文物信息模型 建築信息模型,輸出與應用

Heritage Information Modelling BIM Process, Output & Application



DOOR_SCHEDULE				
Door Type Mark	Family	Height	Width	Count
D01	DOR-DBL-ACD-Open-Glass-w_Top_Windown	2740	1400	5
D03	DOR-DBL-ADC-Wood-w_Glazing-Wall_Void_Angle	2130	1280	8
D04	DOR-DBL-ADC-Wood-w_Top_Window_Angle	3000	1200	1
D4A	DOR-SGL-ACD-Steel-w_Full_Glazing	2130	920	1
D05	DOR-DBL-ACD-Steel-w_Glazing	3000	1400	1
D5B	DOR-SGL-ACD-Wood-Glass-4_Window	2150	1000	1
D06	DOR-DBL-ADC-Barrack Shed_DryingRoom	2075	880	1
D07a	DOR-DBL-ADC-Wood-w_4-Top_Window	3300	1300	1
F01	DOR-OTR-ACD-Folding	2190	1890	4
G01	DOR-DBL-ACD-Grid-Gate	2340	3000	1
G02	DOR-SGL-ACD-Iron_Gate	2450	820	1
S01	DOR-SGL-ACD-Wood_Plain	2180	1020	8



Building

Information +

Modelling

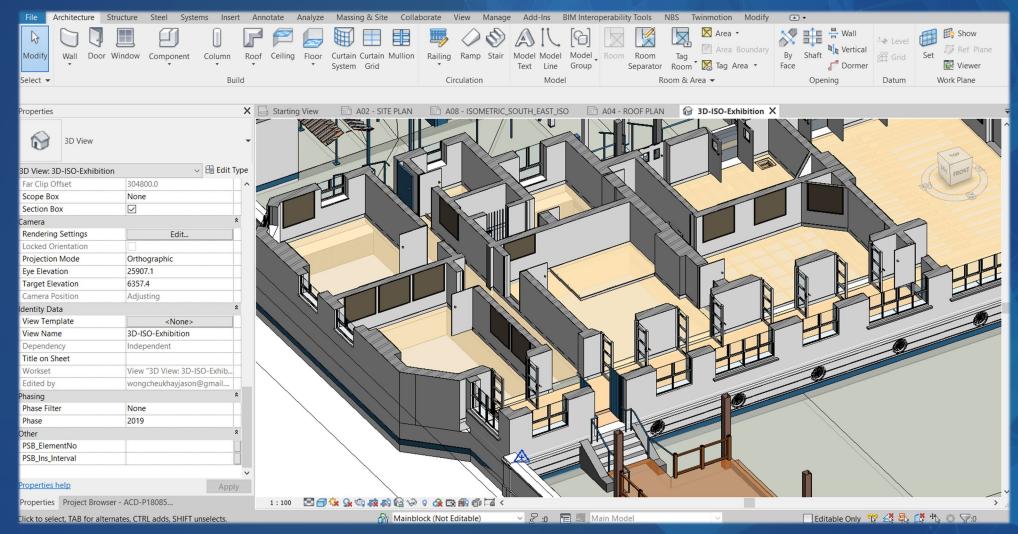
Building: Project Nature

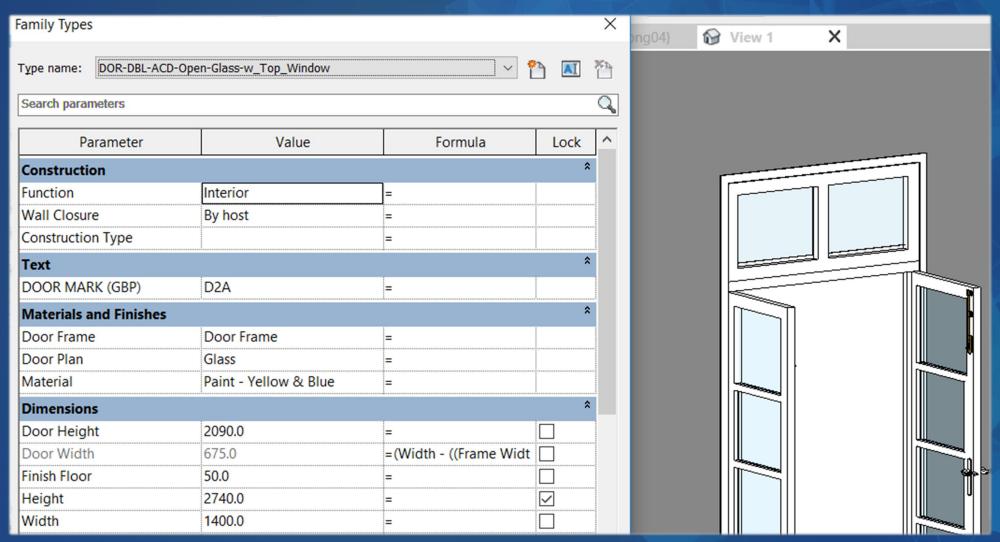
(depends on context, can be replaced by "Asset", "City", "Heritage", etc)

Information: Project Database (Quantity, dimension, material, specification, etc)

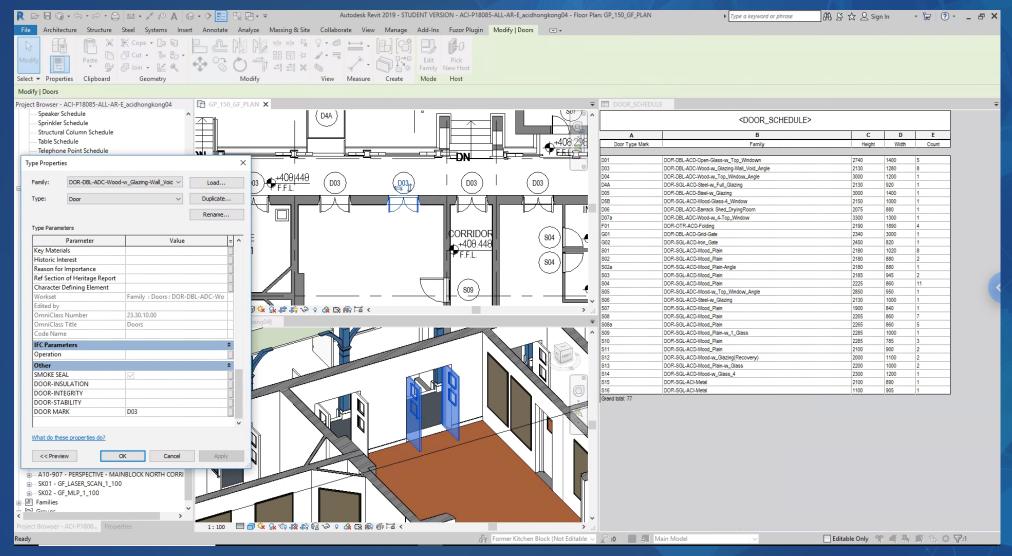
Modelling: <u>Object-based</u> so that can act as a 'container' of information;

Not just about 3D geometry





INFORMATION such as dimensions, materials are contained in the model



Information and Modelling put together in single source

What's more than BIM in HIM?

- Point Cloud to BIM
- Timeline: Phasing
- Character Defining Elements
- See beyond the surface

BIM in HIM Point Cloud to BIM

Point Cloud to BIM



From Point Cloud to BIM Model

Point Cloud to BIM

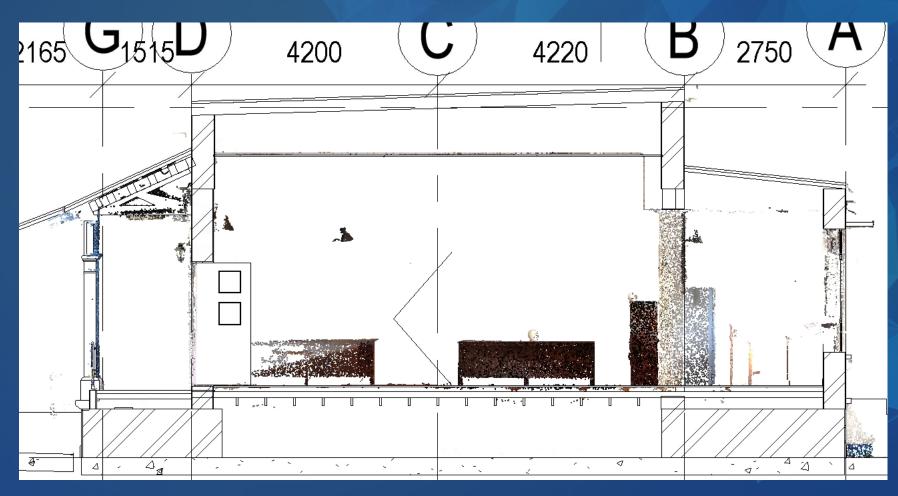


From Point Cloud to BIM Model

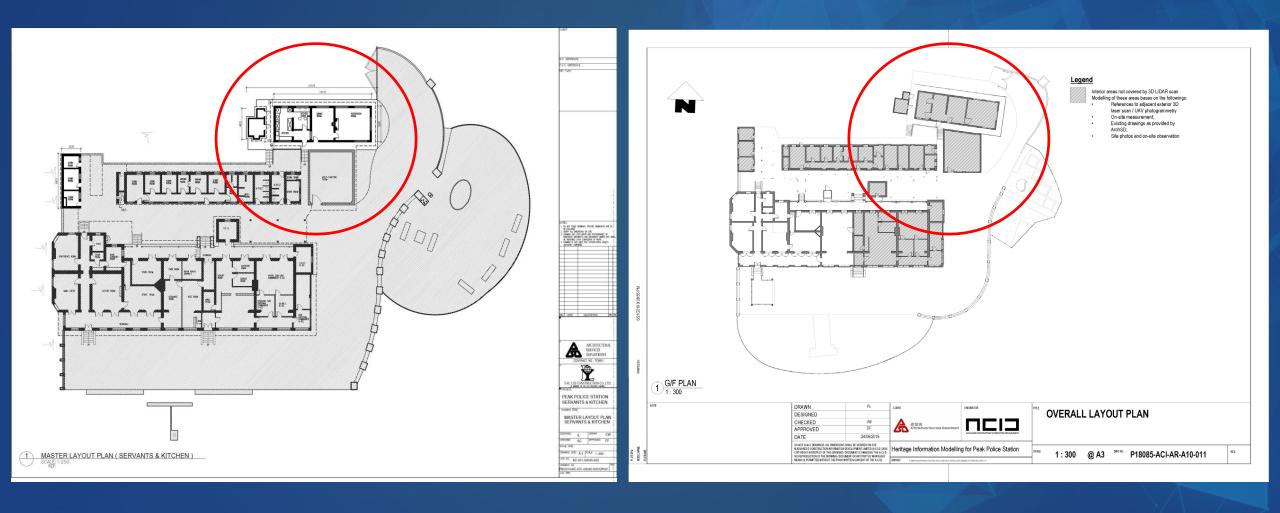
Point Cloud to BIM

Point Cloud =/= BIM

Conversion of Point Cloud Data directly to BIM Object, or, Initial modelling, then Point Cloud for Verification



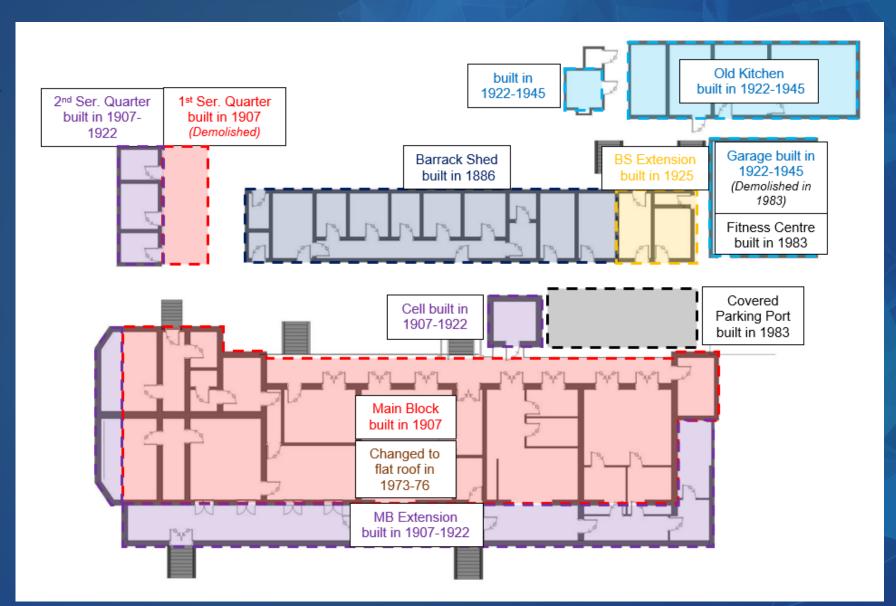
2D Drawings



BIM in HIM Timeline: Phasing

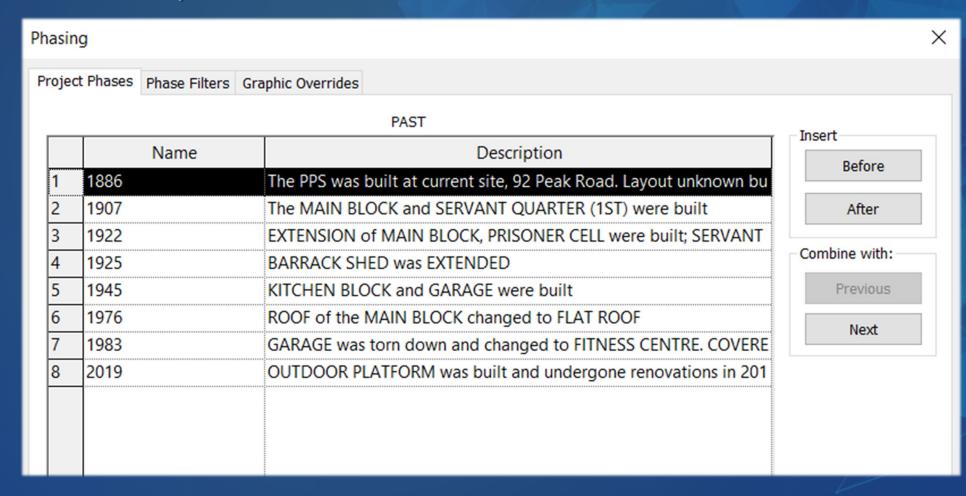
From historical research, how the building has physically changed over time was known

Such information is input into BIM model by Phasing

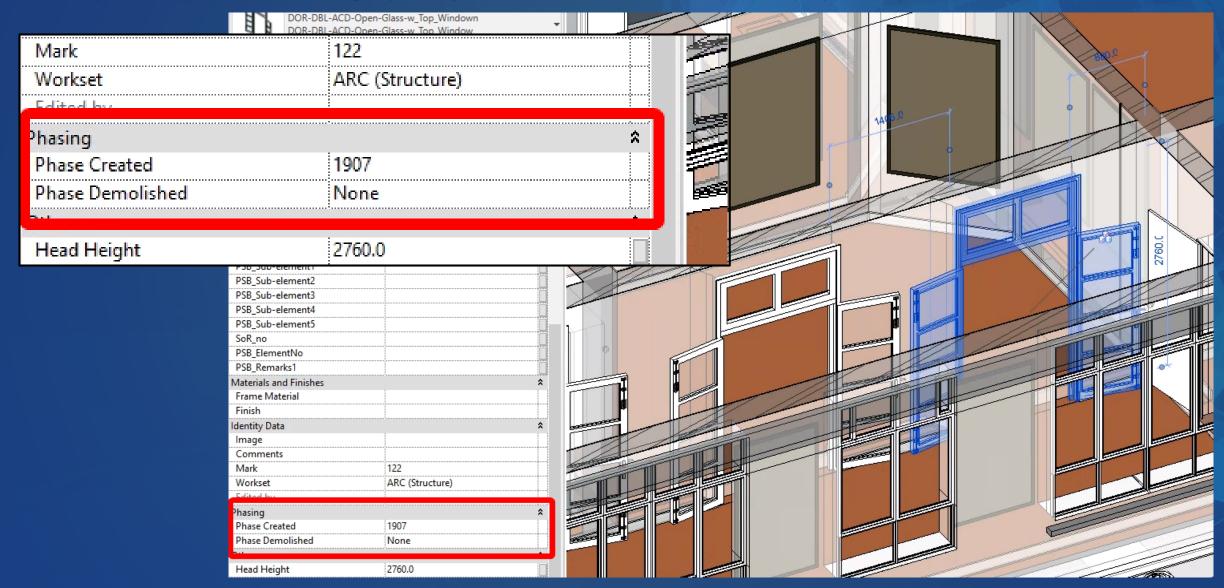


Phasing in Revit (BIM Software we applied in this project) can be complicated for beginners, but how we apply in this project is quite straightforward

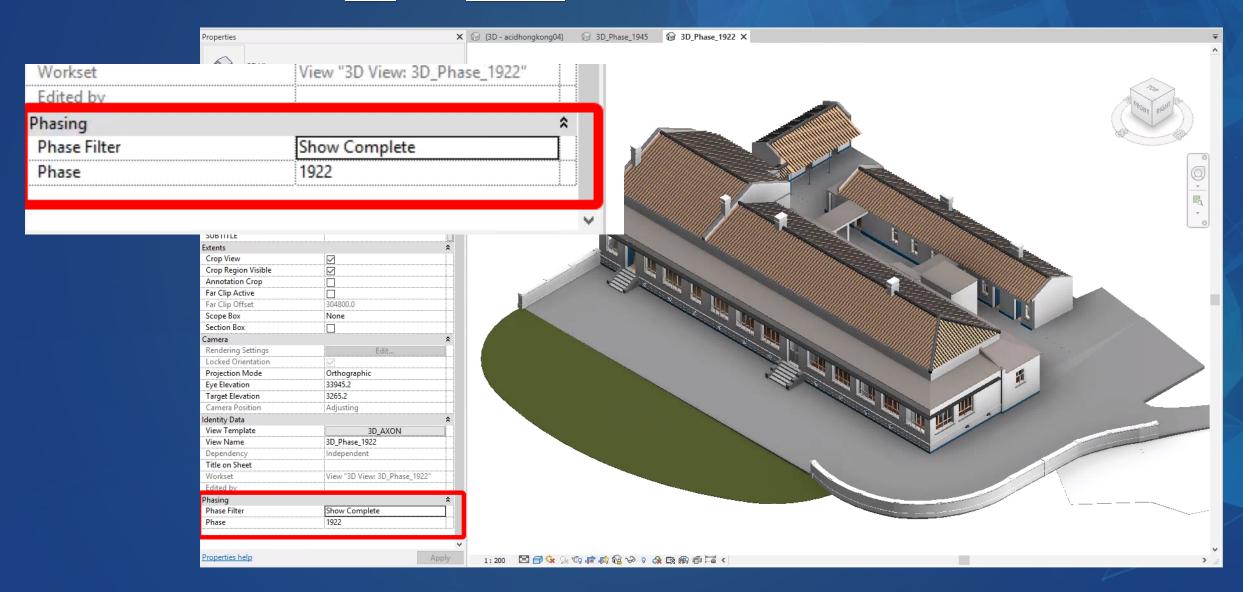
1. Input the Building Timeline into the model as *Project Phases*



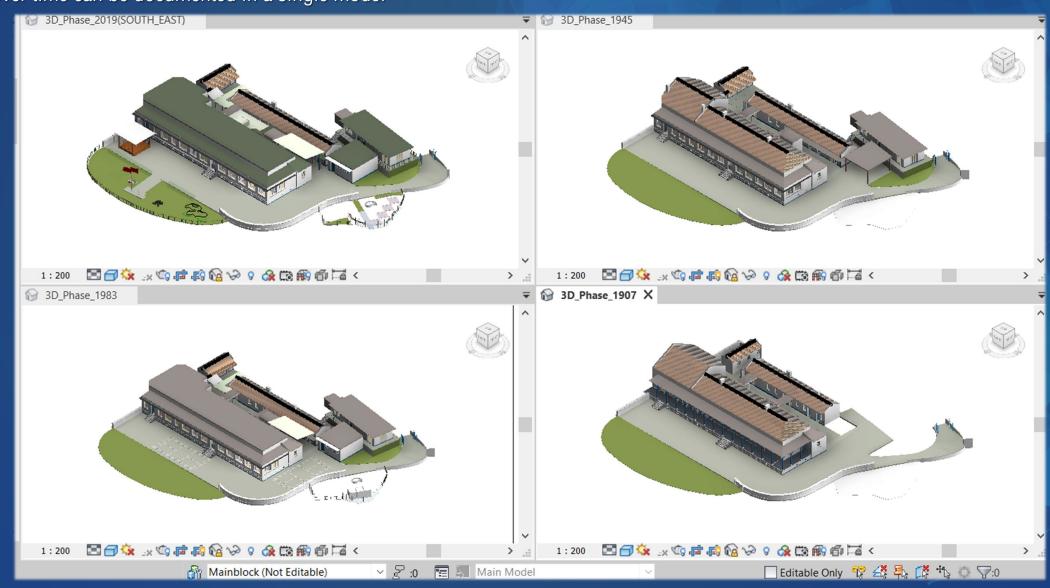
2. Each object in the model under Phasing, input the year that it was *Created* and *Demolished* (if applicable)



3. Each VIEW in Revit can define which *Phase* and set *Phase Filter*



Building changes over time can be documented in a single model



Timeline of Building Change

輸出 Output

立體建築模型 3D Model

建築變遷時間軸 Timeline of Building Change

建築圖則 2D Drawings



BIM in HIM Character Defining Elements

CDEs are documented in the BIM model

But

How detail they should be modelled depends





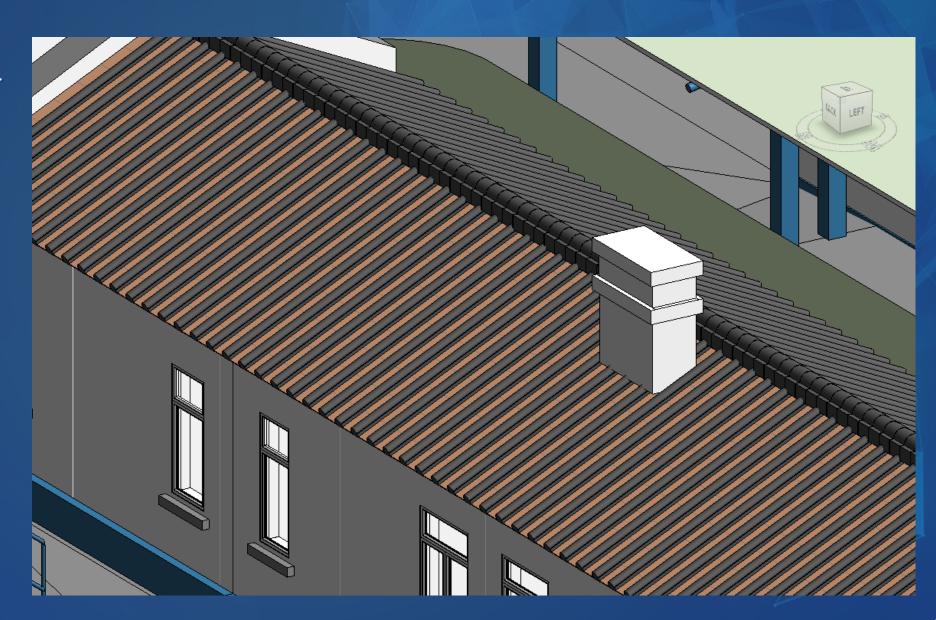
Objects in BIM model are "container" of information and allow users to categorize and input necessary information; but not always the most powerful tools for geometry.

Building Element and standardized /repetitive features are relatively easier to model and worth the effort



It is important to be clear on what purposes / objectives want to achieve.

e.g.
whether it worth modelling roof tiles
piece by piece?
A few issue to consider —
Time
Practicability
File size

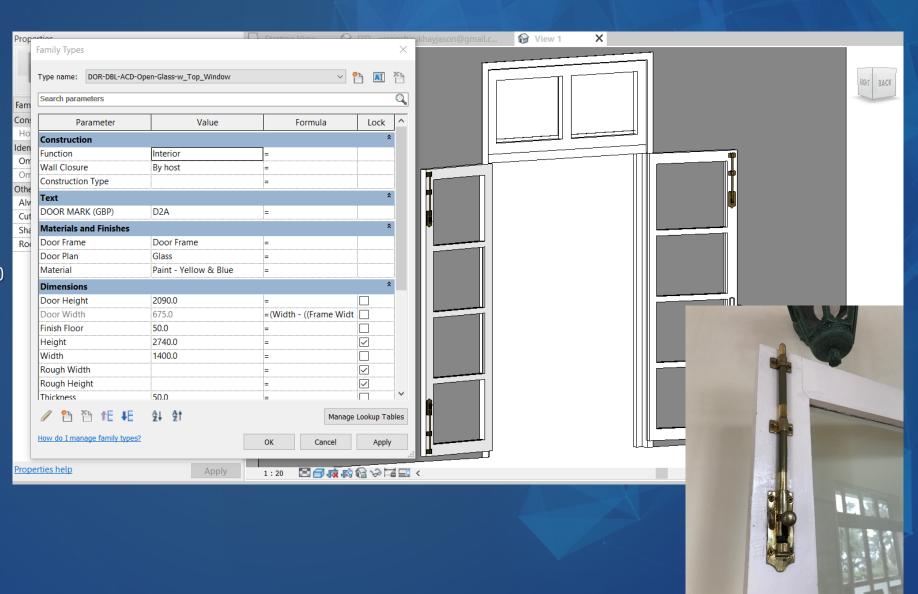


HIM might be more demanding in term of geometry level of development

e.g.

In our case, some doors are modelled with more details, since:

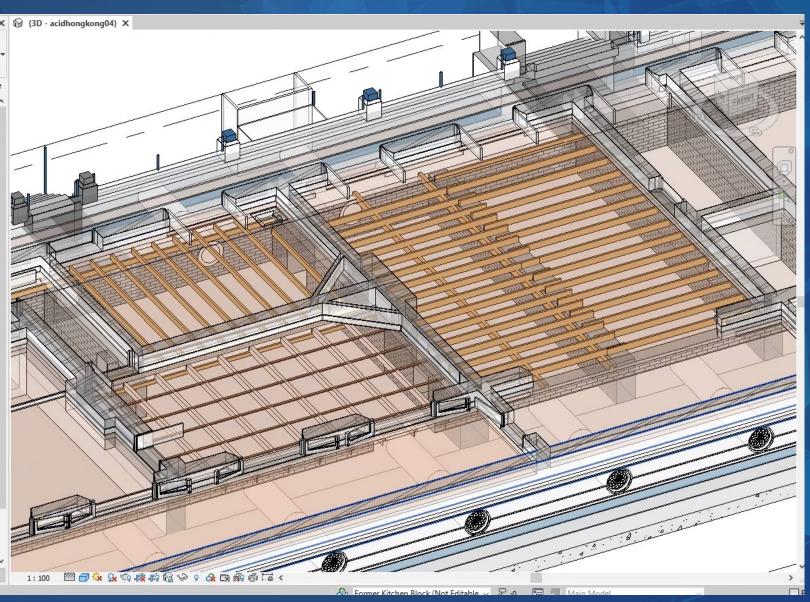
- They are along the exhibition route and obvious in 3D model output;
- They are vulnerable items subject to maintenance and facilities upkeep;
- They have certain historical value



BIM in HIM See beyond the surface

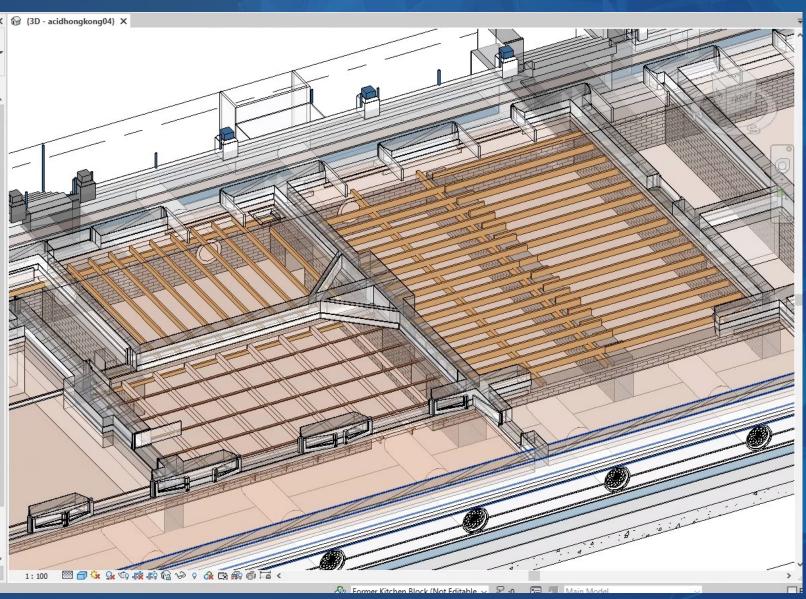
Modelling of 3D model force us to explore beyond the surface.





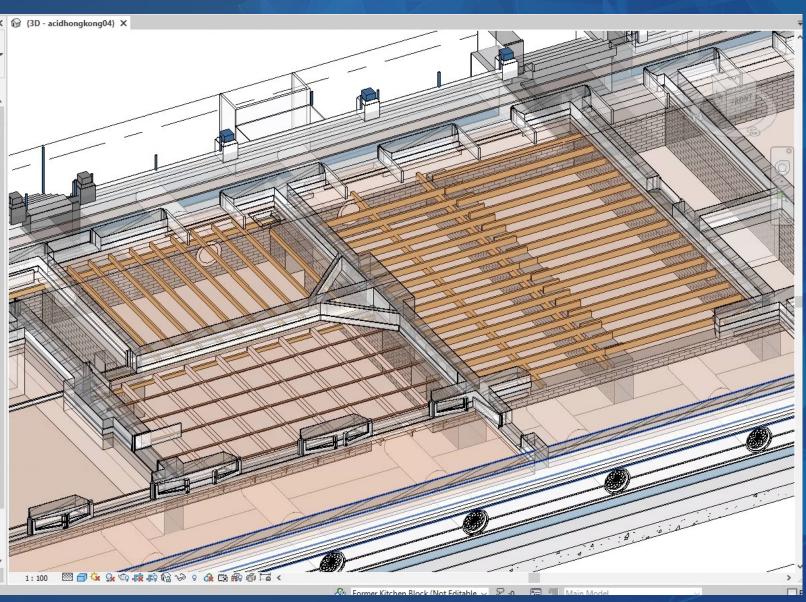
Modelling of 3D model force us to explore beyond the surface.





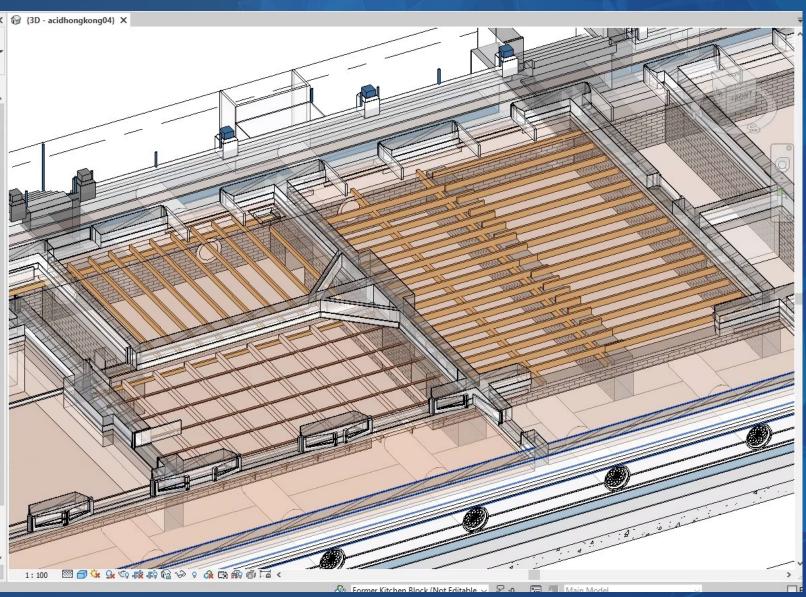
Modelling of 3D model force us to explore beyond the surface.





Modelling of 3D model force us to explore beyond the surface.





Application Facility Upkeep & Maintenance



Property Services Branch Architectural Services Department

Building Information Modelling (BIM) Guide for Facilities Upkeep

(Version 1.0)

Objective

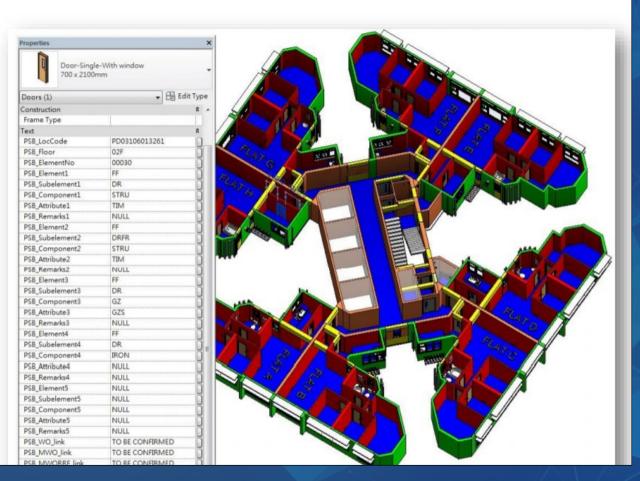
The primary purpose of this Guide is to provide common reference on the adoption of BIM As-built Modelling for Facilities Upkeep in build projects including capital works project entrustment works, subvented capital works projects and works that are undertaken by priparties with project estimates more than \$30 mil and will be handed back to ArchSD for maintena according to Development Bureau Technical Circ (Works) No. 7/2017 or the latest version.

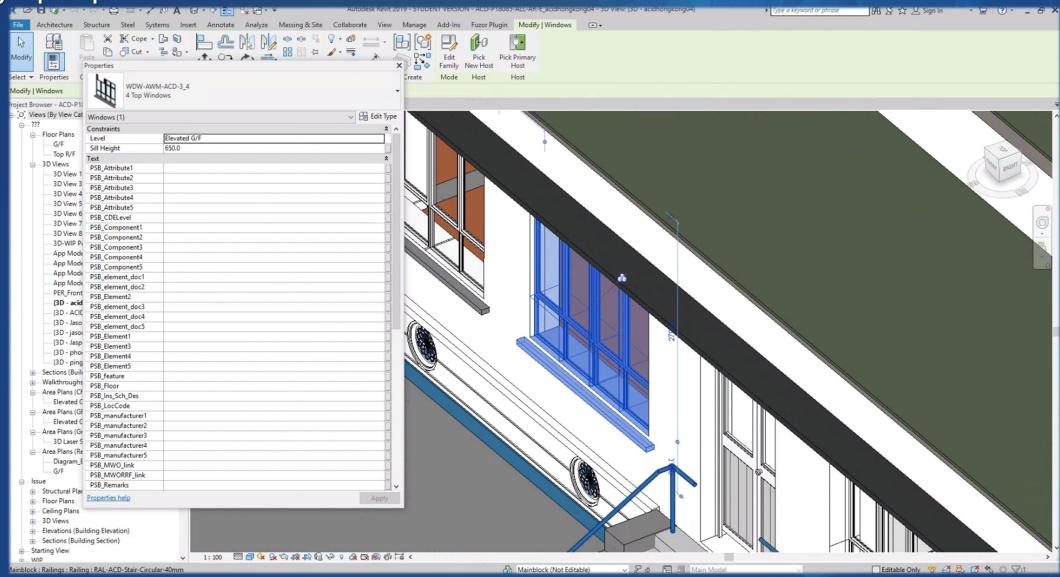
Disclaimer

Whilst the Architectural Services Department endeavou ensure the accuracy of the contents in this Guide expressed or implied warranty is given on the accuracy of

Example of PSB Standard Parameters in Object

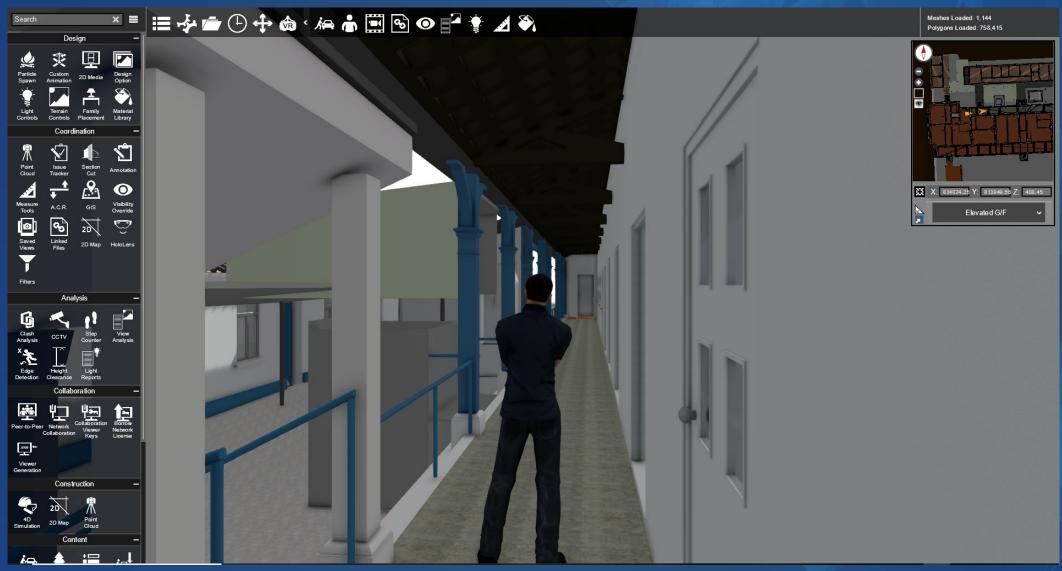
Appendix 2







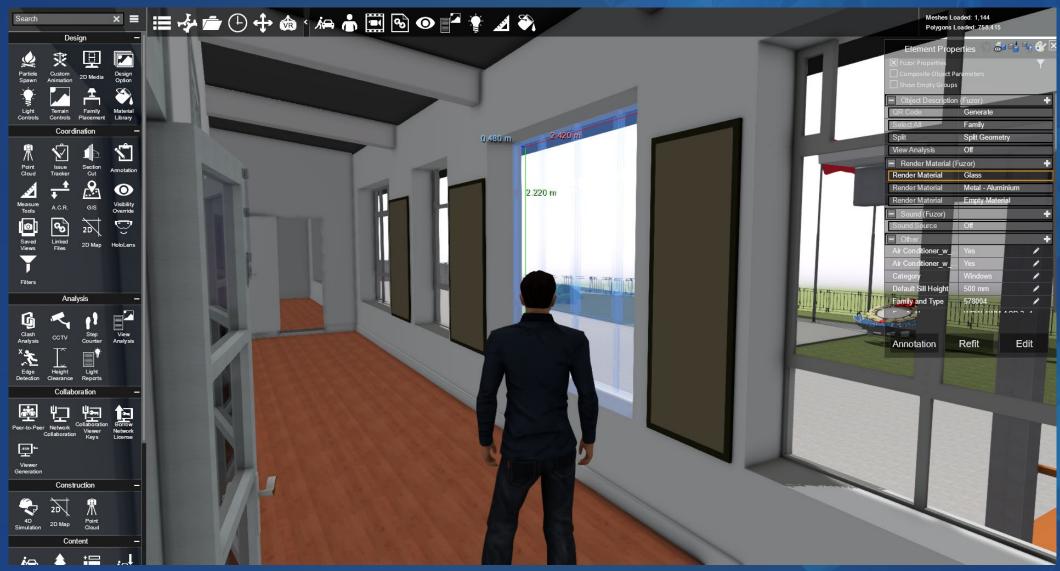
Simulate walkthrough inspection & observe properties of building objects



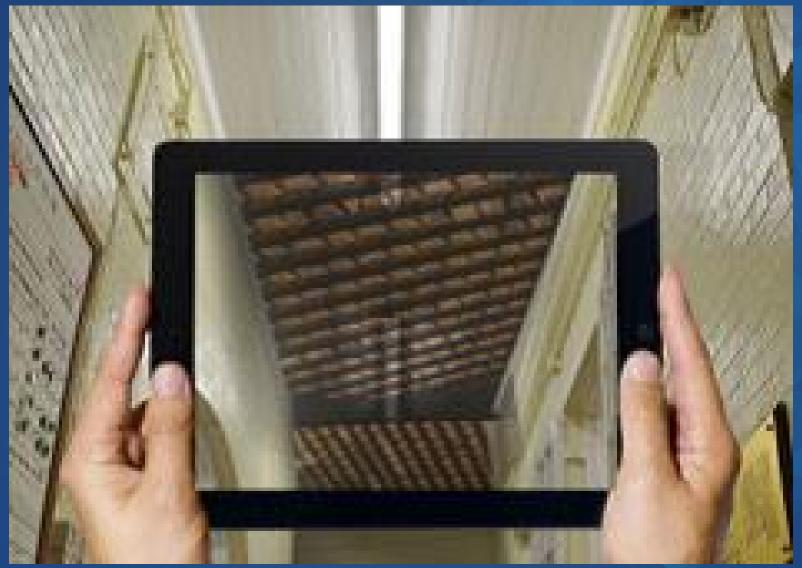
Simulate walkthrough inspection & observe properties of building objects



Simulate walkthrough inspection & observe properties of building objects



Simulate walkthrough inspection & observe properties of building objects



Simulate walkthrough inspection & observe properties of building objects

Application Interactive Mobile App

Interactive Mobile App



PEAK POLICE STATION

Scan QR Code to download (or just search "Peak Police Station")

Interactive Mobile App





山頂警署「文物信息模型」簡介

山頂警署流動應用程式簡介

免責聲明

版權通知

私隱政策

語言 中

中文

English



山頂警署變化

多媒體導賞 ♥







山頂警署「文物信息模型」簡介 Peak Police Station HIM







山頂警署 「文物信息模型」簡介







輸出

STATION

山頂警署HIM



珍 文物信息模型

山頂警署變化

多媒體導賞♡

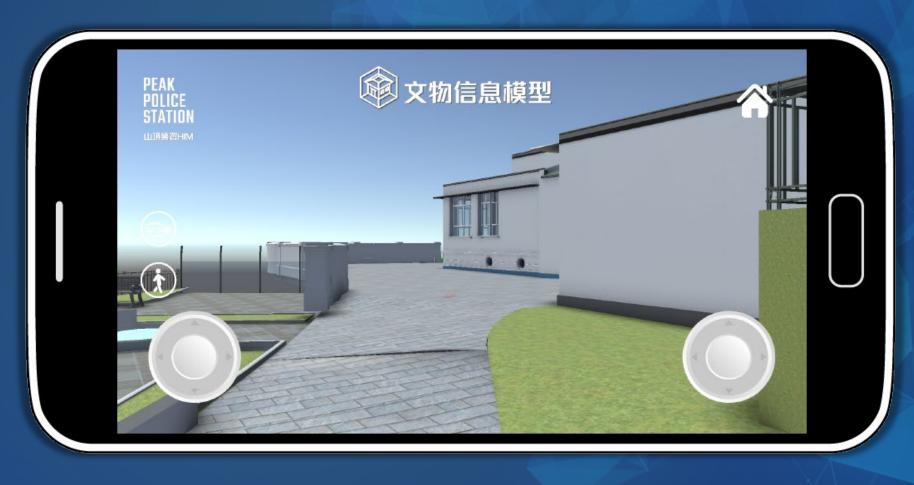






文物信息模型 Heritage Information Modelling





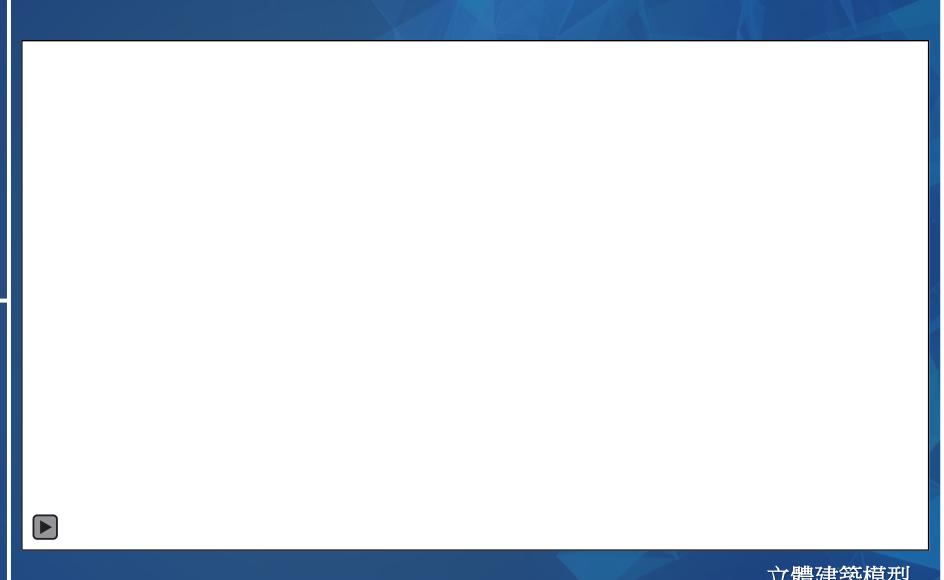
立體建築模型 3D Model

輸出 Output

立體建築模型 3D Model

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建築圖則 2D Drawings



立體建築模型 3D Model

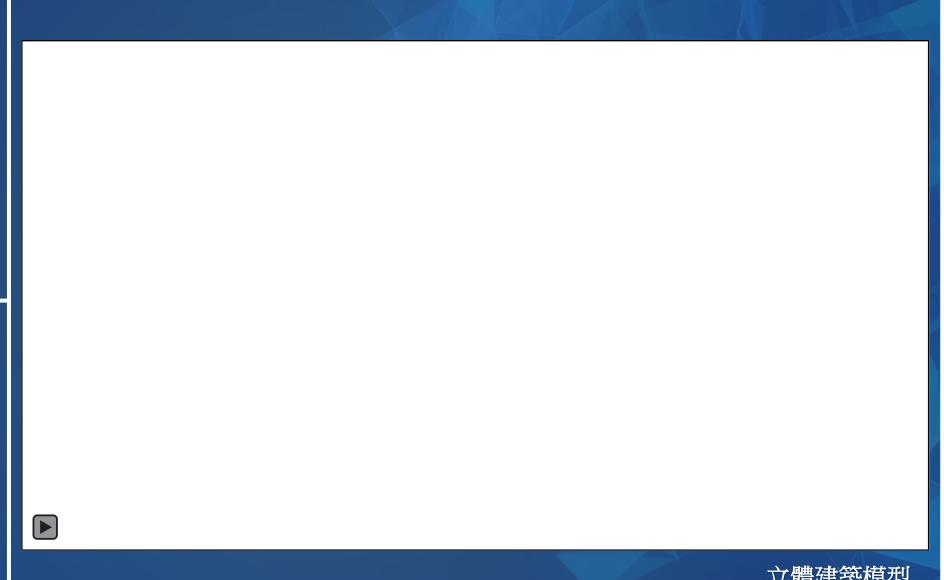
立體建築模型 3D Model

輸出 Output

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立體建築模型 3D Model

山頂警署變化 Timeline of Peak Police Station



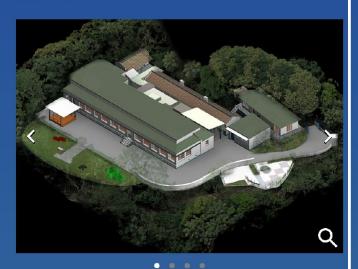


山頂警署變化



山頂警署HIM

2019



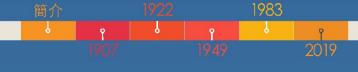
2010

主樓、僕人宿舍、營房和舊羈留室被古物諮詢委員會評定為三級歷史建築。

2000s

經過翻新及修復,加建無障礙設施和講台,成為現時的 模樣。

部份房間的功能亦隨年代有所改變;健身房改為多功能



多媒體導賞 Interactive Tour





PEAK POLICE STATION

山頂警署HIM

請連接至WIFI "HKPF" 啟用AR功能

確定

山頂警署變化

多媒體導賞 👂









PEAK POLICE STATION

山頂警署HIM

請開啟藍牙

確定

山頂警署變化

多媒體導賞 👂







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PEAK POLICE STATION

山頂警署HIM



● 山頂警署變化

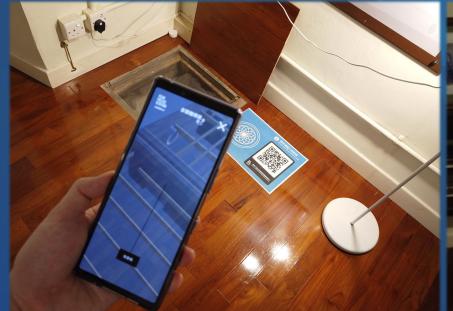
多媒體導賞 ♥

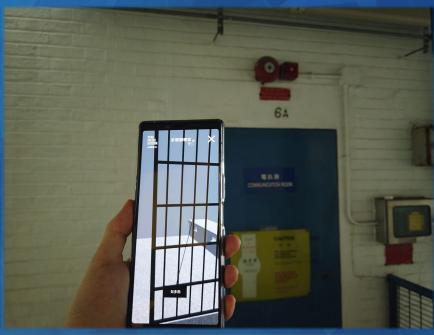














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PEAK POLICE STATION

多媒體導賞 💡



山頂警署HIM

舊警徽





警徽設計

香港開埠初期,警隊是以英國在位君主的皇冠作為徽號,直至1934年才正式出現代表警隊的警徽。當年,助理警司畢明達建議警隊應有其獨特的徽號。於是,畢明達便受命負責警徽的設計工作。他所設計的警徽,其實是以1876年香港政府通過的紋章為基礎,即以從九龍半島南端眺望港島海岸、有著中式帆船及西式快速船艦停舶港內作為背景,近景為華人與洋人握手、洽談生意的圖樣,冠以英皇的皇冠、圖樣左右繞以嘉禾,並在其下有一條寫有英文「香港警察隊」字樣的普藍色絲帶等構成。自此,警隊有屬於自己的徽號。

Constraint & possible way-forward

- Time constraint
- Budget constraint
- Technology constraint
- Purpose-driven HIM: Make sure the objectives are clear at the beginning
- Keep update with the latest technology, hardware and software advancement
- Streamlining the process: Point Cloud -> BIM -> App 3D model

Heritage Information Modelling Q & A