

A short break from profundities in this issue of DRup, to share some strategic thoughts and news.

With HK's other universities, HKU has started working on its strategic plan for the next triennium of funding. For those new to FoA, HKU receives block-funding from HKSAR government, which is fixed for a three-year period and granted on the basis of an educational, teaching and research plan submitted in the year before the new triennium begins. It was for this reason that FoA's department heads and I engaged in lengthy and deep-digging discussions about departmental mid-range strategies, mapped onto a six-year hiring plan (wish-list). HKU's Provost, Professor Richard Wong, has this time around, sensibly required of the Deans a strategic plan that covers 2 triennial funding periods. Under the previous regime, faculty strategic plans had been prepared annually. The six-year hiring plans that Heads and I agreed upon included new hires from five main sources of funds: i) retirements, ii) new master's programs, iii) expanded existing teaching programs, iv) strategic investment funds promised under previous rounds of HKU's BRC special funding bidding, and v) a new BRC settlement for the next three years. For new colleagues coming from outside HK, HKU is still strongly tied to public funding as a legacy of its role as elite educator of local students for HK government, industries and professions. Its ambition is to retain its public sector service focus (and funding) but also to expand private income from TPG, industrial-sponsored RPG and research, donor sources, etc.

Against this background, I have good news to report.

## 1. FoA suite of new Master's

HKU's Senior Management Team seems now to be fully supportive of FoA's strategy to grow its suite of taught post graduate master's programmes. I would like to explore branding these as something like: HKU Institute of Advanced Architecture and Urban Science. HKU Dentistry has done something similar. I will formally consult on this in the coming weeks. Departments would continue to 'own' and 'host' but the brand may be good for recruitment, global and regional profile, course sharing, elective menus, interdisciplinary goals and student experience. Our Master's suite currently stands as follows:

## **Professional Master's**

MArch (2 years professional for architects)  
MArch (Design) route (3 years professional, for students from non-design degrees)  
MLA (2 years professional for landscape architecture)  
DLA/MLA (3 years professional for LA for non-design bachelor graduates)  
MUP (2 years professional for urban planners)  
MSc(Surveying) (1 year professional with routes for construction management and real estate)  
MSc(Conservation) (1 year professional for built environment heritage managers)  
MHM (1 year professional for housing managers)

## **Specialist Master's (for post-professional and terminal degree specialization)**

MUD (1-year urban design program)  
MUA (1-year urban analytics program) (new from 2020/21, with 30 students, hosted by DUPAD; 6 x HKSAR government-funded full scholarships have been awarded to this degree – many congratulations to Liu Xing-Jian and Rebecca Chiu for this coup.) MSc Smart Sustainable Architecture<sup>1</sup> (1-year program, starting 2022, hosted by ARC)  
MSc Smart Sustainable Cities<sup>1</sup> (1-year program, starting 2022, hosted by DLA)  
MSc PropTech<sup>1</sup> (1-year program, starting 2022, hosted by REC)  
MSc Urban Design Analytics (1-year program, starting 2022, hosted by DUPAD)  
MSc(Conservation)<sup>1</sup> (next-gen cross-departmental MSc(Conservation), hosted by DLA for the faculty, building on the successful MSc established by ACP)

All Master's programs are expected to support two professorial track teachers and to be strongly linked to and led by a HKU research group.

## **2. New posts**

### **Four new senior posts**

I am pleased to announce that HKU's BRC has awarded FoA four fully funded new senior posts for three years each. The Department of Landscape Architecture (departmental status expected by end of 2020 calendar year) has been awarded a new Associate Professor. It is likely to be advertised as a landscape ecology post. ARC, DUPAD and REC have each been awarded a full professor post, aiming for high profile global stars. DUPAD will recruit an urban science/analytics prof; REC will recruit a property rights (law and economics) prof; ARC is still consulting and is likely to recruit to strengthen its smart/green architecture research and teaching portfolios.

### **HKU Scholars: 100 new junior posts**

The president is funding 100 new junior posts across the university on similar terms to the Meeting of Minds program (through which FoA recruited data scientist Zhan Zhao (MIT PhD). At least 10 of these posts will be basic data science researchers associated with HKU's new Institute for Data Science. The rest are open for bids and many will go to applied data scientists. I would hope to capture **5-10** (depending on continuing

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<sup>1</sup> Working title

funding sources such as new MSc) **new Assistant Professors** in FoA (parametric green design in ARC, Proptech/blockchain/BIM in REC, urban planning analytics in DUPAD or urban design analytics across DUPAD-ARC-DLA would be ideal). As with the four new senior posts, search begins immediately.

### **HKSAR Scholars**

A similar scheme is expected to be announced soon by HKSAR CE. I would aim to capture **one new high flyer**. We can imagine that these will mainly go to STEM, but if we can field a global star in the arts/design/practicing academic architect, that may also fly, on the basis of the importance of design to HK's future economy. Responses to yesterday's communique from Beijing's 5<sup>th</sup> plenum emphasizes the importance of design in HK-GBA's combined future.

### **3. PhD Scholarships**

Following last year's launch, the Presidential Scholarships continue in the coming year. There will be 100 scholarships on offer. The 2021 intake is likely to be an experimental intake for HKU, with new assessment arrangements in which a general pool is recruited on the basis of merit and then assigned to supervisors and labs subsequently, including a chance for student to try out alternatives (e.g. working closely with 2 or 3 different supervisors over the first few months). This will be flexible to suit different subject cultures. Also, a 5<sup>th</sup> year PhD 'elite RPG student' scholarship will be on offer for those wanting to extend a cutting edge PhD project (an equivalent and possible substitute for a PDF experience for some). These studentships will aim to recruit a cohort of high performing applicants additional to HKPF. Please look out for appropriate talent and invite them to explore your best ideas (without giving away your best secrets).

### **4. PDF Scholarships**

HKU is very generous with its 60 PDF scholarships a year. FoA regularly secures these but does not always apply. In my observation when FoA colleagues have submitted a well thought out rigorous, significant and original proposal, accompanied by a convincing track record, then it is nearly always awarded. These are very valuable in many senses. If you have a great idea but not track record, team up with a more experienced colleague. The competition is open twice a year.

### **5. Other news**

I am very sad to say that Professor Nasrine Seraji will be moving to University College Dublin in 2021. We wish her well in her move back to Europe but are working very hard to retain her for a part of the year as a distinguished or endowed visiting professor.

As always, thanks to those mentioned below for your research, teaching and social impact activities.

Chris Webster  
Dean, FoA

# Teaching and other Achievements

## DUPAD

### 1. Dr. Roger Chan

- Dr. Xie Yongqing, a PhD graduate of DUPAD under the supervision of Dr. Roger Chan, has been appointed Associate Professor of the Department of Urban and Rural Planning, Faculty of Architecture, Tianjian University. Dr Xie was formerly a senior planner of the China Academy of Urban Planning and Design.

## ACP

### 1. Dr. Rosman Wai

- won the prestigious DAM Book Award 2020 for her book ***Design DNA of Mark I: Hong Kong's Public Housing Prototype***. Organized by Deutsches Architekturmuseum (DAM, German Architecture Museum), the award honours the 10 best architecture books published in the world of a given year. This year, 101 architecture and art book publishers worldwide participated, and a specialist jury of external experts and representatives of the DAM selected the winners from 274 entries according to criteria such as design, content concept, quality of materials and workmanship, degree of innovation and topicality.

Dr. Rosman Wai's book: <https://www.mccmcreations.com/product-page/designdna-of-mark-i-hk-public-housing-prototype>

DAM Book Award 2020 winners: <https://dam-online.de/en/program/architectureprizes/dam-architectural-book-award/>

# Research Achievements

## Centre of Urban Studies and Urban Planning

### 1. Dr. Roger Chan

- Dr. Roger Chan was interviewed by Ming Pao on the 40th Anniversary of Shenzhen Special Economic Zone. Commented on rail-based infrastructure development and Hong Kong's position in the Greater Bay Area (Ming Pao, 15 October 2020, A1)

URL: [提加快大灣區城際鐵路建設 近市區 高鐵香港段延至廣州站](#)

10/23/2020

明報新聞網

#### 提加快大灣區城際鐵路建設 近市區 高鐵香港段延至廣州站



【明報專訊】國家主席習近平的發言提到，要加快粵港澳大灣區城際鐵路建設。翻查資料，國家發展改革委員會在今年7月發出文件，提到廣州市區的廣州火車站將會接駁廣深港高鐵。運輸及房屋局證實，廣州市原則上同意，高鐵香港段終點站由市郊的廣州南站，延伸至市中心的廣州火車站，局方會與營運者商討班次等。此外，內地亦規劃興建一條連接香港機場及深圳南山的「港深西部快軌」，運房局稱該計劃未有時間表，會留意高鐵客運量及財務表現等因素。

運房局：廣州市原則上同意 會商班次

國家發改委7月發出《關於粵港澳大灣區城際鐵路建設規劃的批復》，提到要將廣州火車站接駁到廣深港高鐵。運房局稱，廣州市政府原則上通過將高鐵香港段於廣州的終點站延伸至廣州火車站，以更方便乘客出行，局方表示歡迎。

計劃建「港深西部快軌」 局方：無確實時間表

發改委的大灣區鐵路規劃中，亦設計了一條連接香港機場及深圳南山的「港深西部快軌」（見圖）。運房局表示，該線路屬遠期研究城際鐵路項目，現時無確實時間表，亦未有具體方案。

中大工程學院副院長黃錦輝認為，將高鐵終點延伸至廣州市區是好事，可令高鐵網絡接觸點更密，方便市民出行及促進營商。

學者：規劃更着重連接深圳珠江西岸

港大城市規劃及設計系副教授陳振光認為，交通基建是加強大灣區聯繫的基本要求，而發改委的大灣區鐵路規劃更着重連接深圳及珠江西岸，「是否代表香港被邊緣化，學術上是可以這樣討論」。他又說，現時香港與內地已有高鐵連接，沒急切需要推新交通基建，反而應檢討通關模式，例如讓大灣區商貿者有特別通道，方便出入境。

另外，內地計劃在位於深圳的皇崗興建旅檢大樓實施「一地兩檢」，民建聯立法會議員梁志祥昨引述消息稱，政府計劃將港方落馬洲的口岸，搬到內地皇崗後，將騰空的土地用作河套區創科區第二期。

相關字詞：廣州火車站 運房局 高鐵香港段 高鐵 大灣區 習近平



- Dr. Roger Chan was invited to speak at the 2020 Guangdong-Hong Kong-Macau GBA Planning Forum on 19 September. The topic of his presentation is about pioneer city-region in the GBA.



- Dr. Roger Chan has published a journal paper:

Mai X., Chan R.C.K. (2020), Detecting the intellectual pathway of resilience thinking in urban and regional studies: A critical reflection on resilience literature. *Growth and Change*. 51: 876 - 889. DOI: <https://doi.org/10.1111/grow.12390>

**Abstract:** Confronted with increasing natural and anthropogenic crises, sustainable urban and regional development requires a sound understanding of how cities and regions respond to those crises and how that response shapes their continued development. The conceptual ambiguity and missing link among varied perspectives of resilience studies have given rise to a sneaking suspicion about the contribution of resilience thinking. By conducting a network analysis of 1,274 papers published between 1991 and 2019 using CiteSpace, we detect and visualize the intellectual pathway of resilience thinking and argue for its

*malleability to deepen our understanding about human-environment dynamics. Three major research clusters were identified: adaptive capacity of ecosystems, regional variation in economic resilience, and social resilience of disadvantaged communities. Resistance and recovery of systems are the key concerns in the first two clusters, whereas social resilience emphasizes opportunities and processes of restructuring rather than returning to the pre-crisis status. The extension of resilience thinking to the social realm is a promising area for future research. It calls for a shift of epistemology from the deterministic structurefunction hypothesis which is place-less toward a situated understanding of context, relation, and human adaptation despite the methodological challenges ahead.*

## 2. Professor Anthony Yeh

- has published a journal paper:

Qiao S., Yeh G. O. A., Zhang M.Z., Yan X. (2020), Effects of state-led suburbanization on traffic crash density in China: Evidence from the Chengdu City Proper, *Accident Analysis and Prevention*. 148, 105775, ISSN 0001-4575. DOI: <https://doi.org/10.1016/j.aap.2020.105775>

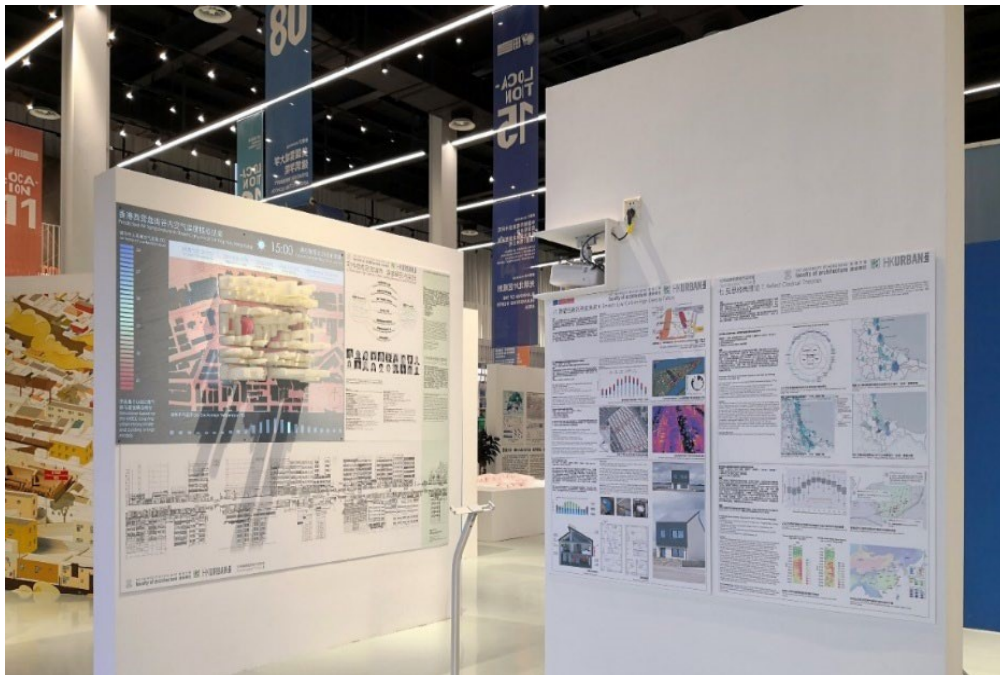
**Abstract:** *Road crashes have become a leading cause of death in China. Although enormous efforts have been exerted to determine the factors that affect individual crash incidents, neighborhood-level crash incidence in Chinese cities has not been sufficiently analyzed. This study fills this gap by quantifying the effects of built environment factors on neighborhood-level automobile-involved crash density (NACD) in urban China and identifying its mediators and mediating effects. In American suburbs, urban sprawl is widely recognized to render neighborhoods unsafe for residence, thus leading to a high crash incidence. This study compares the characteristics of built environments between inner-city neighborhoods and the new neighborhoods that have been developed through China's state-led suburbanization since 2008 to reveal how this suburbanization provides a safer neighborhood environment. A structural equation model is used to examine the relationships among suburbanization, built environment factors, and NACD in the city proper of Chengdu, the largest metropolis in southwest China. Thus, this study contributes new empirical evidence to the debates over urban designs that are safest for traffic. Moreover, this study enriches our understanding of different sociospatial consequences between American-style urban sprawl and China's state-led suburbanization.*

# Sustainable High Density Cities Lab

## 1. Award of National Natural Science Foundation of China

- The SHDC team has been awarded a research grant from the National Natural Science Foundation of China (国家自然科学基金面上项目 Award # 51978594). The winning proposal is entitled “A Multi-City Study of Thermal Adaptation in Urban Outdoor Spaces Using Social Media Data Analytics”. The research team consists of Dr. Jianxiang Huang (PI), Prof. Phil Jones (Co-I), Dr. Lishuai Li (Co-I), Dr. Mengdi Guo (Co-I). The project duration is from 1 January 2020 to 31 December 2023.

The SHDC lab is invited to exhibit research projects at the Shenzhen-Hong Kong 2019 Biennale (Guangming). SHDC is among other research labs to be invited at the same venue such as the Future Cities Laboratory (FCL) of Singapore-ETH, The City Form Laboratory of Harvard GSD, and Singapore Urban Renewal Authority, etc. The theme of the SHDC exhibition is “Sustainable High Density Cities: Linking Research with Practice”.



*SHDC research exhibited in the Biennale. The team used an interactive installation of urban environmental and energy use information projected on a 3D printed model of Sai Ying Pun.*

## 2. Dr. Jianxiang Huang

- Dr. Huang has the following paper accepted for publication:
  - (i) Huang J., Obracht-Prondzynska H., Kamrowska-Zaluska D., Sun Y, Li L. (2020). The Image of the City on Social Media: A Comparative Study using “Big Data” and “Small Data” Methods in the Tri-City Region in Poland, Landscape and Urban Planning. In press.

**Abstract:** “The Image of the City” by Kevin Lynch is a landmark planning theory of lasting influence; its scientific rigor and relevance in the digital age



were in dispute. The rise of social media and other digital technologies offers new opportunities to study the perception of urban environments. Questions remain as to whether social media analytics can provide a reliable measure of perceived city images? If yes, what implication does it hold for urban planners? This paper describes a study on the perception of city images using a combination of “big data” and “small data” methods in the Tri-City Region in Poland. The aims were to 1) test the hypothesis whether social media analytics can elicit Lynchian elements of city image in consistency with conventional methods, and 2) develop and evaluate social media-based indicators of Imageability for planning practice. Geo-tagged images and texts were collected from Instagram and Twitter, two popular social media platforms in Poland. Text-Mining, Image Processing, Clustering Analysis, Kernel Density Estimation, and Sentiment Analysis were used. Results were compared with benchmarks constructed from official GIS database, questionnaire responses and sketch maps. “District”, “landmark”, and “path” identified on social media were in good agreements with benchmarks, less so for “edge” and “node”. Two social media-based indicators have influenced the perception of a place: Instagramability, the frequency of a place captured on Instagram, was linked to its perception as an architectural landmark and tourist attraction, while Twitterability, the frequency of a place mentioned on Twitter by name, was linked to its perceived niceness and relevance to everyday life of communities. Methods developed in this study have theoretical and practical implications for urban planners.

- Dr. Huang has published the following papers:

- (i) Huang J., Chen Y., Jones P., Hao T. (2020) “Heat Stress and Outdoor Activities in Open Spaces of Public Housing Estates in Hong Kong: A Perspective of the Elderly Community”, Indoor and the Built Environment. DOI: <https://doi.org/10.1177/1420326X20950448>

**Abstract:** Open spaces in Hong Kong are in short supply and they are often underused due to the adverse climate, especially in hot and humid summer. This is a missed opportunity that can be otherwise realized to promote health and social interactions for local communities. The high density urban environment makes the condition worse by raising the urban heat island effect and leaving planners with fewer mitigation options. This study aims to test the hypotheses that an unfavourable thermal environment disrupts the use of outdoor open spaces, and whether such disruption differ by age groups. Fieldwork was conducted for three open spaces in public housing estates in Ngau Tau Kok, Hong Kong. On-site thermal conditions were measured using equipment and computer simulations; results were calculated in equivalent temperature in Universal Thermal Climate Index (UTCI). Occupant activities were recorded, together with a questionnaire survey. Results show that an open space purposefully designed for breeze and shading was 2.0 °C in UTCI cooler compared with the other two. It attracted more optional/social activities, higher frequency of visits, and longer duration of stay. The elderly activities were more susceptible to disruptions from heat stress compared with younger groups, outdoor activities largely diminish when ambient thermal environment exceed 39 °C in UTCI. Findings have implications to retrofitting existing open spaces and designing new ones to maximise their use.

- (ii) Huang J., Jones P., Zhang A., Peng R., Li X., Chan P. W. (2020). Urban Building Energy and Climate (UrBEC) Simulation: Example Application and Field Evaluation in Sai Ying Pun, Hong Kong, Energy and Buildings, Vol.207, pp.109580, ISSN 0378-7788.  
DOI: <https://doi.org/10.1016/j.enbuild.2019.109580>

**Abstract:** *The energy performance of a building in a dense city depends to some extent on its surroundings. The impact of the built form, together with anthropogenic heat gains from traffic and building HVAC exhaust, determines external environmental conditions at the Urban Canopy Layer. Existing building energy models are limited in accounting for micro-scale variations of the urban microclimate, which may significantly modify a building's energy performance in density cities. This paper presents the Urban Building Energy and Climate (UrBEC) model, a coupled urban microclimate model (UMM) and building energy model (HTB2) developed to assess the time varying energy performance of a cluster of buildings and the combined heat gains to the external space from direct and reflected solar radiation, traffic and the exhaust from HVAC systems in a high-density city. The simulation results were evaluated by comparison with field measurement data collected from the Sai Ying Pun neighbourhood in Hong Kong, on a summer and winter day. Predicted and measured air and surface temperature at the four locations were found to be in reasonable agreement. Simulation results indicate an average of 1-3 °C of temperature rise in street canyons compared with the ambient air in summer. Street level air is predicted to be 0.6 °C warmer than those at higher levels (20m + ). Anthropogenic heat from traffic and building HVAC exhaust are the dominant contributors to temperature rise in street canyons in summer, exceeding the contribution from urban surfaces. The predicted building cooling demand is expected to increase up to 15 % in summer due to the warming effect in street canyons. The UrBEC model runs significantly faster than current CFD-based approaches. Therefore, the model has the potential to support early stage design and planning decisions in a dense city.*

- (iii) Wang D., Hu L., Hu D, Liu Y, Huang J., Xu Y., Liu J. (2020). Classification, experimental assessment, modelling methods and evaluation metrics of Trombe walls, Renewable and Sustainable Energy Reviews, Vol. 124, 109772, ISSN 1364-0321. DOI: <https://doi.org/10.1016/j.rser.2020.109772>

**Abstract:** *Solar energy building applications are attracting increasing attention from researchers, engineers, businessmen and officials due to their significant benefits in sustainable development, such as energy saving, cost reduction and environmental protection. Trombe wall, as a classical passive solar heating technique, has been studied for many years. A variety of concepts, methodologies and experiences have been developed during relevant research. Especially in recent years, numerous studies on Trombe wall have been published, which implies a rising attention to this technique. This review focuses on the classification, experimental assessment, modeling methods, and evaluation metrics for Trombe wall. In detail, nine types of Trombe walls are introduced according to their materials, structures and functions. Four experimental methods and two modeling methods of Trombe wall are discussed based on their functions, advantages, disadvantages, and applicability. Three aspects of evaluation metrics for Trombe wall are summarized in terms of technique, economy and environment. Moreover, the current and future research of Trombe wall are discussed at the end. The*

*authors consider this article would be useful for their peers and can facilitate the technical development of Trombe wall.*

- (iv) Yang L., Ho J. Y. S., Wong F. K. Y., Chang K. K. P., Chan K.L., Wong M.S., Ho H.C., Yuen J, Huang J., Siu J. (2020), Neighborhood green space, perceived stress and sleep quality in an urban population, Urban Forestry & Urban Greening, Vol. 54, 126763, ISSN 1618-8667. DOI: <https://doi.org/10.1016/j.ufug.2020.126763>

**Background:** Few studies have investigated the impact of neighbourhood green space on perceived stress and sleep quality with adjustment for other environmental factors such as household traffic noise and ambient air pollution. **Methods:** From May to August 2017, a cross-sectional survey of pedestrians aged 20 years or over was conducted in Hong Kong. Neighbourhood green space coverage was measured using the normalized difference vegetation index (NDVI) within a 500-metre buffer of individual residential address. Multinomial logistic regression models were applied to assess the effects of green space on sleep quality and perceived stress. **Results:** We successfully interviewed 608 participants with a mean age of 47.5 years (range 20–99). After adjustment for demographics, lifestyle factors, household air pollution and noise exposure, individuals with more perceived stress had higher odds of moderate and poor sleep quality. This association was found significant in people with low neighbourhood green space coverage, but not in those with high coverage. **Conclusion:** There is some evidence that green space coverage in neighbourhood can attenuate the adverse effects of perceived stress on sleep quality.

- (v) Sun S., Cao W., Ge Y., Ran J., Sun F., Zeng Q., Guo M., Huang J., Lee R., Tian L., Wellenius G. Outdoor light at night and risk of coronary heart disease among older adults: A prospective cohort study. *European Heart Journal*. In press.

3. Ms. Tongping Hao, PhD student supervised by Dr. Jianxiang Huang (Primary Supervisor) and Dr. Ren Chao (Co-Supervisor)

- has confirmed her PhD candidature in June 2020. Her tentative thesis title is "Improving Urban Microclimate in Real-World Practice in High Density Cities: Performance Simulation and Genetic Algorithm"

4. Dr. Mengdi Guo, former postdoctoral researcher of SHDC

- has joined the Department of Architecture of the School of Architecture of Tianjin University as a Young Associate Professor, with effect from September 2020. SHDC members wish her well in the new journey and look forward to continue research collaborations with Mengdi in future.