

BUILDING ON RESEARCH STRENGTHS @ HKU - BUILT

BUILT MICROBIOME

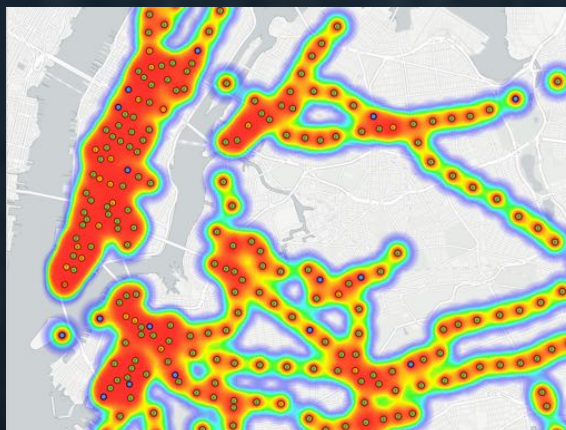
The **Built Environment** is the nexus where humans interact with the microbial world. How we design our working, living, and transit spaces have important implications for the microbiome around us thus affecting the health and livelihoods of our human societies.

In the study of the **Built Environment** we have initiated several inter-departmental projects focused on how bacteria “travel” around Hong Kong and how they communicate with us by performing deep DNA sequencing of samples obtained from the MTR railway lines, banknotes and wastewater treatment facilities.

FLAGSHIP PROJECT

For the Built Environment the Faculties of Science and Architecture have jointly funded (\$400K HKD) a project on the characterization of the temporal and spatial variation of the antimicrobial resistance and its integration with connectivity metrics, indicating potential for through-movement at any point in the city network. The goal is to map the landscape of risk associated with

wastewater/water treatment facilities but also our daily activities (e.g. currency circulation, usage of metro lines, etc) and understand the spreading dynamics in a future disease outbreak with direct implications in protecting public health. The Faculty of Architecture and School of Biological Sciences have agreed to a second round of funding (\$400K HKD) whereas a inter-departmental grant application is under consideration at the Bill & Melinda Gates Foundation.



Ongoing research at HKU has identified major microbial groups on the Hong Kong MTR. Similar projects are underway elsewhere. Here, an example from Pathomap: Microbes of New York City Subway. <http://www.wired.com/2015/02/mapping-microbes-new-york-city-subway/>