

COMPANY

Sun Hung Kai Real Estate Agency Limited

PROJECT

Proposed Residential Development at T.M.T.L No.515, King Sau Lane, Tuen Mun

LOCATION

T.M.T.L. No.515, King Sau Lane, Tuen Mun, New Territories, Hong Kong

TYPE

Residential

SCHEDULED TIME OF COMPLETION

Q1 2019

Single Model Approach Builds Better Homes



BIM PARTNERS INVOLVED

Sun Hung Kai Architects & Engineers Limited
 Archiplus International Limited
 Teamfield Building Contractors Limited
 Vircon Limited

About Sun Hung Kai Real Estate Agency Limited

Sun Hung Kai Properties Limited ("SHKP") was publicly listed in 1972 and is now one of the largest property companies in Hong Kong. It specializes in developing premium-quality residential projects, offices and shopping centres. The Group employs about 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 also by contributing to the good of the community to make Hong Kong a better home for everyone.

The Group understands that buying a home is one of the biggest decisions people make in their lives, and so it 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 seasoned 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. The Group works for the benefit of the community with wide-ranging initiatives to protect the environment, care for the less fortunate and foster educational development.

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

The Project

In current trade practices, design models must be remodelled in construction stages. To help resolve this challenge, Sun Hung Kai (SHK) adopted the Integrated Project Delivery (IPD) approach for the "Proposed Residential Development at T.M.T.L No.515, King Sau Lane, Tuen Mun" project from the beginning, and will continue this through the whole project: using one model all the way through the project life cycle. The model and workflow are well organised to meet the purpose of design as well as a construction study.

The Challenges

As SHK always puts the customer first and offers quality products for customers, BIM models are used to provide the best end-user experience.

Under the tight schedule and site constraints, project matters like detail design, construction method, schedule and cost etc. are hardly optimised. For example, the value of property has to be estimated after acquiring the land. The ELS and foundation construction sequence are complex, in addition to a tight schedule. One of the project constraints is that a village footpath must be maintained throughout project construction.

The Solution

An Integrated Project Delivery (IPD) approach was used from the beginning.

The integrated project team for design and construction maximises the value of BIM models. With the construction team involved in the project at a very early stage, they can use the BIM model to advise the project team on how design changes affect the construction schedule, cost and buildability. The program can be compacted as well, allowing the design team to have more time and more information to optimise the design and better plan for construction.

The Benefits

In the initial project design stage, the 3D terrain model from the Lands Department was used to study the value of the property and visual impact assessment. The design team can refine the building layout design to improve the views of customers.

Sections and captures generated from BIM models are submitted as supporting documents for GBP submission, to assist the Buildings Department to understand the relationship between the existing slope profile and two semi-sunken carpark design schemes.

Construction sequences as well as ELS design are well studied through 4D BIM. The project team can review the method and coordinate the sequence for village footpath diversion.

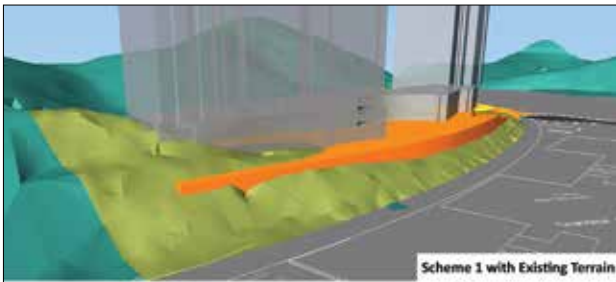
Better with BIM

To allow the senior management level to access the model without difficulties, the 3D BIM models can be converted to a VRML model and displayed in a web browser. In addition, the end-user's view can be studied through the immersive walkthrough with VR glass, when BIM is integrated with VR technology.

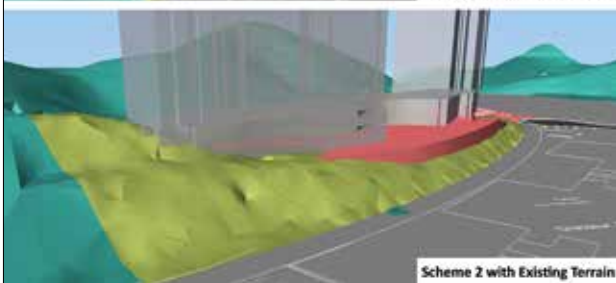
For the future development of BIM in Projects/Enterprises, SHK integrated some handy software to let project members easily access the BIM models and simulations via email, such as cloud and mobile applications for BIM life-cycle usage. Our criteria include ease of use and information security.



Integrating GIS data with BIM can allow the Design Team to estimate the value of property after acquiring the land
Image courtesy of Sun Hung Kai Real Estate Agency Limited

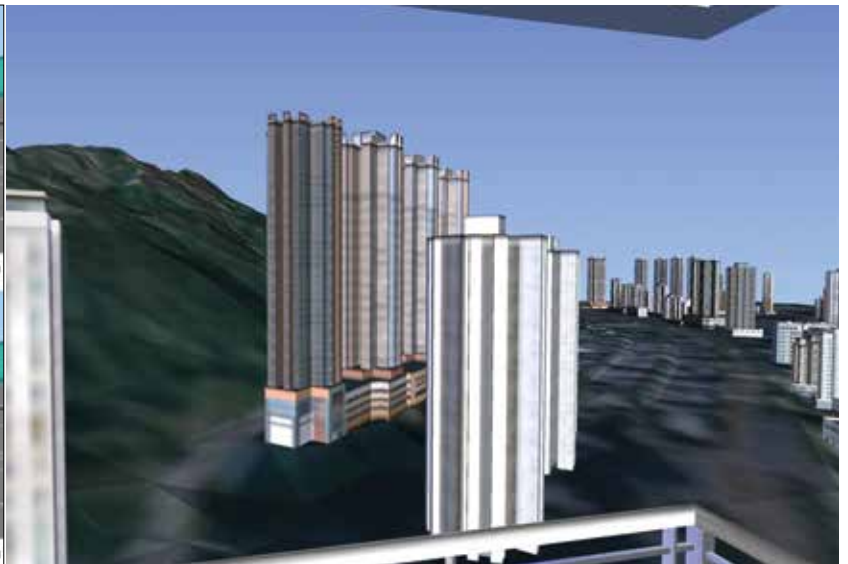


Scheme 1 with Existing Terrain

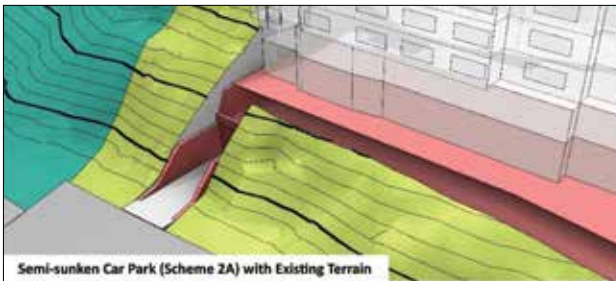


Scheme 2 with Existing Terrain

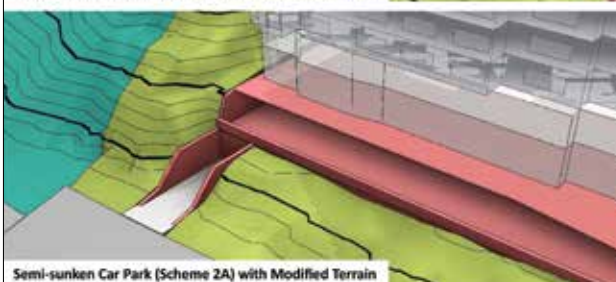
BIM allows Buildings Department to review and compare the overall development impact for different schemes with existing terrain
Image courtesy of Sun Hung Kai Real Estate Agency Limited



Visual impact assessment sample support the Design Team to refine building layout and improve sight view for customer
Image courtesy of Sun Hung Kai Real Estate Agency Limited

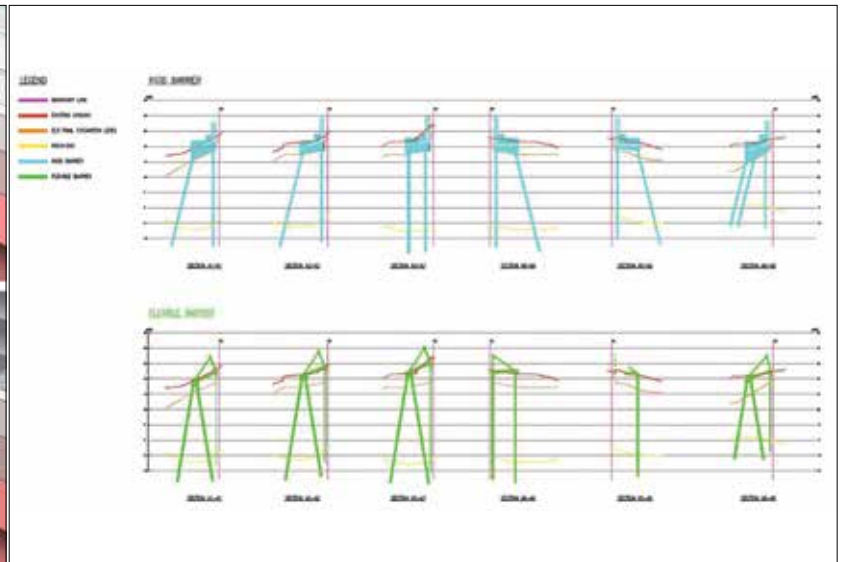


Semi-sunken Car Park (Scheme 2A) with Existing Terrain



Semi-sunken Car Park (Scheme 2A) with Modified Terrain

BIM allows Buildings Department quickly understanding the topographical relationship between the semi-sunken car park and modified terrain
Image courtesy of Sun Hung Kai Real Estate Agency Limited



Sections generated from BIM helps to study the topographical profile and support for understanding the impact before construction
Image courtesy of Sun Hung Kai Real Estate Agency Limited