The Hong Kong University of Science and Technology

香港科技大學
THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

HKUST BIM Lab
Integrate. Innovate. Inspire.

GOLD

Green, Resilient, Empowering
Integrated Digital Twin

(IoT)
Physical Twin
Mobile Devices, Indoor Localization Indoor Navigation
Indoor Air Quality Management
COBie
Maintenance Management
Engineering Analyses
Building Management System
FM / Space Management

• **HKUST DT for facility management**
Scan-to-BIM Using Machine Learning and AI Deep Learning

Training set
Test set
Ground truth for test set
Prediction for test set

Blockchain-enabled openCDE

Introduction of the Organisation

The Hong Kong University of Science and Technology is a public research university founded in 1991. It was ranked 47th in the world and second in Hong Kong by QS 2025. HKUST and its BIM Lab have been enhancing BIM-related digital innovations and applications in research, education, promotion, and institutional adoption over the past years.
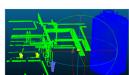
Since 2019, HKUST has started the initiative to develop a digital twin for its entire campus, which serves as the core to support smart and sustainable campus at HKUST. It promotes BIM internally at an institutional level, involving different research groups, FMO, faculty members, staff, and students. The HKUST BIM Lab has conducted cutting-edge academic and applied research in many emerging scientific and technological fields, including BIM, IoT, artificial intelligence, computer vision, VR/AR, facility management, laser scanning, robotics, and blockchain. It has organised many BIM and digital construction events for the industry. By 2024, it has published over 300 international journal and conference papers in these fields. 26

PhD graduates, 18 MPhil students, and hundreds of master students have participated in scientific research projects. Currently, there are 23 researchers, including 13 PhD students and 2 MPhil students in the HKUST BIM Lab. Furthermore, BIM and digital construction have been taught at HKUST at the postgraduate level since 2010. BIM was then introduced to the undergraduate civil engineering curriculum in a required course starting 2018. Each year, over 300 HKUST students were trained with the latest BIM and digital construction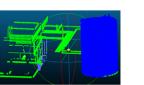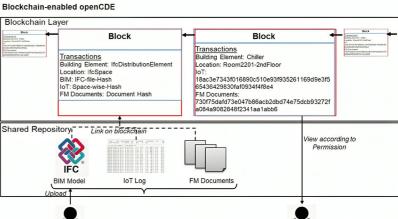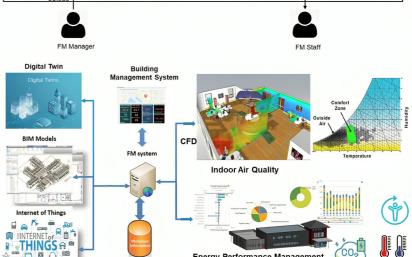 materials on both undergraduate and postgraduate levels.