

**Research Assessment Exercise 2020**  
**Impact Overview Statement**

**University:** City University of Hong Kong |

**Unit of Assessment (UoA):** 17 - Architecture |

**Total number of eligible staff of the university in the UoA:** 5 |

**(1) Context**

Architecture UoA is one of the 4 disciplines of the Department of Architecture and Civil Engineering (ACE) in City University of Hong Kong. The architecture discipline in ACE comprises faculties and teaching staff, and emphasize in-depth collaboration with the engineering disciplines of the department. The context and approach of research works are concentrated in analytical approach with emphasis on the global environmental characteristics. The trend in urbanization fosters the increase in population of many major cities in the world. Large complex buildings and transportation terminals with huge population have been constructed. The planning and design of urban settings and building spatial layouts are important to urban planners and architects.

**(2) Approach to impact**

The members of the UoA concentrate on the analytical strength and collaboration with the architectural engineering experts in the Civil Engineering UoA of ACE. The specific area addresses planning and management for spatial layout and facilities with particular focus on the study of people movement in complex setting and crowd control in densely populated environment. The UoA is regarded as an integral part of ACE to develop the research works that in need of the global society. The works commissioned by the Hong Kong Mass Transit Company demonstrates the real application.

**(3) Strategy and plans**

Similar to other UoAs of ACE, the architecture UoA possesses the following research strategies:

- to establish a vibrant research culture that relates to modern architecture and enhances our international reputation;
- to present the research findings regularly in top ranked international journals, in particular in SCI/SSCI listed journals and disseminate it in appropriate international conferences and exhibitions;
- to promote cross-disciplinary research within ACE and with other colleges and institutions;
- to apply for reputable research grants such as GRF/ CRF/ Theme-based Research Scheme of RGC, China Nationals Science Foundation and other industrial grants such as ITF of HKSAR or Shenzhen Government research grants;
- to support the transfer of knowledge generated through research to practical use for the benefit of the society such as assisting the Hong Kong metro company to study the crowd movement pattern and evacuation; and
- to enroll high caliber doctoral students (on average more than 1 PhD student/ member of the Architecture UoA each year) to support the research works and recruit world-class faculties at various level (in the architecture field, 3 at assistant professor level and 1 at professor level in the past 4 years).

Similar to other UoA of ACE, an impact management strategy has been adopted in that:

- A strategic partnership with industry and other local and international institutions has been arranged. We have strategically worked with the Hong Kong Mass Transit Company, which operates lines in Hong Kong, Mainland China, London, Sweden and Australia. Working

with an international company can allow the impact of our works internationally. Prof. SM Lo has also worked with OMA, a renowned international architect firm, for the design of Mongkok Station rehabilitation project. Moreover, we also collaborate with National Taiwan University (Prof. Rex Lai of NTU) to participate in practical projects in Taiwan and Prof. N. Tomii of Chiba Institute of Technology (Prof. SM Lo's PhD student will work in Japan for a quarter apply the research works in Japan railway stations).

- A multi-disciplinary approach has been taken. ACE's engineering and technological experts have worked with members in Architecture UoA for research and practical projects. For example, they have offered consultancy service for ARUP to study the elevator evacuation pattern for the design in Sai Ying Pun Metro Station.
- Technological platform has been developed to accommodate members in the same UoA to work together. Dr. Y Lu, major research interest in environmental spatial analysis, has collaborate with Prof. SM Lo for research and application of research grants. |

#### **(4) Relationship to case studies**

|The UoA promotes research impacts through its in-depth research activities. The case study provides strong evidence of the impact. The scale and magnitude of our impacts outlined in the case study represent the central commitment of the UoA to industry-relevant research and dissemination to the local and international community.

The impact case submitted reports the development of a pedestrian movement model, CityFlow, for supporting environmental spatial analysis. It has been applied to study complex settings in metro stations, large shopping malls and terminals. The computation model developed has significant impact on the spatial design and management for metro stations and shopping malls with complex settings. It also supports the study of evacuation and helps the establishment of fire and evacuation strategies in metro stations.

All in all, we are optimistic that our strategy of strongly promoting collaboration with external organizations, HKMTRC as exemplified by our case study, ensures the outreach of our research to the 'real world' successfully. The collaboration with HKMTRC and other international institutions can extend our real and lasting impact internationally. |