

Research Assessment Exercise 2020 - Impact Overview Statement

University: The University of Hong Kong

Unit of Assessment (UoA): UoA 17 – Architecture

Total number of eligible staff of the university in the UoA: 20

(1) **Context.** The stakeholders for academic research in architecture, landscape architecture and urban design cover a broad spectrum, encompassing the arts, science, technology, professional, community, NGO and industry sectors. They have brought focus to this agenda by establishing (in 2013) HKUrbanLabs. The Labs constitute the research arm of the Faculty of Architecture (FoA). They draw together the research and outreach energies of scholars of architecture, conservation, construction management, housing, landscape, planning, real estate, surveying, transport, urban design, urban economics, urban studies and more. HKUrbanLabs create an incubator ecosystem in which built-environment scholars from multiple disciplines explore, discuss, think out of the box, bid for funds, innovate, collaborate, prototype, build, test and disseminate. Their collective endeavor is to better understand, plan, design, produce, govern and manage cities of the 21st century, by bringing design alongside science and humanities research. Given their location at the epicenter of an urbanization experiment unprecedented in human history, the Labs have a strong emphasis on research into high-density and rapidly growing cities, including rural-urban linkages and settlements in the hinterlands and heartlands of mega-city regions. As well as a research-nurturing environment, HKUrbanLabs are a platform for building bigger. In this respect, in the first six months of 2019 FoA researchers submitted funding bids for three very large city research institutes (see below under Strategy). These will boost **four broad types of impact** arising from UoA 17 researchers' work in FoA: (i) design innovations that are built and have impact on immediate users, wider communities and wider professional communities of architects; (ii) designs that are not built but impact on professionals globally through international exhibitions and features in international professional magazines; (iii) technical advice arising from research into environmental analytics, building physics, energy performance, pedestrian flow analytics, robotics, visualization and fabrication algorithms; (iv) architectural criticism impacting on the public, the profession and wider culture through books and other media.

(2) **Approaches to Impact.** *Strong partnerships with NGOs:* Providing high-profile NGOs with practical advice based on rigorous academic research is an important impact mechanism for FoA. An example is a set of technical reports written by the Faculty's Landscape researchers and published in 2019 by WWF, which specify a regional landscape design strategy for the most important new road link in South-east Asia, joining Thailand with Myanmar and cutting through two pristine national parks and which is also a crucial link in Belt and Road corridor number 6. Another example is architectural conservation research that supported HK's famous 'Blue House' project, which restored one of the city's most iconic buildings while keeping it in use for low-income residents. This won UNESCO's highest global conservation award in 2018. FoA provides legal and administrative support and continuation funding between such projects to encourage this important impact route. *Cultivating star architect researcher-teacher-practitioners:* Professional commissioning is another important mechanism and FoA adopts the USA architecture faculty model of hiring big- and emerging-name architects to teach and research at the same time as running innovative practices. An example is one of our case studies – Seraji's paradigm-shifting new Parisian *quartier* on the site of one of the city's nineteenth-century bus stations. *Engaging with philanthropists to maximise social gain:* HK tops international lists for philanthropic giving, and philanthropic families and institutions have a good eye for impact – particularly socially impactful design and artistic impact. FoA and HKU are very active helping researchers package ideas for donor funding. Close collaboration with donors creates opportunities for delivering groundbreaking research projects that have social progress at their core. Without these strong relationships with philanthropic organisations, the type of bold, cutting-edge, design-related research that the FoA is known for would not be possible. Rural Urban Framework (RUF), one of the HKUrbanLabs, has raised 4.71 million HKD from donors over the past five years, bringing green and socially progressive architecture to impoverished rural China. Another RUF project designs modular homes

suitable for green mortgage lending, and is aimed at transforming the catastrophic smog and health problem in the Mongolian capital's sprawling tented suburbs. **Exhibiting at international biennales:** Exhibitions are an important mechanism for turning speculative design research into impact on the professional community. FoA's architects regularly exhibit and curate at the Venice Biennale, Shenzhen-Hong Kong Biennale and single exhibitions of international importance such as Thomas Tsang's acclaimed 2014 'Cloud of Unknowing' exhibition at the Taipei Fine Art Museum, which attracted 150,000 visitors. In addition, FoA provides generous support for exhibitions, including seed-funding, running its own gallery in downtown Shanghai and funding the shipment of materials. **Proactive engagement with government policymakers and industry:** FoA's architectural science and technology researchers are active in developing relationships with government agencies and industry, by advising, sitting on steering committees, delivering contract research, writing standards and guideline documents and co-producing research. Examples include a current contract with HK's Urban Renewal Authority (URA) to provide modeling software and services to analyse the thermal comfort of URA urban redevelopment schemes that significantly reconfigure HK's urban building mass, with effects on tens of thousands of residents. FoA provides generous funds for equipment and rolling over RA contracts to support such research. For example, FoA recently spent two million HKD on architectural robots that will underpin a 2019 research contract with the HK Agricultural, Fisheries and Conservation Department to design and print artificial coral reef structures. Similarly, FoA recently spent six million HKD on state-of-art radar scanners for its researchers working on urban-scale ventilation, climate and energy models that have been commissioned by city governments in Mainland China, Hong Kong and France. **Knowledge exchange for community benefit:** Community knowledge exchange projects have long been a crucial impact channel for FoA's researchers. Examples are manifold and often involve FoA students. FoA seed-funds community-focused projects, with the expectation that all manner of anticipated and unanticipated impactful outcomes will emerge, including further commercial funding. The Fabrication and Robotics lab, for example, was seed-funded by the FoA for two years and now has three significant externally funded commissions, including one from HK's MTR.

(3) Strategy and plans. FoA's strategy is to continue using the impact delivery models outlined above and to strengthen them. One way of strengthening is to scale up. Four examples illustrate. First is a ten million RMB R&D contract signed with a township (Chang'an) government (one million population) in Dongguan City in the Pearl River Delta (PRD). This illustrates the strategy of forging closer connections with urban governments in the PRD to help Mainland China tackle major urban design challenges. Second, a much bigger version is currently being negotiated with another PRD government (for a 2.5 billion RMB Urban Institute). A third, focusing more on architectural science (30 million RMB), is being negotiated with one of China's largest development companies and illustrates FoA's strategy for connecting more closely with industry as well as governments. Fourth, is a 100M HKD bid with Habitat for Humanity for a research project yielding innovative eco-design solutions for HK's subdivided housing dwellers.

(4) Relationship to case studies. Case study 1 exemplifies impact by 'design and build' of a potentially genre-creating large city-center project. It reflects FoA's commitment to using its research expertise to break the mold and devise groundbreaking solutions that can be replicated on a wide scale. In the French national media, the commissioning Transport Department of Paris described this multi-function, mixed-use building as a 3D, compact, new urban *quartier* of the 14th Arrondissement of Paris, a horizontal skyscraper and a new model for transit infrastructure redevelopment in French cities. It is hoped that the project will lead to Professor Seraji's second Legion d'Honneur medal from the French President. Case study 2 (RUF - Jintai Village) is a great example of a multi-party pathway to impact. Research funded by General Research Fund (GRF) grants led to impact funded by partnerships with (i) rural- and higher-level local governments, (ii) village organisations and (iii) philanthropic donors who funded the added costs for innovative eco- and context-sensitive design. To achieve this, HKUrbanLabs underwrote RUF while it experimented with alternative funding, partnership, research and dissemination modes over a period of several years.