

## COMPANY

Kerry Properties Limited  
Sino Land Company Limited  
MTR Corporation Limited

## PROJECT

Property Development at Wong Chuk Hang  
Station Package Two

## LOCATION

Depot of Wong Chuk Hang Station,  
Wong Chuk Hang, Hong Kong

## TYPE

Residential Development

## SCHEDULED TIME OF COMPLETION

2023

# Real Practice of Adopting BIM with Integrated Project Delivery

“If Building Information Modelling & Management (BIM) is about the process cross along the project life-cycle, Integrated Project Delivery (IPD) is about the approach to link up the people to make the process run smoothly. By combination of applying BIM with IPD, you will experience a different BIM project.”

—Isaac Lee

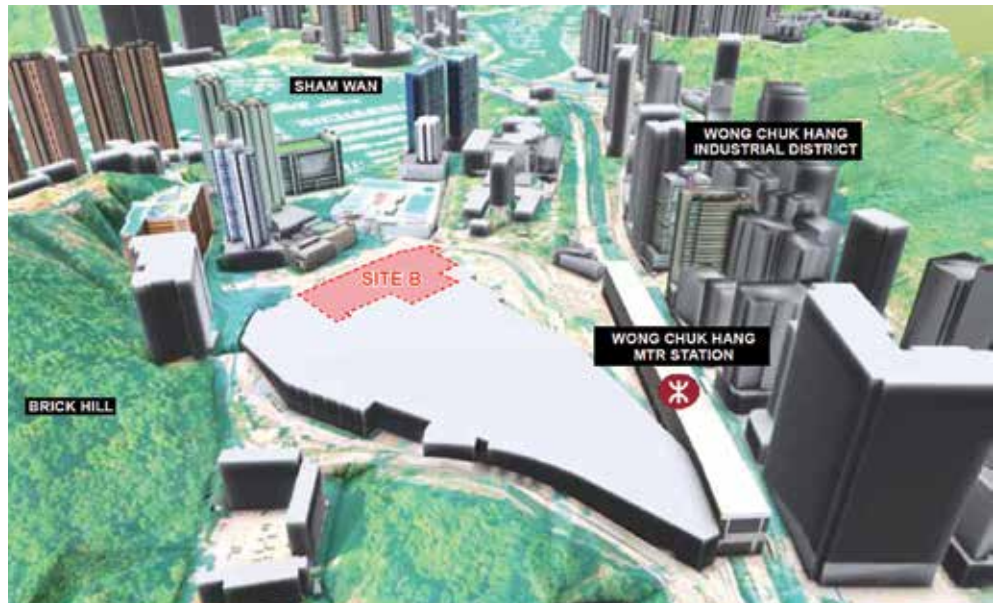
BIM Manager - Kerry Properties  
(H.K.) Limited

## BIM PARTNERS

P&T Architects and Engineers Limited  
Siu Yin Wai & Associates Limited  
Meinhardt (M&E) Limited  
WSP Asia Limited

## AUTODESK PRODUCTS USED

3ds Max  
AutoCAD  
BIM360  
InfraWork360  
Navisworks  
Revit



Site Record Model of WCH  
Image courtesy of Kerry Properties Limited & Sino Land Company Limited & MTR Corporation Limited

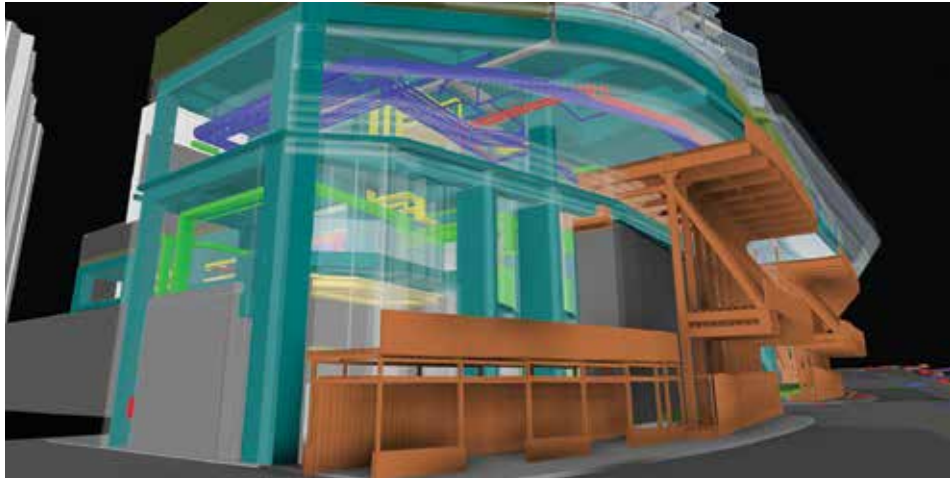
Kerry Properties Limited (KPL) has been adopting Building Information Modelling (BIM) since 2006, resulting from the benefits of BIM Usage such as reducing re-work, better predictability, reducing errors, etc. From the past BIM project experiences, it was found that the core value was not grounded to the working team or to the project directly due to the fragmental execution process to treat the information and model, so Kerry's Project Management Team has an intention to take this project as a pioneer to experiment of implementing BIM process entirely cross along the project life-cycle of this property development.

“The objective is to integrate the objectives and responsibilities of all stakeholders across the entire BIM spectrum in order to bringing out the true potential in application of BIM.” said Executive Director – Mr. Wilkie Lee from the Project Management Department of Kerry Properties (H.K.) Limited.

When it comes to transforming the process to break through the traditional workflow such as implementing BIM, resource investment is inevitable whether government or developers as the top of supply chain.



Coordination Workshop of Integrated Design BIM team  
Image courtesy of Kerry Properties Limited & Sino Land Company Limited & MTR Corporation Limited



Large Scale of Podium Structure  
Image courtesy of Kerry Properties Limited & Sino Land Company Limited & MTR Corporation Limited

### Project Background

Site B of Wong Chuk Hang Station Property Development (WCHB) is a joint venture residential development among Kerry Properties Limited (KPL), Sino Land Company Limited (SINO) and MTR Corporation Limited (MTRC). The Kerry’s Project Management Team was entrusted as the Project Manager, delivering the project with high standards in quality design, construction and sustainability.

This project is located at the south-western part of the Wong Chuk Hang Station Property Development, designated for private residential purposes. This project occupies an area of approximately 92,000 square feet and will generate a permissible GFA of approximately 493,000 square feet.

There are three major challenges in this project to be dealt with. First, all consultants are required to create their own design model and coordination with each other in the design stage. Secondly, there is large scale of cantilevered podium structure on top of the depot, pedestrian walkway and road. Thirdly, the coordination to the connection with adjacent packages is critical to fulfill the consistency of landscape design to get the design approval.

### BIM Partners Involved - “Design in BIM”

As mentioned earlier, full BIM will be adopted from initial design stage to operational stage. The Project Management team set the objective with the BIM Uses for each design consultant in the design stage.

Design in BIM is one of specific requirements for the consultants to engage in this project with a view to ensuring the integrated design and collaborative BIM coordination which can be reached at a high-level.

### BIM Project Management

The mentioned specific BIM requirement earlier, it implied that all parties must be BIM capable even for Kerry’s project management team.



Layout Plan for indicating Adjacent Site  
Image courtesy of Kerry Properties Limited & Sino Land Company Limited & MTR Corporation Limited

For the entire BIM processing in design stage, there were many types of BIM software used by the consultants as they possess different skills on it and BIM maturity. Naviswork is a helpful tool which was used, helping a lot in federating the BIM model in different types of format.

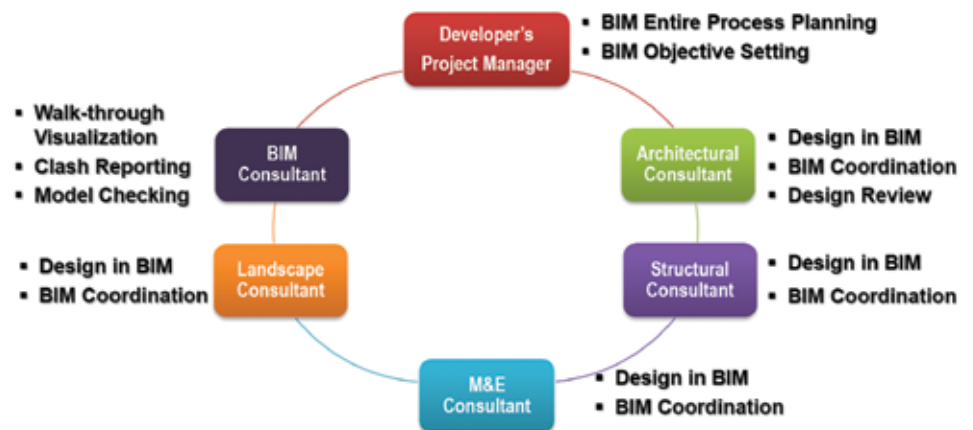
Information exchange is a critical part within the project management with BIM, so the team made use of BIM360 as a collaboration platform for sharing real-time design and construction model & information. In addition, another software - BIM Track was applied for better monitoring and recording the changes among the various design versions.

### Objectives setting for the BIM Uses cross the phases - “make use of the model”

“Right people makes right things by using right tools” is a simple but important concept in BIM Planning. In design stage, the project team aims at enhancing the efficiency of the workflow for the design approval on the one hand. On the other hand, its target is to optimise design through BIM Coordination.

### Site Record Model is not only for site analysis only

The site record model was generated by using unmanned aerial vehicle to



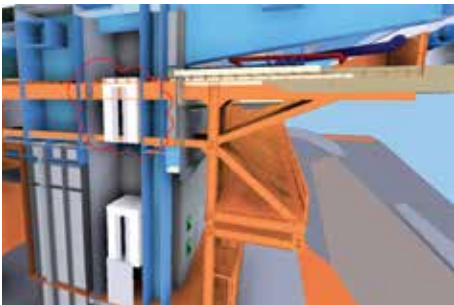
BIM Goal Setting for All consultants in design stage  
Image courtesy of Kerry Properties Limited & Sino Land Company Limited & MTR Corporation Limited



Using Drone to obtain the Site Information  
Image courtesy of Kerry Properties Limited & Sino Land Company Limited & MTR Corporation Limited



Captures from the integrated design review for Entrance  
Image courtesy of Kerry Properties Limited & Sino Land Company Limited & MTR Corporation Limited



BIM Coordination for the Design of Temporary Work and Permanent Structure  
Image courtesy of Kerry Properties Limited & Sino Land Company Limited & MTR Corporation Limited

record the site information. Apart from using record for site analysis, the captured information such as 360 image was integrated to study the views for evaluating the value of the units to go for alternative design proposal if necessary, hence, improving the quality of design.

### “Entrance Promenade” analysis

Landscape design is another challenging task in this project as mentioned. In addition to using tradition workflow for landscape design presentation, “Entrance Promenade” analysis was applied for integrated design review with architectural design, landscape design and surrounding site condition, providing the full picture of design



BIM Added value Application - Virtual Spatial Mock Up  
Image courtesy of Kerry Properties Limited & Sino Land Company Limited & MTR Corporation Limited

instead of fragmented perspective views for imaging the design. Thus, the gap between conceptual design and final product can be further narrowed and the given comments can be taken in appropriate steps straightly.

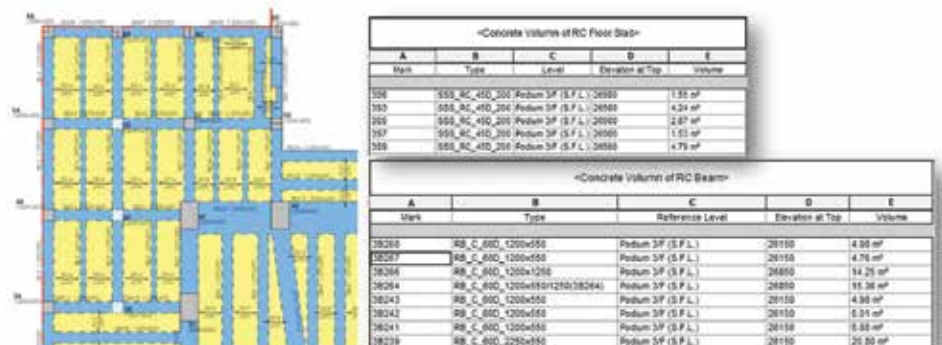
### Virtual Spatial Mockup

Virtual Spatial Mock-Up (VSMU) is developed and applied in this project for validating the spatial feeling of the design instead of conventional physical timber mock up. It is a foreseeable trend of application with BIM which is one of the ways for design review.

Through VR’s equipment like goggles or immersive CAVE system to let project team review the design in virtual environment, it brings a lot of benefits such as no limitation and cost for the site; Model can be updated anytime upon receiving comments; Environmental friendly - Zero wastage; Resolving the problem of the Shortage of Skilled-workers, VSMU allows to provide more design options, by comparison to

traditional physical mock-up.

Through the experience of implementing BIM with integrated project delivery (IPD) approach in this awarded project, it is a successful case to demonstrate that is the way out to gain the value of BIM to the team, project and company.



5D-Quantities Taking off for cross checking the BQ result  
Image courtesy of Kerry Properties Limited & Sino Land Company Limited & MTR Corporation Limited



Bird-eye view for the Development Project of Wong Chuk Hang Site B  
Image courtesy of Kerry Properties Limited & Sino Land Company Limited & MTR Corporation Limited

## About Kerry Properties Limited

Kerry Properties Limited (HKEx: 683), incorporated in Bermuda with limited liability, is a leading property investment and development company in Mainland China and Hong Kong. Leveraging on its decades of experience, expertise and brand equity in property development, the Group focuses on building high-quality residences and mixed-use projects in prime locations of the major cities. It also owns and operates a premier investment portfolio of office, commercial and residential properties in prestigious neighbourhoods. Kerry Properties acts on principles of fairness and integrity, and values the many relationships developed with staff, suppliers, partners, government agencies, and other key stakeholders.

## About Sino Land Company Limited

Sino Land Company Limited (HKSE: 083), is one of the leading property developers of Hong Kong and a constituent member of the Hang Seng Index. With footprints spanning Hong Kong, Mainland China, Singapore and Australia, the Group's core business of developing properties for sale and investment is complemented by a full spectrum of services ranging from hospitality to property management, car park management, cleaning and environmental services and security services.

A committed corporate citizen, Sino Land has been made a constituent member of the Hang Seng Corporate Sustainability Index Series since 2012.

## About MTR Corporation Limited

The MTR Corporation was established in 1975 with a mission to construct and operate, under prudent commercial principles, an urban metro system to help meet Hong Kong's public transport requirements. MTR is regarded as one of the world's leading railway operators for safety, reliability, customer service and cost efficiency.