THE UNIVERSITY OF HONG KONG

DEPARTMENT OF MECHANICAL ENGINEERING

SEMINAR

Online

Title: Unsteady water and air flows in building drainage systems

Speaker: Mr. Chung-Hin Dung (PhD candidate)
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Date: 29 April, 2022 (Friday)

Time: 4:00 p.m. (Hong Kong Time)

Zoom meeting:

1) Link to join the meeting:

https://hku.zoom.us/j/9703753731?pwd=amt3TitUdW5wb3pwSEpmZEdOR1RwQT09

2) Meeting ID: 970 375 3731

3) Password: 031198

Abstract:
The vertical spread of SARS-COV-2 has been dramatically surged in the fifth wave of the Coronavirus disease (COVID-19) pandemic in Hong Kong. Despite the viral transmissibility, the observed high occurrence of vertical transmission calls into question the condition and design of the building drainage systems of high-rise residential buildings, especially public housing and Tong Lau with subdivided units. There has been a lack of understanding of water and air flows in high-rise drainage pipes. We explore the application of numerical models to understand unsteady water and air flows in the drainage system. We apply the method of characteristics (MOC) to simplify and transform the hyperbolic, partial differential equations into ordinary differential equations. A finite-difference method is used to discretize the system. I will illustrate and explain how this numerical model works in this seminar. The developed model will be used to understand and improve the design of drainage systems in high-rise buildings to avoid air leakages.

ALL INTERESTED ARE WELCOME
For further information, please contact Prof. Y. Li at 3917 2625.

Research area: Natural & Built Environment