DOA, SDE/CDE, NUS, Singapore.
2017 - Present **Design Studio Year 2** – Environment Design (AR2102), DOA, SDE/CDE, NUS, Singapore.
2021 - 2024 **Design Studio Year 4,** DOA, SDE/CDE, NUS, Singapore.
2024 **Summer School, Dense and Green Cities: Exploring New Models of Integrated Urban Development (052-0644-24L),** Department of Architecture, ETH Zurich Switzerland (Invited).
2021 - 2023 **Liveable Cities (EG2501),** CDE, NUS, Singapore.
2017 - 2023 **Strategies for Sustainable Architecture (AR 2723),** DOA, SDE/CDE, NUS, Singapore.
2016 - 2017 **Design Simulation and Analysis (AR4322); Assessment of Sustainable Design (AR4323).** DOA, SDE/CDE, NUS, Singapore.
2012 – 2015 **Lecturer (Part time), MSc in Sustainable and Environmental Design**, the Chinese University of Hong Kong, Hong Kong.

Teaching Certificate

2015 **MIT Kaufman Teaching Certificate**, Kaufman Teaching Certificate Programme (KTCP), Massachusetts Institute of Technology (MIT), Cambridge, USA.

Student Award Supervised Since joining NUS

2024 **Young Leader**, Tanya Talwar, World City Summit, Singapore.
2023 **Best Student Presentation Award**, Chen Taihan, 11th International Conference of Urban Climate (ICUC), ICUC Awards Committee, Sydney, Australia.
2018 **Best Resilience and Peoples' Award**, Alyssa Marion Chua Jia-Min, Alvin Soh Wei Jie, Munshi Mukhtar Toh, Ge Luyao, Student Design Colloquium, PLEA 2018, "Passive and Low Energy Architecture - Smart and Healthy within the 2-degree Limit", Hong Kong.

Graduate Students Supervised

2017 - Present **Master of Architecture:**
2024/2025 (4): Esther Chan Hooi T; Li Jia Yao; Thinzar Hlaing; Ying Yue.
2023/2024 (7): Liang Weiheng; Suo Yuying; Cui Yanlun; Cindy Koo Xin Yu; Amy Amelia Binte Ahmad; Jeremy Wong Jia Jun; Poh Yong Yi.
2022/2023 (4): Shen Jinkun; Chen Ziyu; Yang hankang; Zhang Peng.
2021/2022 (3): Ong Xin Yee, Elaina; Zheng LiYing.
2020/2021 (5): Lee Zhiqun; Liu Xiao; Lee Yun Xuan; Soh Ming Lun; Dominic Chang.
2019/2020 (1): Soo Ee Rong.

2017/2018 (2): Sim Leong Yen, Dael; Zakhran Khan B Wasil Han.

2016 - Present **Visiting PhD Students:**
Gao Meng-yuan; Liu Ling; Wu Guodong; Yuan Ye; Liang Shuai; Li Yu; Tan Zhuoling; Li Yu; Han Xiaodan; Zhang Shuyang; Han Dongliang; Gao Ming, Ma Chenshuo; Gao Min; Chen Huan; Dong Wen; Zhong Qikang, Yang Yang. Wang Xi

2019 - Present **PhD Students:**

Lei Qinghua	(Graduated)	Zhu Wei	(Graduated)
Zhang Liqing	(Graduated)	Tanya Talwar	(On-going)
Chen Taihan	(Graduated)	Luo Yilu	(On-going)
Wang Mingqi	(On-going)	Bui Do Phuong Tung	(On-going)
Feng Guanli	(On-going)	Li Wenhui, Kelvin	(On-going)

AWARDS

2026 **Dean's Chair,** College of Design and Engineering (CDE), National University of Singapore (NUS), Singapore.

2026 **Research Award,** CDE, NUS, Singapore.

2025 **NRF Investigatorship,** National Research Foundation, Singapore.

2025 **Timthy Oke Award,** International Associate of Urban Climate.

2024 **Teaching Excellence award,** CDE, NUS, Singapore

2020 **Silver Award (Investigator),** Urban ventilation assessment and wind corridor plan for Chinese cities, The Hong Kong Institute of Planners, Hong Kong, China.

2019 **Presidential Young Professorship,** NUS, Singapore.

2019 **Grand Award (Co-Investigator), Green Building Award**, Urban Ventilation Assessment and Wind Corridor Plan, Sub-Category: Research, Hong Kong Green Building Council, Hong Kong, China.

2019 **First Place (Leader)**, FuturArc Prize 2019 Design Competition, Professional, 3Cs: Connect, Conserve, Cultivate, Hyper Density City, BCI Asia.

2018/2019 **NUS Young Researcher Award (Nominated)** by School of Design and Engineering, NUS. Singapore.

2017/2018 **NUS Young Researcher Award (Nominated)** by School of Design and Engineering, NUS. Singapore.

2015 **CUHK Postgraduate Research Output Award**, Issued by Vice-Chancellor, University level. CUHK. Hong Kong.

2014 **SUTD-MIT Postdoctoral Fellowship**, Singapore University of Technology and Design (SUTD), Massachusetts Institute of Technology (MIT). Singapore/US

2013 **Global Scholarship for Research Excellence**, The Chinese University of Hong Kong (CUHK). Hong Kong.

2012 **AMS-IAUC Student Award**, Best Research and Presentation, American Meteorological Society (AMS), International Association of Urban Climate (IAUC). U.K.

2006 **Copper Prize**, Competition of National Architectural Landscape Design, 18th. United Nations International Week of Science and Pease. Beijing.

2006 **Best Team Award**, Competition of National Architectural Landscape Design, 18th. United Nations International Week of Science and Pease. Beijing.

RESEARCH / CONSULTANCY PROJECTS (As PI, SGD 11.6 Million)

2026 – 2029 (Ongoing) PI, Human-Centric Approaches to Urban Thermal Comfort Perception: Leveraging Greenery and LiDAR in Dense Cityscapes, National Parks Board (SGD 1.399,929.70)

2025 – 2030 (Ongoing) **PI,** Urban Meteorology Nowcasting: Building Climate Health Resilience for the General Public in the Immediate Living Environment, National Research Foundation (SGD 3,179,926.00)

2025 – 2028 (Ongoing)	**PI**, Towards Heat-Health Neighbourhoods in High Density Urban Areas: The Influence of Urban Heat on Older Adults and Design-Based Mitigation Strategies, NUS Suzhou Research Institute (SGD 532,000 + 3 PhD scholarships)
2025 – 2028 (Ongoing)	**PI,** Modelling of greenery solutions for UHI mitigation, National Parks Board, (SGD 1,300,000.00)
2023 – 2026 (Ongoing)	**PI,** Memorandum of Understanding Between Centre of Science and Technology and Industrialization Development, Ministry of Housing and Urban-Rural Development of The People's Republic of China and National University of Singapore.
2024 – 2027 (Ongoing)	**PI,** Sensing and Shaping Air Flow to Mitigate Heat for Assuring Climate Resilience in High Density Coastal Cities, Urban Redevelopment Authority. (SGD 1,293,600)
2022 – 2023	**PI,** Urban Planning and Building Design System Based on Urban Climate Analytics, Reimagine research grant, Phases 1 and 2, NUS, MOE. (SGD 660,000)
2021 – 2024	**PI,** Optimization Algorithm for Rapid Sustainable Planning and Design, Housing Development Board, Singapore (SGD 349,200).
2019 – 2025 (Ongoing)	**PI,** Building Climate Resilience at High Density Cities Using Multi Physical Modelling and Field Measurement, Presidential Young Professorship, NUS. (SGD 1,000,000).
2020 – 2025 (Ongoing)	**PI/Module Leader**, Impact of Climate Change and Urbanization on High-Density Urban System Resilience, Module 2.3, Cluster 2, Future Resilience System II, National Research Foundation. (SGD 1,475,000).
2025 – 2028 (Ongoing)	**Co-PI**, Developing a Personalized Heat Vulnerability Index Integrating Heat-Health Responses and Resilience Strategies among Older Adults in Singapore, NUS Sustainable Futures (SGD 500,000.00)
2024 – 2026 (Ongoing)	**Co-PI,** A Co-Development Approach to Integrated Senior Housing Typologies, Urban Redevelopment Authority (SGD 1,400,000.00)
2021 – 2024	**Co-PI,** Assessment of Urban Ecosystem Services in Residential Neighborhoods in Singapore, NRF. Partner Institution: Housing & Development Board. (SGD 1,500,000).
2021 – 2023	**Co-Investigator,** Resilience Analysis on Hydrogen as a Low-Emission Fuel: Disruption Prevention, Prediction and Recovery, the 7th Intra-CREATE Seed Grant, National Research Foundation. (SGD 249,600).
2021 – 2025 (Ongoing)	**Co-Investigator,** The Sea-City Interface: Mitigating Climate Impacts in Southeast Asia Coastal Cities, Future Cities Laboratory (FCL), National Research Foundation.
2019 - 2020	**PI,** Impact of Climate Change and Urbanization on High-Density Urban System Resilience, Future Resilience System II, Seedbed funding, National Research Foundation. (SGD 70,000)
2018 - 2020	**PI**, A Comprehensive, High-resolution Anthropogenic Heat Flux Database for Singapore with Application to Heat Dispersion Modelling, the 3rd Intra-CREATE Seed Grant, National Research Foundation. (SGD 249,600).
2019 - 2022	**Collaborator**, Experimental Studies on Thermal Comfort in Naturally Ventilated Schools, City of Tomorrow, National Research Foundation (SGD 691,627)
2019 - 2022	**Co-PI**, Development of Thermal-aerodynamic Models for Local Climate Zones, 3rd NRF-NSFC Joint Grant, National Research Foundation (SGD 500,000)
2017 - 2019	**PI**, Multilayer Urban Canopy Modelling and Mapping to Evaluate the Impact of Regional and Local Air Pollutant on Urban Air Quality, the 1st Intra-CREATE Seed Grant, National Research Foundation. (SGD 237,600).
2017 - 2019	**Co-PI,** Development of a Multiscale Urban Microclimate Model for NUS Campus Thermal Environment, NUS Sustainability Cluster Research Initiative, NUS. (SGD 500,000).
2016 - 2019	**PI**, improving cross-ventilation by integrating productive façade into tropical passive design. NUS-CDL Research Grant. (SGD 100,000).
2016 - 2019	**PI**, Evaporative Cooling Techniques to Improve Outdoor Thermal Comfort in the Tropics. MOE Academic Research Fund Tier 1. (SGD 147,000).
2014 - 2015	**Co-Investigator**, A preliminary study of using remote sensing techniques to obtain urban morphological information and its implications on thermal comfort and heat-

	related impact in urban areas. Direct Grant, Social Science Panel, The Chinese University of Hong Kong.
2012 - 2015	**Co-Investigator**, Macau Urban Climate Map Study, Macau Government.
2012 - 2013	**Co-Investigator**, the Study of Planning and Management of Wuhan Urban Air Path, National Natural Science Foundation of China, China.
2011 - 2013	**AVA Consultant**, Term Consultancy for AVA Services, Consultancy for Expert Evaluation and Advisory Services on Air Ventilation Assessment for Indoor Recreation Centre in Area 14, Hong Kong, Hong Kong Architectural Service Department, Hong Kong SAR Government.
2011 - 2012	**Co-Investigator**, Towards Urban Planning Strategies to Improve the Wind Environment in High Density Cities Based on Better Understanding of the Urban Morphology by Using Large Eddy Simulation Model (LES). 2011/2012 Germany/Hong Kong Joint Research Scheme (RGC-DAAD).

PUBLICATIONS

Peer Review Journal Papers (total citations: > 6500; h-index: 38)

1. Zhang L.Q., **Yuan C., 2026,** Physics-Informed machine learning for mapping the heat mitigation potential of vegetation in Singapore, Sustainable Cities and Society, In press, 107317.
2. Chen T.H., Liu X., **Yuan C.,** 2026, Machine learning-based design optimization of urban greening for cooling in tropical cities, Building and Environment, 295, 114468.
3. Chen Y., Dong Q., **Yuan C.,** Zhang L.C., Sun C., 2026, Warming amidst depopulating insights from surface urban heat island in China's shrinking cities, Habitat International, 170, 103758.
4. Luo Y.L., Bui D.P.T., **Yuan C**., 2026, High-resolution pedestrian-level air temperature evaluation in tropical high-density cities – Using machine learning and point-based morphology, Building and Environment, 294, 114374.
5. Hafeznia, H., Alva P., Chen T.H., Tung B.D.P., **Yuan C.**, Stouffs R., Stojadinovic B., 2026, Reducing elderly vulnerability to climate change risks using an integrated infrastructure recovery planning, Disaster Risk Reduction, 132, 105963.
6. Wang L.K., Luca F.D., Jassen P, Tung D.P.B., Chen K.W., **Yuan C.,** 2026, A cross-platform optimization system for comparative design exploration of competing concepts and strategies, Building Engineering, 115, 114413.
7. Zhang L.Q., **Yuan C.**, 2025, Vegetation Cooling in tropical high-density urban areas: Case studies in Singapore, Architecture Science, 32, 27-47.
8. Chen T.H., Singh V.K., Zhang S.Y., Zhang L.Q., **Yuan C.,** 2025, A city-scale mapping tool for assessing effects of urban greenery and morphologies on thermal comfort: A case study in Singapore, Building and Environment, 113760.
9. Ma X., Zeng T.C., Dear R.D., Xie Y.X., **Yuan C**., Lu S., 2025, Active route choice to minimize pedestrian thermal discomfort in a high density subtropical city, Sustainable Cities and Society, 131, 106697
10. Wang R., **Yuan C**., Gong F.Y., Lu L.L., Xiang L.Y., Wang X., 2025, Evaluation and mitigation of heatwave-induced health risks in China: A systematic review, 59(43), 22987-23004.
11. Zhang S.Y., Liu N.X., Wu X.Y., Han Y.C, Li W.W., Guo F., Song X.J., **Yuan C.**, 2025, An empirical study on the compound effects of extreme weather and UHI on Building Energy Consumption under Urban Local Climate, Building and Environment, 287 (Part A), 113824.
12. Lau K., Ng G., **Yuan C**., 2025, Urban Heat Island Adaptation and Mitigation in Practice: Lessons from Policy Implementation in Five Cities, Philosophical Transactions A, 383 (2308): 20240581.
13. Lu S., Ma X., Zeng T., Dear R.D., Xi Y., **Yuan C**., 2025, Active Route Choice to Minimize Pedestrian Thermal Discomfort in a High-Density Subtropical City, Sustainable City and Society, 131, 106697.
14. Zhang X., Chen T.H., Zhang S.Y., **Yuan C**., Tan P.Y., 2025, Toward healthy neighborhood thermal environments: Interpretation of thermal comfort and rapid identification of hotspot areas using image-based metrics and explainable machine learning, Sustainable City and Society, 130, 106648.
15. Ma C.S., **Yuan C**., Zhang Y.F., 2025, An integrated identification framework for analyzing air pollutants mitigation potential from crop residue burning, Renewable and Sustainable Energy Reviews, 218,

115826.

16. Xue Y.P., Zhao Y.L., Wai K.M., **Yuan C**., Carmeliet, J., 2025. Heat and flow dynamics in cities: An experimental comparative study across diverse urban morphologies, Philosophical Transactions A, 383 (2308), 20240573.
17. Zhao Y.L., Carmeliet, J., Hamdi, R., **Yuan C**., Ding X.T., Derome, D., Fan, Y.F., Jiang, S., Peng, J., 2025. Prioritizing Nature-Based Solutions and Technological Innovations to Accelerate Urban Heat Mitigation Pathways, Annual Review of Environment and Resources, 50, 111523-102159
18. Zhong Q.K., Li, Z., Zhu J.W., **Yuan C**., 2025, Revealing Multiscale and Nonlinear Effects of Urban Green Spaces on Heat Islands in High-Density Cities: Insights from MSPA and Machine Learning, Sustainable Cities and Society, 120, 106173.
19. **Yuan C.,** Tung, B.D.P, Zhang L.Q., Carmeliet, J., 2025. A digital Approach to Urban Climate Adaptation: The Microclimate Digital Platform, International Journal on Smart and Sustainable Cities, 02 (01n02), 2450001.
20. Ma C.S., **Yuan C**., Zhang Y.F., Hu H.C., 2025, Mapping utilizable rooftop areas to meet food security goal in four high-density cities: A deep learning and GIS integrated approach, Sustainable Cities and Society, 118, 106066.
21. Mei S.J., Hang J., Fan Y.F., **Yuan C**, Xue Y.P., 2025, CFD simulations on the wind and thermal environment in urban areas with complex terrain under calm conditions, Sustainable Cities and Society, 118, 106022.
22. Zhang S.Y., **Yuan C**., Chen T.H., Ma B.N., Liu N.X., 2025, A cross-scale indicator framework for the study of annual stability of land surface temperature in different land uses, Sustainable Cities and Society, 116, 105936
23. Liu X., Gou Z.H., Yuan C., 2025, Application of human-centric digital twins: Predicting outdoor thermal comfort distribution in Singapore using multi-source data and machine learning, Urban Climate, 58, 102210,
24. Zhou W.Q., **Yuan C.**., 2024, Investigation on Rooftop PV Performance and Impact on Microclimate in Tropical Cities ---- A WRF Modelling Study in Singapore, Renewable Energy, Second review, 237, 121675.
25. Talwar T. and **Yuan C.,** 2024, Impact of Natural Urban Terrain on the Pedestrian Wind Environment in Neighborhoods: A CFD Study with Both Wind and Buoyancy-Driven Scenarios. Building and Environment, 261, 111746.
26. Xue Y.P., Zhao Y.L., Mei S.J., **Yuan C.**, Carmeliet J., 2024, Exploring thermal buoyant flow in urban street canyons: influence of approaching turbulent boundary layer, Experimental Thermal and Fluid Science, 158, 111255.
27. Zhang S.Y., **Yuan C**., Ma B.N., Liu N.X., Li W.W., 2024, Coupling effects of building-vegetation-land on seasonal land surface temperature on street-level: A study from a campus in Beijing, Building and Environment, 262, 111790.
28. Setyantho G.R., **Yuan C.**, Heo Y., 2024, Evaluation of multi-layer urban canopy model (MLUCM) for urban microclimate predictions at different urban contexts, Urban Climate, 55, 101882.
29. Zheng Y.S., Li W.J., Jiang L., **Yuan C.**, Xiao T., Wang R., Cai M., Hong H.B., 2024, Spatial modelling of street-level carbon emissions with multi-source open data: A case study of Guangzhou, Urban Climate, 55, 101974.
30. Li Y., Shen P.Y., **Yuan C**., 2024, An occupant-centric approach for spatio-temporal visual comfort assessment and optimization in daylit sports spaces, Indoor and Built Environment, 33 (1), 145-166.
31. Xiang Y., **Yuan C**., Cen Q.Y., Huang C., Wu C., Teng M., Zhou Z., 2024, Heat risk assessment and response to green infrastructure based on local climate zones, Building and Environment, 248, 111040.
32. Xue Y.P., Zhao Y.L., Mei S.J., **Yuan C.**, Carmeliet J., 2024, Impact of street canyon morphology on heat and fluid flow: An experimental water tunnel study using simultaneous PIV-LIF technique, Experimental Thermal and Fluid Science, 150, 111066.
33. Chen T.H., Meili N., Fatichi S., Hang J., Tan P.K., **Yuan C.**, 2023, Effects of tree plantings with varying street aspect ratios on the thermal environment using a mechanistic urban canopy model, Building and Environment, 246, 111006.

34. He M.W., **Yuan C.,** Zhang X., Wang P.C., Yao C.H., 2023, Impacts of green-blue-grey infrastructures on high-density urban thermal environment at multiple spatial scales, Urban Climate, 52, 101714.
35. Zhao Y.L., Sen S., Susca T., Iaria J., Kubilay, A., Gunawardena K., Zhou X.H., Takane Y., Park Y., Wang X.L., Rubin A., Fan Y.F., **Yuan C.,** Bardhan, R., Derome, D., Urge-Vorsatz D., Carmeliet J., 2023, Beating urban heat: Multimeasure-centric solution sets and a complementary framework for decision-making, Renewable and Sustainable Energy Reviews, 186, 113668.
36. Liu M.X., Yang C.X., Fan Z.X., **Yuan C**., 2023, Prediction approach on pedestrian outdoor activity preference under factors of public open space integrated microclimate, Building and Environment, 244, 110761.
37. Zhang L.Q., **Yuan C.**, 2023, Multi-scale climate-sensitive planning framework to mitigate urban heat island effect: A case study in Singapore, Urban Climate, 49, 101451.
38. Lu M., Tan Z.L., **Yuan C**., Dong Y., Dong W., 2023, Resilience Measurements and Dynamics of Resource-Based Cities in Heilongjiang Province, China, Land, 302 12(2), 12020302.
39. He W.H., Li X.X., Zhang X.H., Yin T.G., Norford L.K., **Yuan C**., 2023, Estimation of anthropogenic heat from buildings based on various data sources in Singapore, Urban Climate, 49, 101434.
40. Mei S.J., Zhao Y.L., Talwar, T., Carmeliet J., **Yuan C.**, 2023, Neighborhood scale traffic pollutant dispersion subject to different wind-buoyancy ratios: A LES case study in Singapore, Building and Environment, 228, 109831.
41. Zhu W. and **Yuan C.**, 2023, Urban heat health risk assessment in Singapore to support resilient urban design – By integrating urban heat and the distribution of the elderly population, Cities, 132, 104103.
42. Zhao Y.L., Xue Y.P., Mei S.J., **Yuan C**., Carmeliet J., 2022, Enhancement of heat removal from street canyons due to buoyant approaching flow Water tunnel PIV-LIF measurements, Building and Environment, 226, 109757.
43. He Y.Y., **Yuan C.**, Ren C., Ng E., 2022. Urban ventilation assessment with improved vertical wind profile in high-density cities–Comparisons between LiDAR and conventional methods, Journal of Wind Engineering and Industrial Aerodynamics, 228, 105116.
44. **Yuan C.**, Zhu R.X., Tong S.S., Mei S.J., Zhu W., 2022. Impact of Anthropogenic Heat from Air-Conditioning on-air Temperature of Naturally Ventilated Apartments at High-Density Tropical Cities, Energy and Buildings, 268, 112171.
45. Zhu W., Mei S.J., Zhang L.Q., **Yuan C.**, 2022. Developing Urban Heat Mitigation Strategies for a Historic Area Using a High-Fidelity Parametric Numerical Simulation: A Case Study in Singapore, Buildings, 12(9), 1311.
46. He Y.Y., **Yuan C**., Ren C., Wong W.W., Shi Y., Ng E., 2022. Urban ventilation assessment with improved vertical wind profile in high-density cities – Investigations in nighttime extreme heat, Building and Environment, 216, 109018.
47. Lei Q.H., Lau S.S.Y., **Yuan C**., Qi Y., 2022. Post-Occupancy Evaluation on the Biophilic Design in Workplace for Health and Wellbeing, Buildings (12), 417.
48. Xu L., Tong S.S., MeI S.J., Cao K., **Yuan C**., 2022. Better Understanding on Impact of Microclimate Information on Building Energy Modelling Performance for Urban Resilience, Sustainable Cities and Society, 80, 103775.
49. He W.H., Zhang L.Q., **Yuan C.**, 2022. Future Air Temperature Projection in High-Density Tropical Cities Based on Global Climate Change and Urbanization --- A Study in Singapore, Urban Climate, 42, 101115.
50. Li X.X., **Yuan C**., Hang J., 2022. Heat wave trends in Southeast Asia: Comparison of results from observation and reanalysis data, Geophysical Research Letters 49(4), e2021GL097151.
51. Mei S.J., **Yuan C.**, 2022. Urban buoyancy-driven air flow and modelling method: A critical review, Building and Environment, 210, 108708.
52. Lei, Q.H., **Yuan, C.**, Lau, S.Y., 2021. A quantitative study for indoor workplace biophilic design to improve health and productivity performance, Journal of Cleaner Production, 324, 129168.
53. Liang S., Leng H.*, Yuan Q., **Yuan C.**, 2021. Impact of the COVID-19 Pandemic: Insights from vacation rentals in twelve megacities, Sustainable Cities and Society, 74, 103121.
54. Mei S.J., **Yuan C.**, 2021. Three-dimensional simulation of building thermal plumes merging in calm conditions: Turbulence model evaluation and turbulence structure analysis, Building and Environment,

203, 108097.

55. Mei S.J., **Yuan C.**, 2021. Analytical and numerical study on transient urban street air warming induced by anthropogenic heat emission, Energy and Building, 231, 110613.
56. Chen T.H., Pan H.N., Lu M.R., Hang J., Lam C.K., **Yuan C**., Pearlmutter, D., 2021. Effects of tree plantings and aspect ratios on pedestrian visual and thermal comfort using scaled outdoor experiments, Science of The Total Environment, 801, 149527.
57. Yun, H., Neo, R., Wong N.H., Ignatius, M., **Yuan C**., Xu Y., Cao K., 2021. Spatial Analysis of Public Residential Housing's Electricity Consumption in relation to Urban Landscape and Building Characteristics: A Case Study in Singapore, Energy and Environment, 34(2), 233-254.
58. **Yuan C.,** Adelia A.S., Mei S.J., He W.H., Li X.X., Norford L., 2020. Mitigating intensity of urban heat island by better understanding on urban morphology and anthropogenic heat dispersion, Building and Environment, 176, 106876.
59. Wai K.M., **Yuan C.**, Lai A., Peter K.N., 2020. Relationship between pedestrian-level outdoor thermal comfort and building morphology in a high-density city, Science of The Total Environment, 708, 134516.
60. Lau S.K., Zhao Y., Lau S.S.Y., **Yuan C.**, Shabunko, V., 2020. An investigation on Ventilation of Building Integrated Photovoltaics System using Numerical Modelling, Solar Energy Engineering, 142(1), 011016.
61. Liang S., Leng H., Yuan Q., Wang B.W., **Yuan C.**, 2020. How does weather and climate affect pedestrian walking speed during cool and cold seasons in severely cold areas? Building and Environment, 175, 106811.
62. **Yuan C.**, Shan R.Q., Adelia A.S., Tablada A., Lau S.K., Lau S.S.Y., 2019. Effects of Vertical Farming on Building Cross Natural Ventilation at Urban Residential Areas, Energy and Buildings, 185, 316-325.
63. Adelia A.S., **Yuan C.***, Liu L., Shan R.Q., 2019. Effects of urban morphology on anthropogenic heat dispersion in high-density tropical cities, Energy and Buildings, 186, 368-383.
64. **Yuan C.**, Shan R.Q., et al., 2019. Multilayer Urban Canopy Modelling and Mapping for Traffic Pollutant Dispersion at High Density Urban Areas, Science of the Total Environment, 647, 255-267.
65. Zheng K., **Yuan C.**, Cen C., Wong N.H., 2019. Dry Mist Systems and its impact on Thermal Comfort for the Tropics, Sustainable City and Society, 51, 101727.
66. Lin Y., Chen G., Chen T., Luo Z., **Yuan C.**, Gao P., Hang J., 2019. The influence of advertisement boards, street and source layouts on CO dispersion and building intake fraction in three-dimensional urban-like models, Building and Environment, 150, 297-321.
67. Tablada A., Kosoric V., Huang H., Chaplin I., Lau S.K., **Yuan C.**, Lau S.S.Y., 2018. Design Optimisation of Productive Façades: Integrating Photovoltaic and Farming Systems at the Tropical Technologies Laboratory, Sustainability, 10 (10), 3762.
68. Lau S.K., Zhao Y., Shabunko V., **Yuan C.**, Lau S.S.Y., Tablada A., Reindl T., 2018. Optimization and evaluation of naturally ventilated BIPV facade design, 150, 87-93.
69. Lau K.K.L., Ng E., Ren C., Ho J.C.K., Wan L., Shi Y., Zheng Y.S., Gong F.Y., Cheng V.C., **Yuan C.,** Tan Z., Wong K.S., 2018. Defining the environmental performance of neighbourhoods in high-density cities. Building Research and Information, 46(5), 540-551.
70. **Yuan C.**, Norford L.K., Ng E., 2017. A Semi-Empirical Model for the Effect of Trees on the Urban Wind Environment, Landscape and Urban Planning, 168, pp 84-93.
71. Xu L., Ren C., **Yuan C.**, Janet E.N., William G., 2017. An ecological study of the association between area level green space and adult mortality in Hong Kong, Journal of Climate, 5, 55-67.
72. Wong W.W., Ng E., **Yuan C.**, Raasch S., 2017. Large-eddy simulations of ventilation for thermal comfort-A parametric study of generic urban configurations with perpendicular approaching winds, Urban Climate, 20, 202-227.
73. Morakinyo T., Kong L., Lau, K.K.L., **Yuan C.**, Ng E., 2017. A study on the impact of shadow-cast and tree species on in-canyon and neighborhood's thermal comfort, Building and Environment, 115, 1 -17.
74. Kong L., Lau K.K.L., **Yuan C.**, Chen Y., Xu Y., Ren, C., Ng E., 2017. Regulation of outdoor thermal comfort by trees in Hong Kong, Sustainable Cities and Society, 31, 12-25.
75. **Yuan C.**, Norford L.K., Britter R., Ng E., 2016. A Modelling-Mapping Approach for Fine-Scale Assessment of Pedestrian-level Wind in High-Density Cities, Building and Environment, 97, 152-165.

76. **Yuan C.**, Ng E., Norford L.K., 2014. Improving air quality in high-density cities by understanding the relationship between air pollutant dispersion and urban morphologies, Building and Environment, 71, 245-258.
77. **Yuan C.**, Ren C., and Ng E., 2014. GIS-based surface roughness evaluation in the urban planning system to improve the wind environment -- A study in Wuhan, China, Urban Climate. 10, pp. 585–593.
78. Ren C., **Yuan C.**, Ho C.K., Ng E., 2014. A study of air path and its application in urban planning, Urban planning Forum, 3, 52-60.
79. **Yuan C.**, Ng E., 2013. Practical application of CFD on environmentally sensitive architectural design at high density cities: a case study in Hong Kong, Urban Climate, 8, 57-77.
80. **Yuan C.**, Ng E., 2012. Building porosity for better urban ventilation in high-density cities - A computational parametric study, Building and Environment, 50, 176-189.
81. Ng E., Chen L., Wang U., and **Yuan C.**, 2012. A study on the cooling effects of greening in a high-density city: an experience from Hong Kong, Building and Environment, 47, 256-271.
82. Ng E., **Yuan C.**, 2012. Policies and technicalities providing natural ventilation to domestic spaces for high-density tropical living in Hong Kong, Architectural Science Review, 55 (1), 61-70.
83. Ng E., **Yuan C.**, Chen L., Ren C., Fung J.C.H., 2011. Improving the wind environment in high-density cities by understanding urban morphology and surface roughness: A study in Hong Kong, Landscape and Urban Planning, 101 (1), 59-74.
84. **Yuan C.**, Chen L., 2011. Mitigating urban heat island effects in high density cities based on sky view factor & urban morphological understanding---- a study at Hong Kong, Architectural Science Review, 54 (4), 305-315.
85. **Yuan, C.**, 2010. Mitigating urban heat island effects of high-density cities: a study at Hong Kong. Architectural Journal, S1, 120.

Authored Book

- **Yuan C.**, 2018. Urban Wind Environment--Integrated Climate-Sensitive Planning and Design, Edition 1, Springer, Singapore.

Book Chapter

- Lei Q.H., **Yuan C**., Lau S.S.Y., 2023. Greening Indoor Workplace in High-Density Cities, A quantitative study for indoor workplace greenery to improve health and productivity, The Routledge Handbook on Greening High-Density Cities, US.
- Lau S.S.Y., Tablada A., Lau S.K., **Yuan C.**, 2021. Vital signs revisited in the tropics: through the NUS-CDL tropical technologies laboratory, Design and Technological Applications in Sustainable Architecture pp95-110, Springer.
- Morakinyo T., **Yuan C.**, Tan Z., Ren C., Lau K.L., Ng E., 2020. Landscape design: green, wind, and water to moderate urban overheating, Fighting the urban overheating in practice, Editor: Mattheos Santamouris, Alberto Muscio, Elsevier, Netherlands.
- **Yuan C.**, 2015. Urban permeability and air path-- A case study in Wuhan, China, edited by Ng, E. and Ren C., Urban Climatic Map – an information tool for sustainable urban planning, Earthscan, U.K.

Conference Papers/Presentation (Selected):

1. Yuan C., Xing J., Li K., and Chen J, 2025, Doppler Lidar-Driven CFD Simulation for High-Density Urban Areas: Validation with Near-Ground Measurements in Singapore, International Conference of Urban Climate 12, Rotterdam, Netherlands.
2. Zhang L.Q., 2025. Physics-Informed Machine Learning for Mapping the Heat Mitigation Potential of Vegetation in Singapore, International Conference of Urban Climate 12, Rotterdam, Netherlands.
3. Talwar, T., Yuan C., 2025, Assessing Extreme Urban Heat Events in Singapore: Local Characteristics, Temporal Trends and Heat Stress Implications, International Conference of Urban Climate 12, Rotterdam, Netherlands.
4. Chen T.H., Yuan C., 2025, A city-scale mapping tool for assessing the effects of urban greenery and morphologies on thermal comfort: A case study in Singapore, International Conference of Urban Climate 12, Rotterdam, Netherlands.
5. Chen T.H., Yuan C., 2024, Effects of tree plantings with varying street aspect ratios on the thermal

environment using a mechanistic urban canopy model, World Cities Summit, Ministry of National Development, Singapore.

6. Yuan C. and Talwar T., 2024, Impact of Natural Urban Terrain on the Pedestrian Wind Environment in Neighborhoods: A CFD Study with Both Wind and Buoyancy-Driven Scenarios, World Cities Summit, Ministry of National Development, Singapore.
7. Zhang L.Q., Yuan C., 2024, Cooling Potential of Urban Vegetation Spatial Pattern in High-density Tropical Cities: A Case Study in Singapore, World Cities Summit, Ministry of National Development, Singapore.
8. Yuan C. and Talwar T., 2024, Impact of Natural Urban Terrain on the Pedestrian Wind Environment in Neighborhoods: A CFD Study with Both Wind and Buoyancy-Driven Scenarios, American Gerophysical Union (AGU), USA.
9. Yuan C., and Hang Jian, 2023, Session Chair, Muti-physics urban climate modelling, International Conference of Urban Climate, UNSW, Sydney, Australia.
10. Yuan, C., Mei, S.J., Zhang, L.Q., Talwar T., Tong S.S., 2022. Mitigating urban heat island by high-fidelity modelling and climate sensitive planning. In Science of Cities Symposium, World Cities Summit, Ministry of National Development, Singapore.
11. Yuan, C., Mei, S.J., He, W., Adelia, A. S., 2022. Mitigating intensity of urban heat island by better understanding on urban morphology and anthropogenic heat dispersion. In 5TH International Conference on Building Energy and Environment. Concordia University, Montreal, Canada.
12. Zhang, Q., Okuda, S., Yuan, C., Corpataux, L., Lau, S. K., 2021. Factors affecting moisture content of cross-laminated timber in a naturally ventilated environment in the tropics. In World Conference on Timber Engineering 2021, WCTE 2021.
13. Yuan, C., Mei, S.J., 2021. Mitigating Intensity of Urban Heat Island by Better Understanding on Urban Morphology and Anthropogenic Heat Dispersion. In European Meteorological Society Annual Meeting 2021. online.
14. Zhang, L., Yuan, C., 2021. Mitigating urban heat island effect through integrated climate-sensitive planning framework: a study based in Singapore. In European Meteorological Society Annual Meeting 2021. online.
15. Mei, S., Yuan, C., 2021. Numerical simulation of urban thermal plume merging. In European Meteorology Society Annual Meeting 2021. Online.
16. Yang, H., Hang, J., Buccolieri, R., Yuan, C., 2020. The influence of vegetation and street layouts on pollutant dispersion and population exposure in idealized two-dimensional urban street canyon. In Healthy Buildings Asia Conference 2019, HB 2019.
17. Yuan C., Ng, E., Norford, L., 2019. A Modelling-Mapping Approach for Fine-Scale Natural Ventilation Evaluation in High Density Cities. In Ecocity World Summit 2019. Canada.
18. Yuan C., Shan, R., Zhang, Y., Yin, T., Li, X., Norford, L., 2019. Multilayer urban canopy modelling and mapping for traffic pollutant dispersion at high density urban areas. In European Meteorological Society Annual Meeting. Denmark.
19. Yuan C., Shan, R., Zhang, Y., Li, X., Yin, T., Norford, L., 2019. Practical Modelling for Traffic Pollutant Dispersion at High Density Urban Areas. In PHYSMOD 2019. Hong Kong.
20. Yuan C., Adelia, A. S., Wu, G., Liu, S., Lian, A., 2019. Sustainable Hyper-Density City Design, Connect, Conserve, and Cultivate, ----a Case Study in Singapore, Asia. In Ecocity World Summit 2019. Canada.
21. Yuan, C., Norford, L., Ng, E., 2018. A Morphometric Modelling Method for Effect of Urban Trees on Air Flow. In International Conference of Urban Climate. New York.
22. Adelia, A., Yuan, C., Shan, R., Gao, M., 2018. Effect of Urban Morphology on Anthropogenic Heat Dispersion in High-Density Tropical Cities. In International Conference of Urban Climate. New York.
23. Yuan, C., Shan, R., Zhang, Y., Li, X. -X., Yin, T., Norford, L., 2018. Multilayer Urban Canopy Modelling and Mapping for Traffic Pollutant Dispersion at High Density Urban Areas. In E. Ng, S. Fong, & C. Ren (Eds.), Smart and Healthy Within The Two Degree Limit (PLEA 2018), VOL 3 (pp. 1010-1011). Hong Kong.
24. Lau, S. -K., Zhao, Y., Shabunko, V., Yuan C., Lau, S. S. -Y., Tablada, A., Reindl, T., 2018.. Optimization and Evaluation of Naturally Ventilated BIPV Facade Design. In A. G. Aberle (Ed.), Proceeding of the 12th International Photovoltaic Power Generation and Smart Energy Conference and Exhibition (SNEC2018) 150, 87-93. Shanghai, China: Elsevier Science.
25. Tablada, A., Chaplin, I., Huang, H., Lau, S. K., Yuan, C., Lau, S. S. Y., 2018. Simulation algorithm for

the integration of solar and farming systems on tropical façades. In CAADRIA 2018 - 23rd International Conference on Computer-Aided Architectural Design Research in Asia: Learning, Prototyping and Adapting Vol. 2 (pp. 123-132).

26. Yuan, C., Zheng, K., Adelia, A. S., Tan, C. L., Wong, N. H., 2018. Two-Phases Evaporative Cooling for Better Outdoor Thermal Comfort in High-Density Tropical Cities. In Passive and Low Energy Architecture (PLEA) 2018. Hong Kong.
27. Zhang, J., Yuan, C., Lau, S. S. Y., Heng, C. K., Lau, S. K., 2017. A case study on the relationship between the distribution of air pollutant and noise from road traffic and the impacts of building typology in high density urban context. In Proceedings of 33rd PLEA International Conference: Design to Thrive, PLEA 2017 Vol. 1 (pp. 1620-1627).
28. Yuan, C., Norford, L., Britter, R., Ng, E., 2017. A modelling-mapping approach for fine-scale natural ventilation evaluation in high density cities. In Proceedings of 33rd PLEA International Conference: Design to Thrive, PLEA 2017 Vol. 2 (pp. 1972-1979).
29. Yuan, C., Norford, L., Ng, E., 2017. A semi-empirical model to evaluate urban wind environment with trees. In Proceedings of 33rd PLEA International Conference: Design to Thrive, PLEA 2017 Vol. 2 (pp. 2927-2934).
30. Tablada, A., Chaplin, I., Huajing, H., Kosoric, V., Lau, S. K., Yuan C., Lau, S. S. Y., 2017. Assessment of solar and farming systems integration into tropical building facades. In ISES Solar World Congress 2017 - IEA SHC International Conference on Solar Heating and Cooling for Buildings and Industry 2017, Proceedings (pp. 655-665). doi:10.18086/swc.2017.12.11
31. Yuan, C., Ren, C., Ng, E., 2017. GIS-based urban permeability evaluation to Improve outdoor natural ventilation at High Density Cities. In Passive Low Energy Architecture Design to Thrive. United Kingdom.
32. Yuan, C., Lau, S. Y., Torre, A., Lau, S. K., 2017. Improving cross-ventilation by integrating productive façade into tropical passive design. In 12th Conference on Advanced Building Skins. Bern, Switzerland.
33. Tablada, A., Kosoric, V., Lau, S. K., Yuan, C., Lau, S., 2017. Productive facade systems for energy and food harvesting: A prototype optimization framework. In Proceedings of 33rd PLEA International Conference: Design to Thrive, PLEA 2017 Vol. 3 (pp. 3595-3602).
34. Yuan, C., 2016. A Modelling-Mapping Approach for Fine-scale Natural Ventilation Evaluation in High Density Cities. In the 4th International Conference on Countermeasures to Urban Heat Island. Singapore.
35. Yuan, C., 2016. Computational Parametric Study to Improve Air Quality in High-Density Cities. In 4th International Conference on Countermeasures to Urban Heat Island. Singapore.
36. Yuan, C., Norford, L. K., Britter, R., Yim, S., 2015. A Modelling-Mapping Approach for Fine-Scale Assessment of Pedestrian-level Wind in High-Density Cities. In the 9th International Conference on Urban Climate (ICUC 9). Toulouse, France.
37. Yuan, C., Ng E., Norford LK., 2015. Improving Air Quality in High-density Cities by Understanding Air Pollutant Dispersion and Urban Morphologies, A Case Study in Hong Kong. In the 9th International Conference on Urban Climate (ICUC 9). France.
38. Yuan, C., Ng, E., Norford, L., 2014. Design science to improve air quality in high-density cities. In 30th International PLEA Conference: Sustainable Habitat for Developing Societies: Choosing the Way Forward - Proceedings Vol. 3 (pp. 17-25).
39. Yuan, C., Ren, C., Ng, E., 2014. GIS-based urban permeability evaluation in the urban planning to improve the wind environment - A case study in Wu Han, China. In 30th International PLEA Conference: Sustainable Habitat for Developing Societies: Choosing the Way Forward - Proceedings Vol. 4 (pp. 8-10).
40. Yuan, C., Ng E., Norford LK, 2013. Effects of urban morphologies on the traffic-related air pollutant dispersion in high density cities. In Urban Environmental Pollution (UEP). China.
41. Yuan, C., Ng, E., 2012. Climatic sensitive urban planning and design to improve natural ventilation in high density cities --- A CFD Parametric study at Hong Kong. In the 6th Japanese-German Meeting on Urban Climatology. Hiroshima, Japan.
42. Yuan, C., Ng E., Chen L., 2012. Optimizing natural ventilation performance at subtropical cities by CFD and morphometric methods. In ICUC 8. Ireland.
43. Yuan, C., Ng, E., 2011. Improving the building permeability for the better urban wind environment in Hong Kong. In the Croucher Advanced Study Institute 2011-2012. Hong Kong, China.

PROFESSIONAL SERVICE

Membership in Editorial Boards at Peer-review journals

2020 - 2024	**Associate Editor**, International Journal of Urban Climate, Publisher: Elsevier. Impact factor: 6.9
2021 - Present	**Editorial Board Member**, International Journal of Landscape and Urban Planning, Publisher: Elsevier. Impact factor: 9.2
2021 - Present	**Academic Editor**, International Journal of PLOS Climate, Publisher: PLOS.

Peer-Review Journal Reviewer (Selected)

Energy and Building; Building and Environment; Landscape and Urban Planning; Journal of Wind Engineering; Science of the Total Environment; Architecture Science Review; Journal of Zhejiang University-Science, A; Geographical Information Science; Sustainability; Urban Climate; Sustainable Cities and Society; Journal of Applied and Computational Mechanics

PhD Thesis Examiner

2026 (External)	**Wu Chenling**, The Air Quality We Shape: Investigating the combined effect of urban form and urban green spaces on air quality, Politecnico di Milano, Italy
2025 (Internal)	**Merve Esmebasi,** Adaptive Acoustic Comfort Through Biophilic Design to Address the Challenge of Natural Ventilation in Workspaces Exposed to Traffic Noise, NUS, Singapore.
2024 (Internal)	**Song Yifan,** Integrating Architectural Design with Green Building Rating System, NUS, Singapore.
2021 (Internal)	**Sun Huixuan**, Visual Impact Assessment of Building – Integrated Photovoltaics in Urban Environments Using Saliency Mapping, NUS, Singapore.
2021 (External)	**Sara Shabahang**, Comparative study of urban residential neighborhood for assessing urban heat effects using Envi-Met Simulation, Victoria University of Wellington, New Zealand.
2020 (Internal)	**Song Xiaoping**, Exploring big data applications for urban greening, Department of Architecture, School of Design and Environment, National University of Singapore/Singapore ETH Centre, Singapore.
2020 (External)	**He Baojie**, Mitigating urban heat island effects: an analysis of precinct ventilation performance and its impact on urban heat islands and outdoor thermal comfort. Faculty of Built Environment, The university of New South Wales, Sydney, Australia.
2019 (Internal)	**Zhang Qianning**, Human-building interaction and its determining factors with respect to green buildings and green users, Department of Architecture, School of Design and Environment, National University of Singapore, Singapore.
2019 (Internal)	**Zheng Kai**, Dry misting systems and its impact on thermal comfort in Singapore, Department of Building, School of Design and Environment, National University of Singapore, Singapore.
2018 (Internal)	**Daniel Hii Jun Chung**, Anthropogenic Heat at Pedestrian Level of High-Density Urban Singapore, Department of Building, School of Design and Environment, National University of Singapore, Singapore.

Research Grant External Reviewer

2018 - Present	**Invited external reviewer**, Research Grants Council of Hong Kong, Hong Kong, China.
2022	**Invited external reviewer**, Israeli Ministry of Innovation, Israel.
2022	**Invited external reviewer,** National Research, Development and Innovation Office, Hungary.
2020	**Invited external reviewer,** United Kingdom Natural Environment Research Council, UK Research and Innovation, Clean Air Programme, UK.

2020 **Invited external reviewer**, Dutch Research Council (NWO), Domain Applied and Engineering Science (AES), Dutch.

Book and Report External Reviewer

2020 **Invited reviewer**, Frontiers – Emerging Issues of Environmental Concern. United Nations Environment Programme (UNEP).
2019 **Invited reviewer**, High-Rise Urban Form and Microclimate, Taylor & Francis, UK
2018 **Invited reviewer**, Routledge, Taylor & Francis, UK.

Committees (External, Since 2016)

2025.09 – 2028. 08 Working Committee (WC) for the Strategic Collaboration, Urban Redevelopment Authority and National University of Singapore, Singapore
2023 Session Chair, Muti-physics urban climate modelling, International Conference of Urban Climate, UNSW, Sydney, Australia.
2021 The Climate Alliance's Asian regional committee member and speaker, Climate & Cities Virtual Conference, International Universities Climate Alliance (Invited)
2018 Passive and Low Energy Architecture, Smart and Healthy within the 2-degree Limit (PLEA 2018, International, Invited).
2018 Building Simulation & Optimization 2018 (BSO 2018, International, Invited).
2017 Passive Low Energy Architecture Design to Thrive (PLEA 2017, International, Invited).
2016 22nd International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA 2017, International, Invited).

Keynotes and Invited Talks

External

2026 REx Conference 2026- Collaboration, Innovation and Society, NUS, Singapore
2025 Climate Modelling and Analytics for Urban Heat Risks Mitigation and Adaptation, Harbin Institute of Technology, Harbin, China.
2025 Cooling Taipei: Building a Climate-Adaptive Green Network Conference, Taipei.
2025 S3 (Singapore-Seoul-Shanghai) Sustainability Forum, Fudan University, Shanghai, China.
2025 Ground-based LiDAR Networks Workshop, The Chinese University of Singapore, Hong Kong.
2025 NUS Sustainable and Green Finance Institute (SGFIN), NUS, Singapore.
2024 Open Talk, Institute of Technology in Architecture (ITA), Department of Architecture, ETH Zurich, Switzerland.
2024 Urban Environment Panel, Festschrift for Prof. Leslie Norford, Department of Architecture, Massachusetts Institute of Technology, US.
2024 Workshop on Urban Resilience, Georgia Institute of Technology (GT), US.
2024 World Cities Summit, Singapore.
2024 Open Talk, Northwest A&F University, China.
Urban Climate Summer School, Xi'an Jiaotong University, China.
2024 Urban Climate Conference, Xi'an Jiaotong University, China.
2024 Invited Talk, Xiamen University, China.
2023 Health + Wellbeing, the 5th ICEA – International Conference on Empathic Architecture, Petra Christian University, Indonesia.
2023 Exhibition, URA's Urban Lab Exhibition - Climate Responsive City, Urban Redevelopment Authority, Singapore.
2023 Exhibition, delegation of Swiss nationals, Singapore ETH Center, Singapore.
2023 Exhibition, Urban Resilience Workshop with the US delegation from National Science Foundation, Singapore-ETH Center, Singapore.
2023 Exhibition, National Research Foundation's CREATE symposium, Singapore.

2023	Frontiers of Architecture Lecture Series, Wuhan University, China.
2023	URBEX Exhibition, Urban Redevelopment Authority, Singapore.
2023	CSIR-CBRI Lecture Series, CSIR-Central Building Research Institute, Roorkee India
2023	Singapore Geospatial Festival, National Supercomputing Centre, Singapore.
2023	Urban Design and Development Center, Chulalongkorn University, Thailand.
2023	Chair of Architecture and Building Systems, ETHZ, Switzerland
2023	Chair of Building Physics, ETHZ, Switzerland
2023	Technical Deep Dive on Urban Heat, World Bank, Singapore
2022	Design & Planning Exchange (DPX), Urban Redevelopment Authority, Singapore.
2022	IHPC-HDB Symposium on "Urban Environmental Modelling for Sustainable Living", Housing & Development Board, Singapore.
2022	Institute of Human Settlements and Civil Engineering, Xi`an Jiaotong University, China.
2022	School of Civil Engineering, Chongqin University, China.
2022	Geospatial Approaches for Better Urban Planning and Climate Resilience, Geography Teachers' Association (GTA) Seminar, Singapore.
2021	Understanding Risk 2021 Conference, World Bank and NUS. Singapore Geospatial Festival 2021, Singapore Land Authority.
2021	Climate Talks- Built Environment, International Universities Climate Alliance, University of New South Wales, Australia.
2021	Future-Shaping ACE (Architecture, Civil, and Environment) Congress, 2021, Korea University, Korea.
2021	ETH Risk Center, ETH Zurich, Switzerland.
2020	School of Human Settlements and Civil Engineering, Xi'an Jiaotong University, China (Paid by Xi'an Jiaotong University).
2020	Singapore Management University, Singapore.
2018	Passive Low Energy Architecture Design to Thrive (PLEA). Hong Kong, China.
2018	PowerFest, Conference, School of Health and Society, Faculty of Social Sciences, University of Wollongong, Australia.

Internal

2025	Sustainability 101 for Policy Officer Programme, Centre for Nature-based climate solutions, Faculty of Science, NUS, Singapore.
2024	Sustainability 101 for Policy Officer Programme, Centre for Nature-based climate solutions, Faculty of Science, NUS, Singapore.
2023	Young Leaders Panel speaker, NUS Cities Symposium, The Science of Cities, NUS, Singapore.
2022	NUS Cities Building an Urban Science Community in Singapore Workshop, NUS, Singapore.
2022	Sustainability 101 for Policy Officer Programme, Centre for Nature-based climate solutions, Faculty of Science, NUS, Singapore
2021	Session Chair, 2nd NUS Climate Change Defense Workshop
2020	1st NUS Climate Change Defense Workshop
2017	NUS-BUCEA Sustainable Design Workshop, Lectures on environmental sensitive design, NUS, Singapore.

PRESS RELEASEs

2023	Urban heat island in Singapore, Microclimate Digital Platform featured by New York Times.
2022	Interview/site visit, Republic of #Seychelles and the Global Centre for Technology, Innovation, and Sustainable Development from the United Nations Development Programme (UNDP) Singapore Global Centre

https://frs.ethz.ch/news-events/frs-news-channel/2022/09/seychelles-and-undp-guests-visit-frss-iot-microclimate-sensing-network.html

2022 Interview, Combatting climate change with efficient urban planning and design, Proof of Passion Innovators Highlights Research, NUS News
https://news.nus.edu.sg/combatting-climate-change-with-efficient-urban-planning-and-design/

2022 Interview, Green Buildings and technologies for Sustainability, Lianhe Zaobao, Singapore Press Holdings (SPH) Media Ltd, Singapore.

2021 Invited TV Interview, Urban Heat, ARD German Television, Singapore ETH Center.
Urban Heat Plume Study
https://www.sde.nus.edu.sg/news/multi-physics-simulation-to-better-understand-thermal-environment-in-urban-planning-enhancing-resilience-for-city-dwellers/

Anthropogenic Heat Study

1) NUS News (Singapore):
https://news.nus.edu.sg/nus-researchers-develop-new-urban-planning-gis-tool-to-improve-urban-climate-resilience/
2) Singapore ETH center (Swizerland/Singapore):
https://frs.ethz.ch/news-events/frs-news-channel/2021/02/urban-planning-gis-tool-for-climate-resilience.html
3) Eco-Business (Asia Pacific)
https://www.eco-business.com/press-releases/nus-researchers-develop-new-urban-planning-gis-tool-to-improve-urban-climate-resilience/
4) India Education Diary (India):
https://indiaeducationdiary.in/nus-researchers-develop-new-urban-planning-gis-tool-to-improve-urban-climate-resilience/
5) PreventionWeb (UN Office for Disaster Risk Reduction (UNDRR))
https://www.preventionweb.net/news/view/75785
6) Mirage News (Australia)
https://www.miragenews.com/researchers-develop-new-urban-planning-gis-tool-507237/