

Organisations Category

Project Owner (Public Sector)

Smart Sustainability Award

Hong Kong Housing Authority,

the Government of the Hong Kong Special Administrative Region, China



Public Housing Development at Tung Chung Area 99

The Hong Kong Housing Authority's (HKHA) public housing development at Tung Chung Area 99 (TC99) pioneers the use of sustainable Modular Integrated Construction (MiC) technology. Early findings suggest MiC can dramatically reduce waste and pollution, while vastly conserving resources and manpower. Serving as a research hub for technologies like MiC 2.0, MiMEP, and High Productivity Construction (HPC), TC99 contributes to their future mass application and the shaping of industry standards.



Application of digitalisation to contribute to sustainable construction:

- 5D BIM Application – to enhance effectiveness and efficiency for works coordination, especially for MiC and MiMEP, leading to enhanced precision of use of materials;
- Project Dashboard – Digital Twins, Integration of BIM and GIS, and Internet of Things for smart site safety and works monitoring;
- Reality Capture Technologies – 3D laser scanning of as-built environment to BIM modelling automation for improved works planning; and
- Construction Robotics – reduce exposure of risky trades to enhance works safety.

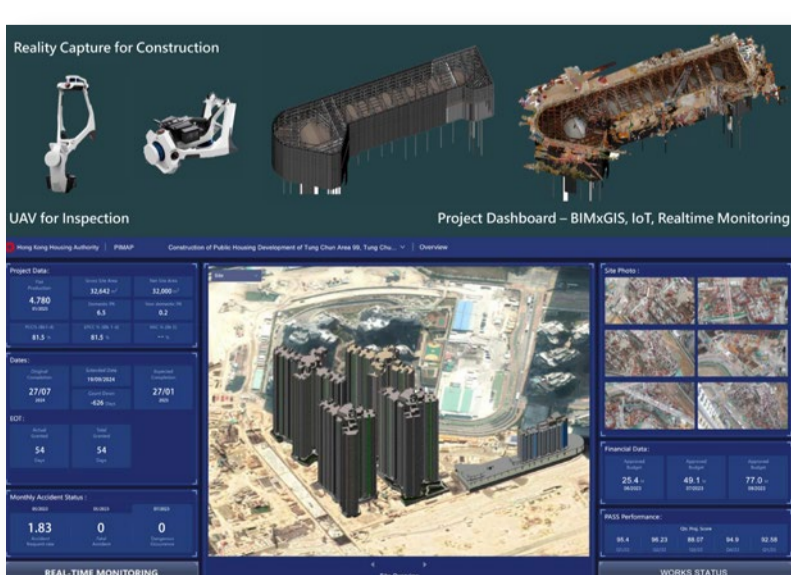


Sustainable Best Practice 1

TC99 pioneers the use of MiC, which is a resource-efficient method that minimises pollution. The project thoroughly embodies carbon reduction strategies, including carbon emission estimates and the use of green building materials, to attain sustainable construction. By leveraging various innovations and technologies, TC99 supports low-carbon initiatives, underscoring the project's commitment to environmental-friendly practices and reinforcing its position as a leading model of sustainable development.

Sustainable Best Practice 2

Emphasising public engagement, stakeholders participate in discussions concerning HKHA's adoption of sustainable MiC at TC99. Serving as a research base for MiC 1.0, MiC 2.0, MiMEP, and High Productivity Construction (HPC), TC99 fosters advancements in construction technology. By doing so, TC99 plays a crucial role in the potential future mass application of these innovative techniques, contributing to the evolution of sustainable construction practices.



Sustainable Best Practice 3

The project dashboard at TC99 utilises Digital Twins, integrating Building Information Modelling (BIM) and Geographic Information Systems (GIS), and Internet of Things (IoT) to provide a smart site safety system and aid its evolution. Additionally, 5D BIM is employed for meticulous planning. Reality capture technologies, such as 3D laser scanning, improve work planning through automatic BIM modelling of the as-built environment. Construction robotics are also utilised, reducing exposure to risky trades and enhancing overall worksite safety.