

**Faculty of Science and Technology****TECHNICAL SEMINAR**

**Title:** A Business Case Study on the Utilization of Green BIM and Machine Learning Platform to Support Building Performance Simulations and Architectural Design Decision

**Date:** 9 March 2018 (Fri)

**Time:** 15:30-17:30

**Venue:** LT-1, THEi Building, Tsing Yi Island

A rectangular graphic with a green-to-yellow gradient background. The text "Green BIM" is written in white, bold, sans-serif font, centered within the graphic.

**Synopsis:** The lecture will use business case studies to demonstrate how the Building Information Modeling (BIM) can be utilized for building performance simulations (BPS) and the integration with the architectural design process. The interoperability between a BIM model and various building performance simulation tools is both effective and efficient. The Green BIM BPS tools, including facade solar heat gain analysis, daylight factor calculation and glare analysis, building envelope energy loading and computational fluid dynamics wind study, can inform the design decisions, improve the workflow, as well as embed critical data and control parameters to contribute to the whole lifecycle of the BIM model supporting the next stage of design/construction stage.

Machine Learning is used by computer science for data analytics in Big Data. However, a similar genetic algorithm can be used to support a specific scenario in solving complex architectural design problem as well – automatic building massing engine with daylight compliance check. A business case study will be used to demonstrate how the genetic algorithm can drive building massing automatically and improving the design quality and workflow efficiency.

**Speaker:** Dr. Benny CHOW  
Director of Sustainability at Aedas

Dr. Benny Chow is the Director of Sustainability at Aedas, focusing on the green buildings and sustainable development, an award-winning sustainable design expert with worldwide project experience. Dr. Chow is now appointed as the appointed as the Member of the Board of Directors, Chairman of the Industry Standards and Practices Committee (ISPC), and GB Faculty of the Hong Kong Green Building Council (HKGBC), co-opt members of the Committee on Environment and the Committee on BIM in Construction Industry Council (CIC) and the chairman of the Sustainability Committee of the ASHRAE Hong Kong Chapter. Dr. Chow brought with him more than 22 years of experience in Sustainable Design and involved in more than 400 projects located in more than 40 cities.



Dr. Chow is specializing in Green-BIM, building physics computer modeling and analysis, urban microclimate study, façade solar heat gain calculations, global daylight illumination simulation, performance-based building energy use and efficiency modeling, and air ventilation assessment using Computational Fluid Dynamics (CFD), and the design of healthcare facility to the prevention of airborne infectious disease.

Prof. Chow was appointed as an Honorary Associate Professor in the Department of Mechanical Engineering at University of Hong Kong (HKU), Adjunct Associate Professor in the Center for Housing Innovations at the Chinese University of Hong Kong (CUHK), and is currently the Adjunct Assistant Professor of the Faculty of Medicine at CUHK.

ALL INTERESTED ARE WELCOME

For further information, please contact Dr. Sam C. M. Hui at “[cmhui@vtc.edu.hk](mailto:cmhui@vtc.edu.hk)”.