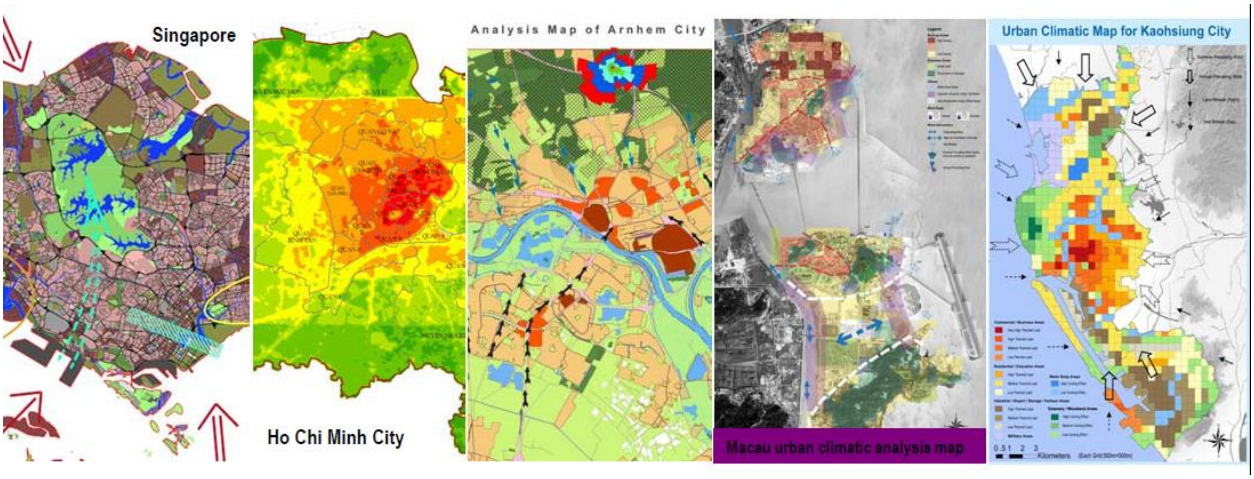
Lecture Topic: Urban Climatic Application in Asian Cities

Speaker: Dr. Chao REN,

Associate Professor, School of Architecture, The Chinese University of Hong Kong



ABSTRACT:

"We only have one earth to live on, one home to go back to, and one common future for mankind"

The study of urban climate has been developed since the nineteenth century due to the anthropogenic climate modification in the cities caused by global industrialization and urbanization process, with the focus to investigate the urban climatic phenomena such as urban heat island, urban energy budget, air pollution dispersion and urban ventilation. The urban climate has great impacts on cities and their populations in terms of thermal comfort, air quality and wind environment.

Although the research studies in the field of urban climatology has been largely expanded in the last two decades, the impact of urban climate knowledge in the urban planning and design practice is still very low. One of the reasons for this is that climate issues are not significant in urban planning decision and they are incorporated in conjunction with other environmental concerns.

Dr. REN will share her practical experience by introducing several governmental consultancy projects she involved and led in Asian high density cities. The presentation looks at the ways of urban climatic application strategies and also the methodology of urban climatic mapping system and urban ventilation assessment.

REN Chao PhD

BA XJTU, PhD CUHK, BEAM Pro

REN Chao is an Associate Professor in School of Architecture, The Chinese University of Hong Kong. She got her PhD in Architecture in 2010. Her research interest is Sustainable Urban and Environmental Design and Urban Climatic Application in Urban Planning. She has involved in several governmental research projects, such as "(Hong Kong) Urban Climatic Map and Standards for Wind Environment – Feasibility Study", "Eco-Planning for Kaohsiung, Taiwan by Using Urban Climatic Map", "Macau Urban Climatic Map Study", "Interrg IVB-Future Cities-Urban Networks to Face Climate Change (Arnhem Urban Climatic Map)" and "The Study of Plan and Management of Wuhan Urban Air Path". She is the Deputy Director of the M.Sc. Sustainable and Environmental Design Programme, and also a research fellow of both the Institute for Future Cities (IOFC) and the Institute of Energy, Environment and Sustainability (IEES) at CUHK. She is a registered BEAM Professional and has joined the Working Group of BEAM Society since 2011. She has published 3 books and is the lead author of over 40 articles published in highly ranked journals and peer-reviewed conferences.

Selected Publications

Ren, C., Lau, K.-l., Yiu, K.-p., & Ng, E. (2013). The Application of Urban Climatic Mapping to the Urban Planning of High-Density Cities: The Case of Kaohsiung, Taiwan. *Cities*. Vol. 31, pp. 1-6, doi: 10.1016/j.cities.2012.12.005.

Ren, C., Spit, T., Lenzholzer, S., Yim, H.L.S., Chen, L., Kupski, S., Burghardt, R., & Katzschner, L., (2012). **Urban Climate Map System for Dutch spatial planning**, *International Journal of Applied Earth Observation and Geoinformation* (18): 207-221. DOI: 10.1016/j.jag.2012.01.026.

Ren, C., Ng, E., & Katzschner, L. (2011), **Urban climatic map studies: a review**. *International Journal of Climatology*, 31(15): 2213-2233. DOI: 10.1002/joc.2237.

REN Chao (ed.), 2016, ***Urban Ventilation Assessment and Wind Corridor Plan: Creating Breathing Cities***, Beijing: China Architecture and Building Press, 300 pgs, ISBN: 978-7-112-20012-2 (in Chinese), published in Dec. 2016.

NG Yan Yung, and **REN Chao** (ed.), 2015, ***The Urban Climatic Map: A Methodology for Sustainable Urban Planning***, London: UK, Routledge, Tayler & Francis Group, 476 pgs, ISBN-13: 978-1849713764, ISBN-10: 1849713766, published in Sep. 2015.