

COMPANY

Century Property Investment Ltd.

PROJECT

Tseuk Luk Street proposed Commercial Redevelopment

LOCATION

LOT No, 5103, 33, Tseuk Luk Street, San Po Kong, Kowloon, Hong Kong

TYPE

Proposed Commercial Redevelopment

SCHEDULED TIME OF COMPLETION

Q3 2017

Unique, Optimised Design for Compact Space

Century Property Investment Ltd.

BIM PARTNERS INVOLVED

Project Architect:

Sun Hung Kai Architects and Engineers Ltd.

Design Architect:

Nikken Sekkei LTD

Mechanical & Electrical Engineering Consultant:

J Roger Preston Limited

Structural Engineering Consultant:

Ove Arup & Partners HK Ltd.

Main Contractor:

Yee Fai Construction Co. Ltd.

Environmental Consultant:

Allied Environmental Consultants Limited

The Project

Century Property Investment is developing a 24-storey office tower featuring 18 levels of office space and a retail podium in Kowloon, Hong Kong. The form of the building is quadrilateral, with huge V columns from G/F to 4/F creating a unique and iconic look.

The Challenges

This project is located in San Po Kong, one of the largest industrial hubs in Hong Kong; the site is located in a compact area with neighbouring buildings enclosing all three sides of our development. With the site constraints, many challenges were encountered during project coordination.

Since the building is enclosed on all three sides, our development has a limited entrance space, some challenges were encountered including the difficulty to position a manhole for underground utilities connection, the position of smoke vents for smoke emissions from the basement as well as the louvre location for cooking fume emissions from the lower three floors.

The BIM modelling was essential for project coordination meetings since some challenges were difficult to resolve using 2D methods. For example, coordination between different trades of building services contractors. Due to our aesthetic design of having the V columns, the architectural feature made it more difficult for building services coordination. Also, the BIM modelling was used to design the enlargement of the basement and verifying whether the car ramps' headroom were adequate. The BIM modelling helped to ensure effective communication among project team members of which some were overseas consultants.

The Solution

Through using BIM to model the comprehensive building elements, the project team found the best way to combine the building services routes and facilities them into the compact space. 3D modelling accelerated the design and drawing production process for the complicated structure components, such as the V columns.

Furthermore, structure alignment solutions were generated from the BIM model for different basement enlargement proposals, and layouts were optimised during collaboration meetings with consultants and sub-contractors. The BIM model was used intensively for clash analyses, and the car ramps were checked in the virtual model, with virtual vehicles that featured in the simulation. The images and animations that were generated from the BIM model was reviewed and shared through cloud services.

The Benefits

BIM has provided a collaborative and holistic platform enabling design reviews between project team members. For example, real-time walkthroughs during coordination meetings enabled the operations and maintenance team to check building services in advance. A clash free solution was generated, and all available spaces were fully utilized. After the building service elements under car ramps were optimised and clashes were eliminated in the simulation, the headroom above the car ramps was also resolved.

Better with BIM

BIM was intensively used in the project, serving as a test buds for design to ensure limited space was being maximized, also to combine data sets, and generate 2D drawings. The BIM model boosted confidence in the design as it ensured everyone was fully informed with the multiple aspects of the design during coordination meetings.



Image courtesy of Century Property Investment Ltd.

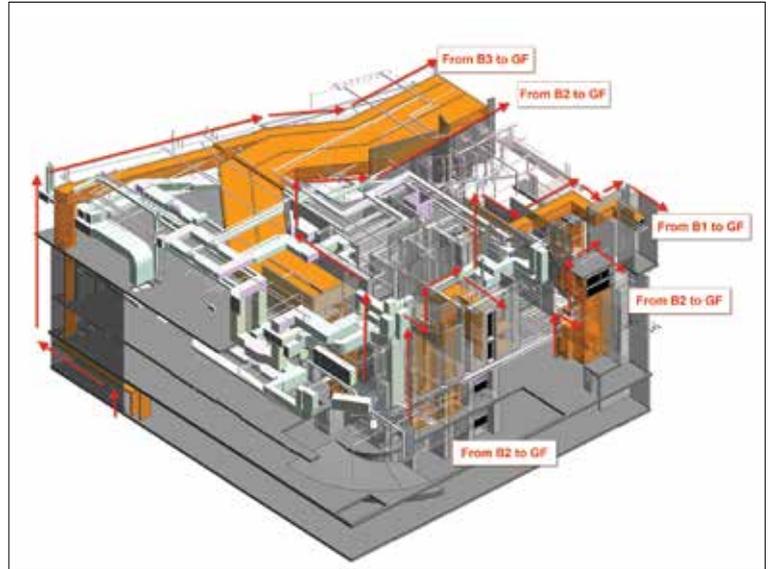


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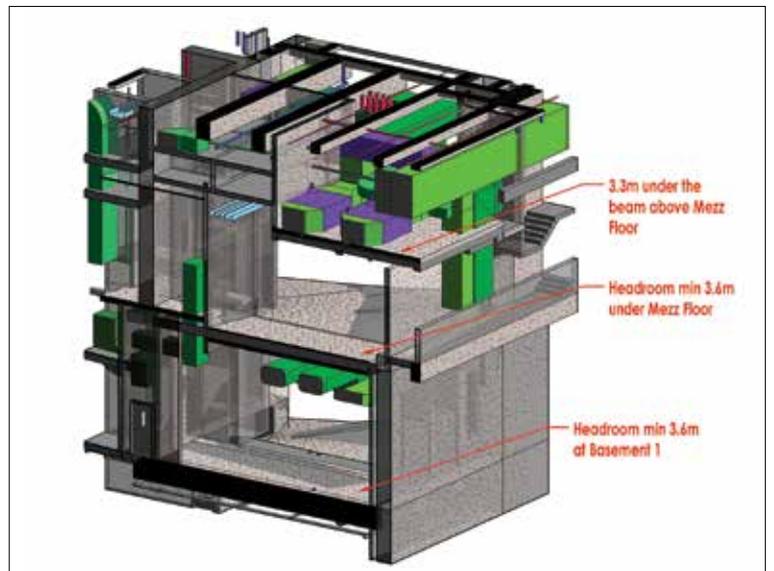


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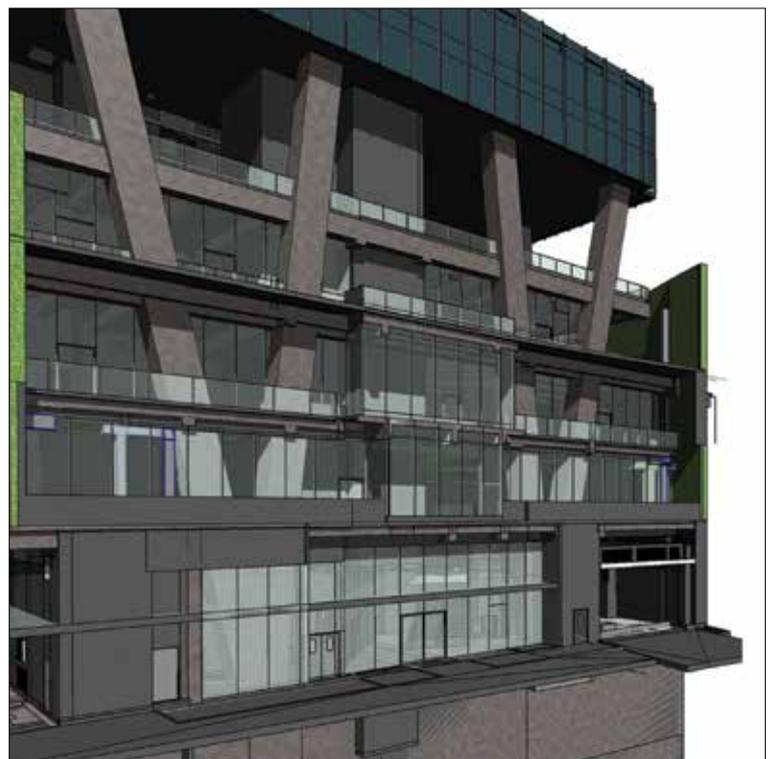


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