

COMPANY

China State Construction Engineering
(Hong Kong) Limited

PROJECT

Main Contract Works for New Acute Hospital at
Kai Tak Development (Site B)

LOCATION

Kai Tak Development Area

TYPE

Hospital

SCHEDULED TIME OF COMPLETION

04 Nov 2024

Collaborating in the Cloud: Smart, BIM and Hospital



About China State Construction Engineering (Hong Kong) Limited

China State Construction Engineering (Hong Kong) Limited ("the Company" or "China State Hong Kong") started its construction business in Hong Kong in 1979. The Company engages in building construction and civil engineering works. China State Hong Kong is among the largest construction contractors in Hong Kong, and is approved by the Works Bureau, to be on the List of Approved Contractors (Group C) for Public Works in the five major categories of building and civil engineering works, namely, "Buildings", "Port Works", "Roads and Drainage", "Site Formation" and "Waterworks".

BIM PARTNERS

Hausner (Hong Kong) Limited
Chinese State Construction Science and Technology Limited
Leung's Wooden Company
Cemac (HongKong) Limited

AUTODESK PRODUCTS USED

Autodesk® 3ds Max®
Autodesk Construction Cloud®
Autodesk® Dynamo
Autodesk Forge®
Autodesk® Navisworks® Manage
Autodesk® ReCap® Pro
Autodesk® Revit®

Project Description

Announced in 2016 Policy Address, the Government of Hong Kong Special Administrative Region has set aside a dedicated provision of HK\$200 billion for the implementation of a 10-year Hospital Development Plan (HDP) in the coming ten years.

The Kai Tak New Acute Hospital (NAH) will be one of the largest hospitals in Hong Kong with 2,400 beds, 37 operating theatres and a broad range of clinical services and facilities.

Project Challenges

The project faces several challenges including a high frequency of design and construction changes, the adoption of Modern Methods of Construction (MiC), Design for Manufacture and Assembly (DfMA), and prefabricated design and construction techniques. These challenges are further compounded by the presence of a large number of laborers and materials on-site. Additionally, there is a significant demand for the production of detailed drawings. Addressing these challenges requires effective change management processes, efficient coordination and collaboration among project stakeholders, the implementation of advanced construction methodologies, and the use of digital technologies such as BIM to streamline processes and enhance productivity.

Solutions for Challenges

For Huge of Laborers & Materials on site, the C-Smart Site Platform, integrated with BIM & AI technology, offers a Digital Works Supervision System for visual quality control and immediate hazard reporting.

For MiC, DfMA & prefabricated design & Constructions Adoption, BIM Team facilitated through early identification of design issues using BIM 3D models. 3D print models aid in visualizing and planning lifting and installation processes.

For Huge of Detail Drawings Production, BIM Team streamlines detail drawing production, significantly reducing time and manpower, while Revit and Dynamo enable efficient generation and modification.

How does BIM benefit the project?

Implementing BIM improves collaboration and communication, minimizing design discrepancies and enabling better coordination and clash detection. This reduces risks and costs by identifying issues early on. BIM improves sequencing and scheduling, optimizing project timelines. It enhances safety on construction sites through virtual walkthroughs and hazard identification. Streamlining facility management, BIM provides accurate information for efficient decision-making, reducing maintenance costs. Lastly, BIM strengthens the building handover process by providing comprehensive documentation and as-built models, ensuring a smooth transition to facility management and maximizing operational effectiveness throughout the building's lifecycle.

Better with BIM

China State embraces innovation in their smart city initiatives by implementing a digital and automated BIM asset management system and facilities maintenance platform. They leverage MS HoloLens 2 for online BIM coordination meetings and virtual site inspections, while utilizing robots for automated 3D laser scanning and comparing with BIM models to effectively manage project progress throughout the entire lifecycle.



Overview of NAH
Image Courtesy of China State Construction Engineering (Hong Kong) Limited



Rendering Image of NAH Project
Image Courtesy of China State Construction Engineering (Hong Kong) Limited



Rendering Image of Block D and Block E
Image Courtesy of China State Construction Engineering (Hong Kong) Limited



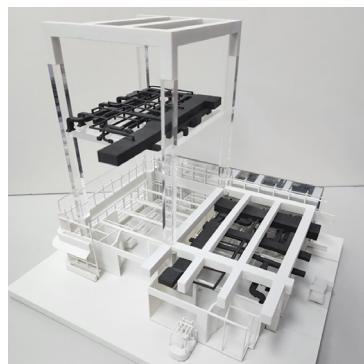
Smart Construction Platform for NAH Project
Image Courtesy of China State Construction Engineering (Hong Kong) Limited



Site Model of NAH Project
Image Courtesy of China State Construction Engineering (Hong Kong) Limited



NAH on Site C-Smart Center
Image Courtesy of China State Construction Engineering (Hong Kong) Limited



6-Bed Ward MiC 3D Print From Revit Model
Image Courtesy of China State Construction Engineering (Hong Kong) Limited



NAH Project Electronic Sand Table
Image Courtesy of China State Construction Engineering (Hong Kong) Limited