Dear All,

This is the 3rd time I have attempted to write the blog for this edition of Dean’s Roundup. The delay has led me to decide on a more sensible approach for the current phase of super-busy activity in FoA. I shall endeavor from now on to send out a DRup every two weeks, if necessary with more of a tweet than a blog, but a blog when I have time. I am also very happy to share the space with any colleague who wants to publish thoughts that will be of interest to the DRup community (its is read by people outside HKU as well as by FoA teachers, researchers and PhD students, and SMT colleagues comment on it from time to time). As well as giving a chance to share what we are each doing, it is a good way of archiving a record of our notable activities and achievements and it tells a story as you look back over the several hundred DRups from the past 6 years. I have said this before – probably also by way of apology for not publishing DRup as frequently as I should – but the longer gaps of late, signal an order-of-magnitude rise in research, teaching-development and KE activity. The list below demonstrates some, but by no means all, of this over the past month or two.

Let me say just one thing of substance in terms of research news. FoA has recently received a very generous donation (fuller details later) to support an exciting sustainable design and planning research project in the Greater Bay Area (3M HKD with matching funds and an anticipated multi-million additional RMB from partnering municipal governments and design agency partners). The project will produce a regional landscape plan for the GBA aimed at providing a visionary framework for active travel (walking, cycling, public transport and personal drone travel) for the next century. Internally, it will be a partnership between FoA departments, with DUPAD providing walkability and transport analytics, DLA and DUPAD the landscape analytics and DLA and Architecture the design work. We can also make space for external partners. I’ll be setting up the team in the next few weeks and inviting anyone who has something to contribute to do so. Outputs will include the plan, reports, scientific papers, design papers and a book.

As some of you will have picked up, this is likely to be the first of a number of Greater Bay Area big research projects. In partnership with deans of two other HKU faculties, I have recently submitted two very large funding bids for urban research initiatives and I am preparing a third with Juan Du. Watch this space!
Congratulations and thanks to everyone behind the hive of activity listed below. FoA is becoming a truly great built environment research unit of international significance. I am presenting some of our work at the ACSP (Chairs of US Planning Schools) conference in Minneapolis this week, as I did at the PLACES journal board meeting at Berkeley not so long ago, (with chairs and/or senior academics from many of the USA’s most significant architecture programs present). It is definitely time to fly the flag more, since we have so much that is impressive to talk about. I encourage you all to do the same in your respective spheres and communities of influence.

Thanks and best wishes.

Chris
Teaching and other Achievements

Faculty of Architecture

1. Dr. Ren Chao

- has been appointed by the HKSAR Government Buildings Department as a member of the Technical Committee on Design and Construction Requirements for Energy Efficiency of Buildings for the term of office from 1 March 2019 to 28 February 2022.

- has been invited to join the steering committee of the Global Heat Health Information Network (GHHIN). The faculty will be recognised as one of the Hong Kong partners of the GHHIN, along with CUHK, CityU, Hong Kong Observatory and the Hong Kong Red Cross.

- The First Global Forum on Heat and Health, held from 17 to 20 December 2018 at The University of Hong Kong, brought together over 120 climate and health experts from 33 countries to strengthen cooperation in science. The forum launched a global network which will seek to build diverse partnerships, improve available evidence and actionable information for planning and preparedness, enhance global heat wave prediction capabilities, and promote life-saving heat-resilient interventions such as community outreach and early warning systems.

2. Dean Webster

- Gave an opening remark at the first Global Heat Health Information Network (GHHIN) Conference on 17 December 2018. The GHHIN conference is co-hosted by the Hong Kong Observatory, HKU School of Public Health, HKU Faculty of Architecture and CUHK Institute of Environment, Energy and Sustainability, CUHK Centre for Global Health, CUHK Collaborating Centre for Oxford University and CUHK for Disaster and Medical Humanitarian Response.

- Delivered an opening remark at the historical drawings and manuscripts donation signing ceremony hosted by P&T Group at the Fringe Club on 20 November 2018. Peter Sidorko (University Librarian), Dr. Eric Schuldenfrei, Dr. Cole Roskam and Dr. Eunice Seng also joined the occasion.
Department of Architecture

1. Dr. Cole Roskam
- was invited to participate in an international conference on material culture in Mao-era China, sponsored by the Council on East Asian Studies at Yale University on 14-15 September 2018. A second, follow-up conference will be held at King's College London in May 2019.
- organized a round table session entitled "The Search for Middle Ground in Africa-Asia Studies: Interdisciplinarity, Infrastructure, and the 'In-Between'" at the second Africa-Asia: A New Axis of Knowledge conference held in Dar-es-Salaam, Tanzania, on 20-22 September 2018.
- was invited to present his research on design institutes in reform-era China as part of the Tongji University Architectural Design Institute's 60th Anniversary, held at Tongji University, on 17-18 October 2018.
- was recently interviewed by CNN, The Guardian, and SCMP for articles related to the new high-speed rail terminal in Hong Kong, and the history of the Mid-Levels, respectively.

Department of Real Estates and Construction

1. Professor Kincho H Law, Visiting Research Professor
- Department of Real Estate and Construction and iLab organized a HKU Visiting Research Professor (VRP) Inauguration Lecture entitled “Applications of AI and Machine Learning in Engineering”, delivered by Professor Kincho H Law, HKU VRP and Professor of Stanford University.
2. Delft University of Technology’s visit

- A group of master students majoring in Construction Engineering and Management from the Delft University of Technology visited Department of Real Estate and Construction on 14 November 2018.

Prof. K.W. Chau, Head of Department, delivered an open speech to welcome the students and their teachers.

Dr. Wilson Lu gave a presentation entitled “A tour of the construction industry in Hong Kong”.

Dr. Roine Leiringer introduced the MSc programmes to the guests.
3. Dr. Lennon Choy

- Appointed as a member of the Professional Development Committee of the Estate Agents Authority for a term of 2 years till October 2020.

- Was invited by the British Council as a speaker to a panel discussion at the SPARK 2019. The panel entitled “Urban Paradox – Resolving Disputes over Spaces” investigated the similarities and differences between the governances of physical and cyber spaces. Other speakers include LegCo member Hon Charles Mok and legal scholars from The University of Surrey and The Chinese University of Hong Kong. Organized by the British Council, SPARK 2019 was held in Tai Kwun | Centre for Heritage and Arts between 18 and 20 January 2019. It attracted over 10,000 visitors.

4. Dr. Wilson Lu

- Signed a book contract “Lu, W. and Flanagan, R., Competing in International Construction Markets”. This is a second book commitment since his last book “BIM and big data for construction cost management” which was published in October 2018 with Routledge, Taylor and Francis Group.

- Led a group of students from Delft University of Technology to visit the Third Runway project of Hong Kong International Airport. Mr. Kevin T. Poole, the Executive Director the project, introduces the projects to the group of visitors. This event was strongly supported by the Department of Real Estate and Construction, in particular. Dr Isabelle Chan and Ms. Phoebe Lee, and MSc students from the Department.
- Dr. Lu attended and delivered a keynote speech entitled “Building Information Modelling and Big Data for Construction Cost Management” at the 23rd International Symposium on Advancement of Construction Management and Real Estate, 24-27 Aug 2018, Guiyang, China. The conference was organized by the Chinese Research Institute of Construction Management (CRIOCM) and Guizhou Institute of Technology.

- Delivered an invited talk entitled “Construction Waste Management Research Revisited: A big data approach”. The talk was organised by Civil Division of the Hong Kong Institute of Engineers (HKIE), on 1 September 2018.

- Led the team of iLab for a round trip to the Yangtze River Delta (YRD) in China from 15 to 19 October 2018:

  1. Visited Xi’an Jiaotong Liverpool University (XJTLU), Suzhou, attended a research seminar between XJTLU and HKU. Dr. Fan Xue (research assistant professor with Dr. Lu), Dr. Ke Chen (Postdoctoral fellow with Dr. Lu), and Ms. Anna Zetkulic (senior research assistant with Dr. Lu) gave three talks respectively on 15 October 2018;

  2. Visited a construction waste recycling company situated in Suzhou on 16 October 2018;

  3. Gave an invited lecture entitled “Developing an urban ‘digital twin’: complementing AI with AK” in School of Public Administration, Zhejiang University of Finance and Economics, Hangzhou, on 18 October 2018; Dr. Fan Xue (Research assistant professor with Dr. Lu) and Mr. Tan Tan (research assistant with Dr. Xue) gave a lecture on “BIM and innovation”; Ms. Jing Wang, Ms. Jinying Xu, Mr. Zhikang Bao did their presentations respectively;
(4) Visited Research Institute of Complex Engineering Management, Tongji University, Shanghai on 19 October 2018. Introduced the research of iLab. Dr. Fan Xue (research assistant professor with Dr. Lu) gave a talk on DFO algorithm.

Dr. Lu joined the research seminar in Chongqing, China on 27 October 2018. The topic of the seminar is related to evaluation and policy studies of the resources and environment capacity of mega cities in China in the context of big data (in Chinese 大數據背景下我囯大型城市資源環境承載力評價與政策研究). The research is supported by the National Social Science Fund of China for Major Projects 2017 (2017 年度國家社科基金重大項目).

Dr. Lu and his PhD student Ms. Jing Wang joined the organizing committee of the 1st Greater Bay Area Student BIM-CIM Innovation Competition. They provided consultant advises and prepared the testing questions for the competition in Hong Kong context. On 7 November 2018, Ms Jing Wang attended the 1st internal meeting of Hong Kong organizing committee in the Hong Kong Continuous Professional Education Centre, discussing the promotion and preparation works with representatives from five universities in Hong Kong and Macau.
Dr. Lu visited Guizhou, Guiyang Province, China during 10-12 November 2018 with a group of representatives from Guangzhou Association for Science and Technology. He visited the Five-hundred-meter Aperture Spherical Radio Telescope (Nickname Tianyan or “天眼” in Chinese).

Dr. Lu and his PhD students Ms. Yuhan Niu, Ms. Jinying Xu, and research assistant Mr. Jin Cao attended the Launching Ceremony of the CIC Construction Innovation Award 2019 on 20 November 2018 at ZCB. Two world renowned speakers Mr. Mark Farmer and Prof. Roger Flanagan shared their insights during the ceremony. The Construction Innovation Award winners from last year also shared their award-winning experience.

Dr. Lu had a meeting with industry practitioners from Zhejiang Green Building Integration Technologies Co., Ltd. to exchange knowledge about BIM, IoT, and prefabricated construction.
Dr. Lu had a meeting with Dr. Peng Yi and his students from Zhejiang University of Finance and Economics, on 30 November 2018.

Dr. Lu delivered an invited talk “Building Information Modelling (BIM) for Construction Waste Management (CWM): Myth and Reality” on the International Conference on Construction Project Management and Construction Engineering (iCCPMCE 2018), from 03-06 December 2018, at Western Sydney University, Sydney, Australia.

Dr. Lu delivered an invited talk “Smart Construction Objects (SCOs): A new paradigm for smarter construction?” on 10 December 2018 at School of Civil and Infrastructure Engineering, Swanston Academic Building, RMIT University, Melbourne, Australia.

Dr. Lu met with scholars from Melbourne University, Monash University, and RMIT University during his academic visits in early December 2018.

Dr. Lu met with key members of the Editorial Board of Project Management Journal (PMJ) at Sheraton Hotel, Melbourne, Australia, in early December 2018.

Dr. Lu was invited to join the Construction Innovation and Technology Fund (CITF) as the BIM panel vetting sub-committee member. The CITF was set up by the Hong Kong government to boost the capacities of enterprises and practitioners in the construction industry to adopt new technology, and support the industry to harness innovative technology. The Development Bureau has commissioned the Construction Industry Council (CIC) to implement the HK$1 billion CITF. There are four such committees including BIM, Advanced construction technologies, Modular Integrated Construction, and Manpower Development.

Dr. Lu was appointed as the Vice Chairman of the Organizing Committee of the 1st Greater Bay Area Student BIM-CIM Innovation Competition.

Dr. Lu was renewed his LSCM’s Expert Review Panel (ERP) membership for a two-year period from January 2019 to December 2020. The ERP is to assist the Technology Committee of the Logistics and Supply Chain Management (LSCM) Center with the following tasks:

1. To provide industry feedback and technological expertise to the Centre’s R&D roadmap;
2. To assess and endorse the scopes, implementation approaches of R&D projects proposals; and;
3. To provide comments & make recommendations to the Technology Committee.

Dr. Lu was approached by the Hong Kong Productivity Council Academy (HKPC) and appointed as the expert in the Assessor Pool of its Building Information Modelling (BIM) Certification and Accreditation Schemes.

Dr. Lu was selected for adding into the National Science and Technology Programmes Expert Database (國家科技專家庫).
5. Ms. Yuhan Niu and Ms. Jing Wang (both PhD students with Dr. Wilson Lu)

- attended the Gammon Cocktail Reception on Nov 13 in Tai Kwun. Mrs Carrie Lam Cheng Yuet-ngor gave a speech during in the reception to share her vision towards Hong Kong construction industry in the coming few years.

6. Mr. Zhikang Bao (REC PhD student jointly supervised by Dr. Wilson W.S. Lu and Prof. K. W. Chau)


7. Ms. Jing Wang (REC PhD student jointly supervised by Dr. Wilson W.S. Lu and Prof. K. W. Chau)


8. Ms. Qingting Xiang (Research Assistant with Dr. Wilson W.S. Lu)

9. Ms. Jinying Xu (REC PhD student jointly supervised by Dr. Wilson W.S. Lu and Dr. L.H. Li)

10. Ms. Anna Zetkulic (A Senior Research Assistant with Dr. Wilson W.S. Lu)

Department of Urban Planning and Design

1. Dr. Roger C. K. Chan
   - Dr. Chan was re-elected to the Executive Committee cum Vice-President, Supervisory Board of the Macao Urban Planning Institute (2018-2021).

2. Dr. Roger C. K. Chan and Dr. Xu Wang
   - co-authored the paper with Yaping Huang and Xuefeng He:


**Abstract:** Current village planning in China, which mostly draws on the experience from urban planning, is a rational planning model based on elite decision-making, resulting in many problems. Essentially, planning is a kind of institutional arrangement according to the demands of multiple actors under certain social context. Since actors and their behaviors in villages are far different from those in cities, leading to the reorganization of planning assumptions and prerequisites, village planning paradigms are prominently distinct from urban planning paradigms. This paper figures out the significance of social networks
and argues that village planning is a kind of communicative planning based on endogenous order, referring to the paradigm development course of Western urban planning theories and the features of Chinese villages. In conclusion, it stresses that village planning should focus on social network and promote communication, coordination, and consensus-building, and accordingly planners should adjust their role.

This paper was ranked first in the “honorable mention” category of the Jin Jingchang China Urban Planning Excellent Papers Award 2018 (金經昌中國城市規劃優秀論文獎). The award is organized by the Urban Planning Society of China and adjudicated by 14 leading planning academics and practitioners. [https://mp.weixin.qq.com/s/HDlBKuMQpAvykzav3BXaGA](https://mp.weixin.qq.com/s/HDlBKuMQpAvykzav3BXaGA)

Dr. Wang received the Hong Kong PhD Fellowship in 2014. He was the first Fulbright scholar in DUPAD and conducted research at Harvard University for 10 months in 2016-17. Dr. Wang successful defended his thesis in 2017 under the supervision of Dr. Roger C K Chan.

Dr. Wang is now a senior staff at the Department of Housing and Urban-Rural Development, Sichuan province. His recent projects include urban agglomeration plan and master plan of cities and counties in Sichuan province.

3. Alain Chiaradia

- Hong Kong Institute of Urban Design - Master of Urban Design

On 18 September 2018, the Hong Kong Institute of Urban Design (HKIUD) officially announced the accreditation for a period of 5 years for the Master of Urban Design (MUD) programme offered by the Department. The HKIUD will nominate an HKIUD professional member as MUD co-external examiner.

- HKIUD student Awards

For their Dissertation/Thesis Design, Miss Yuling Yang (MUD graduate 16-17 and MATPP graduate 17-18) was awarded the 2016-17 HKIUD Student Prize:
An investigation of community garden in Hong Kong and their role in fostering social cohesion and green infrastructure proposals for Tai Kok Tsui.

Mr. Archer Wong Lap Man (MUD graduate 17-18) was awarded the 2017-18 HKIUD Student Prize: An investigation of public life in TD's pedestrianised area in Hong Kong and alternative public space proposals for Yuen Long.

- Norman Foster Foundation Urban Mobility Scholarship

Miss Yuling Yang was the recipient of the prestigious 2018, Norman Foster Foundation Urban Mobility Scholarship, an award that is globally competitive. In 2017, Miss YANG, led the only student team that was awarded an honourable mention at the first ULI Hong Kong Innovation Ideas Competition for young professionals.

4. Professor Rebecca Chiu and Dean Webster

- Visited the School of Government of the Peking University to discuss potential collaboration in teaching and research with the Head of the Department (name) and names….

URL: http://www.iug.pku.edu.cn/xwzx/byxw/1295661.htm
5. Professor Rebecca Chiu
- Invited to give a lecture entitled “Urban and Housing governance in socialist China’s marketizing economy” to the School of Government of the Peking University, on 21 November 2018.

6. Dr. Guibo Sun
- Attended the National Natural Science Foundation research project workshop hosted by XJTLU on elderly health and built environment on 7 January 2019, with delegates from Soochow University, Suzhou University of Technology and the Wujiang Tai Lake New Town Planning Bureau attending. In the workshop, Dr. Sun presented his research on “Natural experimental studies in transport and health”.

- Awarded a University seed fund for his research. Details are as follows:

  Awarded amount: HK$ 93,200
  PI: Dr. Guibo Sun
  Abstract: This project aims to develop a protocol for connectivity impact analysis of Belt and Road (BRI) transport infrastructure projects for use by government, academic, private, media and individual stakeholders. It will include: (1) A network analysis tool, which can conduct multi-modal network analysis for detecting centrality, accessibility, and integration changes, using transport networks integrating road, rail and other forms of transport. (2) A best practice case applying the above tool to the China-Pakistan Economic Corridor (CPEC),
which can offer quantitative insights on the connectivity impact of BRI in Pakistan and China West and can be used as a showcase for the analysis of other BRI corridors.

7. Professor Bo-sin Tang

- was conferred the award of Fellow of the Academy of Social Sciences (FAcSS) on 18 October 2018 for his contribution to social science.

- was appointed by the Hong Kong Institute of Planners (HKIP) as a member of the Adjudication Panel of the HKIP Awards 2018 and attended the Adjudication Panel Meeting on 20 October 2018.

- Tiffany Yeung and Frankie Choy (BAUS 2018 graduates and MUP-1 students) received the Outstanding Awards for their BAUS final-year dissertations from the Planning and Development Division of the Hong Kong Institute of Surveyors. They received the Awards at the Annual Dinner on 12 October 2018 and presented their dissertation findings.
- Ken Chow and Leona Chen (BAUS Year-4 students) shared their learning experiences in the BAUS programme at the Annual Dinner. Many BAUS graduates and students attended the Dinner and networked with seasoned professionals and practitioners in the built environment sector.

- BAUS and MUP students participated in the “Designing Attractive Open Space for Young People Workshop” organized by Civic Exchange and supported by the Planning Department at the City Gallery on 13 October 2018. The Workshop is part of Jockey Club Civic Exchange “Reconnecting Open Space” programme and Vicky Kung (MUP graduate) is the Project Manager (Public Open Space) of this programme.
8. Professor Anthony Yeh and Dr. Xingjian Liu

- Europe-China International Joint Research Project on Sustainable Mobility and Equality in Mega-City Regions (SIMETRI)

The Sustainable Mobility and Equality in Mega-City Regions (SIMETRI) Europe-China International Joint Research Project in which Prof. Anthony Yeh and Dr. Xingjian Liu of the Department of Urban Planning and Design are Co-PI and Project Investigator respectively have received a total of EUR 870,000 for 3 years from the Joint Programming Initiative Urban European (JPI UE) and National Science Foundation of China (NSFC). The research project aims to develop a world-class science platform for political decision-makers responsible for housing, transport, employment and urban development in the world’s biggest mega-city region, the Pearl River Delta Greater Bay Area. This platform integrates work on inequality indicators and predicting future land use and transport developed in western Europe in London and the Randstad with related work in Shenzhen and Guangzhou, producing a system that will use the state-of-the-art simulation models, big data from routine transport, and new ways of using information technology for participatory governance. It will provide new theoretical approaches and technical support for people-oriented regional planning and governance of mega-city regions, striving for realizing a better city life of human beings. The PI and Co-PIs in Europe include Prof. Mike Batty (PI, University College London), Dr. Zhong Chen (King’s College London), and Dr. Joana Barros (Birkbeck University of London), in the UK, and Prof. Eric Koomen (Vrije Universiteit Amsterdam) in the Netherlands. The PI and Co-PIs in China include Prof. Qingquan Li (PI, Shenzhen University), Prof. Anthony G. O. Yeh (The University of Hong Kong), and Prof. Suhong Zhou (Sun Yat-sen University). This research project is one of the 11 proposals that have been selected from 128 proposals.

- Awarded the “Outstanding Research Student Supervisor Award (ORSSA)” for 2017-18 (URL: http://www.rss.hku.hk/honours-awards/internal-awards/orssa-winners). This award is Granted in recognition of supervisors of research postgraduate students whose guidance has been of particular help to their students in the pursuit of research excellence.

9. Dean Webster

- Invited to give a lecture entitled “Will private neighbourhood governance and planning reshape cities in the 21st century?” to the School of Government of the Peking University, on 21 November 2018.
Division of Landscape Architecture

1. Dr. Cecilia Chu

- Organized a public lecture series and walking tour, entitled “Modern Architecture in Central,” for DOCOMOMO Hong Kong and the Hong Kong Institute of Architectural Conservationists (HKICON). The events were supported by the HKSAR Government through its Built Heritage Conservation Fund (BHCF) program. The lectures and tour discussed a range of modern architectural typologies in Central and their significance in the shaping of Hong Kong’s urban landscapes. Speakers and discussants of the lectures include Carmen Tsui (City U), Edward Leung (HKIA), Charles Lai (a o n a), Eunice Seng (DoA) and Cecilia Chu (DLA). The events were well attended with over 70 participants.

Research Achievements

1. Graduate School award presentation ceremony 2018

The following students/graduates have received their awards in the Graduate School Award Presentation Ceremony for 2018 on Wednesday, 12 December 2018, in Rayson Huang Theatre:

- Miss Ting Wang (PhD candidate of the Department of Architecture), awarded the HKU Foundation Postgraduate Fellowships. Miss Wang is supervised by Dr. Cecilia Chu and co-supervised by Dr. Eunice Seng.

- Miss Hui Guo (PhD candidate of the Department of Real Estate and Construction), awarded the Lee Shau Kee Postgraduate Fellowships. Miss Guo is supervised by Dr. Wilson Lu and co-supervised by Professor K W Chau.

- Miss Anqi Zhang (PhD candidate of the Department of Urban Planning and Design), awarded the Lee Shau Kee Postgraduate Fellowships. Miss Zhang is supervised by Dr. Weifeng Li and co-supervised by Dr. Xingjian Liu.

- Mr. Xiaoling Chu (PhD candidate of the Department of Real Estate and Construction), awarded the Philip K H Wong Foundation Postgraduate Fellowships. Mr. Chu is supervised by Dr. Kelvin Wong and co-supervised by Professor K W Chau.

- Dr. Ka Shing Cheung (PhD graduate of the Department of Real Estate and Construction), awarded the Outstanding Research Postgraduate Student 2016-17. Dr. Cheung was supervised by Professor K W Chau and co-supervised by Dr. Kelvin Wong.

- Miss Ya Zhao (PhD student of the Department of Real Estate and Construction), awarded the Hong Kong PhD Fellowships 2018-19. Miss Zhao is supervised by Dr. Lennon Choy and co-supervised by Professor K W Chau.
- Mr. Xiang Yan (PhD candidate of the Department of Urban Planning and Design), awarded the Hong Kong PhD Fellowships 2018-19. Mr. Yan is supervised by Professor Shenjing He and co-supervised by Dr. Roger Chan.

- Miss Ka Man Leung (PhD candidate of the Department of Real Estate and Construction), awarded the Fulbright-RGC Hong Kong Research Scholar Award Programme for 2018-19. Miss Leung is supervised by Dr. Lennon Choy and co-supervised by Professor K W Chau.

HKUrbanLab research groups

Faculty of Architecture

1. Financial Secretary visits the University

- The Financial Secretary, Mr. Paul Chan, GBM, GBS, MH, JP, led his team to visit the University and met with the senior management team members on 30 January 2019. The delegation visited some of the University’s key innovation and research centres including the HKUrbanLab iLab in Architecture, iDendron, State Key Lab of Pharmaceutical and Biotechnology and State Key Lab of Liver Research. The Financial Secretary was impressed by the research strengths of the University in the areas of biotechnology, AI and Smart City, and Fintech set out by government for focused support.

The Dean has been invited to join the President, the Vice-President and Pro-Vice-Chancellor (Research), the Associate Vice-President (Research), the Dean of Business and Economics, the Associate Dean of Engineering, the Acting Dean of Medicine, the Dean of Science and Kerry Holdings Professor in Law in meeting with the Financial Secretary of HKSAR to discuss and exchange views on the University’s vision on innovation and technology development.

This delegation visit initiated by the Financial Secretary is in response to the HKSAR Government’s plan to invest over HK$ 50 billion reserved from 2018-19 Budget to support a further development of innovation and technology.
- The Dean together with the HKUrban lab leaders have also hosted a lab visit on the 7/F for the delegation following the meeting session.

2. The Hong Kong PhD Fellowship Scheme

- Prof. Bo-sin Tang, Prof. SJ He, Dr. Xingjian Liu and Dr. Wilson Lu’s proposed HKPF nominees have been selected by the University’s Humanities Panel for nomination to the RGC. The Faculty has submitted totally 11 nominees and the University has selected 4 for this round.

3. Public Policy Research (PPR) Funding Scheme 2018-19 (Fourth Round)

- Dr. Wilson Lu has been awarded the above subsidized funding scheme managed by the HKSAR Government Policy Innovation and Coordination Office (PICO) for his project entitled “Finding the Needles in a Haystack: Identification of the Illegal Dumping of Construction Waste Using Big Data” at the amount of HK$ 447,350.

4. Strategic Public Policy Research (SPPR) Funding scheme 2018-19

- Dr. Wilson Lu has also been awarded the above subsidized funding scheme for 2018/19 through his project entitled “Boosting Construction Waste Material Sharing in the Guangdong-Hong Kong-Macao Bay Area” at the amount of HK$2,902,000.

This round’s SPPR is highly competitive with a relatively low success rate (<10%). With this year entering to the third round of SPPR, it is noticed that the 9 SPPR projects funded over the past three years, 3 are residing in the Faculty of Architecture (FoA), and two of the three are coordinated by FoA.

5. RGC Research Impact Fund Scheme 2018-19

- Dr. Ren Chao, Dean Webster and Professor Yugo Li of HKU Department of Mechanical Engineering’s joint application with Professor Edward Ng of CUHK School of Architecture and Dr. Kevin Lau of CUHK Institute of Future Cities to the RIF scheme has been awarded a funding of HK$6,742,960 for the project entitled “Increasing the Resilience to the Health Impacts of Extreme Weather on Elderly People under Future Climate Change” for a period of 36 months.
1. Dr. Cecilia Chu

- Published the following article:


  **Abstract:** **Infrastructure Imagination: Hong Kong City Futures 1972-1988** is a recent public exhibition held at Hong Kong’s City Gallery. The exhibition showcases major infrastructure schemes completed in Hong Kong in the 1970s and 1980s, the so-called “golden age of construction” which saw unprecedented urban transformation in the territory. Photographs featured in the exhibition are the work of Heather Coulson, a leading construction photographer who specializes in large-scale engineering and industrial projects. In this short essay, the two curators, Dorothy Tang and Cecilia Chu, reflect on the roles and meanings of infrastructure and its relationship with landscapes in the Hong Kong context, as well as the significance of construction photography in exposing these relationships.

2. Dr. Cole Roskam


1. Dr. Roger C. K. Chan

- In the Global Mayors' Forum 2018 cum Urban Innovation Conference held in Guangzhou on 6-7 December 2018, Dr. Roger Chan gave a keynote on “Urban Agglomerations and the Greater Bay Area” at the Urban Development in the Bay Area session. He was also a panelist in the session on Urban Culture Inheritance and Innovation for Future Cities. In the interviews with Guangzhou Broadcasting Network and Nansha Daily News, he further spoke on the future development of the Pearl River Delta region. The event was attended by over 450 delegates from 39 countries (105 cities) as well as mainland authorities.

Media coverage: https://mp.weixin.qq.com/s/WdW_cuifpM0Tk3y4j1qWlg

- Dr. Chan co-authored the following conference paper with Kishan Datta Bhatta:


Abstract: The 2015 earthquake in Nepal measuring 7.8 on the Richter scale caused serious damage to Kathmandu Valley and the surrounding rural settlements. More than 9,000 people died, 22,000 were injured, 750,000 houses were damaged or destroyed, and eight million people were reportedly affected. The earthquake not only destroyed rural settlement, but also Kathmandu Valley’s centuries old urban heritage and monuments. Traditional temples, stupas, towers, gates, and squares have been severely damaged. With the establishment of National Reconstruction Authority (NRA), several institutions along with international organisations pledged to contribute in the rehabilitation and
reconstruction of infrastructures, buildings, and heritages. In this context, historic settlements of Kathmandu Valley also received widespread attention for urban regeneration and development. Recognizing the historical and cultural significance of the towns, it is stressed that traditional architecture, cultural identity and urban spaces of such towns should be rejuvenated with strong emphasis on community well-being. Considering the case of historic town ‘Bungamati’ of Katmandu Valley, this paper highlights on the heritage and cultural significance of the historic town. With support of findings through interview with key informants, interaction with local communities and field visits, the paper reviews on reconstruction process and the effectiveness of reconstruction plan in addressing cultural continuity and heritage conservation to promote community sustainability. This paper will recommend how the historic towns of Kathmandu valley such as Bungamati need to be reconstructed and to rekindle their resilience.

2. Prof. Rebecca L. H. Chiu

- Gave a Seminar on “Urban and Housing Governance in Socialist China’s Marketizing Economy” at Peking University Institute of Urban Governance, School of Government on 21 November 2018.

- Discussed with Dean HP Yu and Professor HY Shen of the Institute on potential collaboration in research and other academic events or plans related to OBOR.

- Delivered an invited presentation on “Embracing Professionalism, Co-creating Livability” at the Housing Strategies Summit: Embracing Professionalism, Connecting Communities, jointly organized by the Hong Kong Institute of Housing, Chartered Institute of Housing Asia Pacific Branch, Hong Kong Association of Property Management Companies, HKUSPCE and DUPAD, 28 November 2018.

- Completed a collaborative research project funded by the Hong Kong Institute of Housing on Livability of Large Housing Estates in Hong Kong: Contribution of the Housing Management Profession to celebrate the Institute’s 30th Anniversary. Other team members are Professor Shenjing He and Dr Mandy Lau, Ms Angel Wong, and Peggy Wong. The report was distributed at the Housing Strategy Summit, jointly organized by the Hong Kong Institute of Housing, Chartered Institute of Housing Asia Pacific Branch, Hong Kong Association of Property Management Companies, HKUSPACE and DUPAD, 28 November 2018.
3. Professor Shenjing He


- was listed by Elsevier in January, 2019 as one of the most cited researchers (ranked 11th in social sciences) in mainland China for the fifth consecutive year. The data source Elsevier used was from Scopus which includes publications in English only and collects citations worldwide.

- was invited to serve as Associate Editor for Journal of Rural Studies, starting from January 2019.

- published three co-authored papers with the following details:


**Abstract:** National land use policies and strategies worldwide have attempted to establish a healthy housing rental market towards urban sustainability. Monitoring fine-scale housing rental prices should provide essential implications for equitable housing policies. However, doing so remains a challenge because aggregated data were traditionally collected at a coarse scale through census or social surveys. On-line housing rental websites (OHRWs) have become popular social media platforms in the housing studies. This paper attempts to demonstrate how to monitor fine-scale housing rental prices based on OHRWs using the case of Shenzhen in China. Employing hedonic model, a set of housing rental determinants are initially selected from three characteristics (neighborhood, location and structure) and at three levels (nearest accessibility, 15-minute walking distance availability and sub-district availability). Housing rent prediction models are then established (respectively for October 2017 and February 2018) using the training samples collected from the OHRWs and six machine-learning algorithms, including random forest regression (RFR), extra-trees regression (ETR), gradient-boosting regression (GBR), support vector regression (SVR), multi-layer perceptron neural network (MLP-NN) and k-nearest neighbor algorithm (k-NN). Thereafter, the relative importance of the determinants is calculated and visualized using partial dependence plots. Finally, the models are used to monitor housing rental price dynamics for all of the communities within Shenzhen. Results show that all of the algorithms except SVR generally present good performance. Among them, RFR and ETR are the best one in October 2017 and February 2018, respectively. Concerning the spatial pattern of housing rental, the high-high clusters merge in the central districts, whereas the low-low clusters are located in the outskirts, and the
growth rate is the greatest in the farthest outskirts from the central districts. Each determinant affects the housing rent across different scale and sub-district availability and nearest accessibility are more important than 15-minute walking distance availability. The two most influential determinants are sub-district job opportunity and nearest accessibility to health care facilities. The case of Shenzhen shows that the demonstrated framework, which integrates machine-learning algorithms and the hedonic modeling, is practical and efficient. The approach is believed to provide an essential tool to inform equitable housing policies.


Abstract: Spatial accessibility to medical resources is an integral component of universal health coverage. However, research evaluating the spatial accessibility of healthcare services at the community level in China remains limited. We assessed the community-level spatial access to beds, doctors, and nurses at general hospitals and identified the shortage areas in Shenzhen, one of the fastest growing cities in China. Based on hospital and population data from 2016, spatial accessibility was analyzed using several methods: shortest path analysis, Gini coefficient, and enhanced 2-step floating catchment area (E2SFCA). The study found that 99.9% of the residents in Shenzhen could get to the nearest general hospital within 30 min. Healthcare supply was much more equitable between populations than across communities in the city. E2SFCA scores showed that the communities with the best and worst hospital accessibility were found in the southwest and southeast of the city, respectively. State-owned public hospitals still dominated the medical resources supply market and there was a clear spatial accessibility disparity between private and public healthcare resources. The E2SFCA scores supplement more details about resource disparity over space than do crude provider-to-population ratios (PPR) and can help improve the efficiency of the distribution of medical resources.

4. Professor Shenjing He, Dr. D. Wang and Dean Webster

- Have published a co-authored paper:


Abstract: With the deepening of housing reform, housing mobility and residential differentiation in urban China are on the rise. Extant studies on residential satisfaction and relocation intention tend to focus on rural to urban relocation, while little is known about their interactions in the context of urban China. This study attempts to fill this void by offering an updated and detailed account of intra-urban relocation, and by unravelling the complex mechanism and interactions between residential satisfaction and relocation against a
general background of residential differentiation. Based on a questionnaire survey in three types of neighborhoods representative of the dominant residential patterns in contemporary Chinese cities, namely traditional inner city neighborhoods, urban villages and commodity housing estates, this paper examines determinants of residential satisfaction and relocation intention in each residential segment. The results from linear regression and multivariate logistic regression models show that residential satisfaction is influenced by different factors in the three types of residential neighborhoods, but is generally shaped by community attachment and the housing facilities. Relocation intention is generated by a combination of various factors that differ from neighborhood to neighborhood. In traditional inner city neighborhoods, residents are less likely to develop relocation intentions, and satisfaction levels tend to go down with the age of the housing estates. The situation is slightly different in urban villages, where residents with a weak sense of community prefer to relocate. The diversified determinants of relocation intention in the three types of neighborhoods are by no means incidental, being closely related, in fact, to the demographic composition, built environment and development history of the neighborhood. This study offers a multilayer explanation of intra-urban relocation and its interactions with residential satisfaction in post-reform urban China.

5. Dr. Derrick Ho

- Co-authored the following two papers:


  **Abstract:** Climate variability has been documented as being key to influencing human wellbeing across cities as it is linked to mortality and illness due to changes in the perceived weather cycle. Many studies have investigated the impact of summer temperature on human health and have proposed mitigation strategies for summer heat waves. However, sub-tropical cities are still experiencing winter temperature variations. Increasing winter perceived temperature through the decades may soon affect city wellbeing, due to a larger temperature change between normal winter days and extreme cold events, which may cause higher health risk due to lack of adaptation and self-preparedness. Therefore, winter perceived temperature should also be considered and integrated in urban sustainable planning. This study has integrated the increasing winter perceived temperature as a factor for developing spatiotemporal protocols for mitigating the adverse impact of climate change. Land surface temperature (LST) derived from satellite images and building data extracted from aerial photographs were used to simulate the adjusted wind chill equivalent temperature (AWCET) particularly for sub-tropical scenarios between 1990 and 2010 of the Kowloon Peninsula, Hong Kong. Compared with perceived temperature based on the representative station located at the headquarters of the Hong Kong Observatory, the temperature of half the study area in the Kowloon Peninsula has raised by 1.5 °C. The areas with less green space and less public open space in 2010 show higher relative temperatures. Socioeconomically deprived areas (e.g., areas with lower median
monthly income) may suffer more from this scenario, but not all types of socioeconomic disparities are associated with poor sustainable planning. Based on our results and the “no-one left behind” guideline from the United Nations, climate change mitigation should be conducted by targeting socioeconomic neighborhoods more than just aging communities.


Abstract: Rural residential land has been increasingly abandoned in China given the rapid and massive rural-to-urban migration. From the aspect of land-use planning and policy making, it is important to understand the determinants of residential land abandonment across rural areas as well as to know what rural residential land is vulnerable to be abandoned. However, neither of these can be known via qualitative evaluation of residential land abandonment or via remote sensing applications and land-use modelling. In this study, we develop an approach of combining machine learning techniques (Random Forest, Supported Vector Machine, and Naive Bayes) and land-as-an-object analysis to identify the rural residential land that has a high possibility of being abandoned in mountainous areas. We applied this approach to Fang County, Central China. The results indicate a reasonable and reliable prediction of rural residential land abandonment based on our approach, particularly in estimating the potential occurrence of local land abandonment. The geographic characteristics of the land and the living conditions of the land user were found to have relatively significant impacts on rural residential land use. Our approach also provides a pathway to evaluate specific land use and identify its potential change. This approach can be useful for the development of a standardized protocol for the evaluation of residential land abandonment across other rural areas and may be applicable for the investigation of other land types that may be vulnerable to abandonment. Quantitatively assessing the influential factors of residential land use can also provide alternative insights for the development of planning protocols in order to ultimately improve the quality of life and living environments in rural areas.

6. Dr. Weifeng Li
- was invited to serve as Associate Editor of the Journal of Transport and Land Use, the official journal of the World Society for Transport and Land Use Research, published by University of Minnesota (SSCI/Scopus).

7. Dr. Kyung-Min Nam
- presented his co-authored research paper titled “Impacts of Air Pollution on Urban Housing Prices in China” at the 2019 Western Regional Science Association Annual Conference” (Feb 11–15, 2019; Napa, CA, United States). He also chaired session “Disaster, Infrastructure & Housing.”
- has been appointed as a co-guest editor for an Annals of Regional Science special issue on “Impacts of Air Pollution on Regional Economies in East Asia: Methodology and Empirical Evidence.”
together with Dr. Hee-Yeun Yoon of Seoul National University (SNU), co-organized a public international workshop “Impacts of Air Pollution on Regional Economies in East Asia,” held at SNU on 19 December 2018 under the sponsorship of the SNU Spatial Economics Lab and the Korea Ministry of Education (http://calslab.snu.ac.kr/specon/board.read?mcode=14&id=92). Dr. Nam gave opening remarks, presented his on-going CGE-based research paper on the health effects of China’s air pollution, and chaired the morning session.

8. Dr. Guibo Sun and Dean Webster

- Have published the following two papers:


Abstract: In China, as elsewhere, gates are symbolically or actually associated with an escape from crime and insecurity. The manifest phenomenon of security grills on apartments inside gated communities, as a recent retrofitting, is not well understood. We conducted a household survey of 2404 participants in 46 communities in a city, to investigate why China’s gated community apartments have ubiquitously installed security grills. Results show gated communities have relatively low crime rates, but 84% of residents believed their gates could not prevent penetration by non-residents. For a unit increase of the belief in the inefficacy of 2D security (community’s gates and guards) when holding other factors at a fixed value, there is an 18% increase in the probability of trading-off to install 3D security (grills on the individual apartment). The prevalence of apartment-based security grills, representing a phase-change in the dominant mode of the landscape of fear, is highly relevant to the current ungating policy context that is urging a rethink about gated community development.

(2) Y. Lu, Y. Yang, G. Sun, Z. Gou (2019). Associations between overhead-view and eye-level urban greenness and cycling behaviors. Cities, 88, 10-18, doi.org/10.1016/j.cities.2019.01.003

Abstract: Cycling is one type of physical activities with documented health and environmental benefits. Little consensus has been reached about the impacts of urban greenness on cycling behaviour because of the widely varying estimation techniques, especially at street scale. We objectively measured the urban greenness in two ways: overhead-view greenness by Normalized Difference
Vegetation Index (NDVI) and eye-level street greenness by Google Street View (GSV) images. Multilevel logistic regression models were used to examine the association between urban greenness and the odds of cycling (versus not cycling) for 5701 Hong Kong participants after controlling activity-influencing built environment and individual-level covariates. We found the odds of cycling were positively associated with eye-level street greenness but not with overhead-view greenness across three buffer zones: 400 m, 800 m and 1600 m. In addition, the odds of cycling were negatively associated with population density, number of bus stops, and terrain slope, while positively associated with bike lane density.

To build a cycling-friendly city, planners and designers might need to pay more attention to improve citizens’ daily exposure to urban greenness, instead of traditional greenspace indices such as greenspace area or the number of parks. The GSV technique is a novel and reliable method for measuring eye-level urban greenness with potential usage in further healthy city studies.

9. Prof. Bo-sin Tang

- Represented the Faculty of Architecture to attend the Foresight International Future of Cities Research Network Workshop at Groningen organized by the University of Groningen, the Netherlands from 10-11 December 2018. The Research Network comprised scholars from the University of Newcastle, The University of New South Wales, the University of Groningen and HKU. This workshop was the fourth one after the previous three held respectively at Newcastle, Sydney and Hong Kong during the past two and a half years. This workshop comprised meetings with and presentations by practitioners and scholars from New Energy Coalition, Northern Knowledge, Global Centre on Climate Adaptation, and the Municipality of Groningen to discuss various issues and challenges facing future cities.

- Gave a presentation entitled “Institutional Economic Analysis and Application in Optimizing Spatial Planning” at the plenary session in the First National
Academic Conference on Theories, Methods and Applications in Optimizing Spatial Planning organized by Wuhan University on 26 November 2018.

- Gave a presentation entitled “Synergizing Property and Infrastructure Development: Hong Kong Experiences” at the Massey University Property Foundation Launch on 4 October 2018 held at the Northern Club, Auckland, New Zealand. The Property Foundation is under the Massey University charitable status umbrella to achieve excellence in its property qualifications and research to the highest international standards. Details are as follows: https://propertyfoundation.co.nz/about

10. Miss Anqi Zhang (PhD student supervised by Dr. Weifeng Li

- Co-authored the following paper:

  DOI: https://doi.org/10.1016/j.scs.2018.12.024

  **Abstract:** Urban landscape is closely related to human living environment. Optimizing urban landscapes can promote urban vitality and quality, which is the
latest goal of modern urban sustainable development. However, compared with studies at macro-level in large areas (i.e. cities) or micro-level in small areas (i.e. buildings), the fine research on quantifying urban landscape characteristics in large areas are insufficient, though it has stronger link-ages with reality and planning. This paper proposed a quantification analysis system for regional urban landscape studies with block as the study unit and built on three aspects, including city plan, pattern of building forms and urban land use. Spatial and contrastive analysis were adopted to portray urban landscape in 15 typical Chinese cities using geographical open data. Urban landscape in metropolises of China had clear spatial regularity with the distance away from the main center. Besides, most of urban landscape indicators had more than one center and the main center was matched with the area of highest land price and geometric center inmost of metropolises, and the attraction of sub-centers still had significant gap with the main center. Meantime, different cities may indeed display distinctive spatial signatures due to their different development conditions, for example, the landscape features of Guangzhou and Suzhou did not have superiority compared with other cities at similar level. More importantly, quantitative study scope and dimension of fine urban landscape were expanded and a uniform and comparable standard for block level urban landscape analysis in large area was established.

11. Zifeng Chen and Professor Anthony Yeh
- Published the following paper:


Abstract: Unlike in Western cities, where the poor population tends to be concentrated in the deprived inner-city areas and experiences low accessibility, the geographic distribution of the low-income population in Chinese cities might be relatively dispersed across accessibility-rich and accessibility-poor areas. This study aims to examine the relationships between income disparity and accessibility inequality in Chinese cities, as well as to identify the particular group of low-income residents who are at risk of inaccessibility. We conducted an empirical study in the city of Guangzhou, China, based on the population census, points of interest, and road network data and measured accessibility based on the three-step floating catchment area (3SFCA) method. Results reveal that although the essential services are significantly concentrated in the central-city areas, the geographic distribution of the low-income population is considerably dispersed across the central-city and suburban areas, thereby indicating the possibility of considerable intragroup inequality of accessibility among the low-income group. The findings from the regression analyses suggest that although urban development in Chinese cities has not resulted in the distinct residential segregation observed in Western cities, the low income population might still face a dilemma between small floor area and low service accessibility. The study also reveals that non-local residents as well as non-urban hukou holders among the low-income population living in suburban areas also experience low service accessibility, which highlights the importance of incorporating hukou as an
explanatory variable in analyzing accessibility inequality issues in the Chinese context.

12. Dr. Jiangping Zhou

- Has published the following papers:

  DOI: https://doi.org/10.1016/j.tra.2019.01.015

  **Abstract:** Availability of new open/big data (NOBD) such as smartcard and General Transit Feed Specification data has provided unprecedented opportunities for transit planners and policy analysts to conduct analyses that are highly challenging and even infeasible where only traditional data (e.g., censuses/surveys) are in presence. In this study, we first review and summarize discrete and scattering existing studies on (a) society and justice, (b) transportation/space and justice, and (c) transit fare and justice. We consider (c) as a subset of (b) and (b) as a subset of (a). We then illustrate how NOBD can supplement traditional data in the studies of the equity and spatial implications of transit fares via an exploratory study of Brisbane, Australia. Specifically, we propose and implement methods or procedures such as “trajectory rebuilding”, “fare matching”, “segment tagging”, “desired line/stop visualisation”, “commuter identification” and “scenario analysis” to show why and how transit fares could have important equity and spatial implications. In addition to empirical findings and policy recommendations, we offer some transferable methods and procedures for visualising and concretizing the aforementioned implications.

  DOI: https://doi.org/10.1073/pnas.1815928115

  **Abstract:** Residential locations, the jobs–housing relationship, and commuting patterns are key elements to understand urban spatial structure and how city dwellers live. Their successive interaction is important for various fields including urban planning, transport, intraurban migration studies, and social science. However, understanding of the long-term trajectories of workplace and home location, and the resulting commuting patterns, is still limited due to lack of year-to-year data tracking individual behavior. With a 7-y transit smartcard dataset, this paper traces individual trajectories of residences and workplaces. Based on in-metro travel times before and after job and/or home moves, we find that 45 min is an inflection point where the behavioral preference changes. Commuters whose travel time exceeds the point prefer to shorten commutes via moves, while others with shorter commutes tend to increase travel time for better jobs and/or residences. Moreover, we capture four mobility groups: home mover, job hopper, job-and-residence switcher, and stayer. This paper studies how these groups trade off travel time and housing expenditure with their job and housing patterns. Stayers with high job and housing stability tend to be home (apartment unit) owners subject to middle- to high-income groups. Home
movers work at places similar to stayers, while they may upgrade from tenancy to ownership. Switchers increase commute time as well as housing expenditure via job and home moves, as they pay for better residences and work farther from home. Job hoppers mainly reside in the suburbs, suffer from long commutes, change jobs frequently, and are likely to be low-income migrants.

Dr. Zhou's proposal entitled “Can TODness Improve (Expected) Performances of TODs? An Exploration Facilitated by Non-Traditional Data” has been selected from a pool of 17 qualified proposals as one of the recipients of the 2019 Lincoln Institute China Program International Fellowship. The Fellowship Evaluation Committee has carefully evaluated all qualified proposals and recommended that Dr. Zhou be awarded the fellowship at the amount of US$35,000, for a period from 31 January 2019 to 31 January 2020.
1. Dr. Chinmoy Sarkar

- Is named from among nearly 100 applications received from 31 economies across six continents as the Inaugural NAM-HKU Fellow in Global Health Leadership for his major achievement in concept lead and developer of **UK Biobank Urban Morphometric Platform (UKBUMP)**, project which involves spatial modelling and development of the world’s largest health-specific built environment data platform studying links between built environment and health.

The Fellowship scheme is generously supported by Dr Patrick Poon, Council member and Convocation Chairman of The University of Hong Kong. More details about the Fellowship is at: [https://sph.hku.hk/en/nam-hkufellows](https://sph.hku.hk/en/nam-hkufellows)

2. Dr. Chinmoy Sarkar, Dean Webster and Professor John Gallacher

- Their joint paper “Association between adiposity outcomes and residential density: a full-data, cross-sectional analysis of 419 562 UK Biobank adult participants” which was published at *Lancet Planet Health* in October 2017, 1(7), e277-288, has been awarded the 2018 Research Output Prize (Faculty of Architecture).

3. Dr. Ren Chao, Dr. Chinmoy Sarkar and Dean Webster

- Speak at a workshop co-organized with the University of Warwick, entitled “**Solving Urban Challenges through Big Data - University of Warwick with University of Hong Kong**”, at British Council on 18 January 2019. The workshop explored urban issues ranging from disaster risk management to green infrastructure and waste management. Senior researchers from both universities demonstrated how collaborative, university-led research can address pressing real-world challenges.
1. iLab has the following papers submitted for publications:


**Abstract:** Research into construction education has garnered increasing attention over the last few decades and a great number of construction education studies have been published. However, few studies have mapped the global geography and physiognomy of that research. This paper presents the first bibliometric analysis of construction education studies published between 1982 and 2017 in order to chart the academic development and identify various research directions within the field. Focusing on development trends, knowledge body structure, major journals, and collaboration networks and applying quantitative evaluation results allowed instructive findings and implications concerning the possible deficiencies in construction education research to be derived. The analysis of keywords trends indicates that new concepts like BIM and sustainability have recently become hot topics in construction education research. The most influential articles, journals, authors, and countries and regions were also identified. The findings also imply that current construction education research shows a bias towards technology utilization in education and the existence of considerable isolation between formed groups, such as collaboration networks. This study contributes to construction education literature by providing useful information of its status quo and suggesting potential directions for future construction education research.


**Abstract:** Development of semantically rich as-built building information models (BIMs) presents an ongoing challenge for the global BIM and computing engineering communities. A plethora of approaches have been developed which, however, possess several common weaknesses: (1) heavy reliance on laborious manual or semi-automatic segmentation of raw data (e.g., 2D images or 3D point clouds); (2) unsatisfactory results for complex scenes (e.g., furniture or non-standard indoor settings); and (3) failure to use existing resources for modelling and semantic enrichment. This paper aims to advance a novel, derivative-free optimization (DFO)-based approach that can automatically generate semantically rich as-built BIMs of complex scenes from 3D point clouds. In layman’s terms, the proposed approach recognizes candidate BIM components from 3D point clouds, reassembles the components into a BIM, and registers them with semantic information from credible sources. The approach was prototyped in Autodesk Revit and tested on a noisy point cloud of office furniture scanned via a Google Tango smartphone. The results revealed that the semantically rich as-built BIM was automatically and correctly generated with a root-mean-square error (RMSE) of 3.87 cm in a sheer 6.44 seconds. The ‘semantic registration’ approach proved superior to existing segmentation approaches in that it is capable of processing complex scenes and using existing information. In addition to these methodological
contributions, this approach, properly scaled up, will open up avenues for creation of building to city information models from inexpensive data sources and support continued growth in the built environment.

2. iLab has the following paper accepted for publication:

DOI: https://doi.org/10.1108/ECAM-02-2018-0045

Abstract:
Purpose - The aim of this research is to examine the features and tendency of cost indices in the global construction setting.
Design/methodology/approach - Data from 22 countries/regions are collected and analyzed using maximum variance formulation and Kendall rank correlation coefficient.
Findings - It is found that global CCIs (Construction Cost Indexes) have commonly maintained a steady increase for decades, and the CCIs synchronize with each other. Overall synchronicity and synchronicity of different countries pairs have increased with time significantly
Research limitations/implications - The major limitation however is the availability of data: (1) only 22 regions/countries are examined, (2) the distribution of these regions/countries is imbalanced between different continents, and (3) various indices are adopted around the world, of which statistical methods are not same.
Practical implications - The implication is that a better perception of CCIs enables contractors to have a robust estimation for bidding prices and to improve the efficiency of construction projects management. The research findings also provide a useful reference for those countries that have not established construction cost indices databases to forecast the tendency of domestic construction industries.
Originality/value - This paper contributes to the overall body of knowledge by presenting the co- movement of global CCIs and measuring the changes of CCI synchronicity with time and in different countries pairs.

3. iLab published the following 6 papers:

DOI: https://doi.org/10.1016/j.eiar.2018.08.005

Abstract: This paper aims to illustrate the cross-boundary research collaboration (CBRC) landscape of waste management (WM) by various collaboration networks. Through a set of rigorous procedures, a total of 15,396 research papers were extracted from eight subject-related journals published between 1981 and 2016. The author utilized CiteSpace, a Java programme that helps visualize and dissect patterns in scientific literature, to evaluate the content through individual, institutional, national, and disciplinary perspectives. The evaluations of three former perspectives revealed a steady rise in CBRC within WM over the last thirty-five years, although the overall intensities proved fairly low. Inter-individual collaboration groups were limited to their respective regions and only loosely connected, but as more and more academic institutions and universities engaged in WM research, the number and quality of the collaborations increased. Developed countries, chiefly in
North America and Western Europe, comprised the bulk of the WM research, whilst the mounting contributions from developing countries, China in particular, forecasts greater diversity in the future. Analysis also suggested that the intensity of the interdisciplinary collaboration network declined slightly, however, the intensity proved low to begin with. Previous WM research focused more on “hard” technologies than “soft” measures. Future endeavors to encourage CBRC in WM should promote more innovative research to tackle waste challenges globally in a sustainable way.

DOI: https://doi.org/10.1016/j.resconrec.2018.10.039

Abstract: Illegal dumping, referring to the intentional and criminal abandonment of waste in unauthorized areas, has long plagued governments and environmental agencies worldwide. Despite the tremendous resources spent to combat it, the surreptitious nature of illegal dumping indicates the extreme difficulty in its identification. In 2006, the Construction Waste Disposal Charging Scheme (CWDCS) was implemented, regulating that all construction waste must be disposed of at government waste facilities if not otherwise properly reused or recycled. While the CWDCS has significantly improved construction waste management in Hong Kong, it has also triggered illegal dumping problems. Inspired by the success of big data in combating urban crime, this paper aims to identify illegal dumping cases by mining a publicly available data set containing more than 9 million waste disposal records from 2011 to 2017. Using behavioral indicators and up-to-date big data analytics, possible drivers for illegal dumping (e.g., long queuing times) were identified. The analytical results also produced a list of 546 waste hauling trucks suspected of involvement in illegal dumping. This paper contributes to the understanding of illegal dumping behavior and joins the global research community in exploring the value of big data, particularly for combating urban crime. It also presents a three-step big data-enabled urban crime identification methodology comprising ‘Behavior characterization’, ‘Big data analytical model development’, and ‘Model training, calibration, and evaluation’.

DOI: https://doi.org/10.1080/15623599.2018.1532385

Abstract: Building Information Modelling (BIM) has been lauded as a “game changer” for the construction industry. Growing studies show a strong interest among researchers and practitioners to assess the maturity of BIM implementation, which helps understand its quality and degrees of excellence. However, no single study to date has comprehensively measured BIM maturity at the project, organisation, and industry levels and thus achieved a holistic view of BIM implementation. Therefore, this study aims to measure BIM maturity at these three scales using Hong Kong’s construction context as a specific case. To this end, this study collected publicly available information of BIM implementation projects and adapted the multifunctional BIM maturity model (MBMM) as the measurement tool. The results found that construction projects in Hong Kong vary in terms of BIM
maturity, with more than half ranging from Stage 0 to 1. The study also discovered that the BIM maturities of construction-related organisations in Hong Kong differ from each other, primarily owing to the different developments of their BIM processes and protocols. The industry-level assessment indicated unbalanced development in BIM technologies, processes, and protocols.


Abstract: Managing complex and dynamic construction projects is challenging as it relies highly on the real-time communication and seamless coordination of numerous ‘things’ and people that are spatially and temporally distributed at a massive scale. To deal with the associated challenges, various concepts, including internet of things (IoT), cyber-physical systems (CPS), and smart construction objects (SCOs), have been explored in construction. Amidst the increasing overlap and merger of principles among these three pervasive technologies is that clearly narrow definitions and isolated development of each field are no longer appropriate. It is, therefore, opportune for this study to explore and propose a deployment framework that integrates IoT, CPS, and SCOs, with a view to achieving greater synergy that could expedite their holistic implementation. It does so by adopting a mixed methods approach with literature review, technological analyses, case studies, and action research at the core. This deployment framework encompasses the key components of each technology (i.e. the three core properties of SCOs, the bi-directional information flow in CPS, and the extensiveness of devices and networking in IoT) in an inter-connected structure while enabling the uniqueness of each technology to be evident. In addition, example application scenarios are described to demonstrate the applicability of the proposed framework in real-life practice. This study contributes to the body of knowledge by presenting a taxonomy that clarifies the similarities and differences between IoT, CPS, and SCOs when applied to the construction industry. The integrated deployment framework can be used to guide further theoretical explorations on the synergistic effects of IoT, CPS, and SCOs, and enriched with practical cases to facilitate construction project management.


Abstract: ‘Big data’ has been rapidly sprawling in various research disciplines such as biology, ecology, medical science, business, finance, and public governance but rarely in construction waste management (CWM). The CWM community around the world generally relies on ‘small data’ collected via active solicitation such as sampling and ethnographic methods. This small data is intrinsically limited by its inability to account for the totality of CWM and research findings generated from the small data cannot be accepted with a high level of confidence. With the growing interests in big data, it can be reasonably expected that the waste management community will augment efforts to develop big data and its analytics. However, the efforts are currently constrained by the limited knowledge to do so. This research aims to provide a synoptic overview of the prospects and challenges of big data in CWM. It adopts an inductive, qualitative case study method whereby the empirical data is collected using an ethnographic–action-meta-analysis research approach and triangulated with data from literature, ongoing debate, and other sources. The
paper offers some insights on big data acquisition, storage, analytics, implementation, and challenges. Although having a focus on waste management in the construction sector, the insights generated from this study can be of value to general waste management research, which suffers from the same problems of erratic and poor quality data as CWM.


Abstract: Symmetry is ubiquitous in architecture, across both time and place. Automated architectural symmetry detection (ASD) from a data source is not only an intriguing inquiry in its own right, but also a step towards creation of semantically rich building and city information models with applications in architectural design, construction management, heritage conservation, and smart city development. While recent advances in sensing technologies provide inexpensive yet high-quality architectural 3D point clouds, existing methods of ASD from these data sources suffer several weaknesses including noise sensitivity, inaccuracy, and high computational loads. This paper aims to develop a novel derivative-free optimization (DFO)-based approach for effective ASD. It does so by firstly transforming ASD into a nonlinear optimization problem involving architectural regularity and topology. An in-house ODAS (Optimization-based Detection of Architectural Symmetries) approach is then developed to solve the formulated problem using a set of state-of-the-art DFO algorithms. Efficiency, accuracy, and robustness of ODAS are gauged from the experimental results on nine sets of real-life architectural 3D point clouds, with the computational time for ASD from 1.4 million points only 3.7 seconds and increasing in a sheer logarithmic order against the number of points. The contributions of this paper are three-fold. Firstly, formulating ASD as a nonlinear optimization problem constitutes a methodological innovation. Secondly, the provision of up-to-date, open source DFO algorithms allows benchmarking in the future development of free, fast, accurate, and robust approaches for ASD. Thirdly, the ODAS approach can be directly used to develop building and city information models for various value-added applications.

SustainableHD Cities

1. Dr. Lennon Choy

- Ms. Ka-man Leung (Ph.D. Candidate) has been selected to receive the Li Po Chun Charitable Trust Fund Postgraduate Scholarship 2017-18. She is co-supervised by Dr. Lennon Hung-tat Choy and Professor Kwong-wing Chau. She is also a Fulbright scholar and Swire scholar, who is currently visiting University of California, Los Angeles. Her research interests include informal housing, self-enforcement mechanism as well as housing affordability.

2. Dr. Ren Chao and Dean Webster

- Their joint proposal entitled “The Impacts of Future Urban Development on the Urban Climate of Hong Kong: A Numerical Modelling Approach” (F-CUHK403/18, 01/01/2019-31/12/2020) has been awarded a sponsorship at a total amount of HK$86,400 from RGC, under the by PROCORE-France/Hong Kong Joint Research Scheme 2018/19. The funding is supported by the
Consulate General of France in Hong Kong (CGF) and the Research Grants Council (RGC). Dr. Ren will serve as a Co-I in this project. The PI in Hong Kong is from CUHK and the PI in France is from Meteo France.


  http://www.cabp.com.cn/newsdetail.jsp?id=67261&nodeid=1160

- Edited the following publication and paper:


  Virtual Lab of Urban Environments and Human Health

1. Dr. Bin Jiang and Dean Webster

- Published the following joint paper:


  **Abstract:** In high-density cities around the world, alleys are common but neglected spaces that are perceived as unsafe. While cities have invested resources in environmental interventions to improve safety in urban allies, it is not clear how these interventions impact perceived safety. We review two important criminology theories that discuss the environmental and social factors that lead to crime: the Broken Windows Theory and the Routine Activity Theory. We argue that these theories can also be used to explain safety perceptions of urban environments, and then develop urban alley interventions based on these theories. We test people’s perceived safety of these interventions through a photograph survey. Results show that all interventions yielded higher perceived safety than existing alley scenes. Interventions based on the Broken Windows Theory (cleaning or vegetation interventions) yielded only modest improvements in perceived safety, while interventions based on the Routine Activity Theory (urban function interventions) yielded higher ratings. Our findings question the dominant use of the Broken Windows Theory in environmental interventions to promote perceived safety and argue for a more effective approach: urban function interventions inspired by the Routine Activity Theory.