

COMPANY

Sun Hung Kai Real Estate Agency Limited

PROJECT

Proposed Residential Development at Sha Tin Town Lot No.566

LOCATION

Area 56A, Kau To, Sha Tin, New Territories, Hong Kong

TYPE

Residential

SCHEDULED TIME OF COMPLETION

Nov 2016

BIM as Data Centre, Collaborator and Connector



BIM PARTNERS INVOLVED

Chun Fai Construction Company Limited

Consolidated Consulting Engineers Limited

Forida Limited

Guava Hong Kong Limited

Lik Kai Engineering Company Limited

Lik On Security Limited

Ronald Lu & Partners (Hong Kong) Limited

Sanfield (Management) Limited

Siu Yin Wai & Associates Limited

About Sun Hung Kai Real Estate Agency Limited

Sun Hung Kai Properties Limited ("SHKP") is one of the largest property companies in Hong Kong. It specialises in developing premium-quality residential projects, offices and shopping centres. The Group employs more than 37,000 people.

Sun Hung Kai Properties puts its long-standing belief in 'Building Homes with Heart' into practice, on the one hand by developing residences of the finest quality and offering first-class service to its customers, and by contributing to the good of the community.

The group spares no effort to deliver the very best. Vertical integration from planning, material sourcing and construction through to project monitoring and property management ensures high standards in every aspect of a development.

The group's management team follows prudent strategies for long-term business development and the company's philosophy includes a strong sense of corporate social responsibility, both to its customers and to the public.

Sun Hung Kai Properties – We're 'Building Homes with Heart'.

The Project

This is a low-density residential development project at Sha Tin Town Kau To Shan Lot No.566, including 24 houses, 3 towers with a total of 35 flats, basement car park, clubhouse and swimming pool.

The Challenges

In this project, Sun Hung Kai faces the same problems as other projects in terms of workflow: Design information is shared in an inefficient way; and uncertainty regarding how to make BIM a good platform for sharing information among the project team.

On the other hand, the BS consultant and contractor performed some simulations requiring extra modelling, i.e. not BIM-based. The simulations are costly and time consuming; while the report/results are always too professional to be interpreted and visualised among the project team.

The Solution

The project team opted to build a bridge for communication between BIM and designers, engineers and contractors. The BIM models would be shared to multi-disciplinary project stakeholders, and better communication would be employed to connect with them. The designers, engineers and contractors used the models to review their designs, find conflicts and extract useful data. The BIM models also could be improved, or their quality could be validated, by the stakeholders.

Rather than just employing 2D to 3D and coordination, we believe the BIM model can bring us much more value by using the single BIM model for analyses and simulations in other aspects. In this project, we sought the possibilities of performing the following simulations with BIM as an alternative to the traditional practices: Lighting Simulation; CFD Simulation; and CCTV Simulation.

The Benefits

We promote BIM by utilising the model with Autodesk simulation software to run the same simulations in the project; the process is more interactive and the result is more user-friendly and trivial for the project team.

Lighting Simulation: The BIM model was exported to 3ds Max. Then Dialux was used for lighting analysis.

CFD Air Flow Simulation: In the carpark basement level, 50 jet fans are required. The BIM consultant employed the supplier's reported simulation criteria to input to Autodesk CFD to simulate the air flow. The CFD model yielded impressive results, including the air flow direction in the vertical plan, which helped the design consultant to understand the designs with differing scenarios.

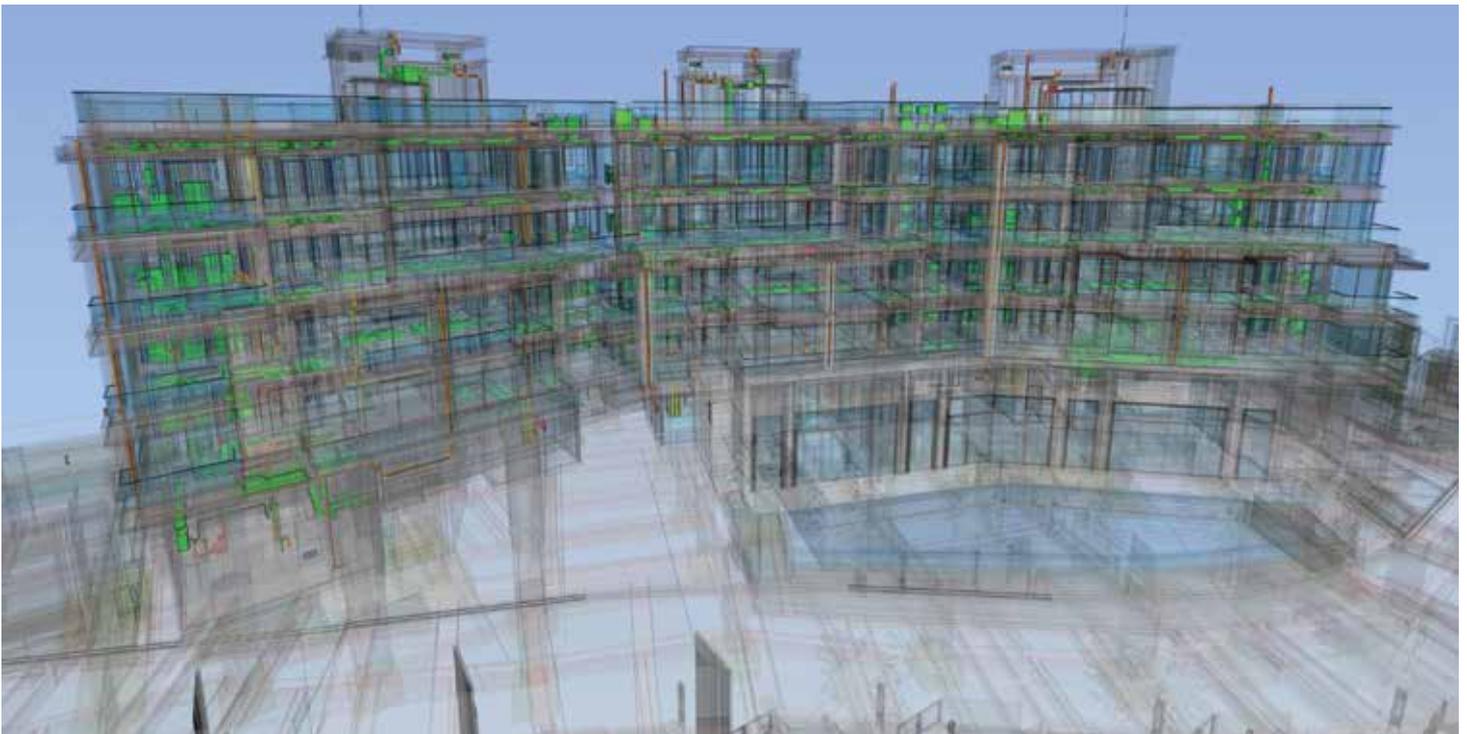
CCTV simulation for security system design: The BIM consultant proposed using the CCTV manufacturer's Revit family file with add-in tool to make a CCTV simulation in the project's BIM file. This provided 3D views for design reviews and immediate adjustments. We obtained a good experience from performing these simulations, learning that BIM models can be used in different areas, and with good visualisation experiences for designers and engineers.

Better with BIM

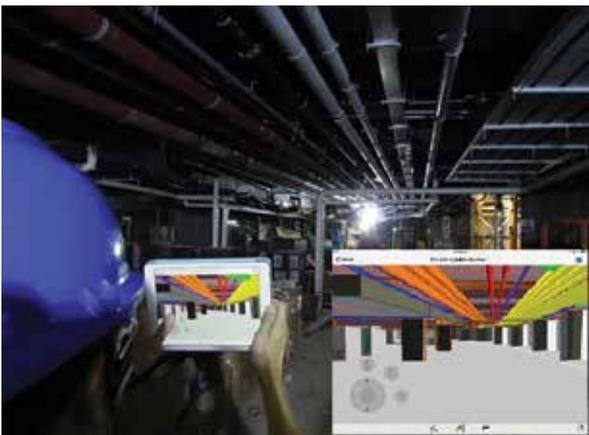
The BIM technology was not only a tool. It could be a data centre, a collaborator, even a connector, enabling communications between multi-disciplinary stakeholders. We aim to elevate BIM to a higher level.



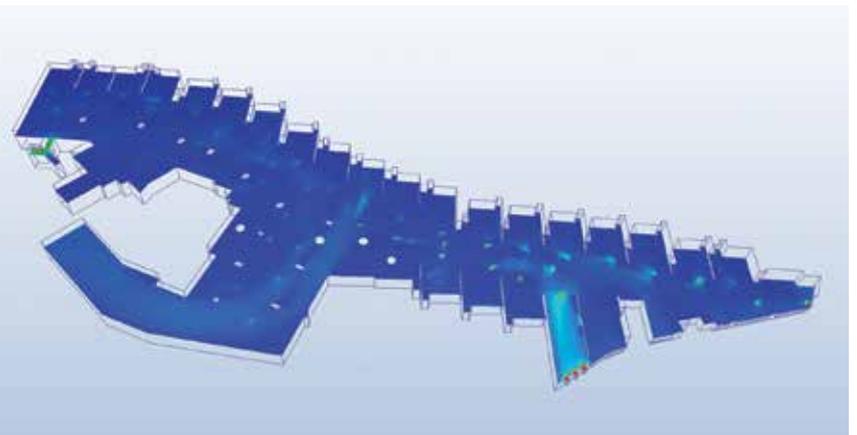
Bird's-eye view
Image courtesy of Sun Hung Kai Real Estate Agency Limited



Combine BIM Model for coordination
Image courtesy of Sun Hung Kai Real Estate Agency Limited



BIM 360 Glue in iPad for site review
Image courtesy of Sun Hung Kai Real Estate Agency Limited



CFD for Jet Fan Air Flow analysis
Image courtesy of Sun Hung Kai Real Estate Agency Limited