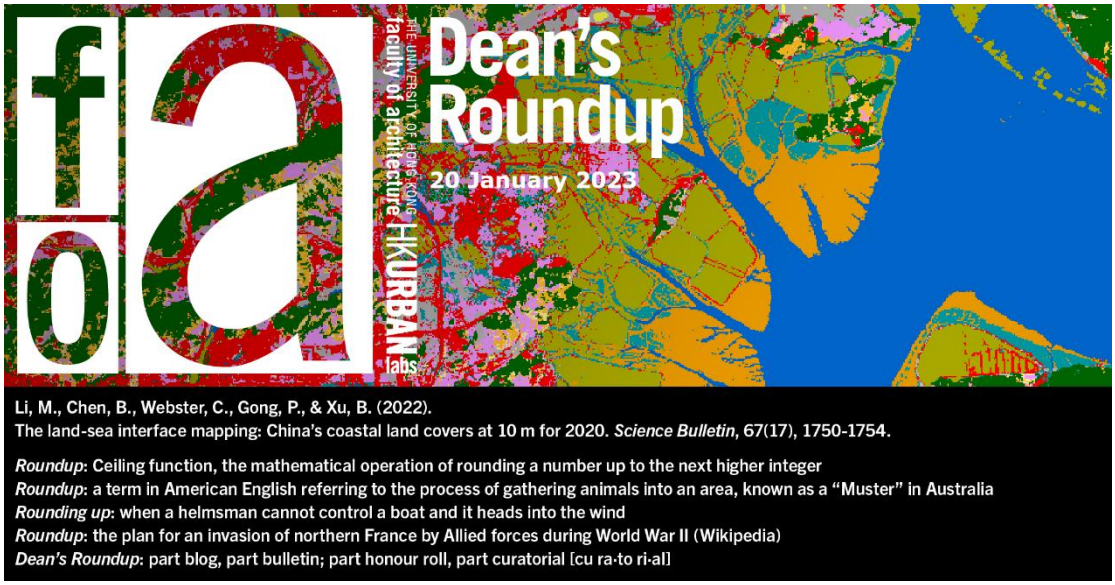



Li, M., Chen, B., Webster, C., Gong, P., & Xu, B. (2022).
The land-sea interface mapping: China's coastal land covers at 10 m for 2020. *Science Bulletin*, 67(17), 1750-1754.

***Roundup***: Ceiling function, the mathematical operation of rounding a number up to the next higher integer
***Roundup***: a term in American English referring to the process of gathering animals into an area, known as a "Muster" in Australia
***Rounding up***: when a helmsman cannot control a boat and it heads into the wind
***Roundup***: the plan for an invasion of northern France by Allied forces during World War II (Wikipedia)
***Dean's Roundup***: part blog, part bulletin; part honour roll, part curatorial [cu ra·to ri·al]

## Happy Chinese New Year

This week saw the first session of FoA's innovative Research Methods 101 class for all combined first year undergraduate students across architecture, surveying, urban planning and landscape. The opening topic: how do we know what we know? I introduced students to three kinds of inference by which humans tend to draw conclusions about matters of interest, and left the students thinking about three systematic approaches to knowledge discovery: scientific method, historical method, and design thinking method. For anyone interested, the teaching sessions are all online.

A recurring theme in the lecture and the (brilliant) student questions that followed, was the relationship between scientific knowledge and everyday and professional knowledge. Or to be more precise, the relationship between abductive reasoning on the one hand, and inductive and deductive reasoning on the other. One student asked (pertinently to current discussions in our Landscape Division): 'how does knowledge coming from the scientific method feed into designing better landscapes?'. Nice. My answer went along the following lines.

Scientific method helps refine the hypotheses that we adopt in our daily decision-making. That's it. That's how the world works. Take away systematic social science and STEM research on landscapes, buildings, cities, people, firms, governments and urban social and economic processes, and we would find ourselves only with inherited wisdom, intuition, experience and raw observation. These are very good and sufficient for some matters. But they also need challenging and updating. We need to reflect upon them to constantly improve our knowledge and guard against prejudice and bias and errors of observation, inference, conclusion and judgement.

There may be no obvious one-to-one link between academic knowledge generated by scientific, historical or design method, and practical professional decisions we need to make or advise on. But civilisation would not be civilisation

unless its intellectuals were set aside to pay attention to improving the accuracy and predictability of the hypotheses and heuristics that govern our world-view and the conclusions we draw from what we see, encounter, analyse and attempt to change and create for the better.

Systematic knowledge generation methods, be they scientific, historical, design-thinking, ethnographic, or critical literature-based, have the overall long-term effect of refining our working models of the world (better ontology). They improve the quality of conclusions we draw from observation (better inductive inference). They improve the quality of hypotheses we select intuitively in sense-making, analysis, creating, and problem solving (better abductive inference). They improve the quality of premises (assumptions) that we use in logical reasoning and constructing and delivering arguments (better deductive inference). They may even, on rare paradigm-shifting occasions, improve the logic we use in making deductions.

Having said that there is not necessarily a one-to-one relationship between scientific or humanities research outputs on the one hand and professional knowledge and actions on the other, there may indeed be.

I gave students the following example, inspired by Brad Cantrell's work at University of Virginia School of Architecture. If you want to design innovative landscape schemes that evolve over time, with acupuncture interventions into natural run-off systems rather than concrete channelisation, then you need to have studied geomorphology and hydrology and you need to be able to model the evolution of stream system as self-organising dendritic and sinusoidal systems of erosion and sediment deposition. To accurately predict what your design might look like in one, ten, or fifty years' time, you need good predictive models and that requires scientific research via survey, modelling and analogue and digital simulation. It needs hypotheses that have been tested and refined via the scientific method. It requires theory that has emerged on the basis of those hypotheses as short-cuts to more efficient discovery of further knowledge, without re-inventing the wheel.

That's also why researchers, whether they use scientific method, historical method or design method, should peer-review each other's research and should journal the results by chronology, author and links to previous work (citations). Without that, whatever you discover from your research that may be of interest to the world, has little chance of feeding back into civilisation's knowledge base where it can improve the quality of hypotheses and heuristics guiding individual's decisions and society's progress.

Congratulations to all our hard-working colleagues who have delivered the achievements listed below. FoA is an amazing school to be part of and we can all enjoy sharing each other's glory and learning from each other's routes to success and to academic and societal impact.

Linking to the blog topic above, we record below no less than six large blue-chip competitive academic research grants secured by FoA colleagues, involving 11 of us across all departments – more than 11 actually since some

colleagues are collegiately involved in working packages on these big grants even though they are not PIs or Co-Is. The total amount of funding across these projects is 66.8M HKD.

Amazing work. Thanks all.

I would like to have been able to single out certain colleagues from below for their prolific efforts, outputs and recognitions, but I decided not to (you know who you are – thanks), since *each* achievement mentioned below, even the smallest by our most junior colleague, is a major success, of which, as Dean, I am equally proud.

Wishing you all a peaceful CNY break and a prosperous and fun Year of the Rabbit.

Chris Webster
Dean, FoA

New and current projects awarded the RGC Collaborative Research Fund

Year of Award: 2022-23

Recommended Amount of Funding (HKD): $7,124,940

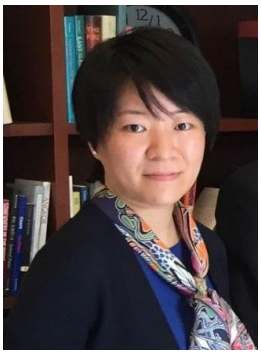
Name: Dr Chao Ren (Co-PI)

Department/Division: Division of Landscape Architecture

Funding Scheme: CRF 2022/23 Collaborative Research Project Grant

Project Title: Improvement of the understanding of the 3-dimensional wind behaviors in urban areas of Hong Kong using Doppler LiDAR system (C6026-22GF)

Project Summary:



*Designing cities to provide better urban ventilation improves the living environment. Hong Kong (HK), located in the sub-tropical climate zone and having hot and humid summer months, has one of the highest living densities in the world. In 2006, the HK Planning Department (PlanD) established the Air Ventilation Assessment (AVA) methodology. Since then, stakeholders of most major project developments have to conduct studies to optimise their designs. Currently, a territorial-wide wind profile dataset is available on the PlanD's website. It was generated using the Regional Atmospheric Modelling System. This dataset has never been validated by field observations. Recently, the uWRF (WRF BEP/BEM) model has also been used to provide input wind profiles to AVA studies. It lacks long-term field data to validate the parameterisations of surface momentum flux. Since the AVA results highly depend on input wind profiles, filling the knowledge gap is important. The research team will adopt Doppler Light Detection and Ranging (LiDAR) to develop and measure wind profiles. An annual and spatial understanding of wind profiles in a high-density urban setting will be gained. An improved understanding of wind profiles and, therefore, the urban wind environment in HK will allow better planning decisions to be made. The experience will also be of reference value to planners of other high-density cities around the world and scientists of the LiDAR research community.*

Year of Award: 2022-23

Recommended Amount of Funding (HKD): $3,548,582

Name: Dr Binley Chen (Co-PI)

Department/Division: Division of Landscape Architecture

Funding Scheme: CRF 2022/23 Young Collaborative Research Grant (YCRG)

Project Title: Climate- and environment-conscious urban growth in the Guangdong-Hong Kong-Macau Greater Bay Area (GBA): solutions and co-benefits (C2002-22Y)

Project Summary:

*Global warming caused by human activities has invoked more intense and frequent extreme weather events around the world, and urbanisation plays a nonnegligible role. Urban growth has been taking place at an unprecedented pace and it is anticipated to continue in the future. Urbanisation induces not only the convenience of living and better access to healthcare, but it also creates a series of social and environmental issues. How we act to alleviate the adverse effects of urbanisation remains a challenging issue, which requires knowledge in multiple disciplines, including urban planning, atmospheric science, environmental engineering, etc. Different spatial arrangements and distribution of urban lands are likely to significantly affect the magnitude of urban warming, diffusion of air pollutants, and human exposure to these risk factors. It has been demonstrated previously that compact and sprawling urban growth is prone to trigger intensified urban warming and exert greater human heat stress. The Guangdong–Hong Kong–Macau Great Bay Area (GBA) was proposed in recent years as a key strategic planning in China's development blueprint, and the planning and development of the GBA is still in the early stages. A careful and thoughtful planning of urban lands would benefit urban climate, environment and human health, without sacrificing the goal of urban growth and economy development. Besides, how to better assess the impacts of the planning of lands on climate, environment and human health remains a concerned issue, as China plans to achieve carbon peak and carbon neutrality. To address these essential issues, this project aims to offer solutions to climate- and environment-conscious urban growth, and to assess the co-benefits of climate, air quality and human health. This will be achieved with a team composed of members who have expertise in urban planning, climate science, atmospheric chemistry, and environmental health. In this project, we will develop a tool to optimise arrangements of lands to reduce urban warming, air pollution, and human exposure. A coupled climate-chemistry model will be improved with better secondary formation of pollution from urban sources. This modelling tool will further be used to assess how the optimised land arrangements would benefit urban warming and air pollution. The co-benefits of human health will also be assessed with cohort data. The results would offer valuable implications for the development of the GBA and contribute to the achievement of carbon peak and carbon neutrality.*

Year of Award: 2022-23

Budget to be Funded by RGC (HKD): $7,200,000

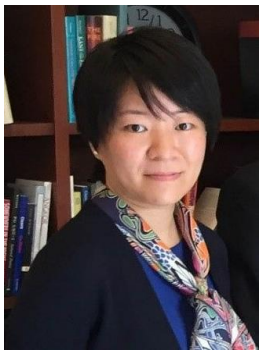
Name: Dr Chao Ren (Co-PI)

Department/Division: Division of Landscape Architecture

Funding Scheme: Research Impact Fund 2022/23

Project Title: Increasing the resilience to the health impacts of extreme cold weather on the older population under future climate change (R4040-22)

Project Summary:



*In 2018, the study team initiated a RIF project (RGC ref. R4046-18) to work on the interrelationship among climate change, the built environment, and older population living. The study focus was identified to be the increasingly hotter climate in the future due to climate change. Combined with the extreme heat understanding of Phase 1 of the study, the proposed study aims to contribute by: (1) establishing the frequency and intensity of the extreme cold and damp events, and evaluating their health effects to the older population on a year-round basis; (2) developing a more holistic mitigation action plan with better urban planning and building design under hot and cold extreme weather; and (3) developing a more holistic adaptation action plan for supporting services to increase the resilience of the older population to hot and cold extreme weather. This study will provide a methodological framework for incorporating the scientific knowledge of both extreme hot and cold weather and their associated impacts on the elderly health and well-being into a comprehensive plan for response actions.*

Year of Award: 2021-22

Funding Amount Awarded (HKD): $6,125,102

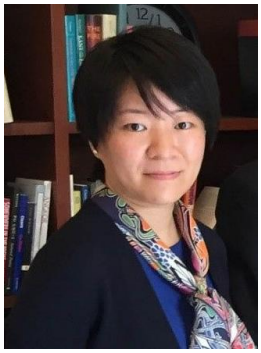
Name: Dr Chao Ren (PC)

Department/Division: Division of Landscape Architecture

Funding Scheme: CRF 2021/22 Collaborative Research Project Grant (CRPG)

Project Title: Turning 2060 Carbon Neutrality into Reality: a cross-disciplinary study of air pollution and health co-benefits of climate change mitigation of the Guangdong-Hong Kong-Macau Greater Bay Area (GBA) (C7041-21GF)

Project Summary:



*The Guangdong-Hong Kong-Macau Greater Bay Area (GBA) is now the largest fast-developing economic and industrial region in China. Provincial and municipal governments of the GBA pledge to meet the carbon neutrality (CN) target by 2060 set by the central government of China. However, concrete mitigation measures and pathways to achieve this ambitious target have yet to be made. And their potential impact on future air quality, health and socio-economy is unknown. Thus, it is important to conduct a cross-disciplinary study to explore the potential mitigation pathways and assess the consequential impacts in the GBA for developing an optimised climate policy. This study is timely needed, as climate change, air pollution, health, and socioeconomics are correlated. Our valid and reliable studies will generate a future picture of climate change mitigation and its impact on health and socioeconomics of 2030-2060, aiding the development of an optimised climate change mitigation policy and a collaborative management plan on air quality control of the GBA.*

Year of Award: 2021-22

Funding Amount Awarded (HKD): $8,320,000

Names: Dr Eric Schuldenfrei (PC) and Dean Chris Webster (Co-PI)

Department/Division: Department of Architecture

Funding Scheme: Second CRF Covid-19 and NID Exercise Group Research Proposals

Project Title: Spatial Exposure Notification (C7105-21GF)

Project Summary:

*The devastating cholera pandemics of the 19th century were solved first by epidemiology, which identified the water-borne pathogen and its spread, and then by a civil effort to re-engineer the water infrastructure of cities. How might city design change as a result of the early 21st century pandemic and how do we couple building configuration and the new infrastructure of pathogen surveillance?*

*As novel air-borne diseases such as SARS and COVID-19 (C19) overtake us, what form should our 21st century response take? Our solution must be interdisciplinary, integrating new ideas from epidemiology, architecture, and psychology. But even fundamental facts of how influenza propagates remain unobserved — we need new ways of sensing the spread of disease in the built environment.*

*We propose a new class of low-cost sensor devices that interoperate with the current Google / Apple Exposure Notification (GAEN) framework while fixing deficiencies in its design — which, by neglecting crucial spatial and temporal aspects of contagion, triggers inaccurate contact notifications. We maintain (and repair) existing privacy protections while adding new sources of data through the integration of fixed environmental sensors that let us reconstruct key spatial dimensions of contagion.*

*Exposure risk estimates are improved by more accurately measuring interactions between environment, proximity, time, location, and airflow. These metrics can enable rapid contact tracing for airborne diseases like influenza and can provide a data collection infrastructure essential for the experimentation required to refine transmission models and develop efficient responses. Such data can also guide modifications to building codes, urban environments and policy for future pandemics. By targeting the requirements to operate within architectural elements such as lightbulbs, our proposed GAEN-based sensor devices can potentially enable a massively scalable solution within existing building infrastructure.*

*The information our system collects in real time is vital to government decision-making. In the C19 pandemic, governments have struggled to*

*enact real-time regulations for quarantining, social distancing and masking. For new diseases, the nature of transmission (fomite vs airborne), incubation periods and transmission curves will again be initially unknown. Manual contact tracing schemes designed to capture this data fail at scale and therefore near-instantaneous contact tracing becomes necessary to produce rapid exposure notifications to reduce infections. Even in the case of the yearly flu, our proposal for a rapid, dynamically calibrated and trusted exposure notification system — which could simply tell potentially infected persons to wear a mask for a few days — might transform the economic and human costs in ways that cannot be hoped for through radical and exorbitant modifications to existing building HVAC systems.*

Year of Award: 2021-22

Approved Budget (HKD): $34,604,000

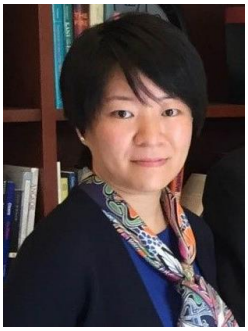
Names: Dr Chao Ren (Co-PI), Dr Jianxiang Huang (Co-PI), Professor Wilson Lu (Co-PI), Professor Bo-sin Tang (Co-PI) and Dr Frank Xue (Co-PI)

Departments and Division: Department of Real Estate and Construction, Department of Urban Planning and Design, and Division of Landscape Architecture

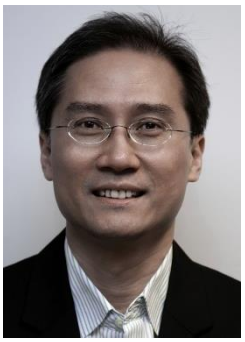
Funding Scheme: Theme-based Research Scheme 2021/22 (Eleventh Round)

Project Title: Healthy and Resilient City with Pervasive Local Outdoor Comfort/Cooling Hubs (LoCHs)

Project Summary:







*Heatwaves exacerbated by the Urban Heat Island (UHI) effect can make urban environments unbearable. US epidemiology studies have indicated that there was a correlation between high temperature and morbidity and mortality. In Hong Kong, high temperature events have significant impact on the mortality risk and hospitalisation rate. People in dense urban environments tend to stay indoors longer, become more sedentary and use more energy to run air-conditioners. Studies in Developmental & Behavioural Pediatrics showed that outdoor playtime is associated with children's body mass index scores and obesity. It is believed that systematically designed 'open streets' programmes could develop into heat resilience hubs like oasis in a desert, enabling the urbanites to reclaim the outdoors. The importance of such projects cannot be overstated considering the rapid global urbanisation while the planet faces irreversible climate change.*

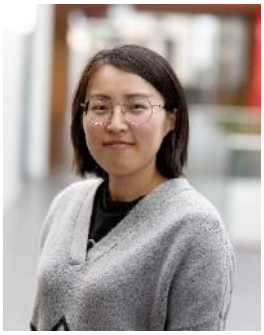
*This project intends to build upon the team's successful RGC CRF project, which demonstrated that outdoor localised comfort hubs (LoCH) exist in a town centre even in a high-density urban environment like Hong Kong with a hot, humid summer, and that, in particular, the semi-outdoor space created by lift-up building design was favourable for thermal comfort due to the combined effects of shading and induced wind downwash. We found that, even if we cannot change the climate of a whole city, we can create LoCHs to pervade all neighbourhoods*

*proportional to their scales. By employing a scientific microclimate design methodology based on advanced modelling and simulation of wind, heat, and moisture at the early building design and planning stage, thermal and wind comfort can be maximised and thermal stress risk be minimised, via an optimised combination of building forms and their relative locations in a precinct with assisting vegetation, water, surface materials, and ad hoc pavilions and other mechanical means, and the same idea can also be applied to infill redevelopment projects and other property development to create LoCHs in an existing neighbourhood. In this proposed project, "self-driving" optimisation of building forms and architectural master-plan via big data analytics and artificial intelligence (AI) programming is the target deliverable, which combines GIS, building information modelling (BIM), enhanced with high resolution wind and thermal microclimate modelling down to the scale of the pedestrian level. The state-of-the-art of computing power will be put into use in conventional architectural design and planning practice to improve contemporary and future urban liveability and sustainability, and to cope with a rapidly changing climate.*

# Faculty of Architecture

1. New colleagues

- A warm welcome to the following new colleagues, who joined our Faculty since December 2022:

| | |
|---|---|
|  | Dr Zisheng Song<br><br>Post-doctoral Fellow<br>Department of Urban Planning and Design<br><br>Zisheng completed his PhD in Real Estate and Construction Management at KTH Royal Institute of Technology, Sweden, and received his Master's degree in Business Management from Beijing University of Chemical Technology. Before he joined the Social Infrastructure for Equity and Wellbeing Lab, he was a Post-doctoral Fellow at KTH Royal Institute of Technology. His research interests focus on housing economics, residential mobility, and the built environment governance. |
|  | Dr Jinshuo Wang<br><br>Post-doctoral Fellow<br>Department of Urban Planning and Design<br><br>Jinshuo obtained her PhD in Urban Planning from Radboud University in The Netherlands. Her research interests focus on analysing the relationship among public transportation infrastructure provision, land value capture, and urban development from the perspective of urban governance and institutionalism. She is working on a research project exploring institutional frameworks of urban rail transit investment and the specific social and wellbeing impacts of transit-oriented development in the Greater Bay Area. |

| | |
|---|---|
|  | Dr Anqi Zhang<br><br>Post-doctoral Fellow<br>Department of Urban Planning and Design<br><br>Anqi obtained her PhD degree from HKU and a Master's degree from Peking University. Her research interests include urban landscape and its social-environmental impacts such as urban vitality, urban heat island and air quality, and the application of the geographical open data in urban and environmental studies. She aims to contribute to the field of urban sustainable development by providing an all-around understanding of the measurements, features, impacts and optimisation strategies of the urban landscape. |
|  | Dr Yvonne Lai<br><br>Post-doctoral Fellow<br>Department of Urban Planning and Design<br><br>Yvonne obtained her PhD in Urban Planning and Design at HKU. Prior to that, she received her Master's degree in Architecture with Distinction at the University of Edinburgh. She is a researcher at the Healthy High Density Cities Lab. Her research lies in the interdisciplinary area of healthy cities linking urban built and social environmental exposures to individual level behaviour, health and wellbeing, employing large-scale health cohorts and spatial and statistical modelling techniques. |

2. Faculty Teaching Awards 2022

- were given to the following colleagues, by unanimous decision of the Selection Panel:

    - Dr Kristof Crolla, Associate Professor, Department of Architecture
    - Mr Donn Holohan, Assistant Professor, Department of Architecture
    - Dr Eike Schling, Assistant Professor, Department of Architecture
    - Dr Guibo Sun, Assistant Professor, Department of Urban Planning and Design

  The Panel was impressed with the awardees' dedication in teaching, and their innovative pedagogical approaches to enduring excellence to enhance student learning experiences and learning outcomes.

3. Research Output Prize 2022

- Dr Jianxiang Huang, Dr Yi Xu and Dr Mengdi Guo (PhD 2018) are awarded by the University Research Committee, on the nomination of the Faculty, the 2022 Research Output Prize, for their co-authored paper:

  **Huang, J.**, **Xu, Y.**, Jones, P., Li, X., **Guo, M.**, Liu, G., & Ji., J. S. (2021). Building energy and thermo-hydraulic simulation (BETHS) for district heat system in residential communities: A case of Shenyang, China, *Energy and Buildings, 247*, 111114. https://doi.org/10.1016/j.enbuild.2021.111114.

  ***Abstract**: District Heating Systems (DHS) have received renewed attention in relation to their environmental, economic, and health benefits. Research literature on DHS tends to focus separately, either on the thermo-hydrological modelling or building energy demand. Rarely are there combined simulation approaches that consider the interactions between the district heating system and the buildings they serve. There is a practical need for a coupled simulation model to inform operation and energy retrofit strategies, such as, building insulation, water leakage prevention, and achieving comfortable indoor air temperatures. In this study, a novel simulation model, BETHS, is developed to predict the time-varying energy performance and occupant thermal comfort of a cluster of buildings served by a DHS in the urban context. The simulation results are compared with field measurement data collected for a secondary network consisting of 12 buildings and 2788 m of pipeline network over a 10-day period, in Shenyang, Liaoning, China. Predicted water temperature and indoor air temperature showed reasonable agreements with measured data. Simulation results suggested an energy saving of 35% for improved building insulation, 32% for switching from coal to gas, 18% for reduced indoor temperature, 14% for water leakage prevention, and 67% if all are combined. The BETHS model can be a valuable extension to a building energy simulation framework, and support retrofit strategies and operational decisions for existing DHS networks.*

4. Faculty Retreat 2023

- was held at Le Meridien Hong Kong, Cyberport, on 9 January 2023, with the participation of around 70 colleagues across our Departments and Division.

  On the day, colleagues were divided into different groups in both morning and afternoon sessions, to discuss and present on various issues, including new name for the Faculty; Faculty structure; handling subject identity in a Built Environment Faculty; balance between research and educational missions in the Faculty and its branding.

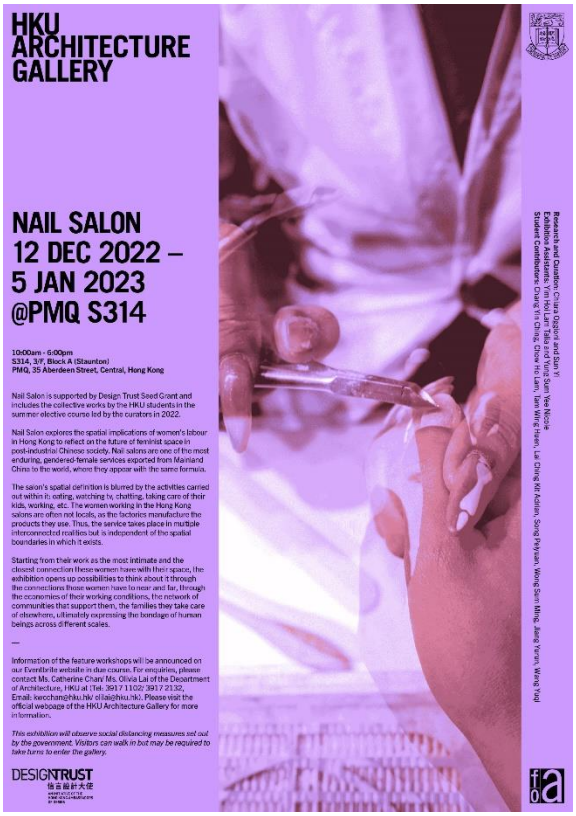
  A wealth of views, analysis, vision and specific ideas resulted, which would help make practical and directional responses to 2022's six-yearly Faculty Review in the coming months. Notes on follow-up actions will be distributed by the Faculty in due course.

More Photos at the Faculty Retreat

# Department of Architecture

1. ‘Nail Salon – Spatial Implications of Women’s Labour’ Exhibition @ PMQ

    - featured collective works by HKU students from a summer elective course in 2022, exploring the spatial implications of women’s labour in Hong Kong while reflecting on the future of feminist space in post-industrial Chinese society. The exhibition is supported by the Design Trust Seed Grant.




**Research and Curation:** Chiara Oggioni and Sun Yi

**Exhibition Assistants:** Yim Hoi Lam Talia and Yung Sum Yee Nicole

**Student Contributors:** Chang Yin Ching, Chow Ho Lam, Tam Wing Huen, Lai Ching Kit Adrian, Song Peiyuan, Wong Sum Ming, Jiang Yurun, Wang Yuqi

**Key Visual Credits:** Chow Ho Lam and Tam Wing Huen

**Date:** 12 December 2022 – 05 January 2023, 10:00 am - 6:00 pm

**Venue:** S314, 3/F, Staunton (Block A), PMQ, 35 Aberdeen Street, Central, Hong Kong

2. ‘The Lobby’ Exhibition @ PMQ

- is the first collaboration between ARC and the Hong Kong Arts Centre (HKAC). It was set up as an outpost workspace occupied by the HKAC Public Arts Team, a meeting place for consultations, conversations and critiques, to reveal the complex process-driven art and cultural production, as well as the inner workings of an arts organisation. Re-centering work-in-progress as an exhibition, the day-time ‘office’ transformed into a ‘lobby’ in the evening, hosting tea-time and shared-meal sessions to unveil the underlying whispers circulating in the art world. Through the exhibition, participants unlearned and relearned the ever-changing vocabulary that drives the art and cultural ecology in Hong Kong.


**Curatorial Team:** Taylor Cheng, Amber Lau, Ian Leung, Offy Leung, Nickole Li, Clarissa Lim, Jade Lui, Denise Yeung

**Date:** 15 December 2022 – 6 January 2023, 2:00 pm – 6:00 pm

**Venue:** S214, 2/F, Staunton (Block A), PMQ, 35 Aberdeen Street, Central, Hong Kong

3. Mr Sony Devabhaktuni

   - has written for Places Journal's Field Notes: Design Activism, a seven-part narrative survey in which more than six dozen designers and design educators around the world respond to the calls for meaningful change across today's practice and pedagogy.

     Sony's contribution, titled 'The Futures of Architecture', proposes a reframing of design imagination – from the singular solution to plural contingencies – through architectural scenario planning for Amaravati, a new capital city of the Indian state of Andhra Pradesh.

     Read his full statement: https://placesjournal.org/article/field-notes-on-design-activism-4/

4. Dr Kristof Crolla

   - attended the 2022 Taiwan Bamboo Forum – Next Generation as one of the four international speakers.

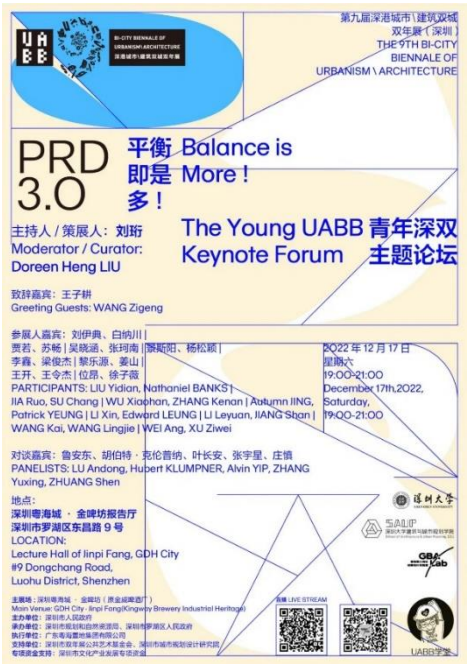
     Media coverage in Chinese:

     - 【藝術文化】2022 年台灣竹論壇 三生三藝匯聚綠色新能量 - 自由藝文網 (ltn.com.tw)
     - 匯聚綠色新能量 2022 年臺灣竹論壇拋題未來竹願景 - 奧丁丁新聞 OwlNews (owlting.com)
     - 「2022 年臺灣竹論壇」探討未來竹願景 | 生活新聞 | 20221220 | match 生活網

5. Mr Su Chang

- presented at the Young UABB Keynote Forum 2022, on the topic of ‘Architecture as Geography – Imagining the Design Techniques for “Bay-Areas”’, on 17 December 2022. The Young UABB section of the recent Shenzhen Bi-City Biennale of Urbanism/Architecture featured eight emerging architects from Greater China in collaboration with experts/scholars/ researchers of other disciplines.

  One of them was Chang, and his installation on show, titled ‘Fishing: Becoming Lo Ting’, was a collaboration with historian/theorist Ruo Jia (Pratt/Harvard). The project imagined the possibility for post-human subjects to participate in the construction of water-environmental technologies. The collaboration emerged out of Chang’s research on sustainable material culture in Hong Kong’s fishing villages and Ruo’s theoretical exploration of post-humanism.




‘Fishing: Becoming Lo Ting’
by Su Chang and Ruo Jia

6. In Memory of William S.W. Lim (1932-2023)

- We express our sadness in the passing of architect, urban theorist, and advocate William Siew Wai Lim, who had been associated with the Department of Architecture in many ways throughout his life.

  Read the full obituary by Dr Eunice Seng: https://www.arch.hku.hk/in-memory-of-william-s-w-lim/

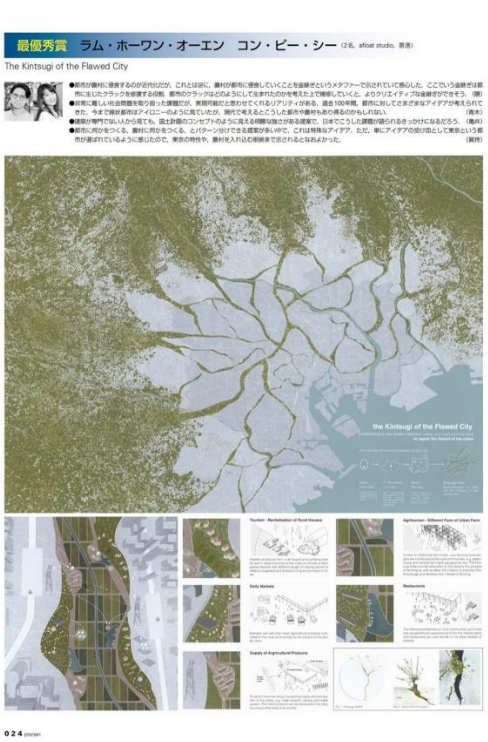
From left to right: Fumihiko Maki, David Lim, Tao Ho, Sumet Jumsai and William S.W. Lim, at the launch of Tao Ho's solo exhibition, 'Painting, Sculpture, Design, Architecture' at the University Museum & Art Gallery, Fung Ping Shan Building in HKU on September 11, 1995. Source: William S.W. Lim's collection.

7. Central Glass International Architectural Design Competition

- ARC alumna Jessica Kong (MArch 2018) won First Prize at the 57th Central Glass International Architectural Design Competition (セントラル硝子国際建築設計競技), with her team proposal 'Kintsugi of the Flawed City', which iterates on the possibility of establishing a new system between cities and rural communities as a strategy to repair the flaws of the cities.

  Competition jury included Kengo Kuma [Kengo Kuma & Associates], Tadao Kamei [Nikken Sekkei Ltd.], Jun Aoki [AS], Goichi Kamochi [Obayashi Corporation], Yoshiharu Tsukamoto [Atelier Bow-Wow], and Junya Ishigami [Junya Ishigami＋Associates].

  The proposal is also featured in the January 2023 issue of *SHINKENCHIKU* Magazine (新建築).

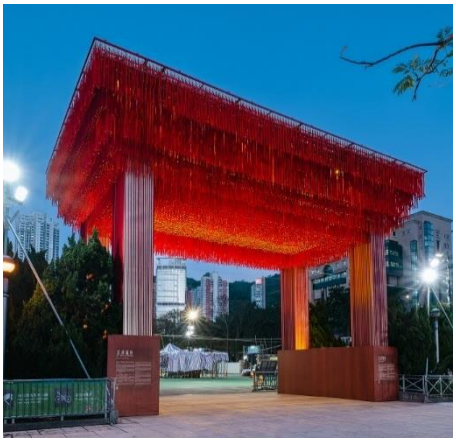



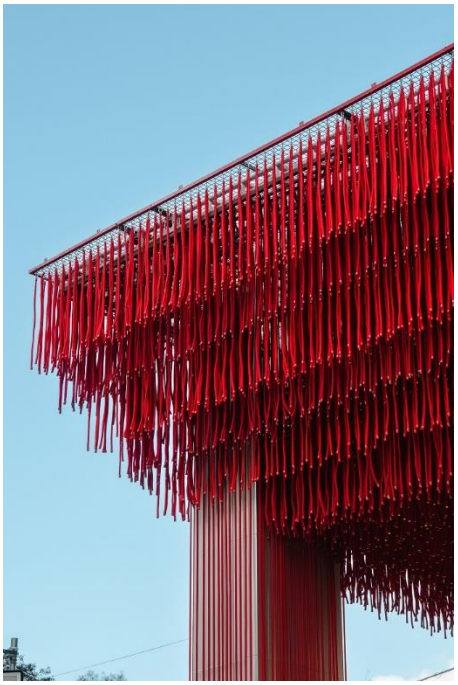

More Information

8. HKIA Idea Design Competition

- ARC alumnus Jacky Chan Yin Fung (MArch 2017), together with other young architects Vivian Wong Wai Yin, James Tang Yu Ching and Nicolas Chung Siu Kay, won in the HKIA Idea Design Competition with their work 'The Gate of Blessings', which explores the balance between traditional and innovative understanding of blessings, love and care in architecture. The design team pushes boundaries by recreating a traditional form of Chinese architecture with unconventional materials, aiming to evoke the visitor's spatial perception and elevate sensual experiences with moments of unexpected joy when entering The Gate of Blessings. The winning work has set foot in Victoria Park during the Lunar New Year Fair 2023.

  Press coverage (in Chinese):
  - 港角
  - 東方 / on.cc
  - HK01





# Division of Landscape Architecture

1. Dr Chao Ren

   - has been selected as an awardee of Rosie Young 90 Medal for Outstanding Young Woman Scholar for her academic innovation and excellence. The Medal recognises outstanding research and scholarship, and distinguished contributions to the University and the community. A presentation ceremony will take place in February 2023 (tentative).

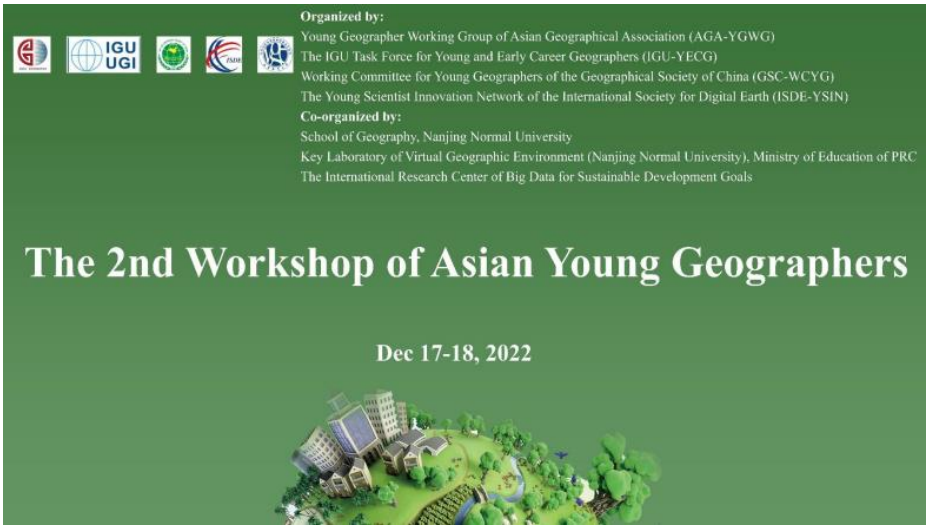
2. Dr Binley Chen

   - co-organised the inaugural Advanced Urban Remote Sensing Workshop at HKU on 3–4 December 2022, for which he chaired the Technical Session 1 that comprised six invited talks.

**04:50 pm – 06:30 pm Technical Session 1**
**(Chair: Dr. Bin Chen, The University of Hong Kong)**
(Venue: 11/F, Social Sciences Chamber)

| | |
|---|---|
| 4:50 pm – 5:05 pm | Dr. Weifeng Li, The University of Hong Kong, HKSAR, China<br>**Who are More Exposed to PM2.5 Pollution: Integrating Mobile Phone Location Data and Satellite-Based Deep Learning Approach** |
| 5:05 pm – 5:20 pm | Dr. Meng Gao, Hong Kong Baptist University, HKSAR, China<br>**Stereoscopic Monitoring: A Promising Strategy to Advance Diagnostic and Prediction of Air Pollution** |
| 5:20 pm – 5:35 pm | Dr. Fan Zhang, Hong Kong university of Science and Technology, HKSAR, China<br>**Perceiving Cities with AI and Street-Level Imagery** |
| 5:35 pm – 5:50 pm | Dr. Lu Yi, City University of Hong Kong, HKSAR, China<br>**Establishing a citywide street tree inventory with street view images and computer vision techniques** |
| 5:50 pm – 6:05 pm | Dr. Xiaojiang Li, Temple University, USA<br>**The discrepancies of the urban heat exposure metrics in urban heat mapping** |
| 6:05 pm – 6:20 pm | Dr. Aqil Tariq, Mississippi State University, USA<br>**Spatio-temporal variation of decadal seasonal heat island mapping, using MODIS and ground stations data** |

- gave an invited talk on 'Urban Greenspace Exposure and Inequality Assessment Using Geospatial Big Data', at the 2nd Workshop of Asian Young Geographers on 17 December 2022.




- received 2022 China New Talents in Science and Technology – Shining Potential Award.



5. Ms Vincci Mak

- has been awarded a funding from the University's Teaching Development Grant (TDG) for her project:

  Project Title: Developing Social-inclusion in University Curriculum: How to Equip Students with Disciplinary Knowledge Training to Become the Social-inclusion Enabler in the Future (Project no. 917)

  Funding Amount: HK$299,892 (Central: HK$249,910; Faculty: HK$49,982)

  Project Duration: 12 months

# Department of Real Estate and Construction

1. Professor Wilson Lu

   - was invited to speak at the International Conference on MiC, as part of the Construction Innovation Expo (CIExpo) 2022. The topic he presented at the Conference was about MiC logistics and supply chain management with a focus on its quality assurance and quality control (QA/QC), which has been much disrupted by the COVID-19 pandemic. He also introduced a solution called 'MiC Trilogy' (MiC 三寶) based on BIM and Blockchain.


2. Professor Daniel Ho and Professor Kelvin Wong

   - were invited by the Hong Kong Institute of Surveyors to serve as Chairman and Member of the Building Surveyor Awards 2023 Jury Panel (Research and Innovation), respectively.


3. Ar Ka-sing Yu

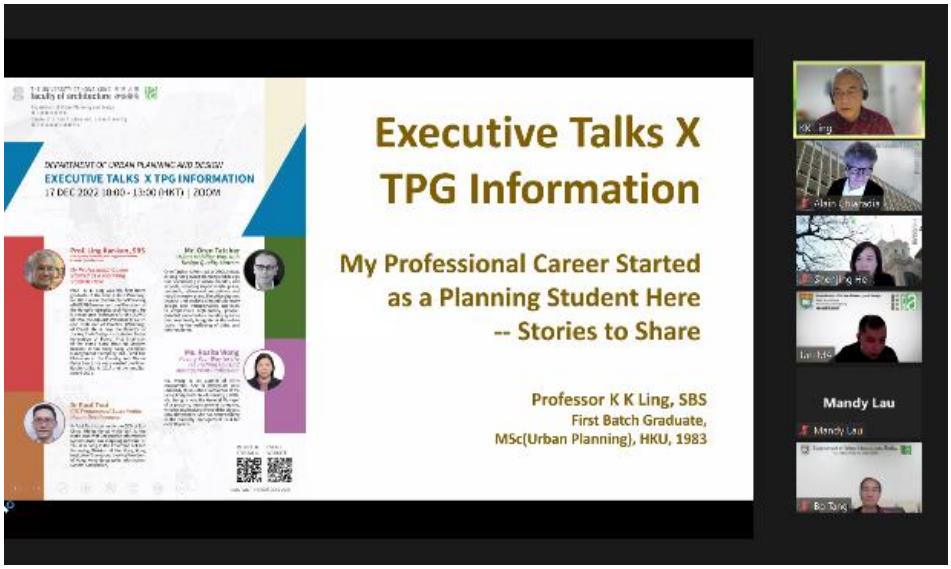
   - has been appointed as a new member of the Advisory Committee on Built Heritage Conservation, for a term of two years with effect from 1 January 2023.

     Government Press Release

# Department of Urban Planning and Design

1. Executive Talks x TPG Information sharing session

   - was held via Zoom on 17 December 2022, with nearly 100 participants joined in. The virtual event was designed as a platform for current and prospective master's students to learn and discuss the ins and outs of working in the urban planning and design industry. Top-level executives, including Professor Ling Kar-kan, Sr Paul Tsui, Mr Oren Tatcher and Ms Rosita Wong, were invited to share their insights of what it takes to succeed in the field.



## Why does Sustainable Urban Planning Matter?

- **Protect green space** → carbon sequestration and better living environment
- **Enhance walkability** → less driving, lower carbon emission and healthier lifestyle
- Preserve natural environment, such as coastal and river → higher biodiversity
- e.g. the Northern Metropolis development is proposing new conversation parks and wetland park extension area to drive the sustainability

*Northern Metropolis Development Strategy Report*


## Urban Mobility: Why Hub Design Quality Matters

University of Hong Kong
December 17, 2022

OREN TATCHER

OTC

## Career Prospects of Property Management

- There is increasing demand for property management practitioners.
- As long as there are buildings, there require property management, not much affected by economic downturns.
- Currently there are around 12,000 professional property managers and officers.
- More and more property management professionals (managerial grade or above) and supervisory grade personnel are required upon occupation of more new buildings. Expected to increase to 14,000 in the coming 5 years.

2. Professor Shenjing He

   - was invited to join the editorial board of *The Geographical Journal* in December 2022.

   More Information

   - was invited to join the RSA (Regional Studies Association) International Hour Webinar Series, entitled 'Exploring the Chinese Social Model: Beyond Market and State', as a discussant, on 7 December 2022.

3. Dr Si Qiao

   - won the 2nd Runner Up of the HKSTS Outstanding Student Paper Award of the Hong Kong Society for Transportation Studies on 12 December 2022, for her paper titled 'Driving a Future Transport Scheme Towards Spatial Justice: Mobility-as-a-Service-Oriented Public Transit and its Accessibility', supervised by Professor Anthony Yeh.

# Centre of Urban Studies and Urban Planning

1. Mr Alain Chiaradia

   - was invited to present his research on spatial accessibility at the International Transport Forum (ITF) Research Work and Opportunities for Collaboration, on 21 November 2022, in Bangkok, Thailand. The ITF at the Organisation for Economic Co-operation and Development (OECD) is an intergovernmental organisation with 64 member countries. It acts as a think tank for transport policy and organises the Annual Summit of transport ministers, being the only global body that covers all transport modes.

     More Information

   - was invited to present his research on Wider Economic Impact (WEI) of transport investment at the MIT – City Form Laboratory research seminar led by Professor Andres Sevtsuk, on 1 December 2022.

2. Dr Weifeng Li, Ms Yishiqin Li (PhD student) and Dean Chris Webster

   - have the following paper accepted for publication:

     **Li, W.**, **Li, Y.**, Li, X., **Webster, C.** (2023). Developer obligations and negotiation-based benefit distribution in urban redevelopment: Evidence from Shenzhen, China. *Cities*. [Manuscript Number: JCIT-D-21-01463R2]

     ***Abstract***: *The distribution of potential benefits between local governments and developers in urban redevelopment shows a global popularity of negotiating developer obligations for more value capture in exchange for the adjustments to land-use regulations. Existing literature has focused on the institutional factors at national or city level that determine the effectiveness of developer obligations for public value capturing, neglecting the potential gains obtained by developers and overlooking the influencing factors at project level. This study examines the impact of project-based factors on distributional outcomes by applying a quantitative analysis of citywide urban renewal projects in Shenzhen, China. In the Chinese context, the benefit distribution is affected by the involvement of state-owned enterprise (SOE) developers, which have established special relationships with local*

*governments and such relationships vary between local and central SOEs. The results indicate that compared with non-SOEs, local SOEs contribute more negotiable developer obligations, while central SOEs are more likely to receive administrative support for project promotion. Though, neither of them is granted extra development density. This study sheds light on the strategies adopted by Chinese local governments to achieve comprehensive objectives via differentiated treatment to SOEs and non-SOEs in the negotiation-based benefit distribution of marketized urban redevelopment.*

# iLab

1. Mr Ziyu Peng, Professor Wilson Lu and Dean Webster

   - have the following paper accepted for publication:

     **Peng, Z. Y., Lu, W. W. S.***, & **Webster, C.** Identifying the impacts of trading construction waste across jurisdictions: A simulation of the Greater Bay Area, China using non-linear optimization. *Environmental Science and Pollution Research* (Manuscript No.: ESPR-D-22-06348R2)

     ***Abstract:*** *Local authorities worldwide are actively encouraging waste material trading within their jurisdictions as a promising strategy to develop a more circular economy. Construction activities consume natural resources intensively and generate massive solid waste. With proper ex-post treatment, the was te materials can be recycled or even directly reused, hence contributing to the circular economy. Using the Hong Kong-Macao-Guangdong Greater Bay Area (GBA) as the context, we simulate the impacts of a construction waste trading market on the waste flows and the resulting monetary exchanges. Our model views each city as a representative agent that maximizes the benefit of conducting waste recycling. The interactions of their profit-seeking behavior will lead to optimized overall social costs. We then solve this problem using a non-linear optimization algorithm. The simulation shows that with a fully operational market, the traded waste materials amount to 1253.84 million $m^3$, covering 82.36% of GBA's total construction waste generation in a typical year. The monetary transactions equal to US$38.41 billion. Such huge payments present a great opportunity for the GBA cities to develop their recycling industries. In addition, we argue that although increasing public pressure is effective in reducing inequalities in the final waste distribution, it also results in fewer financial transactions flowing to less-developed cities, which reduces their funding for developing the circular economy.*

# Ronald Coase Centre for Property Rights Research

1. Professor Lawrence Lai

- has published the following articles:

(i) **Lai, L. W. C.** (2023). From fish to land grabbing - a note on the transition of the concept of "common property" in property rights research under two traditions. *Planning Theory, 0*(0). https://doi.org/10.1177/14730952221121072

***Abstract:*** *This essay begins with a trialogue on the definitions of "common property" and introduces two "traditions" of interpreting property rights. The older, traced to Gordon (1954) and propagated by Cheung (1970), distinguishes common from communal property; the younger, to Ciriacy-Wantrup & Bishop (1975) and made popular by Ostrom (2000), calls "commons" (communal in the sense of the older tradition) "common property. With the help of three matrices, the essay summarises the two traditions and explains that property rights and access are two distinct dimensions, respectively de jure and de facto, of resource enjoyment.*

(ii) **Lai, L. W. C.** (2023). "No property is an island": The private lot as the basic unit of landuse planning & management of a wider world. *COSMOS + TAXIS, 11*(1+2), 90-96. https://cosmosandtaxis.files.wordpress.com/2022/12/lai_ct_vol11_iss1_2.pdf

***Abstract:*** *Informed by basic neo-institutional economic and property law concepts, this essay points out that private property in the form of a lot is rarely an isolated piece of land due to the social nature of private property of land; and explains that private property rights of land necessarily include the negative rights not to use, to derive income or alienate. The distinction between de jure rights & duties and de facto access conditions is useful; and the number of individuals on land should not affect the nature of private property though it may affect its use. Reference is made to an interesting re-interpretation of The Tale of Peter Rabbit by Blomley.*

***Keywords:*** *Private property rights, exclusivity, negative rights, lot, layout, spatial division of labour*

- was interviewed by ViuTV's documentary programme '經緯線 / Now Report', in the episode '戰爭留痕' [Traces of Wars], in which he shared his research on military relics during a field trip with students to Devil's Peak. The interview came out in November 2022 and is now available on YouTube.

# Sustainable High Density Cities Lab

1. Dr Jianxiang Huang

   - has published the following papers:

   (i) Khoo, C.K., Li, X., & **Huang, J.*** (2022). Green behaviours and green buildings: A post-occupancy evaluation of public housing estates in Hong Kong. *Sustainability, 14* (16), 9862. https://doi.org/10.3390/su14169862

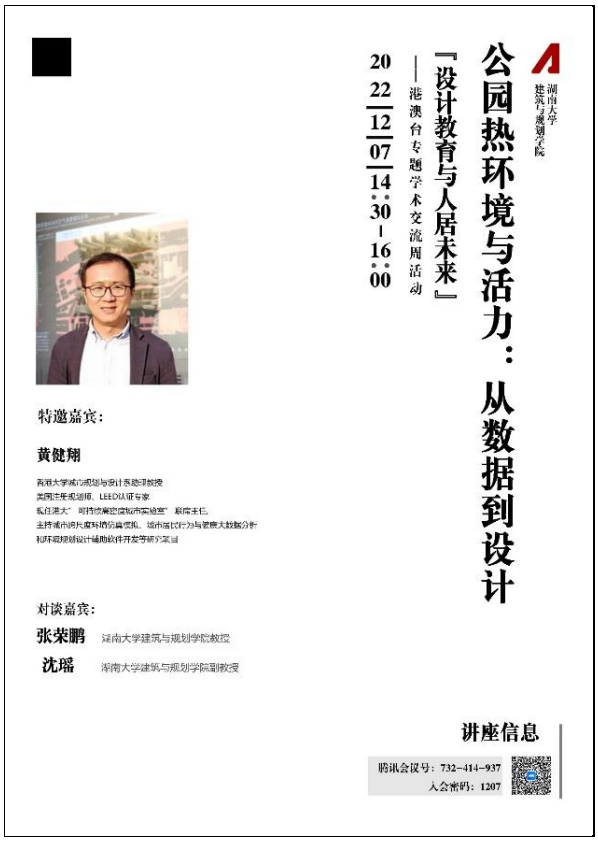
   ***Abstract:*** *A green building is believed to promote green behaviors from energy-saving to waste recycling. Green building certifications have attracted wide interest, and some were made mandatory for publicly funded developments in cities such as Hong Kong. Policymakers debate whether the city's expanding public housing stock should be exempted from the green certification mandate for reasons of cost, while evidence of behavioral benefits in green residential buildings is thin, or non-existent for public housing estates. This paper describes a post-occupancy evaluation study on self-reported green behaviors in Hong Kong's public housing estates. The study subjects are 400 occupants from two pairs of public rental housing estates with or without green certifications. A natural experiment was conducted, in which surveyed occupants were allocated to certified and uncertified estates via a random lottery, without significant differences in socioeconomic characteristics and propensity to green behaviors a priori. The results show that green-certified housing estates partially induced energy-saving behaviors, but not water saving or waste recycling, nor does it enhance satisfaction or green awareness. A certification alone is insufficient to induce behavioral changes, rather, efforts should be invested in conveying the green message, public education, and appropriate fiscal incentives.*

   (ii) Wang, P., Xiang, H., Guo, M., Shi, Y., Chong, K.C., **Huang, J.**, & Ho, H.C.* (2023). Indoor and roadside exposures to traffic noise and cardiovascular mortality and the role of urban environmental stressors across a high-rise, high-density environment: A case study in Hong Kong. *Building and Environment, 229*, 109945. https://doi.org/10.1016/j.buildenv.2022.109945

   ***Abstract****: Traffic noise is a common factor associated with elevated cardiovascular risks. Compact environment and building morphology in a high-rise, high-density city can magnify traffic noise in various locations (e.g., roadside and indoor environments). However, no studies have investigated how indoor and roadside traffic noise separately and jointly influenced cardiovascular risks across a compact environment. Thus, this study applied negative binomial*

*generalized linear mixed models to estimate associations between roadside/indoor exposures to traffic noise and cardiovascular mortality (2006–2015). Stratified analyses were applied to evaluate effect modifications by canopy-layer and surface-layer urban heat island (UHI), night-time light, and greenness. Our results showed that each 1 dB increase in roadside and indoor exposures to traffic noise was positively associated with 1.183 (95% confidence interval (CI): 1.068–1.311) and 1.046 (95% CI: 1.012–1.081) times the risk of all cardiovascular deaths, respectively. When both types of noise were included in the models, the associations of roadside exposure were attenuated and became non-significant whereas the associations of indoor exposure remained consistent. Stronger and significant associations between roadside exposure and cardiovascular mortality were observed in areas with more intensive UHI, more severe light pollution, and lower average greenness. Robust impacts regarding indoor exposure to traffic noise were found after roadside exposure was accounted for. In conclusion, urban environment stressors could act synergistically on their adverse effects on cardiovascular outcomes. Built environment interventions should be applied to minimize indoor exposure to traffic noise to reduce cardiovascular risks, despite complex urban morphology.*

- was invited to lecture at the Department of Urban Planning at Hunan University on 7 December 2022. Titled ‘The Thermal Environment and Vitality of Urban Parks: from Data Analytics to Design’, the lecture was part of the Design Education and Future Human Habitat Lecture Series.



- gave a presentation on ‘Embedding Technologies in Urban Design Education: the Master of Urban Design Programme at the University of Hong Kong’, at the 3rd Urban Design Forum hosted by Harbin Institute of Technology on 10 December 2022. Dr Huang also led the discussion on the sub-topic of blending technology with design.


2. Professor Phil Jones and Dr Jianxiang Huang

   - have published the following paper:

     **Huang, J.**, **Jones, P.***, & He, X. (2022). Masks, ventilation and exposure time: A web-based calculator of indoor COVID-19 infection risk. *Frontiers in Built Environment, 8.* https://doi.org/10.3389/fbuil.2022.986923

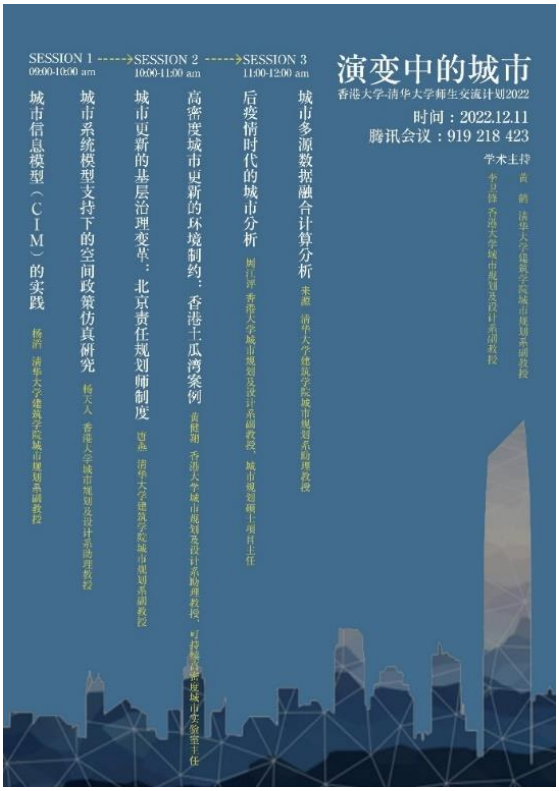
     ***Abstract:*** *Two and half years into the COVID-19 pandemic, there is quite a lot of confusion over public health guidance necessary in order to reduce disease infection risks, from room air ventilation, the use of air cleaners, and type of mask and whether or not to wear a mask. This paper describes the development of a novel web-based calculator for use by the public to assess COVID-19 infection risks between a source and receiver in a typical room. The aim is to inform the disease infection risk in response to varying exposure times, mask-wearing, and viral variant in circulation. The calculator is based on the state-of-the-art research evidence, i.e., a room air ventilation model, mask infiltration efficiencies, room cleaner efficiencies, the quanta emission rates of various viral variants of COVID-19, and the modified Wells Riley equations. The results show that exposure times are critical in determining transmission risk. Masks are important and can reduce infection risk especially over shorter exposure times and for lower source emission quantum. N95 respirators are by far the most effective, especially for Omicron, and the results indicate that N95 respirators are necessary for the more infectious variants. Increasing fresh air ventilation rates from 2ac/h to 6ac/h can have a considerable impact in reducing transmission risk in a well-mixed space. Going from 6 ac/h to 12ac/h is less effective especially at lower exposure times. Venues can be classified in terms of risk, and appropriate high ventilation rates might be recommended for high-risk, speaking loudly and singing, such as classrooms and theatres. However, for low risk, quiet and speaking softly venues, such as offices and libraries, higher ventilation rates may not be required; instead, mechanical ventilation systems in combination with air cleaners can effectively remove small fraction size aerosol particles. The web-based calculator provides an easy-to-use and valuable tool for use in estimating infection risk.*

   - participated in the ‘Low Carbon Housing – from Theory to Practice’ research symposium, hosted by the School of Architecture and Planning at Hunan University on 19 December 2022.

     In this symposium, Professor Jones delivered a presentation on ‘Transition to Zero Carbon’, while Dr Huang spoke on ‘Building Energy, Micro-Climate and Health in High-Density Cities: Evidence from Hong Kong.’ The symposium was also joined by Professor Joanne Patterson of Cardiff University, Professor Rongpei Zhang of Hunan University, Professor Yixin Chen of Hunan University, Dr Hu Du of Liverpool John Moores University and Dr Emmanouil Perisoglou of Cardiff University.


3. Dr Jianxiang Huang, Dr Tianren Yang and Dr Jiangping Zhou

   - presented their research studies at the HKU-Tsinghua Research Symposium: Cities in Evolution, on 11 December 2022. The Symposium was joined by scholars from Tsinghua University, and was moderated by Dr Weifeng Li (DUPAD) and Dr He Huang (Tsinghua University).



# Urban Analytics and Interventions Research Lab

1. uLab researchers

   - have published the following papers:

      (i) **Sun, G.**, **Choe, E. Y.**, & **Webster, C.** (2022). Natural experiments in healthy cities research: How can urban planning and design knowledge reinforce the causal inference? *Town Planning Review, 94*(1), 87-108. https://doi.org/10.3828/tpr.2022.14

      **Town Planning Review 94.1 - Featured Article:** The editorial team have selected this article as a particularly influential piece from last year's volume and, as such, they are highlighting it on their blog and make it free to read for a limited period.

      More Information

      ***Statement:*** *Our article comments on what makes a strong research design for natural experiments in healthy cities research. Researchers often ask questions about* cause *and* effect*: in this field, causes are built environment interventions via urban planning and design practices, such as park renovation, a new bus line or a housing redevelopment programme; effects are individual and community health and well-being.*

      *Recently, discussions about natural experiment have intensified. This may be partially because the Nobel Prize in Economic Sciences in 2021 went to the three scholars who demonstrated how natural experiments could infer causality in real-world problems when randomised controlled experiments are impossible (The Nobel Prize 2021). In healthy cities research, John Snow's London cholera study is a classic and oft-cited natural experiment. But what is rarely cited is how Snow spent strenuous efforts in an as-if random treatment-control group assignment, in which he used substantive knowledge of water utility organisation in London to validate the group comparison to conclude cholera is a waterborne infectious disease.*

      *There is a growing interest in natural experiments, both in planning and public health (Craig et al., 2012; Craig et al., 2022; Chanam et al., 2022). But designing studies to advance the science of healthy cities and guide evidence-based policy and planning is still fraught with difficulties. The UK Medical Research Council's broad definition in 2012 allows for studies to be termed natural experiments even if they do not attempt to approach the as-if randomised assignment as a randomised control experiment. Following a contemporary debate in the philosophy of social sciences, our analysis suggested that such a broad definition is not constructive. Defining a study as a natural experiment based on it involving a naturally occurred intervention, has led to a rather chaotic research landscape. Drawing*

*on three well-documented natural experiment research projects that did not attempt as-if-random assignment to treatment and control groups, we note that the causality inferred is hardly convincing.*

*When moving from association to causality, the key is how we exclude (un)observable confounders. In a strong natural experiment, detailed planning and design knowledge of how the interventions were produced should have a more central role at the research design stage to obviate confounders. Our paper elaborated on how such knowledge can help discover strong natural experiments with as-if random treatment-control assignment, and real-world relevance. We offer a simple conceptual framework for strong natural experiment design in urban planning and policy, and we refer as the LARD principle: ideally, the assignment to treatment or control group should have the strength of* **L**egal **A**ssignment*, by strong public regulation or by private contract; and this barrier should have the effect of preserving an as-if* **R**andom **D**istribution *of confounders between the treatment and control groups.*

*We advocate that as natural experiments become more popular in the planning field, the term should specifically refer only to an experimental design-based approach that uses strong research design. Qualitative research in policy evaluation typically comes as an adjunct to help interpret quantitative surveys. We argue that qualitative research should be more central at the experimental design stage, with planning and design domain-specific knowledge being employed* ex-ante *to reinforce the power of causal inference by improving research design, not just being employed* ex-post *to interpret survey findings.*

(ii) **Choe, E. Y.**, **He, D.**, & **Sun, G.*** (2022). Trading-off transit and non-transit physical activity among older people: Evidence from longitudinal accelerometer data of a natural experiment study. *Journal of Urban Health*. https://doi.org/10.1007/s11524-022-00709-4

***Abstract:*** *This study used a natural experiment of a new metro line in Hong Kong to examine trade-offs between transit-related and non-transit-related physical activity (PA) among 104 older people (aged ≥65 years) based on longitudinal accelerometer data with a travel diary that distinguished transit-related and non-transit-related PA. Difference-in-Difference (DID) analysis compared PA changes between treatment and control groups. We found that new metro stations have trade-off effects between transit and non-transit PA: After opening metro stations transit-related PA increased by 12 minutes on average per day, but non-transit-related PA decreased by 18 minutes. In addition, the proportion of time spent in transit-related PA increased by 6%. The results suggested that new metro stations could generate transit-related PA, but it might shift from non-transit-related PA among older people. Our findings revealed trade-off effects of public transit interventions and have significant implications for transport and healthy ageing studies.*

(iii) **Choe, E. Y.**, **Du, Y.**, & **Sun, G.*** (2022). Decline in older adults' daily mobility during the COVID-19 pandemic: the role of individual and built environment factors. *BMC Public Health, 22*(1), 2317. https://doi.org/10.1186/s12889-022-14780-8

***Abstract:*** *Our results show that the duration of active travel declined from 174.72 to 76.92 min per week, and that the public transport use frequency decreased from an average of 6.14 to 3.96 trips per week during the COVID-19 pandemic in September 2020 (before the rollout of vaccination programme). We also found residential density ($p < 0.05$) and the number of bus stop was negatively associated with the decline in their active travel ($p < 0.01$), while a higher destination mix was associated with a more significant decrease in active travel ($p < 0.01$). Higher availability of recreational facilities in neighbourhoods was associated with a greater decrease in public transport use ($p < 0.05$). In addition, those who were older or had depressive symptoms, which are considered a vulnerable group, were negatively associated with decrease in their mobility ($p < 0.001$).*

*Maintaining mobility and social interactions are crucial for older adults' health during the COVID-19 pandemic. This study found that individual and environmental factors affected older adults' active travel and public transport use during the pandemic. Our findings contribute to understanding the COVID-19 impact on daily mobility in older adults and support more effective active travel promotion policies in the post-pandemic future.*

(iv) **Du, Y.**, **Sun, G.***, & Kwan, M.-po. (2022). Transit-oriented development for older people: Does using multiple public transport options improve their physical and mental health? *Journal of Transport and Land Use, 15*(1), 729-753. https://doi.org/10.5198/jtlu.2022.2152

***Abstract:*** *Transit-oriented cities often use urban rail transit (e.g., metro) to lead public transport development (TOD), which might overlook other public transport options (e.g., bus) that matter for the health and wellbeing of older people. We investigate older people's public transport use patterns and how multiple public transport options are related to the physical and mental health of older people. We found that older people prefer multiple public transport options rather than the metro-dominated single-mode, and this travel preference benefits the physical and mental health of this population. Our research helps deepen the understanding of public transport use and associated health outcomes among older people and has policy implications for TOD planning concerning the ageing population.*

(v) **He, D.**, **Sun, G.***, De Vos, J., & **Webster, C.** (2022). The effects of metro interventions on physical activity and walking among older adults: A natural experiment in Hong Kong. *Health & Place, 78,* 102939. https://doi.org/10.1016/j.healthplace.2022.102939

***Abstract:*** *This paper provides causal inference on how transport intervention affects moderate-to-vigorous physical activity (MVPA) and walking among older adults using a natural experiment of a new metro line in Hong Kong. A longitudinal survey of 449 cohort participants was collected before and after the metro operation. Treatment groups live within a 400m walking buffer of the new metro stations, while control groups are located around comparable stations on existing metro lines. These metro lines were planned at the same time using similar principles, but the intervention line was built later due to different financial models. Our difference-in-difference (DID) models found that the new metro line significantly decreased older adults' weekly MVPA (−129.33 min, $p < 0.05$) in treatment groups, while the effect on change in walking time did not significantly differ between the treatment and control groups. We also found heterogeneous treatment effects among gender and age subgroups. Furthermore, our time effect tests suggested that older adults' physical activity and walking levels may stabilise, based on participants living around a metro station operated four years ago with another comparable station operated three decades ago. This practice-based evidence suggests that new metro developments might not promote physical activity and walking levels among older adults in the high-density city of Hong Kong.*

- have the following article accepted for publication:

  **Sun, G.**, & **Du, Y.** (2023) New metro and subjective wellbeing among older people: A natural experiment in Hong Kong. *Transportation Research Part A: Policy and Practice*, 1-15 (accepted in January 2023).

  ***Abstract:*** *Research into transport and subjective wellbeing impact at older ages are still at an early stage. It is still unclear whether the transport intervention (e.g., new transport infrastructure) can effectively promote older people's subjective wellbeing, and if so, through which pathways. This paper provided causal inference on the effects of public transport infrastructure on evaluative, hedonic and eudaimonic wellbeing among older adults using a natural experiment of a new metro line in Hong Kong. A longitudinal survey of 449 cohort participants was collected before and after the new metro operation. Our Difference-in-Difference (DID) modelling results suggested that it might be difficult to delineate a direct pathway from public transport infrastructure provision to subjective wellbeing improvement among older people. The causal linkage is more plausible for the new metro could contribute to the subjective wellbeing only if older people can adapt to it; for those who wanted to maintain or increase bus use after the metro intervention, we found a negative association with better subjective wellbeing. Our natural experiment study provides practice-based evidence for transport planning and healthy ageing policies.*

2. Dr Guibo Sun

   - was invited to be Associate Editor for the *Journal of Transport & Health* at Elsevier, a flagship journal in its field that brings researchers to some of the most exciting research developments in transport and health. He assumed the role in January 2023.

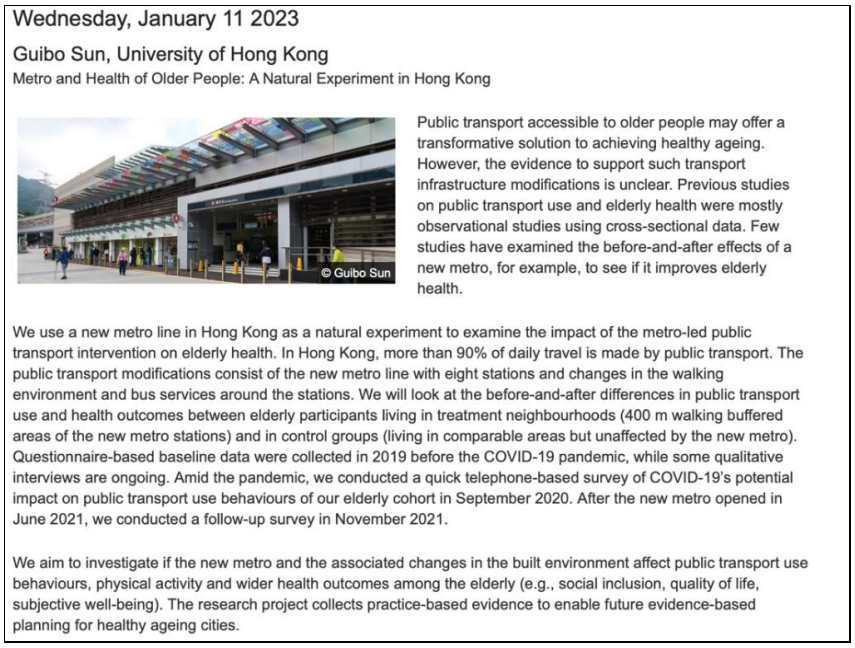
   - received a grant of HK$1M from the HKU Seed Funding for Strategic Interdisciplinary Research Scheme, for his project titled 'Methodologies for assessing specific social, economic, health and wellbeing impacts of volumetric urban designs of metro infrastructure projects in the Greater Bay Area', for a period of three years from June 2022 to June 2025.

   - has been invited to give the following seminars:

     (i) 'New Metro and Subjective Wellbeing Among Older People: A Natural Experiment in Hong Kong', at RAM, Department of Spatial Planning, TU Dortmund, on 28 July 2022.


More Information

(ii) 'Metro and Health of Older People: A Natural Experiment in Hong Kong', as part of the Pt.Talks series at the Chair of Planning Theory and Urban Development, Faculty of Architecture, RWTH Aachen University, on 11 January 2023. Through the seminar, his methodological expertise on urban interventions and natural experiment also added to the curriculum at RWTH Aachen University and the exchange between the two institutions.




More Information

(iii) On methodologies for assessing social, health and wellbeing impacts of urban interventions in high-density cities, at The Bartlett Centre for Advanced Spatial Analysis (CASA), UCL, on 8 February 2023:

***Abstract**: Recently, high-density cities have experienced a rapid increase in the ageing population, together with changes in building, transport and open space. My research aims to study how these changes in built environment affect the social, health and wellbeing outcomes. Rigorous methods, such as natural experiments, are used to collect causal evidence of social and health impacts imposed by urban interventions. The cases include new metro, urban renewal and street experiments in Hong Kong, a three-dimensional and volumetric high-density city. In this seminar, I will present our efforts in research niches of Urban Analytics and Interventions Research Lab at the University of Hong Kong.*

3. PhD Student Exchange

- uLab jointly hosted two peer talk sessions with the New Urban Researchers' Seminar Series (NURSS) in October and November 2022. The peer talks aimed to strengthen academic exchange among research postgraduate students, featuring TU Dortmund University's PhD students Víctor Cobs-Muñoz on 'Environmental Justice and Place: Creating a Framework Proposal to Approach Social-ecological Sacrifice Zones', and Liudmila Slivinskaya on 'Reading Urban Form of Housing Estate through Place'. With backgrounds in Chile and Belarus respectively, the two speakers carried their cultural roots into their research interests, which made the talks unique for Hong Kong-based doctoral researchers.

  The peer talks were part of Víctor and Liudmila's one-month academic visit at uLab, during which they shared their PhD research projects to exchange ideas with counterparts in the Department of Urban Planning and Design at HKU. The academic exchange is funded by the DAAD/RGC Joint Research Scheme (G-HKU703/20; PI: Dr Guibo Sun).


¡Gracias!