This week is the start of HKU's new semester and in the kick-off session of our first year undergraduate cross-departmental course AFI1001, we talked about research purpose and strategy.

I was struck by a comment from our distinguished guest, Professor Derek Collins, Dean of HKU Faculty of Arts, that portrayed arts and humanities scholarly research as 'conversations' around shared intellectual interests. It seemed to me to offer a concise description of many humanities and social science research communities, and possibly some architectural design scholarship too. In the Q&A I asked Dean Collins how he would describe the difference between these kinds of communities and intellectually focused facebook communities.

He gave three important take-aways. First, academic communities formed around conversations demand evidence – an academic conversation is generally shaped by a path of the strongest evidence (noting that an academic agenda can sometimes slip off this path and become partisan, ideological and self-referential). Second, research methodology is important for quality-controlling evidence, for example historical triangulation between sources and archival research for new evidence to triangulate. Thirdly, an appreciation of the cultural context of other peoples' contributions to a conversation is important. To consider another person's version of the story is like holding up a mirror to our own version. In it, if we are a disciplined scholar, we may see the gaps in our own view.

In the second half of this morning's session, I talked about research as answering a question; and academic research being distinguished from personal and professional research by its demands on quality of evidence (noting that some professional tasks require as much or more data quality than academic research). I contrasted the humble but powerful case study (CS) approach with the mighty randomised control experiment (RCE). A well-implemented CS creates general knowledge about a specific phenomenon. A RCE creates specific knowledge about

a general phenomenon. To fight Covid-19, we need specific knowledge about how a particular vaccine affects virus behaviour in the individual and the general population. A vaccine could not be released on the basis of a wide range of deep observations derived from case studies of specific individuals, however comprehensive the general picture created of those individuals.

The case study is a powerful research device in medicine as well as social science, arts and humanities. It is useful for hypothesis generation and hypothesis refutation as well as for learning a lot about a particular case as a way to understand nuances in processes and particularities. There is a fine boundary between social science and humanities in contemporary urban case study research: many case study-based human geography papers I have listened to and refereed, seem more concerned with telling stories than answering questions and creating specific knowledge that can be generalised to other cases. I have sat in talks by erudite famous professors from which I have emerged thinking 'I have learned nothing in terms of generalisable principles, but I am totally inspired'.

My own interpretation of this conundrum, is that sometimes researchers slip over the border from social science into literature. The clue is in the term – 'stories'.

Stories are powerful. They anchor culture, history, religion and even science. But if we are academic story-tellers, our approach must be the same as Dean Collins' when asked about communities formed around conversations. Around these academic camp-fires, we tell stories to each other, not just for entertainment (though there is entertainment value in the activity and the artefacts), but to hone our intellectual critique.

This takes us right back to the earliest recorded intellectual jousting – of the ancient Greeks and before them the Sumerians and other Mesopotamian prototypical civilisations. Like students in Plato's private school, the *Akademia*, our story-telling yields philosophical constructions and counter-constructions.  In a mixture of the deductive logic of those constructed abstract worlds, and the raw and unstructured empiricism of the fireside conversation, we make and test knowledge.

The academic discipline of architectural history and theory is made up of such conversations. They are held not around the fireside but around iconic buildings and cities and around their designers – who themselves become icons. In this sense, architectural research is a form of humanities scholarship. Most architecture academics would, I think, acknowledge that it has generally been difficult to move from telling stories about buildings and designs, to developing the abstractions that help us move on to more formally codify, test and develop a theoretical knowledge base that lasts. My own view is that it has been this difficulty that has led to architectural education's focus on people (designers) and designs, rather than on a corpus of abstracted knowledge and theories. Is there an equivalent to Aristotelian logic emerging from architectural story-telling? From Aristotle's teaching emerged a formalisation – one of the first formalisations of deductive logic – aimed at providing a language for testing the consistency of new developments in philosophical discussion. This is what a lot of our research in FoA is doing, in essence – developing abstractions that allow us to better assess, both inductively and

deductively, claims to knowledge advancement, including the advancement of ideas about how to apply basic knowledge to affect changes in the real world.

In architectural technology fields, story-telling has progressed to formalised mathematical models of, for example, environmental performance. Knowledge can thus be tested through the normal academic route of peer-reviewed journaling (which serves the purpose of quality control, recording the provenance of an idea, and tracking its evolution over time). Well-founded architectural humanities research likewise follows the rules of historians, anthropologists and so on in respect to the quality of evidence, analytical strategies and documenting the provenance and trajectory of ideas.

Scholarly designers do not have a well-established tradition in the above, the nearest perhaps being the rigorous peer review found in the highest level of international competitions; and of course the ruthless and unforgiving quality control tests of the market place (in the case of built designs). Might this be OK? Perhaps the stories told in the architectural journals, monographs, edited books and even the self-published self-promoting books of famous and would-be famous designers, are valuable enough in themselves. If they inspire (students, other designers), why do we need abstractions? Why theorise? Why formalise knowledge in logical constructions? Why not raw uninterpreted inspiration from one designer to another? Some might say that this is not academic or scholarly. Others would say that the scholarship is embodied in the design, and that to disembody it through explicating a theory of the underlying design process or principles, is to de-mystify it and make it less of an engaging book to read.

And so we are back to literature and art. Some of the processes of architecture may require the development of a rigourously researched knowledge base. But the *object* of architecture: the building, landscape or designed open space, is a *story* that should perhaps be left for anyone to read in whatever way they wish.


Congratulations and thanks to all those mentioned below.


Chris

# Teaching and other Achievements

## Department of Architecture

1. Dr. Cole Roskam

   - whose essay on the history of the Hong Kong Observatory, entitled "Constructing climate: The Hong Kong Observatory and meteorological networks within the British imperial sphere, 1842 – 1912", has recently been shortlisted for the RIBA President's Awards for Research 2020, under the category of "Annual Theme: Climate Change".

     URL: https://www.architecture.com/researchawards



Typhoon of 1874. Photograph by Lai Afong, Hong Kong

2. Christian J. Lange and Lidia Ratoi

- are exhibiting their 3D-printed coral reef tiles project, a collaboration with HKU's Faculty of Science, at PMQ:

**Reformative Coral Habitats**



Hoi Ha Wan Marine Park is a local biodiversity hotspot accounting for more than three-quarters of reef-building corals in Hong Kong and more than 120 fish species. However, in recent years, gradual deterioration of the coral habitat, a process known as bioerosion, coupled with coral bleaching and mass mortality events in 2015-2016, are putting the future of the coral community at risk. In view of this, a team of HKU architects and marine scientists has developed a series of reformative 3D-printed terracotta reef-structures intended to aid coral restoration by providing structurally complex substrates at the degraded areas.

The design and production of the 128 3D-printed reef tiles were executed in the Robotic Fabrication Lab of the Faculty of Architecture at HKU, covering roughly 40 sq. meters in total, and were deployed in selected sites in the Marine Park in July 2020. The experiment will be closely monitored by marine scientists and researchers for the next one and a half years.

The project is commissioned by the Agriculture, Fisheries and Conservation Department (AFCD) and is part of an ongoing active management measure for coral restoration in Hoi Ha Wan Marine Park in Hong Kong.

This exhibition reveals the design process, manufacturing, deployment, and ageing process of the tiles.

**Date:** 11 January (Monday) - 31 January (Sunday) 2021
**Time:** 10:00am - 8:00pm
**Venue:** S507, 5/F, Staunton (Block A), PMQ,
35 Aberdeen Street, Central, Hong Kong

*Project Credits:*
*Robotic Fabrication Lab | Faculty of Architecture | The University of Hong Kong*
*Christian J. Lange (Team Leader), Lidia Ratoi, Dominic Co Lim, Jason Hu*

*Swire Institute of Marine Science (SWIMS) | The University of Hong Kong*
*Dr. David M. Baker (Team Leader), Vriko Yu, Phil Thompson*
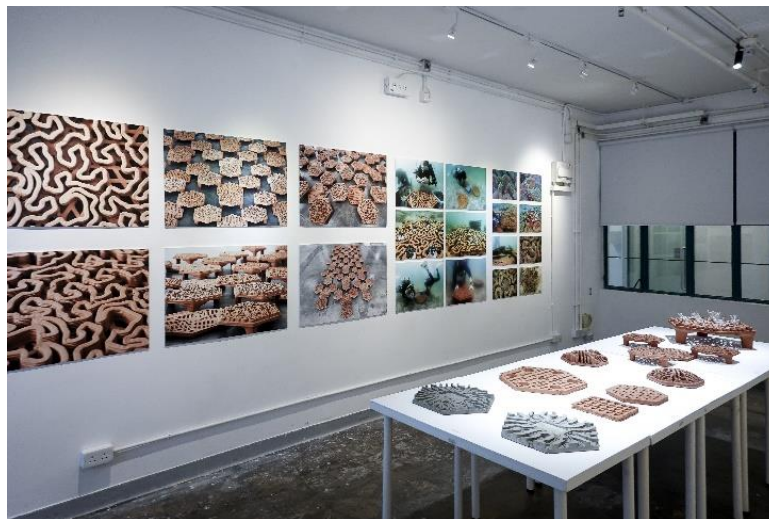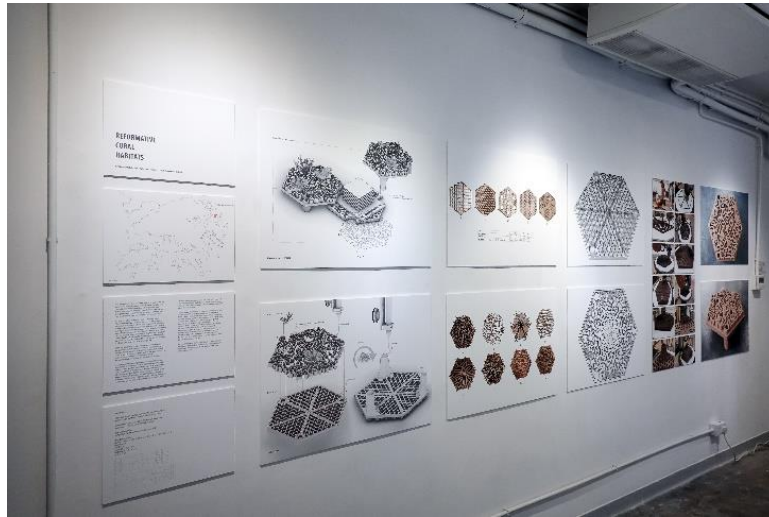




Media coverage: Ming Pao Weekly – Culture (港大建築系 3D 打印「珊瑚礁盤」助海下灣珊瑚復育)
https://www.mpweekly.com/culture/珊瑚復育-海下灣海岸公園-3d 打印-169322

# Department of Real Estate and Construction

1. Professor Lawrence Lai

   - has recently been featured in a newspaper article on the conservation of wartime bunkers in Hong Kong:

     https://hd.stheadline.com/news/realtime/hk/1974147/即時-港聞-港府冷待研究報告-二戰遺址恐變廢墟



2. Ir Dr. S W Poon and Dr. Katherine Deng

   - delivered a CPD talk to HKICON on 12 January, about the lighthouse and the people on Waglan Island:

     https://member.hkicon.org/events/20210112/

# Department of Urban Planning and Design

1. Dr. Weifeng Li

   - Three teams of BAUS Year 3 students have participated in the public webinar entitled "Training Class Season 4: OpenBIM – The Technical", organised by the Hong Kong Alliance of Built Asset & Environment Information Management Associations (HKABAEIMA) and the Hong Kong Chapter of buildingSMART International, on 30 December 2020. The three presentations were on the planning and designing of new/renewal projects, by integrating GIS and BIM. Their topics and presenters are as follows:

     * **Energizing To Kwa Wan: Kai Ming Street & Wing Kwong Street Renewal Project (Group 1)**
     # Speakers: Cheng Chun Fung, Kelvin; Choi Tsz Wing, Nora; Lui Wing Hin, Daniel & Pang Man Tung, Kelly
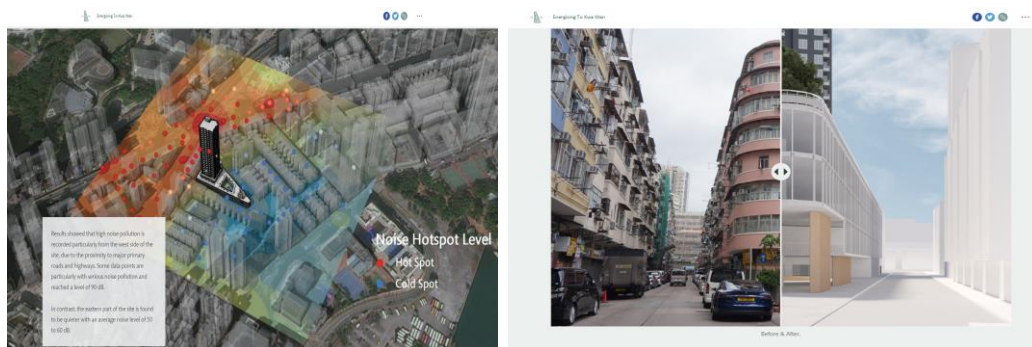


     * **Tomorrow Diamond Hill – Proposed Development in Diamond Hill CDA (Group 2)**
     # Speakers: Chan Pak Hei, Marco; Cheung Chi Cho, Evan; Ho Tsz Chun, Adrian & Lam Tsz Ting, Chloe
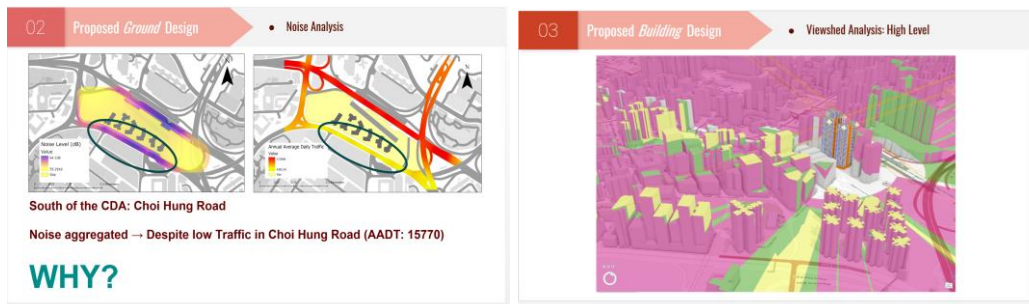
* **"Revitalizing – Connecting – Energizing": Proposed Peel Street/ Graham Street Redevelopment Scheme (Group 3)**
# Speakers: Chan Tin Wai, Rachael; Kwok Chun Wai, Eric & Ng Sin Yu, Ashley
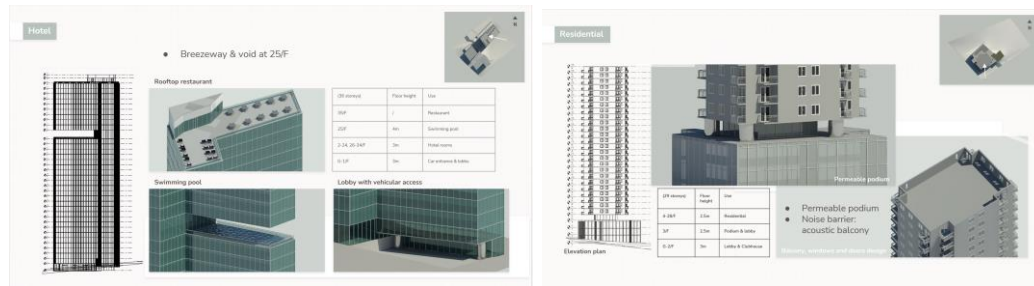


Poster of the Public Webinar "Training Class Season 4: OpenBIM – The Technical":

# Research Achievements

## Germany / Hong Kong Joint Research Scheme 2020/21

Launched in 1996 by the Research Grants Council (RGC) and the German Academic Exchange Service (DAAD), the Germany / Hong Kong Joint Research Scheme aims to promote research collaboration between Hong Kong and Germany by providing researchers in the two locations with travel grants for duration periods of one and two years.

This year, there are altogether 12 projects being funded across the eight UGC-funded universities in Hong Kong. Out of the five funded projects from HKU, two are coming from our Faculty, one from Dr. Eike Schling of DoA and one from Dr. Guibo Sun of DUPAD.  Details of Dr. Schling's and Dr. Sun's projects are listed as follows:

1. Dr. Eike Schling

- Project Title: Kinetic Grid Mechanisms
  Project No.: G-HKU707/20
  Collaborator: Professor Dr.-Ing. Rainer Barthel of Technical University of Munich
  Funding: equivalent to HKD 37,600 each for Hong Kong side and Germany side

2. Dr. Guibo Sun

  Project Title: Intercultural perspectives for understanding how people experience everyday space and place
  Project No.: G-HKU703/20
  Collaborator: Dr. Rene Westerholt of TU Dortmund University
  Funding: equivalent to HKD 90,000 each for Hong Kong side and Germany side

  This funding scheme encourages active involvement of PhD students in their academic exchange – the two PhD students under Dr. Westerholt's supervision in TU Dortmund University, which has the largest university department for spatial planning in Europe, will visit HKU for a one-month period, while Dr. Sun's PhD student will visit Germany for a two-month period, during the two-year funding period.

# Centre of Urban Studies and Urban Planning

1. Dr. Derrick Ho

  - has published the following papers:

(i) **Hung Chak Ho\***, Paulina Wong, Chunlan Guo (2021). Impacts of social and environmental perceptions on preparedness and knowledge of air pollution risk: A study of adolescent males in an urbanized, high-density city. <u>Sustainable Cities and Society</u>, 66, 102678. ISSN 2210-6707, DOI: https://doi.org/10.1016/j.scs.2020.102678.

*Background: Adolescent males are often considered as less medically vulnerable, resulting in less community healthcare but stronger influences of environmental awareness (preparedness and knowledge) on self-preventive strategies of air pollution risk. However, socio-environmental experiences can alter subjective understandings of the environment, thereby modifying their environmental awareness.*

*Method: A two-stage analysis was applied to evaluate the impacts of socio-environmental perceptions on the preparedness and knowledge of air pollution risk among 551 adolescent males. In the first stage, we evaluated the impacts on the overall preparedness and knowledge with Gaussian regressions, and in the second stage, we evaluated specific preparedness and knowledge with binomial regressions.*

*Results: First-stage analyses showed that socio-environmental perceptions impacted overall preparedness but not overall knowledge. Particularly, perceivably low environmental knowledge of oneself negatively influenced overall preparedness, and a perceivably large household positively influenced overall preparedness. The second-stage analyses further implied a complex mechanism between perception, preparedness, and knowledge. Specifically, poor outdoor air quality surrounding the home and perceivably low environmental knowledge of oneself negatively influenced specific preparedness for caring for family members. Perceivably low environmental knowledge of oneself also negatively influenced preparedness for outdoor air pollution and knowledge of visibility, wearing masks, cardiovascular diseases, and mortality risk. Poor indoor environment negatively influenced preparedness of wearing a mask. However, participating in few sports activities negatively influenced preparedness for wearing a mask, and knowledge of wearing masks, greenhouse gases, and tropospheric ozone, but positively influenced preparedness for outdoor activities during hazy days. Perceivably low school grade positively influenced knowledge of tropospheric ozone. Perceivably low environmental knowledge of the parents and a large household also positively influenced specific preparedness. Poor indoor air quality at home positively influenced knowledge of mortality risk.*

*Conclusions: Due to the complexity of adolescent males' preparedness and knowledge, further environmental and health actions (e.g., community services, environmental education, and health workshops) with appropriate preventive strategies should be targeted and specified.*

***Background***: *Human immunodeficiency virus (HIV) remains a public health priority in Latin America. While the burden of HIV is historically concentrated in urban areas and high-risk groups, subnational estimates that cover multiple countries and years are missing. This paucity is partially due to incomplete vital registration (VR) systems and statistical challenges related to estimating mortality rates in areas with low numbers of HIV deaths. In this analysis, we address this gap and provide novel estimates of the HIV mortality rate and the number of HIV deaths by age group, sex, and municipality in Brazil, Colombia, Costa Rica, Ecuador, Guatemala, and Mexico.*

***Methods***: *We performed an ecological study using VR data ranging from 2000 to 2017, dependent on individual country data availability. We modeled HIV mortality using a Bayesian spatially explicit mixed-effects regression model that incorporated prior information on VR completeness. We calibrated our results to the Global Burden of Disease Study 2017.*

***Results***: *All countries displayed over a 40-fold difference in HIV mortality between municipalities with the highest and lowest age-standardized HIV mortality rate in the last year of study for men, and over a 20-fold difference for women. Despite decreases in national HIV mortality in all countries—apart from Ecuador—across the period of study, we found broad variation in relative changes in HIV mortality at the municipality level and increasing relative inequality over time in all countries. In all six countries included in this analysis, 50% or more HIV deaths were concentrated in fewer than 10% of municipalities in the latest year of study. In addition, national age patterns reflected shifts in mortality to older age groups—the median age group among decedents ranged from 30 to 45 years of age at the municipality level in Brazil, Colombia, and Mexico in 2017.*

***Conclusions***: *Our subnational estimates of HIV mortality revealed significant spatial variation and diverging local trends in HIV mortality over time and by age. This analysis provides a framework for incorporating data and uncertainty from incomplete VR systems and can help guide more geographically precise public health interventions to support HIV-related care and reduce HIV-related deaths.*