'HKU Anthem used to generate floor plans' (Dr Frank Xue, FoA)

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]

Notes on the Degree Show

In this issue of Dean's Roundup, Department of Architecture's tutors Lidia Ratoi, Kent Mundle and Su Chang reflect on their teaching experience, discussions and interactions with students prior to the Degree Show, while projecting a potential future for the annual exhibition.

'Most of you, if not all of you, like me, feel inadequately educated. That is an ordinary feeling for a member of our species.' (Kurt Vonnegut – 'Your Guess is as Good as Mine')

Architecture students, like most students (and most humans) who happen to be at the beginning stage of life, have little choice but to believe those who educate them. It is for this reason that I often find that the questions related to ethics, psychology and sociology that infiltrate within teaching architecture, are the ones worth pursuing. Yet it comes as no surprise that these questions are not only difficult to *answer*, but even hard to *formulate*.

To my own difficulty, once entering the rightful path of what we define as 'adulthood', I have discovered that we live in a world which is both evolving and decaying at such fast pace, that relating to my own education – even though I have not graduated too long ago – is not only obsolete, but also irresponsible. Therefore, I embrace intellectual and hierarchical flexibility, and have decided to embark on the journey of discovering the future of architecture together with my students, accepting that their guess – *if it is based on empirical processes and informed decisions* – is as good as mine. I therefore consider myself more of an anthropologist than a tour guide – someone who can share knowledge on what has been previously done, what is the current status quo and what I imagine this planet will be in relation to architecture – rather than someone who can indicate each precise step to arrive at a finite destination.

The purpose of this approach is to avoid the obvious, and to include the human component in a field that is created specifically for human living, yet it is commonly treated as a being of itself, submissive to artificially created 'principles', which are very often related to form and function, and rarely related to the actuality of the world architecture inhabits. Behind the scenes, students and teachers are united in the battlefield, and much if not everything is dependent on studio and course activities which are hidden to an outside visitor.

The Degree Show displays an eerie map of human existence, which at this point of observation is entangled with university studies. I have used a pair of uneducated eyes (in the field of architecture, not in general) to test my primordial theory, which is that traversing the Show is like witnessing a short time span of personal history. By this I mean that the evolution from the undomesticated nature of ideas, which occurs in Year 1, to the sophistication of developing an entire project at thesis level, is not only traceable, but natural. However, this begs a question – how much 'breeding' does an architect need, and at which point does carefully considered teaching become a denial of the basic human condition? How, when and to what degree are spontaneity, error and wilderness accepted and embraced in a field which should not treat the very nature of living as a trauma, yet so often does?

If I were to encapsulate my observations on the Degree Show in one word, that word would be 'hopeful'. I notice a new generation of architects who use projects and intellectual pursuits as ways of uncovering *themselves*, rather than shields to hide *behind*. I consider this a learning opportunity for a teacher such as myself, who has been conditioned by societal limitations to be afraid of associating my work with myself. Simply based on the relationship between my gender, nationality and field of research, I have been mostly afraid of falling into 'exoticism' and terrified of being accused of benefiting from a vote of confidence for diversity reasons. Yet, I am given hope when noticing the courage of my students, who have transcended such fears and are putting themselves at the forefront of their projects – which makes me believe that we are finally at a point in which architects are directly accountable for their own projects. And it is precisely accountability which demands acceptance, diversity, inclusivity and opportunity, for a person held accountable is one who has the freedom of intellectual and, most importantly, human ownership.

I am very much aware that my interpretation might come from the anxiety of not knowing where the world is going, and selfishly hoping that the coming generations will do better than the previous ones, placing my own generation in an uncertain place of responsibility. However, it is my closing argument that I believe architecture teachers and students should be in a continuous loop of feedback on matters related to the future, and that it is the responsibility of a school to submit itself to the public scrutiny that comes with displaying the results of this liaison of minds.

Lidia Ratoi

In the few days and weeks prior to the Degree Show, the space where the tidy work now stands was a field of debris sprinkled with tutors and students discussing and working. After these last three years of often quiet studios due to the pandemic, the scene was honestly thrilling. One day while waiting to meet a student I wandered through the space and scanned the ongoing work.

One tutor and their student leaned over a pile of drawings on trace paper. They made marks while debating how the drawings read in relation to some 1960s precedents. A group of students watched a colleague's video, and one of them asked about a reference to a similar film made by a European practice they liked. Belgian or Swiss, they couldn't be sure. One of my co-teachers poked and pulled at a model-drawing composite to their student's unease. They discussed whether the piece would be presented as a model, drawing, or both.

Now, weeks later, the exhibition is successfully open, and yet I can't help but feel that there's something missing from those preceding days amongst the ongoing work. If the exhibition is a collection of the students' individual journeys over the course of a year, or the thesis as a culmination of their entire education, I somewhat regret that we're not better able to read the course out of these wanderings through the work on the walls. This isn't to suggest a lack of quality or rigour, but rather the means of representation that often flattens semesters of inquiry into images, that while compelling, can withhold from us more than they tell. Where we now read sequences of software processes, I wish we would see the traces of studies, erasures and revelations.

At our school, these traces may be more apparent in our model making, whether as a series of casting tests or a set of foam and stick assemblies. Also, the nature of contemporary images to conceal their means of construction may be to blame. But regardless, where we seem to have room to grow is in our use of drawing and other representational media as issues to explore in themselves, rather than tools for presentation. This being said, there are outlying projects that focus on exploring the way of drawing or use of media, and thus read coherently on the wall as rigorous, but personal journeys into processes of design. For instance, one thesis reveals an intimate dialogue between recursive drawings and models to uncover the student's own spatial practice; another explores the use of 'surveying drawing' as a tool to study a village island housing type and trace its spirit into a potential successor; and one elective course unpacks the manipulation of surfaces and artificial light to produce atmospheres, presenting a specific position on the practice of image production.

As we often debate the issue of identity of our school, we should perhaps look more critically at the images we produce as a primary site for that redefinition.

Kent Mundle

Not many people still keep a diary for themselves these days. I don't. But our daily experiences, thoughts, and feelings still get inscribed personally in more ways than one.

A diary is organised by date, but its discrete arrangement also allows anyone (once granted access) to read stories of any dates without a given order. A stroll through the thesis work in Knowles Building studios during the annual Degree Show gives us the impression of taking glimpses into the diaries that students have been keeping. The models and drawings become forms of documentation that record the students' and teachers' endeavours throughout the thesis year and even draw intellectual memories from the student works and references that precede the theses themselves. This impression is even more intense this year, as many of the works directly reflect on our personal and society's struggle with the pandemic, the environmental imperatives, and the city's immediate future.

To think about the *theses as diaries* makes us temporarily suspend the way we always assume for the *theses as novels* – positions and arguments, or plots and narratives – and consider the idea of design as a practice of documenting: diving deep into the floating data we collect day by day and becoming a part of it until its informational load triggers a phase transition in ourselves that dissipates creative energy. To design like a diarist is to design by documenting, charging our system up to a boiling point in which we can distil a new material phase change. A diarist-architect would erase the typical divide between analysis and synthesis (or research and project, in the case of a thesis), blending the algorithmic objectivity and creative subjectivity into a back-and-forth process, which is essential to resonate with contemporary architectural territories.

We could even read the entire Degree Show like a diary of the whole school, one that consists of many stories across the years without a given timeline or order. We could draw clues between the urban strolls in the first year studio and the aquatic vision for our city that many urban projects propose in the MArch studios, between the rammed earth models that appear in both the second year studio and the thesis room, or to draw debates between the 'messy' cast models in the third year studio and the immaculate paper models from some of the most outstanding thesis projects. It is an alchemical experience of both memories and imagination. The questions are: how should we continue to write, and who has access to this diary?
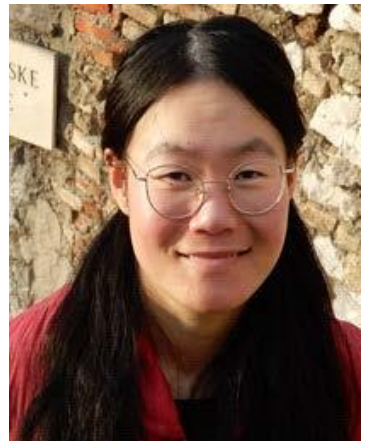
Su Chang

Three beautifully written provocations to think about what we read in and into the Degree Show, in different ways drawing us to the subjective. Thank you colleagues. And the usual thanks and congratulations to those mentioned below. Best wishes to all for the new academic year.

Chris Webster
Dean, FoA

Faculty of Architecture

1. A warm welcome to the following new colleagues, who joined our Faculty from June to August 2022:

|	
	Dr Chen Chen Post-doctoral Fellow, Faculty of Architecture Dr Chen holds a PhD in Environmental Science and Engineering from Tsinghua University, with a PhD thesis on urban ecological metabolism models. At FoA, she works on research projects in urban scaling, urban systems and urban performance analytics under the supervision of Dr Xiaohu Zhang and Dean Webster, which will help develop the research agenda of HKU's new Urban Systems Institute.
	Dr Colleen Chiu-Shee Assistant Professor, Department of Urban Planning and Design Dr Chiu-Shee holds a PhD in Urban and Environmental Planning and Design from the Massachusetts Institute of Technology. Her current research concerns green and smart urban futures, the global mobility of policy innovation, and cross-cultural research and education. She teaches for the BAUS and MUD programmes at DUPAD.
	Dr Qiong He Post-doctoral Fellow, Department of Urban Planning and Design Dr He received her PhD in Urban Geography from the University of Amsterdam. She joined the Social Infrastructure for Equity and Wellbeing (SIEW) Lab to research housing, education and urban studies under the supervision of Professor Shenjing He.

Dr Alec Kirkley

Assistant Professor,
Department of Urban Planning and Design (jointly appointed by HKU Institute of Data Science)

Dr Kirkley obtained his PhD in Physics at the University of Michigan. His research focuses on the theory of complex networks and the statistical physics of urban systems, with specific interests in the characterisation of structure in networks with metadata, the development of analysis methods and algorithms for statistical inference with network data, the structure and dynamics of human mobility, and the spatial manifestation of socioeconomic inequality.
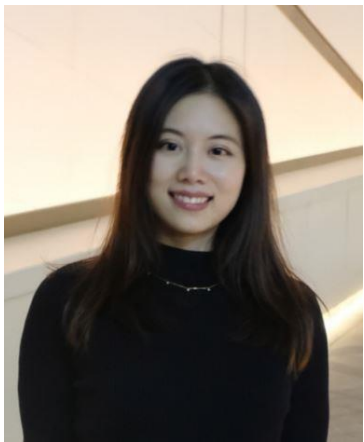
Dr Siru Lu, Thera

Post-doctoral Fellow,
Department of Real Estate and Construction

Dr Lu received her PhD in real estate finance and economics from the University of Hong Kong. She joined REC to research price-setting behaviour of property developers, under the supervision of Professor Kelvin Wong.

Ms Linda Shetabi

Lecturer, Division of Landscape Architecture

Ms Shetabi's PhD research at the University of Glasgow analyses heritage conservation and environmental sustainability policies in the context of the UN 2030 Agenda and the Scottish sustainable urban development policy. She is a member of Docomomo HK and ICOMOS SDG Working Group, and a consultant on the Institute of Conservation (Icon) Policy Panel. She teaches for the MSc(Conservation) programme at DLA.

	Dr Xiang Yan Post-doctoral Fellow, Department of Urban Planning and Design Dr Yan received his PhD in Urban Planning and Health Geography from the University of Hong Kong. He joined the Social Infrastructure for Equity and Wellbeing (SIEW) Lab to research cross-border healthcare utilisation and mobility in the Greater Bay Area, among other related projects, under the supervision of Professor Shenjing He.
	Dr Jin Zhu Assistant Professor, Department of Real Estate and Construction (home department) & Department of Urban Planning and Design (co-host department) Dr Zhu completed his PhD in Planning and Urban Development at the University of New South Wales and worked as Assistant Professor at City University of Hong Kong. At FoA, he teaches courses in areas related to property rights and land/housing policy at both undergraduate and postgraduate levels.
	Dr Mirna Zordan Post-doctoral Fellow, Department of Architecture Dr Zordan is a licensed Italian architect, design instructor and academic researcher with an interest in environment-behaviour performances in complex urban conditions. She received her PhD from the City University of Hong Kong and joined ARC recently to assist Dr Eric Schuldenfrei on his UGC Collaborative Research Fund project 'Spatial Exposure Notification'.

2. General Research Fund (GRF) and Early Career Scheme (ECS) 2022/23

- This year, nine FoA projects receive funding support from the Research Grants Council (RGC) through the General Research Fund (GRF) and Early Career Scheme (ECS):

General Research Fund (GRF)

Department/ Division	PI	Funded Project	Funding (HKD)
ARC	Dr Eunice Seng	Women and Architectural Discourses: A History of Women's Contribution to the Study of Modern Architecture in China and Asia	331,250
ARC	Dr Ying Zhou	Reusing Old Buildings for Contemporary Art: Heritage and Culture or Mismatch? Cases from Hong Kong Shanghai and Singapore	581,300
REC	Dr Roine Leiringer	Orchestrating Shadows – Managing Evolving Transient and Loosely Coupled External Stakeholder Groups on Megaprojects	535,537
DUPAD	Dr Jun Ma	Modelling and Qualifying the Impacts of the Influential Variables on Sidewalk Particle Concentrations	938,380

Early Career Scheme (ECS)

Department/ Division	PI	Funded Project	Funding (HKD)
DLA	Dr Binley Chen	Understanding Urban Greenspace Exposure Across Space and Time in China: A Novel Integration of Human-greenspace Dynamics and Environmental Exposure Models	969,384
ARC	Mr Donn Holohan	Material Settings Integrating Building Tradition with Emergent Technologies	968,570

ARC	Mr Guillaume L. Othenin-Girard	Drawing into Place: The Impact of Survey Methodologies on Interpretive Planning	1,048,780
REC	Dr Alex S. Shi	The Nexus of Financial and Urban Landscapes: How does Venture Capitals Reshape China's Entrepreneurship?	673,699
REC	Dr Michael CY Wang	The Rise of Healthy Buildings: Economic Assessment with a Novel Dataset	522,167

3. Seed Fund for Strategic Interdisciplinary Research Scheme (SIRS) 2021/22

    -   has been awarded by the University Research Committee (URC) to the following four applications submitted by our Departments and Division:

        (i) Integrated Assessment of Urban Climate-related Risks: Hazard, Exposure, and Vulnerability

        Project Coordinator: Dr Binley Chen, Division of Landscape Architecture

        Project Duration: 27 June 2022 to 26 June 2025

        Awarded Amount: HK$ 499,536

Abstract: This project aims to focus on three key urban climate-related risks — Heat, Flood, and Air pollution (HFA) in the Guangdong-Hong Kong-Macau Greater Bay Area (GBA) to advance a comprehensive understanding of multiple urban risks and develop an integrated framework for urban risk monitoring, modelling, assessment, and response. The specific research objectives include: 1) To develop long-term and high-resolution spatiotemporal data cubes (STDCs) for monitoring urban climate-related risks — Heat, Flood, and Air pollution (HFA) in GBA. 2) To parameterise the HFA risk components by using the Intergovernmental Panel on Climate Change (IPCC) 'Hazard-Exposure-Vulnerability' conceptual framework and the developed STDCs. 3) To assess the individual and integrated HFA risks by using the weighted 'Hazard-Exposure-Vulnerability' models and examine the composition, distribution, and pattern of HFA risks across different cities of the GBA. 4) To detect the drivers of HFA risks and develop spatiotemporal optimisation strategies to guide urban risk adaptations and managements.
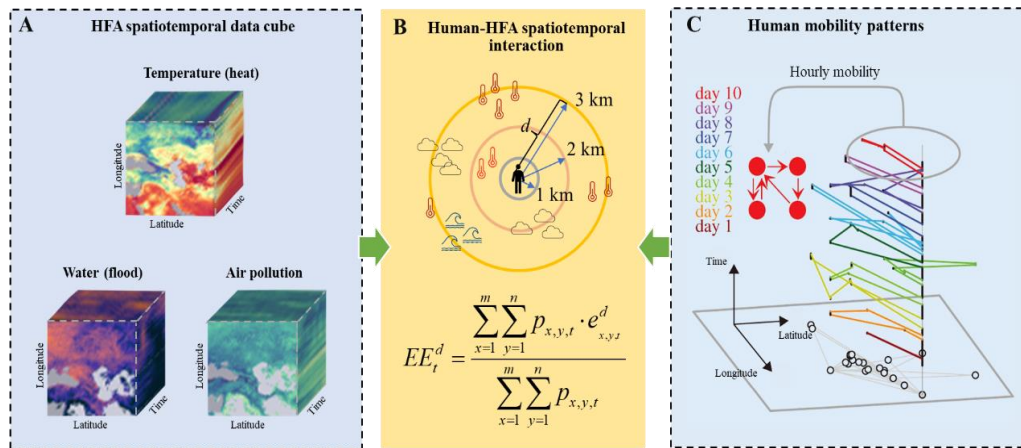
(ii) Empowering High-performance Bamboo Construction: A Low-cost, Material Informatics-driven, Culm Structural Properties Definition System

Project Coordinator: Dr Kristof Crolla, Department of Architecture

*Project Duration:* 27 June 2022 to 26 June 2025

Awarded Amount: HK$ 500,000

Abstract: Buildings generate nearly 40% of annual global CO_2 emissions with building materials and construction responsible for 11%. Recent integration of advanced computational analysis workflows into material performance evaluations has revealed opportunities for a more performative and sustainable architecture integration of natural materials. Bamboo is a material of high environmental and socio-cultural importance with many benefits as a construction material: It is one of the fastest growing, widely available, low-cost, carbon-sequestering natural resources suitable for direct implementation in construction and has globally been part of vernacular construction for centuries. Yet, bamboo has historically been difficult to standardise due to its naturally irregular geometric growth. This has limited application within the contemporary built environment despite its low cost and wide availability, especially in its most sustainable natural, un-engineered form: as solid culms. This project hypothesises that the recent democratisation of sensing technology and cloud computing combined with advances in Material Informatics pave the way for innovative, real-time, non-destructive material classification, analysis, and categorisation for timber bamboo – a collection of large species of bamboo suitable for construction application. With currently available open source projects such as OpenScan, FabScan, AliceVision, Smart Thumper in combination with projects such as Bamboo Test-Kit-in-a-Backpack, we believe it is possible to develop an integrated smart solution to bring real-time culm classification into use. Accessible technologies for 3D object scanning include laser triangulation, photogrammetry, and LiDAR. Other material properties that can be captured include bendability, density, weight, sound, vibration, temperature, moisture, and more. We hypothesise that such data sets can be combined with multi-scale modelling techniques to produce sufficiently large data sets material informatics required for machine learning algorithms to rapidly map them with the targeted

individual culms structural properties, thus facilitating their standardisation and general use. This international, multi-disciplinary collaborative research project draws on expertise from various fields, including Architecture, Industrial Design, Structural Engineering, Computer Science, Material Science and Botany. Expanding efficient use of natural bamboo culms within construction through the setup of a low-tech, low-cost, practical, and speedy onsite prediction system of culms' structural properties will positively impact the development of environmentally sustainable construction from natural resources.
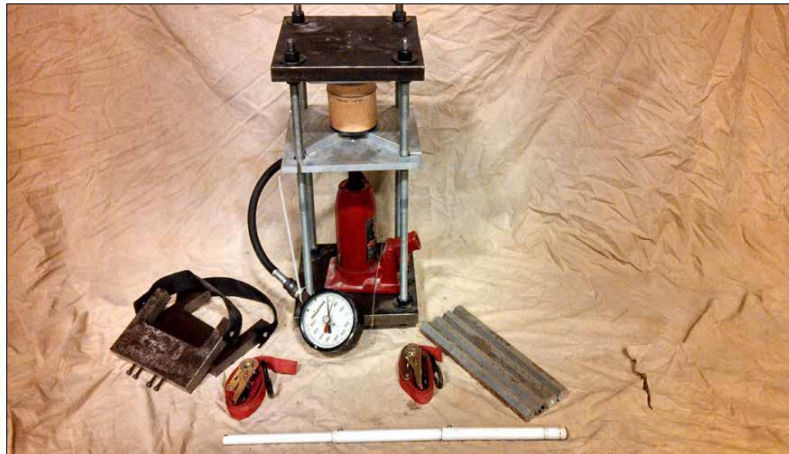
Bamboo Test-Kit-in-a-Backpack, by Professor Kent A. Harries
(Co-PI, University of Pittsburgh), et al.
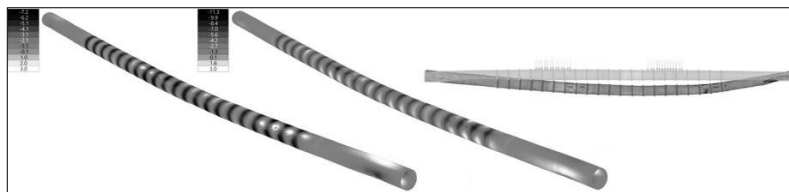
Non-linear behaviour and failure mechanism of bamboo poles
in bending, by Dr Elias G. Dimitrakopoulos (Co-PI, HKUST), et al.

(iii) Investigating Impacts of Prolonged Extreme Hot Events on Indoor Heat Health and Building Energy Demand in a High-density City

Project Coordinator: Dr Chao Ren, Division of Landscape Architecture

Project Duration: 27 June 2022 to 26 June 2025

Awarded: HK$ 480,000

Abstract: *It is well known that extreme hot events can trigger significant health risks for vulnerable populations. In recent years, prolonged summers with higher temperature and humidity are observed in subtropical cities such as Hong Kong. Prolonged extreme hot weather events are found to be significantly associated with the excess mortality risks in Hong Kong. This study aims to evaluate the relationship between outdoor and indoor living environmental conditions during prolonged*

extreme hot events. The investigation of indoor heat hazards under prolonged extreme hot events will provide a methodological framework for incorporating the scientific understanding of extreme hot events and their associated impacts on indoor heat health and building energy demand into a comprehensive plan for providing adaptation actions to vulnerable people.
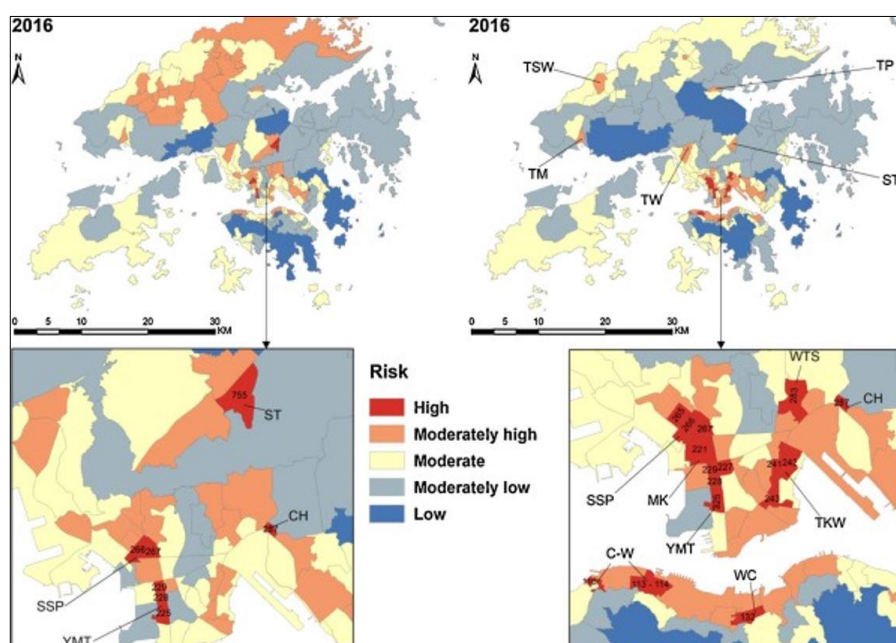
Hong Kong heat risk map (daytime and nighttime) in 2016

(iv) Methodologies for Assessing Specific Social, Economic, Health and Wellbeing Impacts of Volumetric Urban Designs of Metro Infrastructure Projects in Greater Bay Area

Project Coordinator: Dr Guibo Sun, Department of Urban Planning and Design

Project Duration: 27 June 2022 to 26 June 2025

Awarded Amount: HK$ 500,000

Abstract: This project will support pilot studies to refine research questions and methodologies and confirm feasibilities for biding of an external research impact fund on interdisciplinary assessments of how volumetric developments in metro infrastructure projects generate social, economic, health and wellbeing impacts for society in Greater Bay Area, within the contexts of institution, urban design, land finance and political regime in China. A sheer number of metro projects have been planned and constructed in Greater Bay Area. The findings can help transform the cities in this region because cities in Greater Bay Area rely on metro development to sustain their high-density built environment. Moreover, the investigation allows us to provide an in-depth understanding of the mechanism in the numerous new metro lines built in China and offer

remediation guidelines to improve them further. It is a metro-city-building era for Chinese cities. In one year, over 50 metro lines could be either planned or constructed in China. In addition, China is actively extending the metro-city building model to Belt and Road countries, such as Ethiopia, Vietnam and Israel. Hence, the impact pathways expand from China to abroad. The research objectives include:

- *To document and compare the wide variety of institutional (legal, organisational, financial and design) frameworks used to provide metro infrastructure as part of the popular land financialisation approach to urban development and planning in China.*

- *To develop methods and models for valuing the high-density, multi-level, multi-function urban spaces and pedestrian networks created by metro development projects in China's high-density cities, including approaches for valuing specific design attributes of these schemes in a way that will help governments, developers, and transport agencies better optimise project designs and plans.*

- *To go beyond cross-sectional studies by designing longitudinal and natural experimental studies capable of measuring causal effects of metro development on social, economic and health outcomes (focusing on housing price, active travel and wellbeing) in the Greater Bay Area.*

4. MoU Signing with Construction Industry Council (CIC)

    -   An MoU has been signed to support the collaboration between CIC and FoA based on a shared vision to introduce knowledge of Building Information Modelling (BIM) and Construction Digitalisation (CD) technologies into higher education.

        Dr Isabelle Chan (REC), Mr Ulrich Kirchhoff (ARC) and Professor Wilson Lu (REC) represented FoA to attend the Hong Kong Construction Common Data Environment Award Launching Ceremony and MoUs Signing with Higher Education Institutions, co-organised by the HKSAR Development Bureau and CIC, at the Zero Carbon Park on 7 July 2022.

Department of Architecture

1. 'Weather Casting' Exhibition @ PMQ

   - showcased the speculative design experiments conducted in BAAS Year 3 Design Studios, exploring the symbiotic relationship between architecture and nature.

   Architecture is obliged to stay intact during its life time, continuously resisting the force of nature and protecting people from extreme weather. However, its strength and integrity are constantly weakened by the weather and this process is irresistible and irreversible. Instead of fighting against this insuperable battle, could architecture submit to, embrace, and grow with nature? Could the process of weakening be transformed into one that is capable of strengthening, enriching and prolonging the symbiotic relationship between architecture and nature?

   From ice formwork disappearing in construction to modular housing decaying in the growth of banyan trees, 'Weather Casting' showcased the speculative design experiments conducted in BAAS Year 3 Design Studios instructed by Fai Au and coordinated by Thomas Tsang. Through an intensive process of drawing and model making, these experiments contemplate how the vulnerability of architecture and permeability of nature could become the primary design drivers in shaping forms and spaces that interact creatively with the vivaciousness of weather. The weakness, discrepancy and instability of materials discovered during the process are captured and seen as design potential rather than limitation.

   Architecture and weather are indivisible entities that inhabit each other. Weather casts architecture, and architecture grows from within.

Curator: Fai Au

Year 3 Studio Coordinator: Thomas Tsang

Exhibition Contributors: HKU BAAS Year 3 Students 2019 – 2022

Curatorial Support: Cheung Tsz Kiu Jackie, Cheung Wing See Kyo, Hong Sum Ho Angus, Lai See Long Christopher, Yau Pui Yu

Date:	**25 June 2022 (Sat) – 27 July 2022 (Wed)**
Time:	**10:00 am – 6:00 pm**
Venue:	**S314, 3/F, Block A (Staunton), PMQ, 35 Aberdeen Street, Central, Hong Kong**

2. Dr Cole Roskam

- has his article 'Architecture of Shanghai' accepted for publication in *Oxford Bibliographies in Architecture, Planning, and Preservation*.
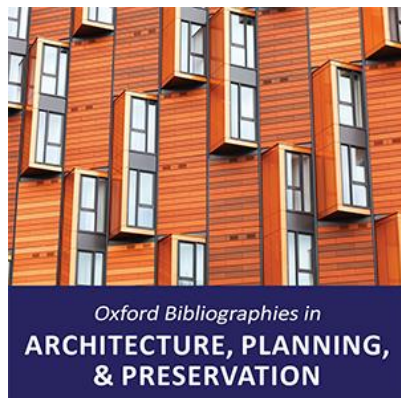
- has been appointed as an international editor for *The Journal of Architecture*.

3. Mr Thomas Tsang

   - has completed the first year of his Jockey Club Augmented Reality in Arts Education Project with an AR exhibition at Tai Kwun, on show from 24 July to 25 September 2022.

The two-year Project offers junior secondary school students and teachers in Hong Kong a collaborative and interdisciplinary education programme that integrates the four pillars of art, culture, technology and history, through the use of new technologies and Augmented Reality.

Funded by the Hong Kong Jockey Club Charities Trust and organised by Osage Art Foundation, the Project involves four higher education institutions in Hong Kong, namely HKBU's Academy of Visual Arts (AVA), HKAPA's School of Theatre and Entertainment Arts, HKDI's Department of Communication Design and Digital Media, and HKU's Department of Architecture.

   o [About the Project](#)

   o [About the Exhibition](#)

   Media Coverage:

   o [TIMABLE: 「賽馬會 AR 藝術教育計劃 2021-22」AR 展覽](#)

   o [Ming Pao Weekly: 【大館走走】觸得到的在地記憶　百多名中學生為社區製作 AR 公共藝術](#)

   o [ZTYLEZ: 擴增實境留住社區歷史文化！本地中學生打造，大館盡情探索 AR 公共藝術！](#)

   o [Sing Tao Daily: 科技保育文化｜中學生天馬行空 借 AR 遊戲化身保衛隊 保育歷史及文化](#)

Division of Landscape Architecture

1. Mr Mathew Pryor

   - and Ms Lynn H. Lin have won a Virtual Teaching and Learning Grant (HK$1,000,000) under the UGC Teaching Development and Language Enhancement Grant (TDLEG) scheme to develop a low-cost, open access educational metaverse (EdMet) that can improve students' online access to information, engagement and collaboration, and digital literacy. The project will further develop their award-winning *Curios* platform as an educational metaverse, allowing teachers to develop and share teaching resources and facilitate learning activities in a virtual environment. It will help students to connect with classmates, document their own learning journeys, and present their learning outcomes, online. The new EdMet platform will be promoted within HKU and local K12 schools to allow teachers and students to have innovative, social, and visible learning experiences in a simple metaverse world. TELI's Leon Lai and Tyrone Kwok, as well as FoA's Tim Yeung are members of the study team.
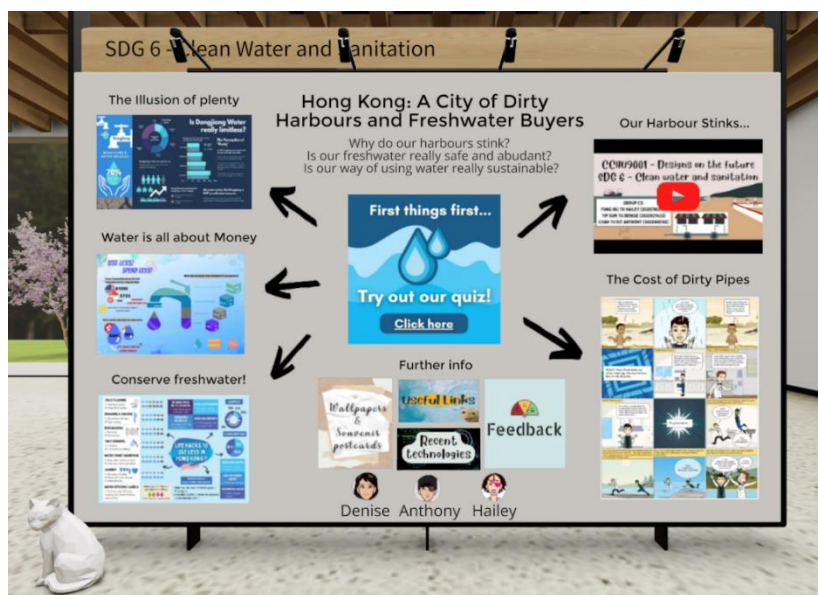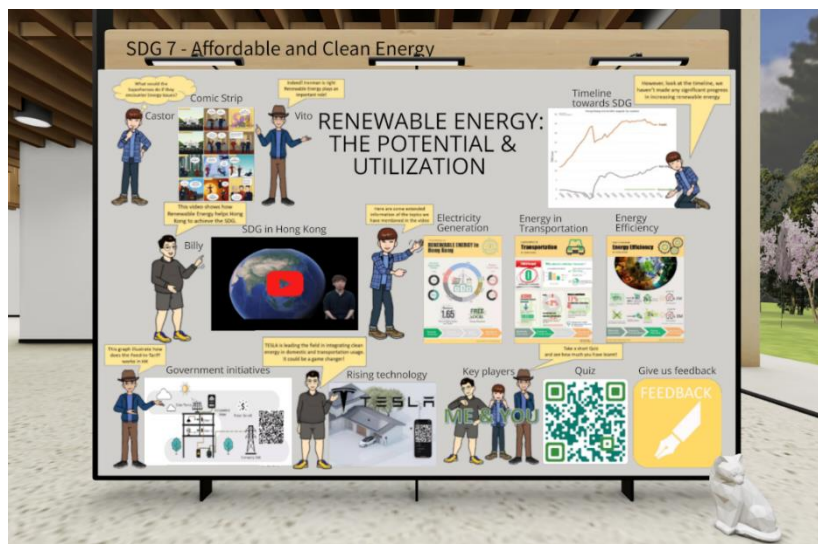
- has won a new Teaching Development Grant (HK$300,000) to undertake a study on 'Peer Observation of Teaching in Faculty of Architecture'. Peer observation of teaching (POT) is a structured, peer-supported developmental process that aims to improve teaching performance in Higher Education by enhancing teaching practices and encouraging teachers to explore new approaches. Through facilitating active engagement with pedagogical theory and critical reflection on teaching experience, POT can help teachers to learn more about their teaching approach, develop better teaching craft and create a sense of professionalism in their teaching. It can be used to inform discussions on teaching performance and help teachers and managers obtain objective evidence to support teaching evaluations. This TDG study will extend the pilot POT mechanism that Mathew developed under his HKU T&L Fellowship (2021-22), and apply it to design studio courses within the Faculty of Architecture.

In the first stage of this study, Mathew is looking for colleagues who might be willing to test out POT. If you are interested to try, please contact him directly.

2. Mr Yilun Li (PhD student), Mr Brian Cheang, Mr Chun Wah Tang and Ms Wan Ting Yim (MLA students)

- won Merit Awards in the Student Category of the 'Design Competition for Transformation of Sensory Garden at Kwun Tong Promenade', organised by the Hong Kong Institute of Architects and Energizing Kowloon East Office of the HKSAR Development Bureau.

In this competition, students were asked to propose new structures/ installations/functions to replace the existing sensory installations and renovate the overall hard and soft landscaping of the area. The chosen site, Sensory Garden in Kwun Tong Promenade, is located at the former Kwun Tong Public Cargo Working Area and is part of the redevelopment project completed in 2015.

Awarded Projects:
'Senses Hill + Valley' by Yilun Li (Advisor: Dr Ren Chao)
'Nature Reversi' by Brian Cheang, Chun Wah Tang and Wan Ting Yim

Details of the competition and results:
https://www.hkia.net/en/whats-on.html?id=8221

'Senses Hill + Valley' by Yilun Li
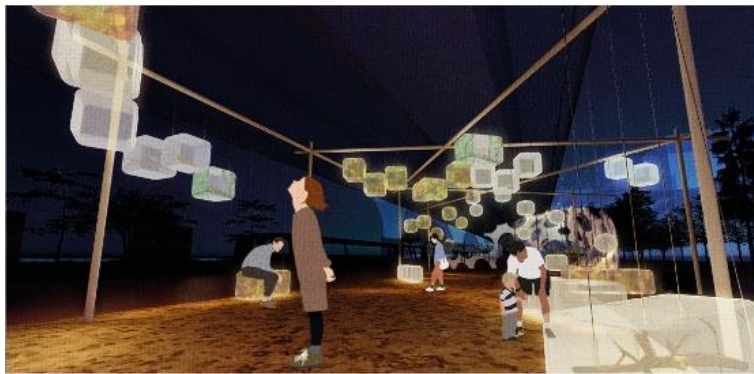
'Nature Reversi' by Brian Cheang, Chun Wah Tang and Wan Ting Yim

3. Ms Xiaomeng An (MLA 2021)

- won Silver Prize in the 'Renewal and Remodel' category of the 19th Asian Design Award (2021), for her MLA thesis design on the psychological wellness of 'migrant children', who migrated to big cities with their parents, who are more commonly known as 'migrant workers'.

  Migrant children are not only excluded from the public education system, but are also challenged by the frequent changes in their households, neighbourhoods and schools. These challenges are likely to cause psychological deficits and trigger negative emotions.

To tackle this issue, Xiaomeng's awarded design, 'Using Participatory Design of School Spaces to Promote Migrant Children's Psychological Health', explores how public welfare organisations can contribute resources to schools for migrant children to improve their psychological wellness. It proposes a variety of low-cost participatory design approaches for different types of spaces, from furniture to installations to landscaping. Through participation in the creation of various types of spaces, students, teachers, parents and volunteers can work together to improve the quality of the space and also create emotional connection and comfort.

Thesis Advisor: Dr Jiang Bin

More information: https://mp.weixin.qq.com/s/luv7uT9WtgK19tCGXwVOTQ
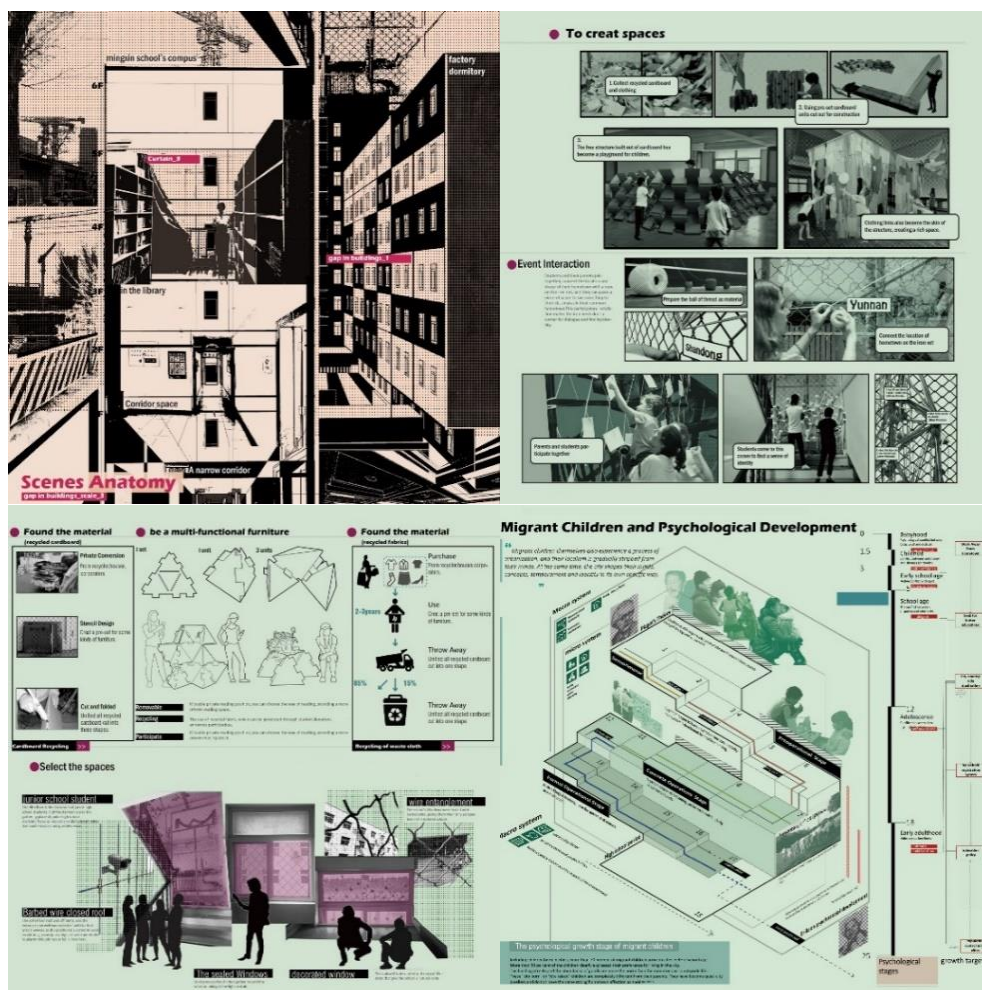
4. Ms Lydia Huitong Li, Ms Lena Ziyuan Li, Ms Tobie Wai Hei Tse and
   Ms Joyce Nok Lam Wong (BALS students)

   - awarded Champion of the 'Co-create SMART-PARK Challenge' (Open Group), organised by Cyberport and Rotary International District 3450.

     In this competition, students were invited to submit a design proposal for public facilities such as Tai Mo Shan Rotary Park and Cyberport Waterfront Park.

     Investing into the concepts of 'Smart' and 'Co-Create', the group proposed 'The Smart Loop', with the intention to strengthen the connection between the park and its enjoyers with a reciprocal 'give and take' relationship. The proposal comprises a series of prototypes that revolve around an interactive loop system to power the daily operations of the park, ultimately aiming to benefit both the park and its users.

     'The Smart Loop' works with one of the most essential energies – electricity, to prompt interaction between the park and its enjoyers. In the Smart Electricity Cycle, the main idea is that we, as users, generate electricity from exercising in the Park, whether it is from the piezoelectric running track or the gym loops. The cycle between nature and human is therefore dynamic and interconnected, in which one action always provokes the other, operating similarly to the principle of gear wheels. To further enhance users' experience and establish a stronger interrelationship with the park, a mobile application is proposed to keep track of the electricity generation and physical activity, acting as an incentive to encourage users to exercise habitually at the park.

     With an emphasis on sustainability and technology, 'Co-create SMART-PARK Challenge' called for creative and feasible design proposals with an aim to cultivate youngsters' innovation and skills and help build a smart park for a sustainable society.

     Supervisor: Mr Mathew Pryor

5. Mr Gavin Coates / HKU Division of Landscape Architecture Digital Arboretum

In landscape architecture education, field trips are vitally important to experience and learn about scale, design with plants, and the relationships between human activities and ecology, as well as encouraging learning interaction within student groups.

The HKU Division of Landscape Architecture Digital Arboretum (www.digarb.hku.hk) is a newly created platform featuring hundreds of videos of plants taken in the field in lieu of field trips since face-to-face teaching was disrupted by COVID-19 starting in 2020.

At first the videos were posted on 'Facebook Workplace' sites for individual plant and ecology courses running under the Bachelor's and Master's landscape architecture programmes. The subjects and content were initially based on field trips that were designed to showcase plants in a variety of urban and rural landscapes.

The videos proved popular with students who benefited from being able to retrieve information and watch the videos repeatedly. One student commented: 'The site visit video is very useful. Sometimes when we go on-site, it is a bit hard for us to remember the name of the species and their characteristics, but Gavin's video allowed us to watch it several times. **Hopefully the video wouldn't be deleted in the future so we can watch it again when we need it!**'

For this initiative, Mr Gavin Coates was awarded the HKU Teaching Innovation Award in 2020. In 2021, he successfully applied for an HKU Teaching Development Grant to create a digital archive making the videos accessible and searchable for landscape architecture students, professionals and the general public with an interest in this topic.

Now the framework of the Digital Arboretum is in place and available with more than 600 videos about plants and trees in Hong Kong. Future contents will continually be added and it is intended that students will contribute to the expansion of the range of species and topics through designated assignments.

It is hoped that the Digital Arboretum will serve as an encouragement to explore and discover the treasure trove of arboricultural and horticultural wonders in Hong Kong.
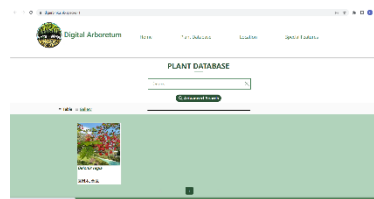
There are three main sections on the platform:
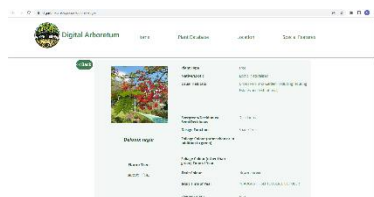
1. Plant Database

- Search by botanical, Chinese or English (if any) name in the search bar, for example '*Delonix*'.
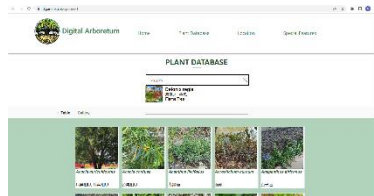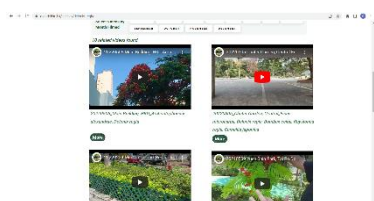

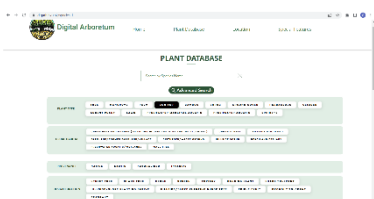- Click the picture icon that appears for '*Delonix*'.

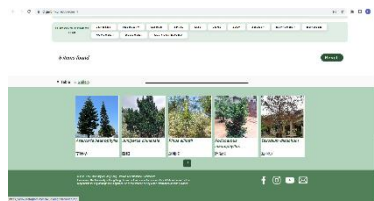- You can view the '*Delonix*' page with some basic information.

- And all the videos in which '*Delonix*' is discussed.

- You can also click the 'Advanced Search' button and select a plant type such as 'CONIFER' (or/and other attributes).
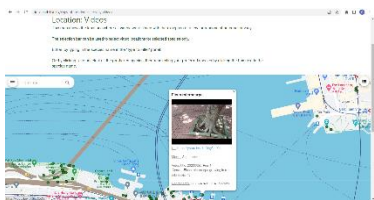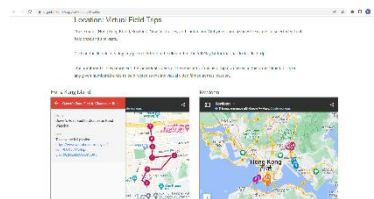
- All the items related to 'CONIFER' will appear.

2. [Location](#)

- Zoom in to the ['Location: Videos'](#) map to find where each video was filmed.

- Or zoom in to the ['Location: Virtual Field Trips'](#) maps. Click on the line delineating the route of the field trip to watch the field trip videos in order, or click on the numbered stops for the individual videos.

3. [Special Features](#)

- Student Work

- [Useful Links](#)

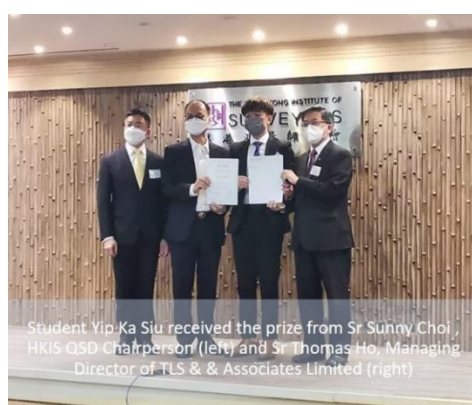# Department of Real Estate and Construction

1. BSc(Surveying) students

   - have reported the following achievements:

   (i) HKIS QSD Scholarship 2022

   Mr Chan Ho Tin, Miss Lee Yuk Ying and Mr Yip Ka Siu (Year 3) have been awarded the Hong Kong Institute of Surveyors' Quantity Surveying Division Scholarship.

   This scholarship is a recognition of the students' outstanding performance in key quantity surveying subjects including measurement, contract law and quantity surveying practice. They were invited to attend the presentation ceremony on 6 July 2022.

Student Chan Ho Tin received the prize from Sr Sunny Choi , HKIS QSD Chairperson (left) and Sr Kenneth Kwan, Chairman of Rider Levett Bucknall (right)

Student Lee Yuk Ying received the prize from Sr Sunny Choi , HKIS QSD Chairperson (left) and Sr George Yeung, Turner & Townsend Limited (right)

Student Yip Ka Siu received the prize from Sr Sunny Choi , HKIS QSD Chairperson (left) and Sr Thomas Ho, Managing Director of TLS & & Associates Limited (right)

   (ii) CIOB Certificate of Excellence 2022

   Miss Au Tsz Ching Carmen (2022 graduand) received Certificate of Excellence from the Chartered Institute of Building (Hong Kong).

2. HKU Taster Programme 2022 – Digital Revolution in Real Estate and Construction

The Department of Real Estate and Construction was invited to take part in the HKU Taster Programme 2022 on 29 August 2022. Designed with the theme of 'Digital Revolution in Real Estate and Construction', the event aimed to offer secondary students an exciting taste of surveying education in HKU. Following a brief introduction of the surveying profession, students participated in different hands-on workshops covering virtual reality, simulation of MiC module installation, mobile Lidar and/or ground penetrating radar. The event has attracted more than 120 secondary school students to participate.
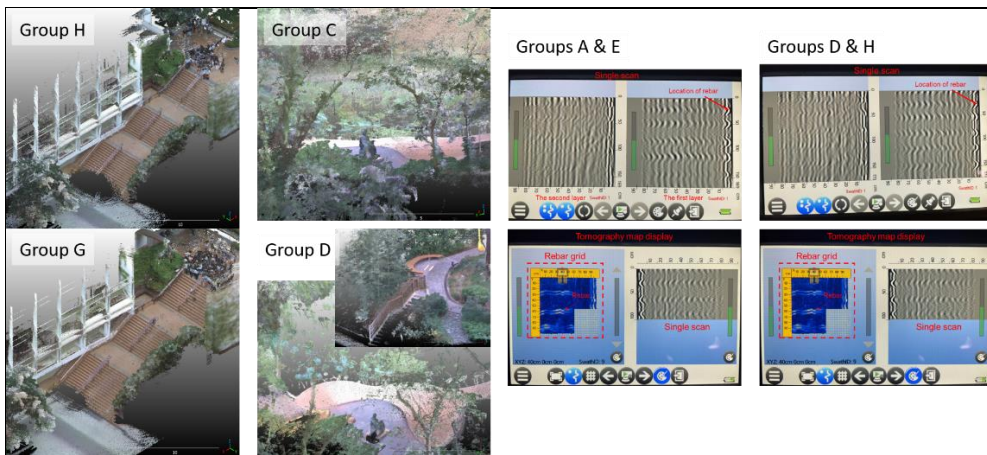
Team:
Teachers: Dr Isabelle Chan, Dr Frank Xue, and Dr Junjie Chen
Research Assistants: Hank, Hao Chen, Zhao Dong, Yonglin, Yijie and Leo

Special thanks to Professor Wilson Lu for offering the iLab for the robotic workshop.

3. Dr Sun Wah Poon (Adjunct Professor)

    -   was invited to be the guest speaker at the launching ceremony of 'Remembrance and Reflection: 50 Years after the Tragic Landslides on 18 June 1972' thematic exhibition, organised by the Geotechnical Engineering Office of the Civil Engineering and Development Department of the HKSAR Government, on 3 June 2022 at Tai Kwun.

4. Dr Llewellyn Tang

    -   was invited to be the course advisory panel member and guest speaker for the Construction Industry Council (CIC) Master Class on Common Data Environment (Project Managers) Kick-off Ceremony, on 1 September 2022. It was an event to promote Common Data Environment which helps the industry to reskill and reshape a new digital ecosystem.

5. Professor Kelvin Wong

   - was invited to join the Urban Land Institute (ULI) Asia Pacific Summit as a speaker of its inaugural Housing Forum on 30 August 2022, in which he was joined by panelists from Hong Kong, Japan and Singapore to discuss different governments' approaches to and policy on housing.

   - serves as an Advisory Committee Member of the newly launched ULI Asia Pacific Home Attainability Index, which compares property prices and rent affordability across 28 cities, setting a data-informed foundation for regional discussions on housing needs and solutions.

Department of Urban Planning and Design

1. Xu Yan, Guiyu Chen, Yongxin Chen and Jingyi Peng (MUA students)

   - won a second prize in the 6th Chengyuan Cup – Planning Decision Support Model Design Contest, a well-known annual competition in Mainland China focusing on decision support analytics for urban planning, for their project 'A Safe Route Recommendation System Based on Safety Perception and Crime Risk'.

The project is developed from the coursework in URBA6004 'Spatial Mobilities Analytics', taught by Dr Zhan Zhao, who also serves as a supervisor for this winning project. To consider safety in route recommendation, the project proposes a system to account for both actual safety risks (based on crime statistics) as well as perceived safety (based on street view images), in addition to the route length (based on street network data). The trade-off between different factors can be adjusted according to user specification. Central Los Angeles is selected as a case study. Example output routes:


The 6th Chengyuan Cup is jointly hosted by Beijing Chengyuan Digital Technology Co. Ltd., World Urban Planning Education Network, and Beijing Planning Institute Hongdu Planning and Architectural Design

Research Institute Co. Ltd., with support from Beijing City Lab, Baidu Map Huiyan, and China Unicom Smart Footprint. The annual competition attracts hundreds of participants from universities, research institutes as well as urban planning enterprises. This year's announcement (in Chinese) can be found at: http://wupen.org/competitions/20

2. MUA and BAUS students

- won the Champion and Merit Award of the Open Category respectively in the Open GIS Competition, organised by the Geospatial Lab of the Development Bureau of the HKSAR Government on 30 July 2022. The Competition aimed to encourage the public to explore the use of spatial data and develop GIS applications that help us understand our community better and provide visions for improvements.

The Champion Award went to MUA students CHEUNG Kwok Lun Alan, LAI Sze Wing, LEUNG Yi Tak Lily, LI Hok Yee, TSANG Nok Sze Sophine and YIU Kin Nam Kenny. Their winning entry, 'Camping, but not Tampering', uses a site suitability analysis to identify suitable camping sites.
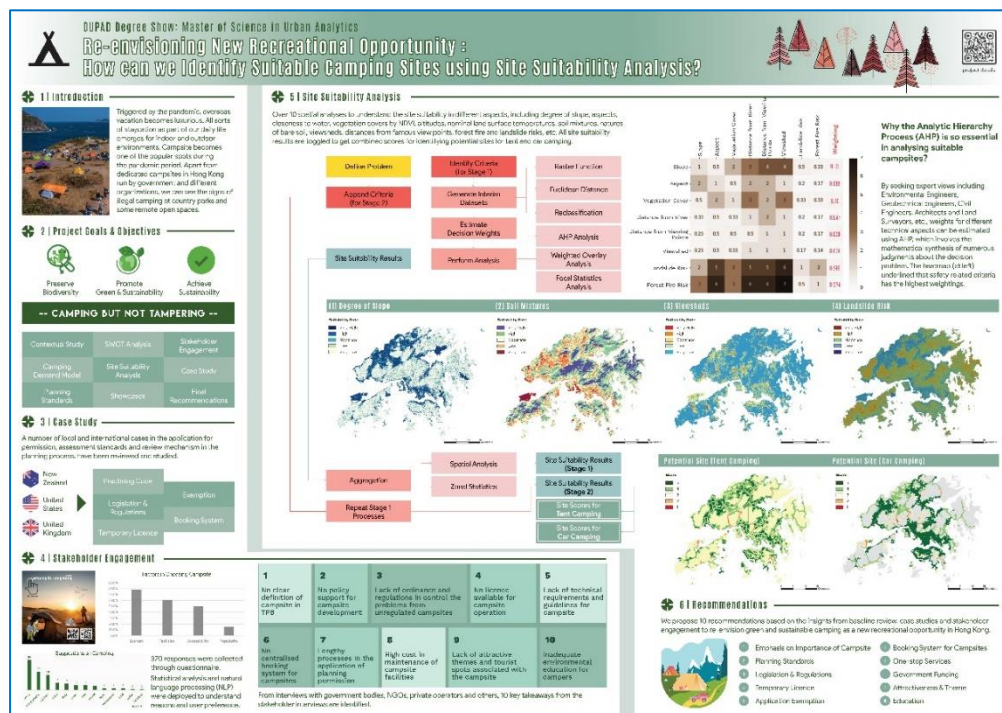
And the Merit Award went to BAUS students CHAN Kwun Wing, CHU Chit Hei Sebastian, HUNG Nga Ping, LAM Tsz Ying Tony, SOO Hiu Tung and WONG Chi Kit Geoff, with their entry 'Renewal of Local Communal'.

The Champion Award was presented by Mr Ma Ching Yeung, Chairman of Tung Wah Group of Hospitals, to the winning team (from left to right: LEUNG Yi Tak Lily, YIU Kin Nam Kenny, TSANG Nok Sze Sophine, LAI Sze Wing and LI Hok Yee)

3. Professor Shenjing He

    -   was invited to deliver a keynote speech entitled 'Urban Redevelopment under State-led Financialization in Post-2008 China' at The 16th International Association for China Planning (IACP) Annual Conference, organised by IACP and Huazhong University of Science and Technology.

        With the theme of 'Urban-Rural Healthy and Sustainable Development', the Conference was held in Wuhan and online, during 23-27 June 2022. More information on IACP website.

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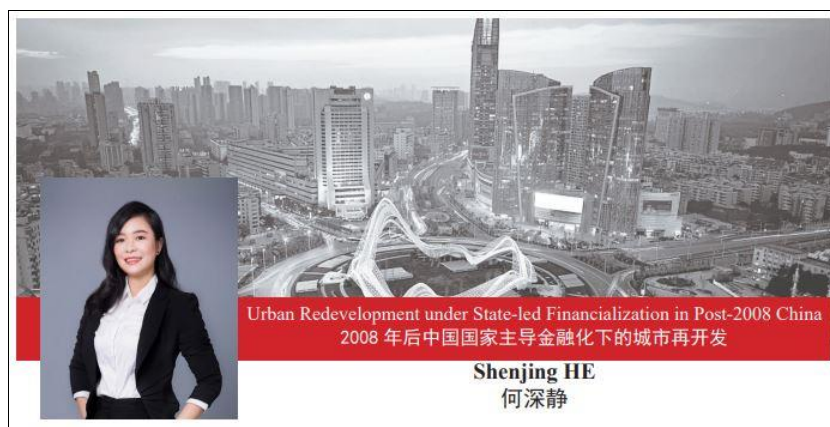
- was invited to serve as one of the judges for The Institution of Civil Engineers Hong Kong Association – Graduates and Students Division (ICE-HKA-G&S) Communication Competition 2021-22, on 4 June 2022. It is a team competition promoting the development of excellent communication skills among ICE's young members, where competitors were required to present a make-up civil engineering project at a mock public consultation meeting. More information on ICE's website.

Professor Shenjing He (far left) as one of the judges for ICE-HKA-G&S Communication Competition 2021-22

4. Dr Mandy Lau

- served on the Jury Panel of the Hong Kong Institute of Housing (HKIH) Elite Awards on 20 August 2022. The HKIH Elite Awards recognise outstanding property managers for their contribution to the profession and community.

More information: https://www.housing.org.hk/eliteaward2022

Centre of Urban Studies and Urban Planning

1. Mr Alain Chiaradia

    - has published the following paper:

    Zhou, Y., Zhang, L., & **Chiaradia, A. J. F.*** (2022). Estimating wider economic impacts of transport infrastructure Investment: Evidence from accessibility disparity in Hong Kong. *Transportation Research Part A: Policy and Practice, 162*, 220-235. https://doi.org/10.1016/j.tra.2022.05.014

    Abstract: Much recent work on transport and the economy has focused on 'Wider Economic Impacts' (WEIs) of infrastructure investment, the impacts other than time savings benefiting those actually using the transport network. Differential effects of transportation infrastructure by mode such as urban rail and road are relatively well known. However, impacts of other mode such as walking are scarce. This paper estimates wider economic impacts related to productivity from full rail, road and walking transport networks in Hong Kong in 2016. To the best of our knowledge, this is the first paper that makes use of complex network science indicators with spatial cognition-weighted accessibility combining full urban rail network, road network, and pedestrian network in capturing wider economic impacts. We use an instrumental variable approach to identify the causal effect of transport network centralities on productivity measured by gross value added. Our identification strategy largely relies on the exogenous variations from historical planned and existing transport networks. A first specification confirms the significance of urban rail and road. Specification with pedestrian network shows that pedestrian and rail networks can statistically significantly increase productivity in Hong Kong while roads play a less significant but still meaningful role. Our findings are robust to a variety of sensitivity tests such as using night-time light intensity and residential wage as alternative measures for productivity. The research suggests a key planning policy implication: place-based policies in a dense city require improvement in pedestrian and rail network structure that impacts local and global transport accessibility.

2. Mr Maosu Li (PhD Year 3 student) and Professor Anthony Yeh

    - have published the following paper with Dr Frank Xue (REC and iLab) and Miss Yijie Wu (PhD Year 1 student, REC):

    Li, M., **Xue, F.***, **Wu, Y.**, & **Yeh, A. G. O.** (2022). A room with a view: Automatic assessment of window views for high-rise high-density areas using City Information Models and deep transfer learning. *Landscape and Urban Planning, 226*, 104505. https://doi.org/10.1016/j.landurbplan.2022.104505

    Abstract: Every windowed room has a view, which reflects the visibility of nature and landscape and has a strong influence on the health, living satisfaction, and housing value of inhabitants. Thus, automatic accurate

window view assessment is vital in examining neighborhood landscape and optimizing the social and physical settings for sustainable urban development. However, existing methods are labor-intensive, inaccurate, and non-scalable to assess window views in high-rise, high-density cities. This study aims to assess Window View Indices (WVIs) quantitatively and automatically by using a photo-realistic City Information Model (CIM). First, we define four WVIs to represent the outside (i) greenery, (ii) water-body, (iii) sky, and (iv) construction views quantitatively. Then, we proposed a deep transfer learning method to estimate the WVIs for the window views captured in the CIM. Preliminary experimental tests in Wan Chai District, Hong Kong confirmed that our method was highly satisfactory ($R^2 > 0.95$) and fast (3.08 s per view), and the WVIs were accurate (RMSE < 0.042). The proposed approach can be used in computing city-scale window views for landscape management, sustainable urban planning and design, and real estate valuation.

3. Dr Zhan Zhao and his PhD student Ms Yuebing Liang

   - have published the following paper:

   Liang, Y., **Zhao, Z.***, & Sun, L. (2022). Memory-augmented dynamic graph convolution networks for traffic data imputation with diverse missing patterns. *Transportation Research Part C: Emerging Technologies, 143*, 103826. https://doi.org/10.1016/j.trc.2022.103826

***Abstract**: Missing data is an inevitable and ubiquitous problem for traffic data collection in intelligent transportation systems. Recent research has employed graph neural networks (GNNs) for spatiotemporal data imputation and achieved promising performance. However, there still exist two limitations to be addressed: first, existing approaches are generally limited in directly leveraging global spatiotemporal information from different nodes at different time; second, most of these approaches do not consider the unique characteristics of transportation systems or traffic data, including dynamic spatial dependencies and correlated missing patterns. To fill these research gaps, we propose a novel deep learning framework called Memory-augmented Dynamic Graph Convolution Networks (MDGCN) to impute missing traffic data. The model uses a recurrent layer to capture temporal information and a graph convolution layer to capture spatial information. To address the first research gap, we introduce an external memory network to store and share the global spatiotemporal information across the traffic network. For the second research gap, a graph structure estimation technique is proposed to learn dynamic spatial dependencies directly from traffic data. In addition, four types of missing patterns with various missing ratios are considered in model evaluation. Extensive experiments based on two public traffic speed datasets are conducted. The results show that our proposed model outperforms existing state-of-the-art deep learning approaches in all kinds of missing scenarios, and both the proposed external memory network and graph structure estimation technique contribute to the model performance. The model performance is competitive in most cases even without complete training data.*

4. Dr Jiangping Zhou

    -   has co-authored the following paper:

        Chen, R., & **Zhou, J.** (2022). Fare adjustment's impacts on travel patterns and farebox revenue: An empirical study based on longitudinal smartcard data. *Transportation Research Part A: Policy and Practice, 164*, 111–133. https://doi.org/10.1016/j.tra.2022.08.003

        Abstract: *Fare policy plays an important role in transit operations and management. To better coordinate and achieve the multidimensional goals of a proposed fare adjustment policy (e.g., increasing revenue, managing demand, and improving equity), a fundamental step is to evaluate its travel pattern impacts, which helps us consider the policy in a bigger socioeconomic context. Existing studies rarely investigate the impacts of such a policy on different users' and user groups' travel patterns and transit operators' farebox revenue using longitudinal data from sources such as smartcard data. To fill this gap, we exploit 24 weeks' smartcard data from Wuhan, China, to empirically quantify those impacts. We find that (a) the fare increase had significant but varying impacts on travel patterns across users and user groups; (b) confronting the fare increase, commuter groups identified by the topic model reduced their trip frequency more but later as compared to other groups; (c) low-accessibility, long-distance, and single-destination metro riders were less sensitive to the fare increase; (d) when there was a system-wide fare increase with a distance-based structure, trip purposes and socioeconomic statuses could better predict the impacts on the travel demand and farebox revenue than spatiality. These findings indicate that increasing average fares while offering discounted tickets for frequent and/or captive riders could maintain the existing ridership and farebox revenue and possibly increase additional ridership.*

5. Dr Kyung-Min Nam

    -   chaired the 'Special Session – Spatial Connectivity of Northeast Asia Regions' at the 12th Asian Conference in Regional Science, held in hybrid mode in Ulsan, Korea, on 9 August 2022.

        In this session, his co-authored paper, titled 'Regional Growth and Distribution Impacts of Improved Cross-border Road Transport System along the China-Indochina Peninsular Economic Corridor', was also presented by Dr Ji Zheng, a postdoctoral fellow under his supervision.

        -   Conference Website

        -   Conference Programme Book

6. Dr Yulun Zhou

    - was invited to give a talk, titled 'Applications of Modern Technologies in Generative Computational Design', at the Lands Department (LandsD) of the HKSAR Government on 10 June 2022.

      Around 100 government officials attended the event, which also marked the successful completion of LandsD's *Seminar-Workshop Series in Urban Analytics*, initiated and led by Professor Rebecca Chiu and Dr Kenneth Tang.
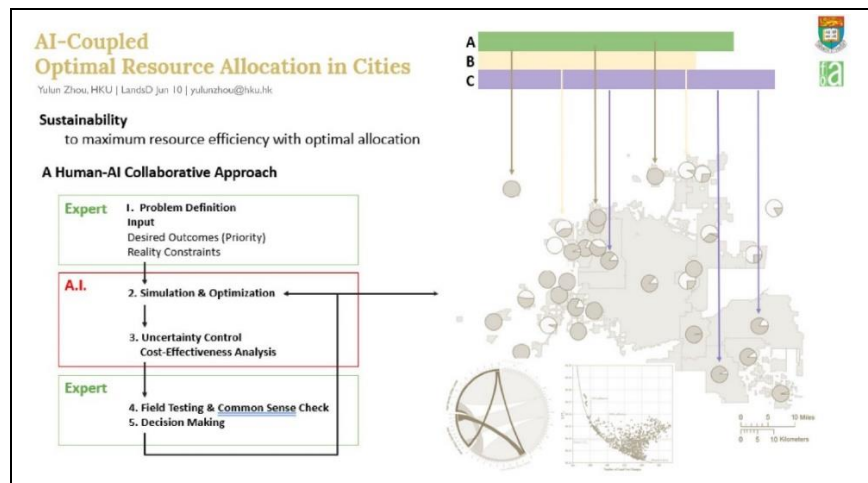
7. Professor Shenjing He

    - was invited by the Hong Kong Institute of Architects to deliver a talk in relation to Urban-Rural Symbiosis and Development, at the HKIA Journal Symposium 'Countryside?' on 21 August 2022.

More information: https://www.hkia.net/en/whats-on.html?id=9060

8. Dr Tianren Yang

   - co-organised an event at the UN-Habitat World Urban Forum (WUF) with the International Society of City and Regional Planners (ISOCARP) to facilitate discussion on the topic of 'Sino-EU Sustainable Urban and Rural Regeneration'. The event was conducted in hybrid mode on 30 June 2022.
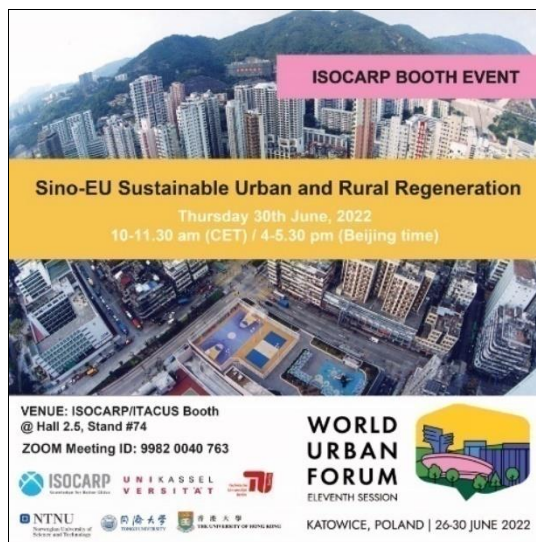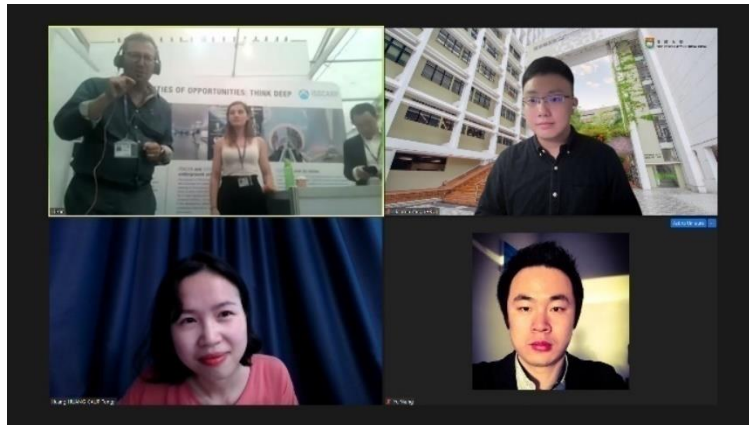
Future Urbanity & Sustainable Environment Lab

1. Dr Binley Chen

   - has received a Seed Fund for Basic Research from the University Research Committee, for his project 'Urban Land Use Monitor (LUMonitor): Time-series Mapping of Essential Urban Land Use Categories in Greater Bay Area'.

     Abstract: The knowledge about the historical process and future development of urban land uses is very supportive to city managers and relevant stakeholders for strategic urban planning on heathy and sustainable development, especially for those rapidly urbanised regions where urban land use is changing dramatically. Although several pioneer studies have multi-source and multi-scale remote sensing datasets and different algorithms to derive high-level semantic classification of urban land uses (Chen et al. 2021; Gong et al. 2020a; Tu et al. 2020), time-series mapping of essential urban land use categories (EULUC) remains limited and challenging. To close this knowledge gap and better inform the spatiotemporal dynamic of urban functions, this project will develop a robust and cost-effective framework for mapping annual dynamics of EULUC, by leveraging multi-source remote sensing imagery and urban sensing geospatial big data. The proposed urban land use monitor (LUMonitor) will be tested and fine-tuned in the Guangdong-Hong Kong-Macau Greater Bay Area (GBA), a fast-developing metropolitan region in Southern China.
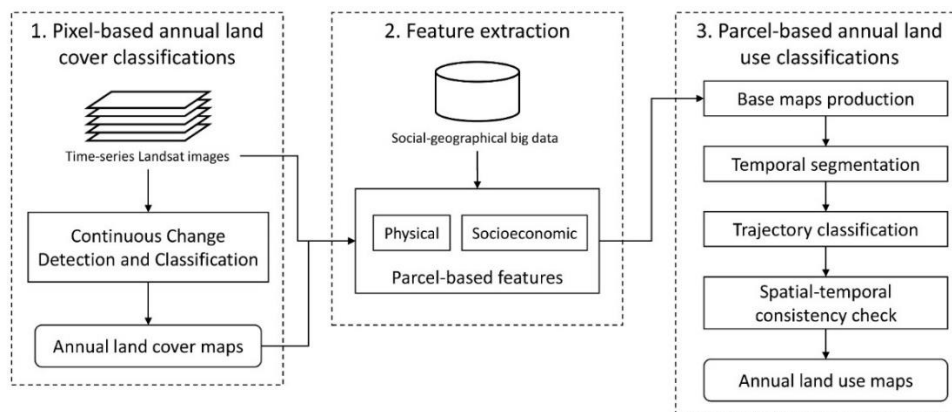

   - gave an invited lecture on 'Leveraging Geospatial Big Data and Interdisciplinary Approaches in Urban Environmental Studies' at the Fourth International Quantitative Remote Sensing Summer School, co-organised by Wuhan University, The University of Maryland and The University of Hong Kong during 5-13 July 2022.

- was named 'Global Young Scientist' at the Global Young Scientist Forum on Frontier Science and Technology, as part of the World Geospatial Developers Conference on 21 July 2022. For more details, visit: http://wgdc.taibo.cn/gysf

- has joined the Editorial Board of *Frontiers in Remote Sensing* (Remote Sensing Time Series Analysis) as Associate Editor.
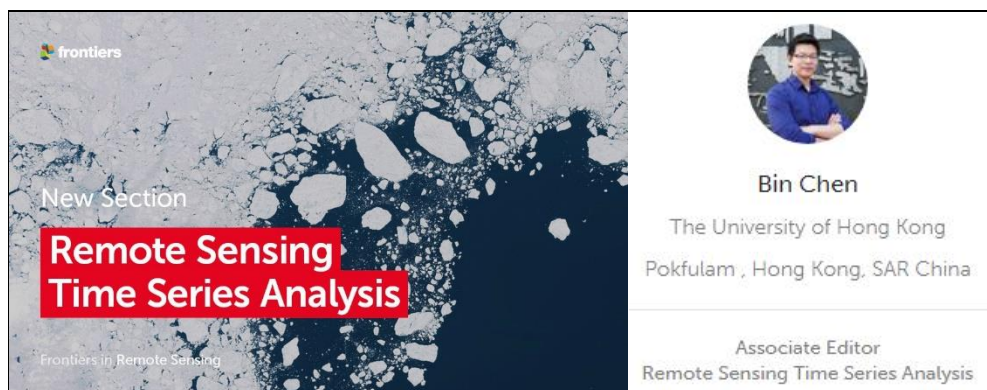
2. Dr Binley Chen, Dr Shengbiao Wu and Dean Chris Webster

- have published the following papers:

(i) **Chen, B.***, Tu, Y., **Wu, S.**, Song, Y., Jin, Y., **Webster, C.**, Xu, B., & Gong, P. (2022). Beyond green environments: Multi-scale difference in human exposure to greenspace in China. *Environment International, 166*, 107348. https://doi.org/10.1016/j.envint.2022.107348 (IF = 13.35)

Abstract: Greenspace exposure metrics can allow for comparisons of green space supply across time, space, and population groups, and for inferring patterns of variation in opportunities for people to enjoy the health and recreational benefits of nearby green environments. A better understanding of greenspace exposure differences across various spatial scales is a critical requirement for lessening environmental health disparities. However, existing studies are typically limited to a single city or across selected cities, which severely limits the use of results in measuring systemic national and regional scale differences that might need policy at above individual city planning level. To close this knowledge gap, our study aims to provide a holistic assessment of multi-scale greenspace exposure across provinces, cities, counties, towns, and land parcels for the whole of China. We mapped the nationwide fractional greenspace coverage at 10 m with Sentinel-2 satellite imagery, and then modelled population-weighted greenspace exposure to examine variation of greenspace exposure across scales. Our results show a prominent scaling effect of greenspace exposure across multi-scale administrative divisions in China, suggesting, as expected, an increase in heterogeneity with finer spatial scales. We also identify an asymmetric pattern of the difference between greenspace exposure and greenspace coverage, across a geo-demographic demarcation boundary (i.e., along the Heihe–Tengchong Line). In general, the greenspace coverage rate will overestimate more realistic human exposure to greenspace in East China while underestimating in West China. We further found that, in China, more recently urbanized areas have much better greenspace exposure than older urban areas. Our study provides a spatially explicit greenspace exposure metric for discovering multi-scale greenspace exposure difference, which will enhance governments' capacity to quantify environmental justice, detect vulnerable greenspace exposure risk hotspots, prioritize greenspace management at the supra-city scale, and monitor the balance between greenspace supply and demand.

Visualisation: Online GIS platform of greenspace exposure in China
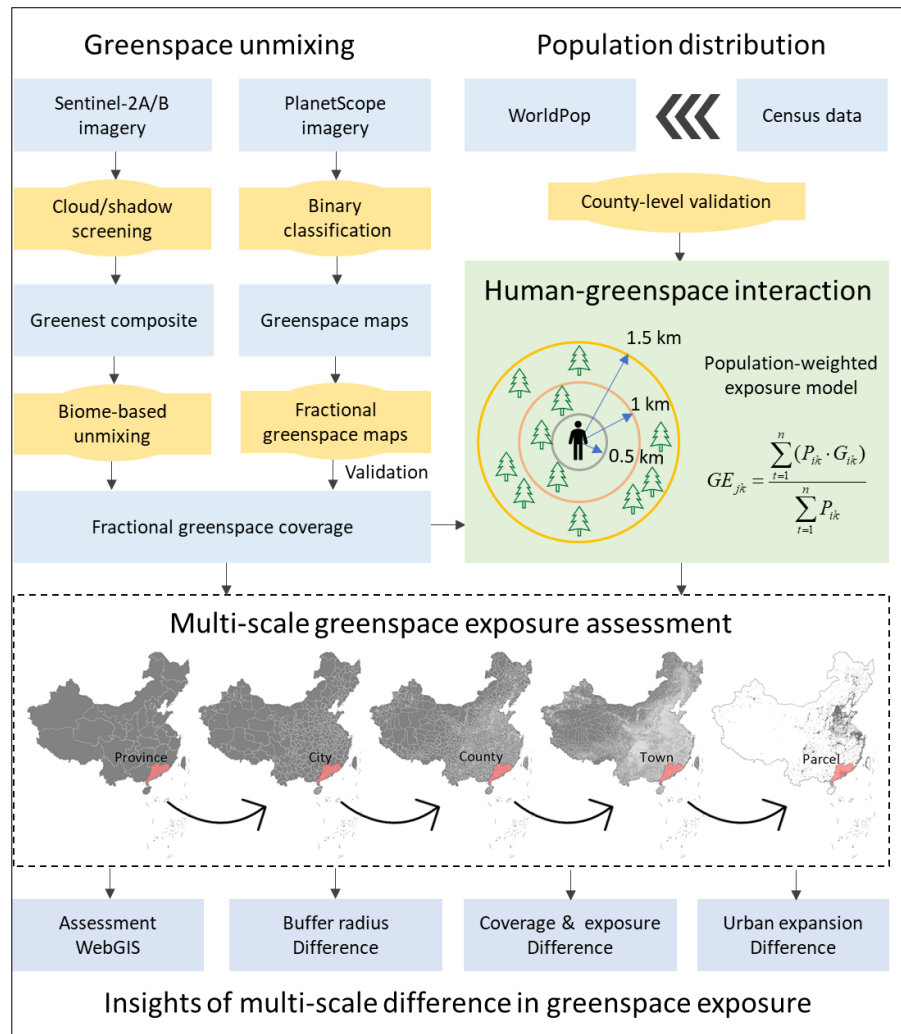
Flowchart of study design, including dataset, methods, and expected results.

(ii) **Chen, B.***, **Wu, S.**, Song, Y., **Webster, C.**, Xu, B., & Gong, P. (2022). Contrasting inequality in human exposure to greenspace between cities of Global North and Global South. *Nature Communications* ,13, 4636. https://doi.org/10.1038/s41467-022-32258-4.

Abstract: *The United Nations specified the need for "providing universal access to greenspace for urban residents" in the 11th Sustainable Development Goal. Yet, how far we are from this goal remains unclear. Here, we develop a methodology incorporating fine-resolution population and greenspace mappings and use the results for 2020 to elucidate global differences in human exposure to greenspace. We identify a contrasting pattern of greenspace exposure between Global South and North cities. Global South cities enjoy only one third of the greenspace exposure level of Global North cities. Greenspace exposure inequality (Gini: 0.47) in Global South cities is nearly twice that of Global North cities (Gini: 0.27). We quantify that 22% of the spatial disparity is associated with greenspace provision, and 53% is associated with joint effects of greenspace provision and spatial configuration. These findings highlight the need for prioritizing greening policies to mitigate environmental disparity and achieve sustainable development goals.*

iLab

1. Mr Maosu Li (DUPAD PhD Year 3 student)

    -   was invited to speak at the Computer Vision and Pattern Recognition (CVPR) Conference 2022, organised in New Orleans, USA. He and his team members, Miss Yijie Wu (PhD Year 1 student, REC) and Dr Frank Xue (REC), presented on the topic of 'Floor Layer-based Kernels and Pillars of Points (FLKPP): 3D Building Model Reconstruction'.
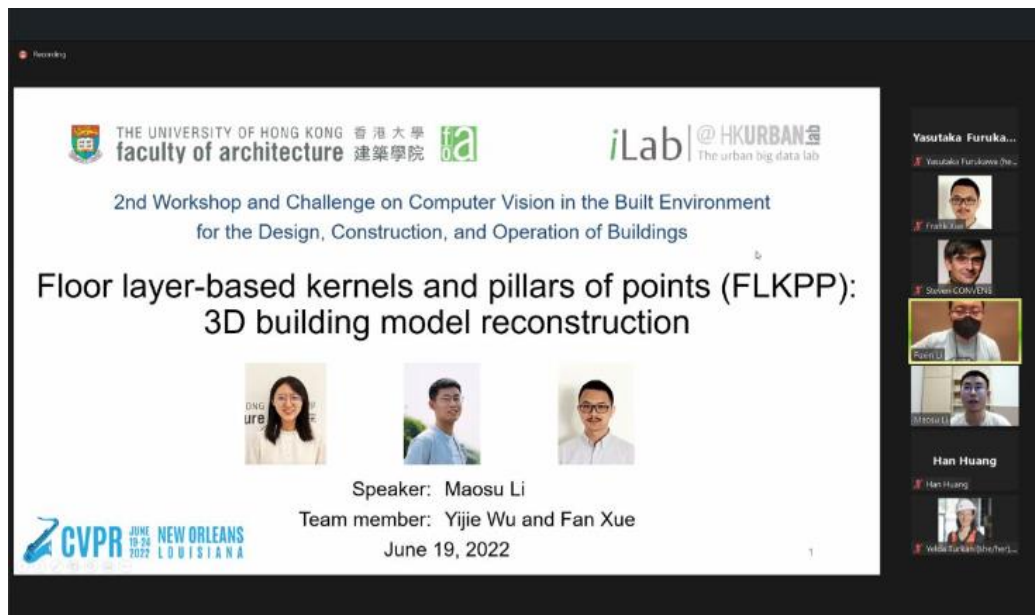
2. iLab researchers

    -   The following paper received Best Paper Award 2022 from the American Society of Civil Engineers (ASCE) Journal of Management in Engineering (JME) [2022 IF = 6.853]:

        Wu, L., Lu, W.S., Zhao, R., Xu, J.Y., Li, X., & **Xue, F.** (2022). Using blockchain to improve information sharing accuracy in the onsite assembly of modular construction. *ASCE Journal of Management in Engineering, 38*(3), 04022014. https://doi.org/10.1061/(ASCE)ME.1943-5479.0001029

        Abstract: *Onsite assembly is a critical stage for modular construction. Its success or failure depends on accurate information sharing among numerous stakeholders who, unfortunately, often possess unsynchronized information. Owing to its decentralized consensus mechanism, blockchain has the potential to improve information-sharing accuracy on construction sites. However, little research has documented how this can be done. Adopting a design science research (DSR) method, this study aimed to explore the use of blockchain technology to improve information-sharing accuracy in the onsite assembly of modular*

construction (OAMC). First, an OAMC business process analysis was conducted to understand the issues leading to information sharing, in particular its accuracy. Then, a blockchain-based conceptual model was developed. Its components, such as membership registration, information sharing-request, ordering service, consensus mechanism, and distributed storage, were described. Finally, a prototype system was developed and validated in a mock-up OAMC. The results show that the prototype system can improve the accuracy of information sharing in OAMC by allowing project participants to endorse information about the modules and their assembly through the blockchain's consensus mechanism. This study explores and implements blockchain technology in a specific construction area. It can serve as a valuable reference for future endeavors in harnessing the power of blockchain technology, particularly for mobilizing information endorsement mechanisms for various value-added applications.

Ronald Coase Centre for Property Rights Research

1. Dr Michael Chongyu Wang

   - has published the following paper:

   Devine, A., Sanderford, A., & **Wang, C.** (2022). Sustainability and Private Equity Real Estate Returns. *The Journal of Real Estate Finance and Economics.* https://doi.org/10.1007/s11146-022-09914-z

   Abstract: This paper explores private equity real estate fund performance and voluntary environmental, social, and governance (ESG) disclosures. Using data from the National Council of Real Estate Investment Fiduciaries (NCREIF), it examines the relationship between performance for funds in the Open Ended Diversified Core Equity (ODCE) Index and reporting to the Global Real Estate Sustainability Benchmark (GRESB), a platform for disclosure about fund/firm-level ESG strategies and performance. The empirical analyses suggest four conclusions. First, there has been substantial adoption of and reporting to GRESB in the last 5 years, suggesting that reporting to GRESB is a form of table stakes for ODCE members. Second, GRESB participation and performance are both significant predictors of cross-sectional fund returns. Third, GRESB participation and performance are associated with the price appreciation component of fund total returns but not with the income component. Fourth, the relationships between fund returns and GRESB participation and scores are independent of local economic conditions. These results close an important gap in the literature about private equity real estate fund performance and ESG/climate change mitigation efforts in commercial real estate markets.
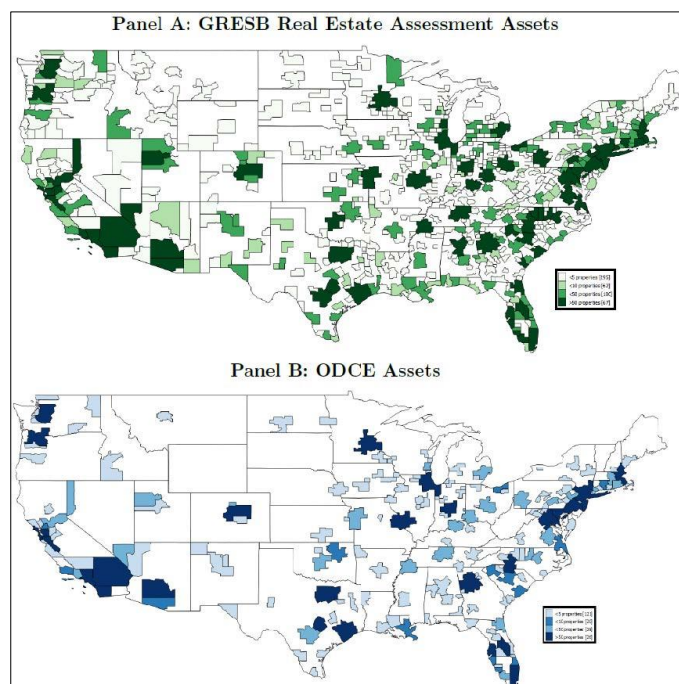
GRESB & ODCE Asset Density, by CBSA

ODCE Quarterly Return, GRESB vs. Non-GRESE

2. Professor Lawrence Lai and Professor Stephen Davies

- have published the following article:

Lai, L. W. C., & **Davies, S. N. G.** (2022). Is non-zoning of land impossible? Eight fundamental propositions of zoning. *Journal of Environmental Policy & Planning*, 1-16. https://doi.org/10.1080/1523908X.2022.2098096

Abstract: This essay explains that by virtue of having its boundary delineated, each parcel of land thus defined (or, more technically, zoned) acquires a unique boundary rendering it a discretely differentiated good. Zoning is about enclosing otherwise common resources with clear boundaries, both land and sea, to constrain rent dissipation, and enable betterment and conservation. By referring to parallels in maritime zoning according to international law and treaties, the discussion frees bundling zoning with U.S. zoning law vocabulary and explores the implications of the generic meaning of zoning as boundary delineation. Zoning is the primeval form of town and country planning. It can be imposed by state command or adopted by mutual agreement between government and individuals, conferring or attenuating rights and/or stipulating obligations. The actual effect of zoning is a case-by-case empirical matter. Zoning has a significant informational dimension and is a form of production, leaving a very rigid physical geographical outcome. Dezoning in the sense of depriving land property of its boundaries is generically impossible: once zoned (and thus created), a plot or parcel cannot be uncreated, just changed.

3. Professor Kelvin Wong and Professor K.W. Chau

    -   have published the following papers:

    (i) **Wong, S.K.**, Cheung, K.S., Deng, K.K., & **Chau, K.W.** (2021). Policy responses to an overheated housing market: Credit tightening versus transaction taxes. *Journal of Asian Economics, 75*, 101330. ISSN 1049-0078. https://doi.org/10.1016/j.asieco.2021.101330

    Abstract*: Among Asian economies, Hong Kong has experienced the highest real growth in house prices since the 2010s. Two macroprudential measures, namely credit tightening (loan-to-value ratio cap) and transaction taxes (stamp duty), were introduced to cool down the overheated housing market. This study examines and compares their effectiveness based on a set of constant-quality house price indices. Through an error correction model, we find that credit tightening was able to curb house price growth in the high-price segment, while transaction taxes could not. An explanation is that the exemptions from transaction taxes for those with genuine housing needs could be abused by other market participants. It is easier for buyers to exploit the exemptions to get around the stamp duty than to manipulate the property valuation for mortgage lending. The implication is that the effectiveness of macroprudential measures hinges on whether compliance or exemption can be easily monitored and enforced.*

    (ii) **Wong, S.K.**, Deng, K.K., & **Chau, K.W.** (2022). Do short-term real estate investors outperform the market? *Journal of Real Estate Research, 44*(2), 287-309. https://doi.org/10.1080/08965803.2021.2008608

    Abstract*: Some real estate investors engage in short-term trading in spite of the high transaction costs that this involves. While previous studies have identified various incentives that encourage short-term investors to engage in these practices, there has, to date, been little investigation into the influence of different market conditions over their performance. Based on real estate transaction data from Hong Kong, this study finds that buying and reselling within three months produces, on average, a gross return of 6% above the market. Three economic conditions are shown to be favorable to their performance: 1) comparable transactions are scant; 2) prices are more dispersed; and 3) market prices go down. Further analysis reveals that these short-term investors make a greater profit from purchases than from resales. While it is beyond the scope of this study to pin down the strategy adopted by each investor, the results are consistent with a "search" explanation, according to which, short-term investors behave as if they were arbitrageurs capable of exploiting the valuation spread between buyers and sellers.*

4. Professor Kelvin Wong

- has published the following paper:

Deng, K.K., **Wong, S.K.**, Cheung, K.S., & Tse, K.S. (2022). Do real estate investors trade on momentum? *The North American Journal of Economics and Finance, 62*, 101746. ISSN 1062-9408. https://doi.org/10.1016/j.najef.2022.101746

Abstract: Real estate markets are known to be less-than-efficient for many reasons, but what roles short-term trading plays are unclear. Do short-term investors bring additional risk to the market and cause prices to deviate from fundamental values? Based on an extensive dataset of property transactions and a policy shock that substantially raised the cost of short-term trading in Hong Kong, we estimate 'real estate risk' with and without short-term trading based on return predictability, return volatility, and price dispersion. Our results show that as short-term investors exit the market, market returns are less predictable and less volatile, while prices are less dispersed cross-sectionally. Consistent with herding models in behavioral finance, the findings suggest that short-term investors are momentum traders who do not enhance price efficiency.

- was interviewed by *Hong Kong Economic Journal Monthly 信報財經月刊* (#544, July 2022, p.20) in its feature story "過度市場化釀惡果 房產共富樓市變天", where he shared his views on housing affordability and housing REITs.

Social Infrastructure for Equity and Wellbeing Lab

1. Professor Shenjing He

   - has published the following paper:

   Wang, K., Qian, J., & **He, S.** (2022). From campaign-style governance to multiple environmentalities: urban political ecologies of e-waste regulation in Guiyu, China. *Urban Geography,* 1-24. https://doi.org/10.1080/02723638.2022.2092307

Abstract: *Recent urban political ecology (UPE) literature on urban environmentality, drawing on Foucauldian power analytics, sheds important light on how powers in non-coercive, non-sovereign, and diffused forms emerge and produce docile environmental subjects. Meanwhile, much literature on urban environmental politics in the Global South works with an environmental governance approach, focusing on the role of sovereign power in governing urban socio-ecological changes. This paper collapses the distinction between sovereign and non-sovereign forms of governance by engaging with the multiple environmentalities thesis. This theoretical perspective is illustrated through a case study of a highly polluted global e-waste processing hub, namely Guiyu Town, Guangdong Province, China. In all, this study not only highlights the relevance of the multiple environmentalities paradigm to UPE but also paves a way towards developing situated theories and empirics amidst environmental politics in the urban South.*