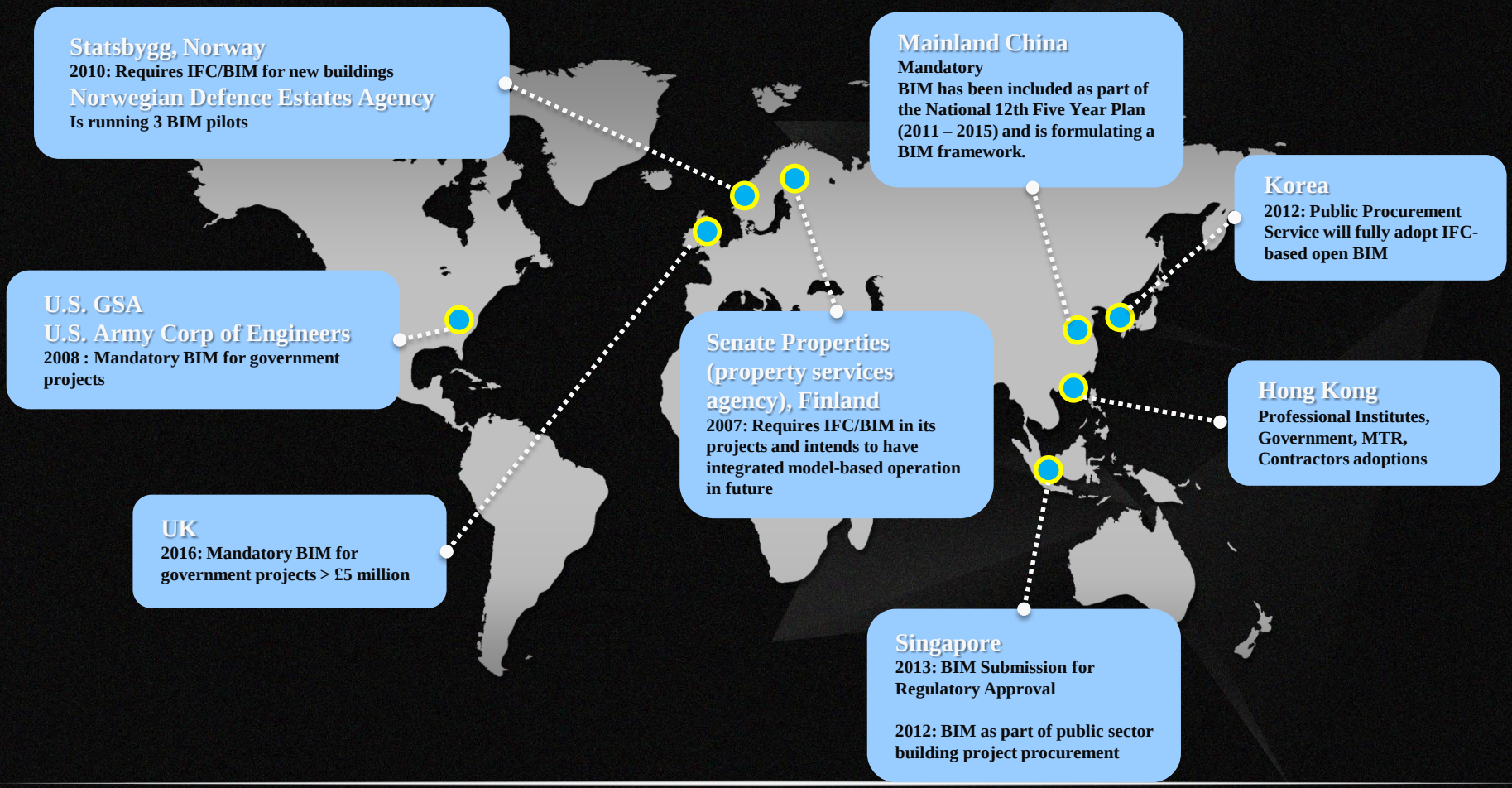
A DVANCED
C ONSTRUCTION
I NFORMATION
D EVELOPMENT

BIM

Global Perspective on BIM

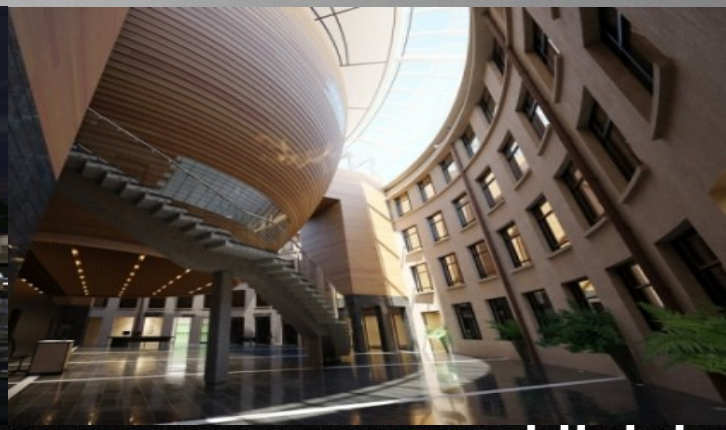


Fake BIM

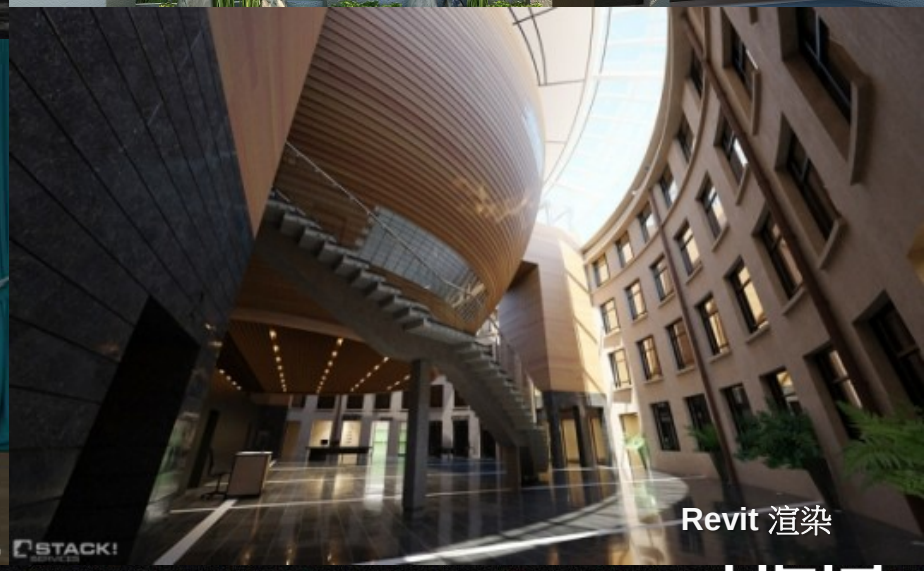
M + ?

JUST 3D MODEL – NOT BIM





Fake BIM



Fake BIM

- Rendering
- CG (Computer Graphic)
- Animations
- Interactive Gaming

Use BIM tools not necessarily means BIM!

HALF-BIM

I <> M

3D MODEL >> QTO , CLASH ANALYSIS

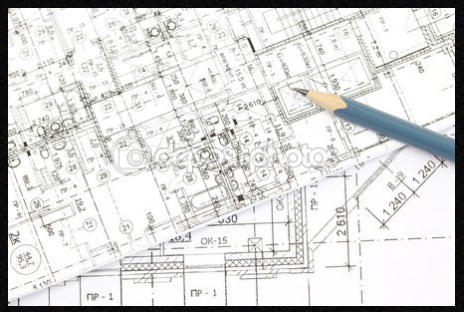
HALF BIM

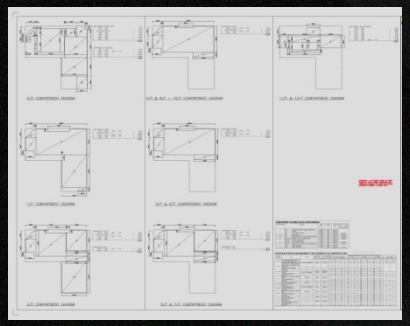
DESIGN

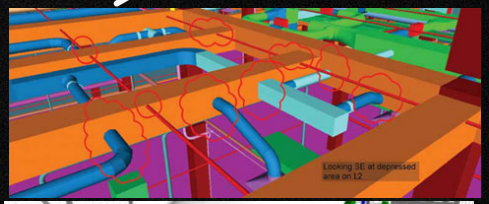
CAD

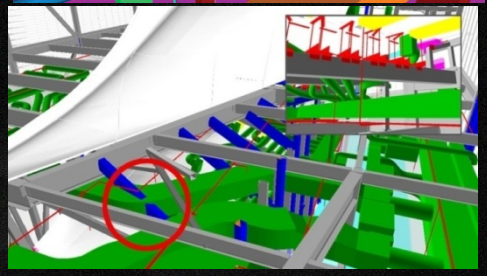
CAD

BIM







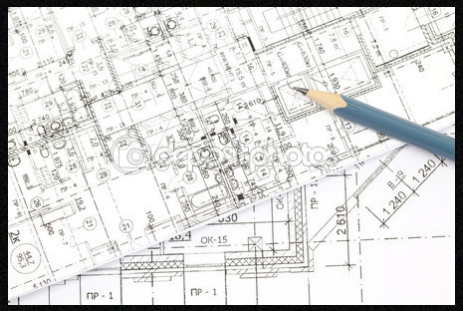


CONSTRUCTION INFORMATION

STATUTORY SUBMISSION

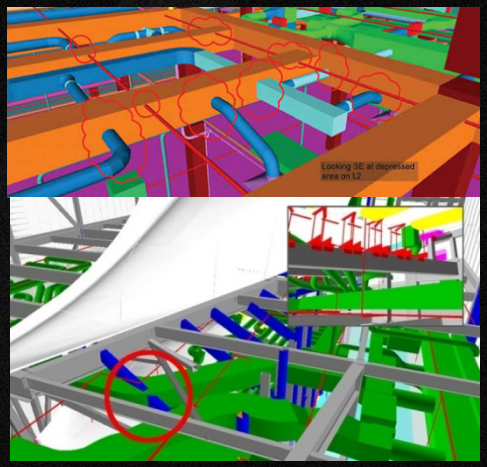
CLASH DETECTION

REAL BIM

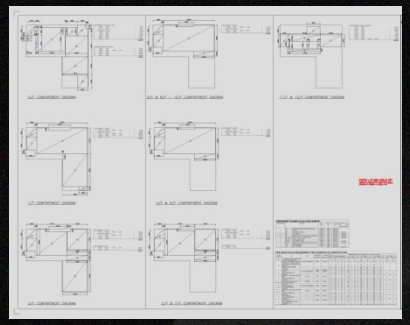


CONSTRUCTION
INFORMATOIN

DESIGN
in
BIM
Single Source Database



CLASH
DETECTION



STATUTORY
SUBMISSION

REAL BIM

I = M

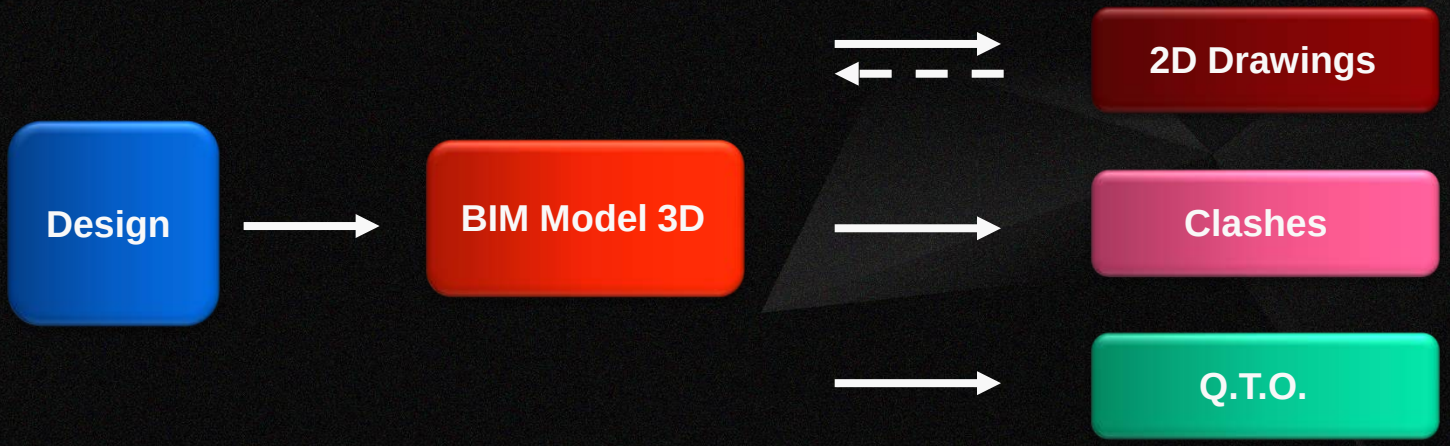
I > M

INFORMATION FROM MODEL,

INFORMATION MORE IMPORTANT

Perceived BIM Workflow

True BIM Workflow :

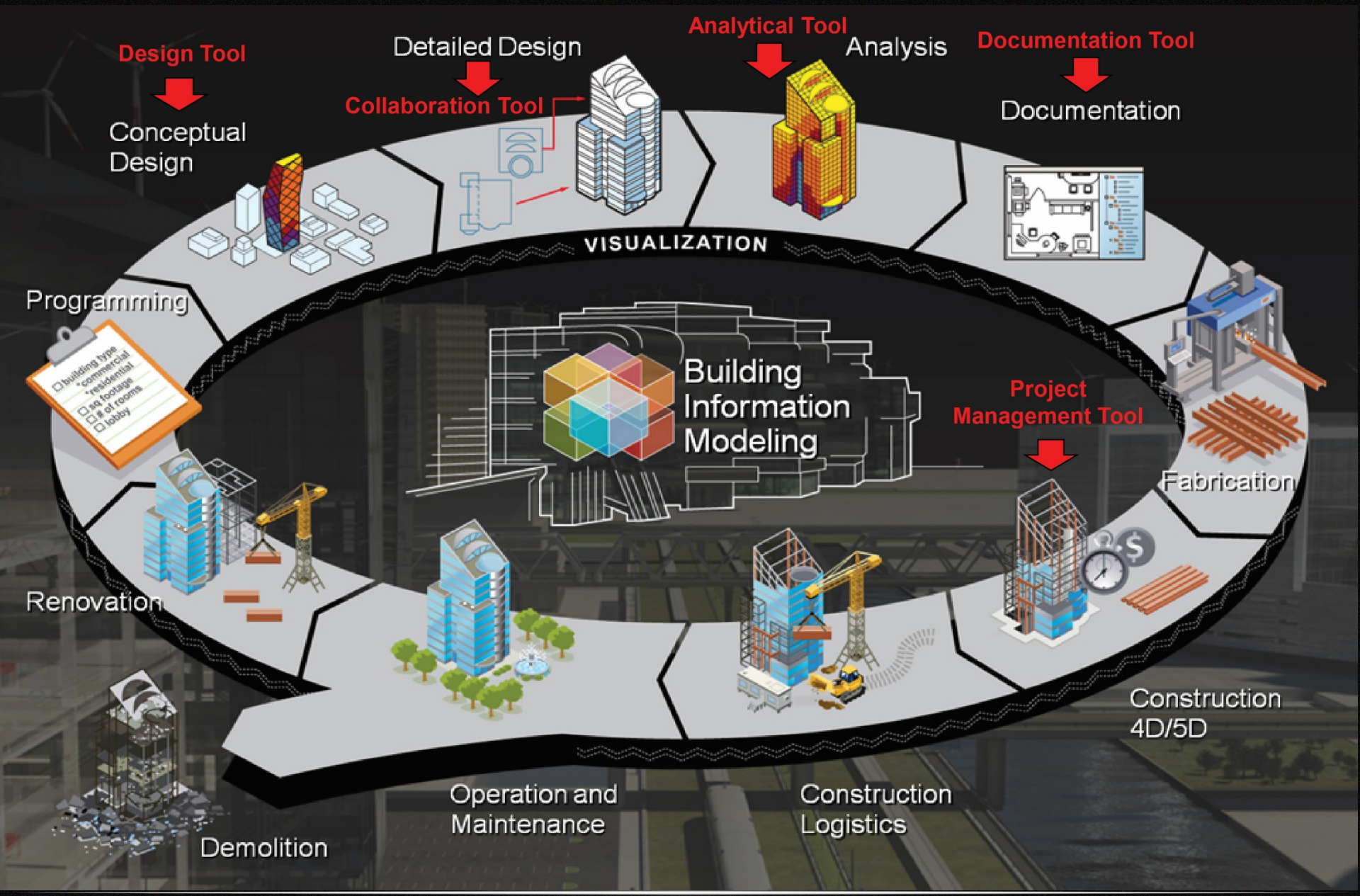


BIM

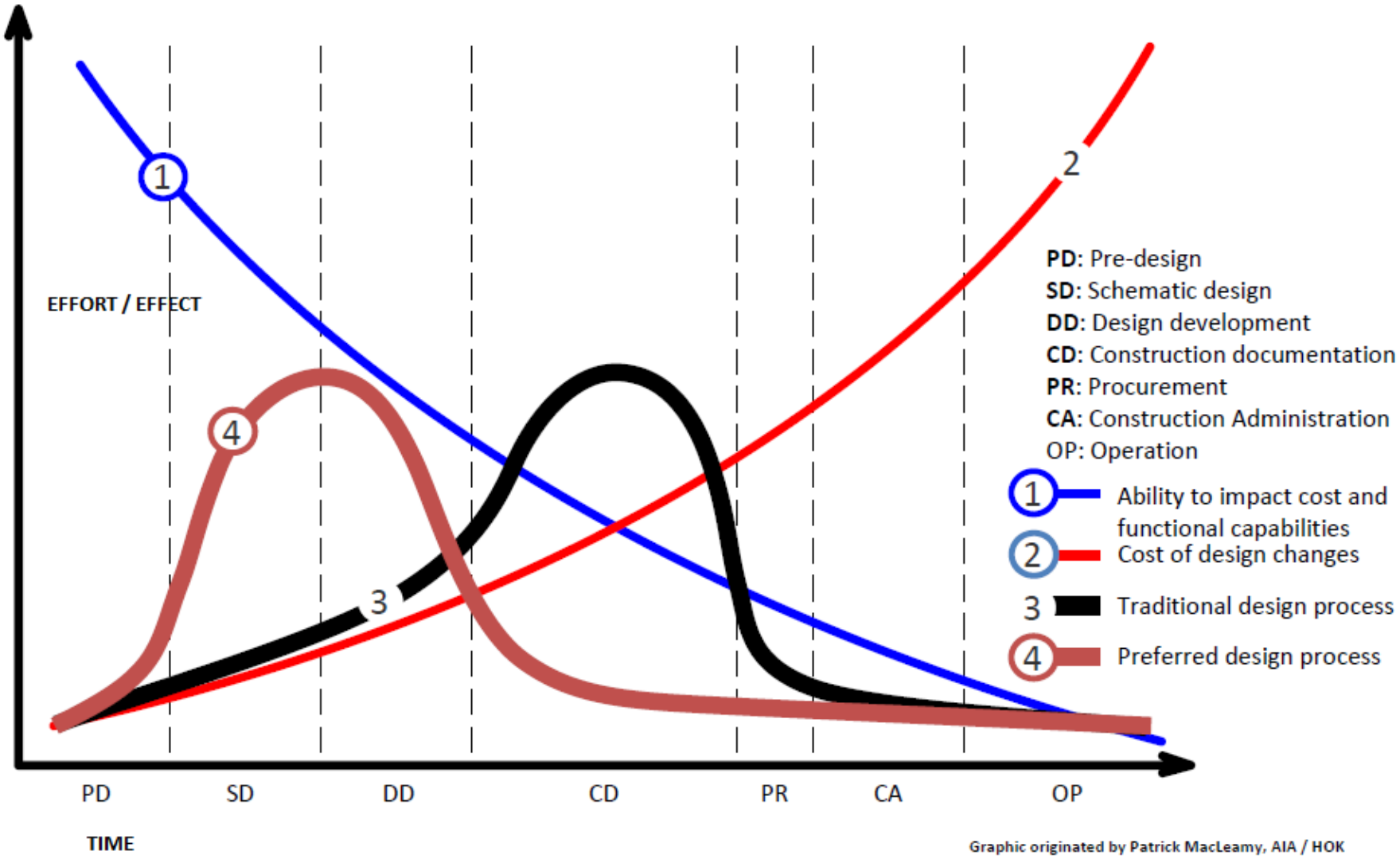
Modelling **Information** **Business**

REAL BIM

BIM is a process, Business is the objective



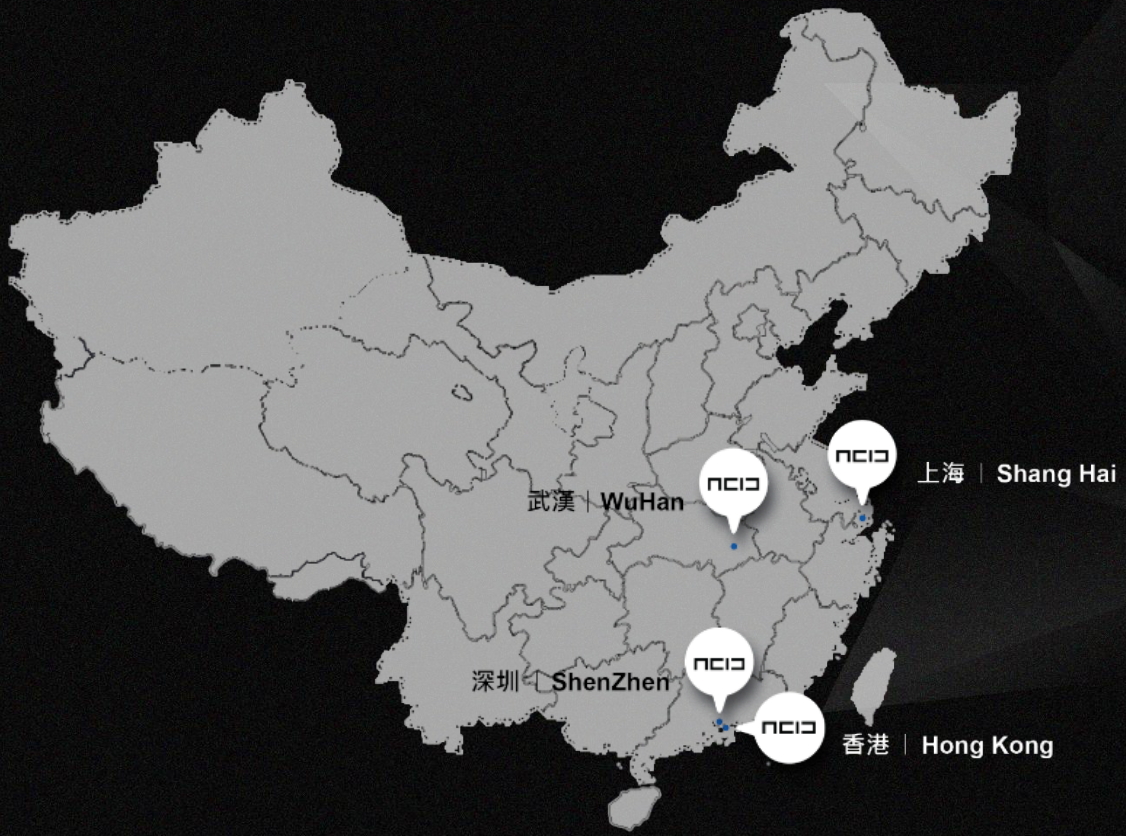
BIM - project life cycle


EFFORT / EFFECT
1
2
3
4
PD
SD
DD
CD
PR
CA
OP
TIME
PD: Pre-design
SD: Schematic design
DD: Design development
CD: Construction documentation
PR: Procurement
CA: Construction Administration
OP: Operation
1 Ability to impact cost and functional capabilities
2 Cost of design changes
3 Traditional design process
4 Preferred design process
Graphic originated by Patrick MacLeamy, AIA / HOK

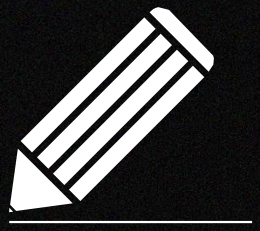
- A.C.I.D. Company

- Hong Kong, Wuhan, Shanghai and Shenzhen Office
- Over 100 qualified Professional and Technical Staff

- Location



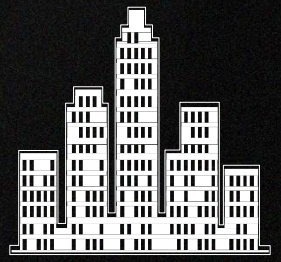
Scope of Service



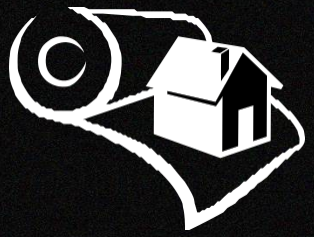
A&U Design

sMaRT BIM

Life-cycle BIM

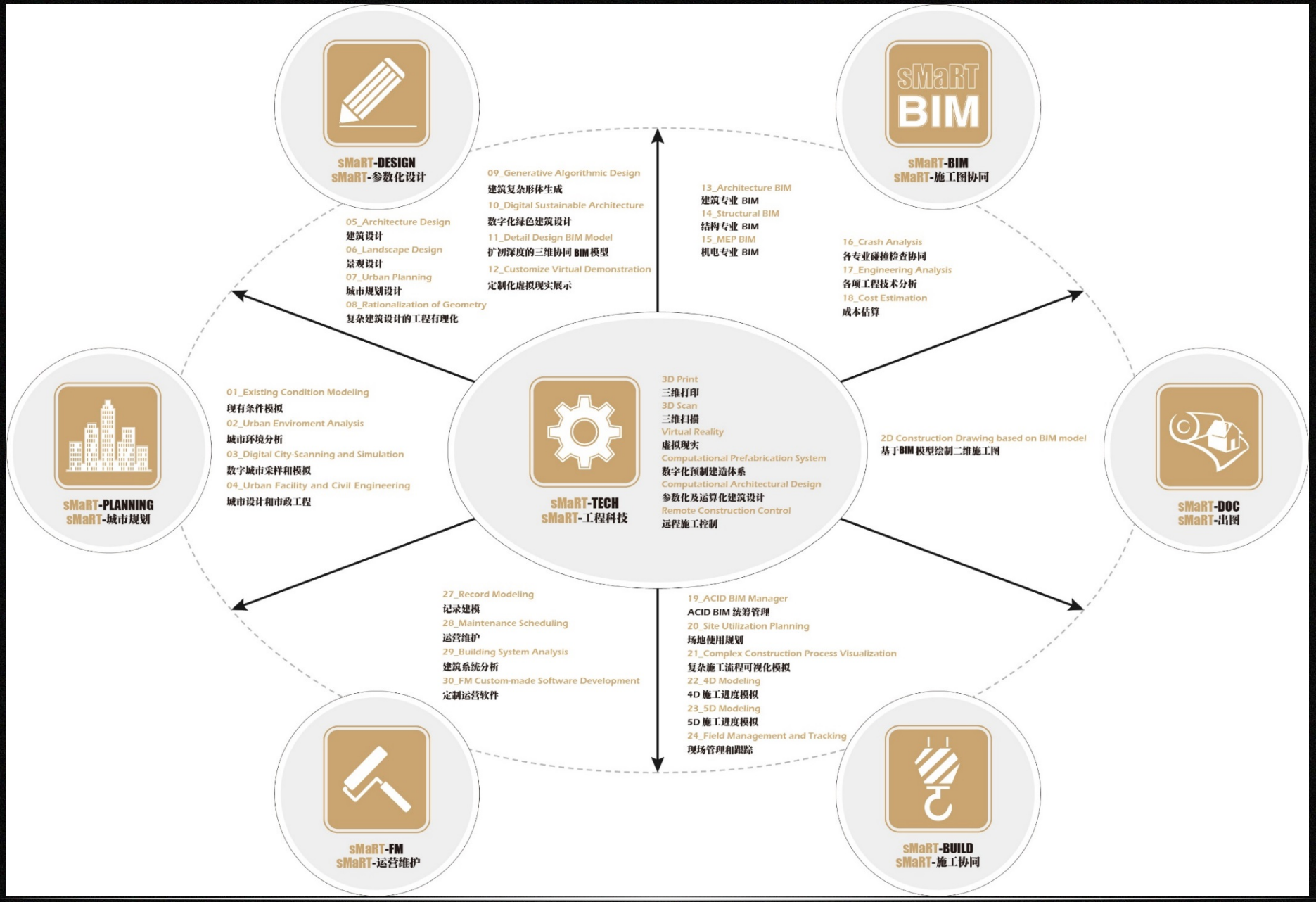


Smart City



3D Product

Education& Training


sMaRT-DESIGN
sMaRT-参数化设计
09_Generative Algorithmic Design
建筑复杂形体生成
10_Digital Sustainable Architecture
数字化绿色建筑设计
11_Detail Design BIM Model
扩初深度的三维协同 BIM 模型
12_Customize Virtual Demonstration
定制化虚拟现实展示
05_Architecture Design
建筑设计
06_Landscape Design
景观设计
07_Urban Planning
城市规划设计
08_Rationalization of Geometry
复杂建筑设计的工程有理化
sMaRT BIM
sMaRT-BIM
sMaRT-施工图协同
13_Architecture BIM
建筑专业 BIM
14_Structural BIM
结构专业 BIM
15_MEP BIM
机电专业 BIM
16_Crash Analysis
各专业碰撞检查协同
17_Engineering Analysis
各项工程技术分析
18_Cost Estimation
成本估算
sMaRT-PLANNING
sMaRT-城市规划
01_Existing Condition Modeling
现有条件模拟
02_Urban Enviroment Analysis
城市环境分析
03_Digital City-Scanning and Simulation
数字城市采样和模拟
04_Urban Facility and Civil Engineering
城市设计和市政工程
sMaRT-TECH
sMaRT-工程科技
3D Print
三维打印
3D Scan
三维扫描
Virtual Reality
虚拟现实
Computational Prefabrication System
数字化预制建造体系
Computational Architectural Design
参数化及运算化建筑设计
Remote Construction Control
远程施工控制
sMaRT-DOC
sMaRT-出图
2D Construction Drawing based on BIM model
基于BIM 模型绘制二维施工图
sMaRT-FM
sMaRT-运营维护
27_Record Modeling
记录建模
28_Maintenance Scheduling
运营维护
29_Building System Analysis
建筑系统分析
30_FM Custom-made Software Development
定制运营软件
sMaRT-BUILD
sMaRT-施工协同
19_ACID BIM Manager
ACID BIM 统筹管理
20_Site Utilization Planning
场地使用规划
21_Complex Construction Process Visualization
复杂施工流程可视化模拟
22_4D Modeling
4D 施工进度模拟
23_5D Modeling
5D 施工进度模拟
24_Field Management and Tracking
现场管理和跟踪

- Award

我们是

中华人民共和国住建部
《建筑工程设计信息模型交付标准》参编单位
《建筑工程设计信息模型分类和编码标准》参编单位
《建筑工程设计信息模型出图标准》参编单位

buildingSMART中国分部理事单位

香港建筑信息模拟学会（HKIBIM）发起人及现任会长（David Fung）
香港建筑师学会（HKIA）公司会员(ACID-HK)
中国数字建筑设计专业委员会（DADA）联合发起人
香港房屋署、建筑署BIM技术管理顾问及培训导师团队

行业荣誉

设计获奖/Design Award

• 荣获2013国际绿色建筑设计银奖/Award Silver Medal of International Green Architecture 2013
• 荣获2013欧洲设计年TOP50设计/Award TOP50 Design of 2013 European Design Year
• 荣获2012年公民建筑奖提名
• 荣获2014WA中国建筑奖社会公平奖佳作奖/Excellence Award of 2014 WA Social Equality Award
• 荣获2014WA中国建筑奖设计实验奖入围奖

BIM 获奖/BIM Award
• ACID-HK HIM 項目（BIM技术古建保护应用）荣获:
香港2015buildingSMART大奖
香港BIM大奖 2015
• ACID-HK 為香港BIM Award 2014 贊助機構
• ACID-HK香港董事总经理冯树坚先生:
荣获香港建造業議會2014卓越建築信息模擬獎BIM Excellence Award
被选为香港建筑模拟学会（HKIBIM）会长 2015-16
被选为香港建筑师学会(HKIA)BIM 及IT 小組副会长 2015-16
接受亚洲电视台采访發表對香港BIM 發展的意見及討論

香港建築師學會

The Hong Kong Institute of Architects

This is to certify that

Advanced Construction Information Development Limited

was admitted as **a Corporate Member**
of the Institute on the **Twenty-fifth**
day of **April 2015**

thereby accepting the privileges and responsibility of membership and undertaking to comply with the Rules of the Institute.

President *Registrar*

The Hong Kong Society of Architects was founded in the year 1956. It was reconstituted in the year 1972 as the Hong Kong Institute of Architects.

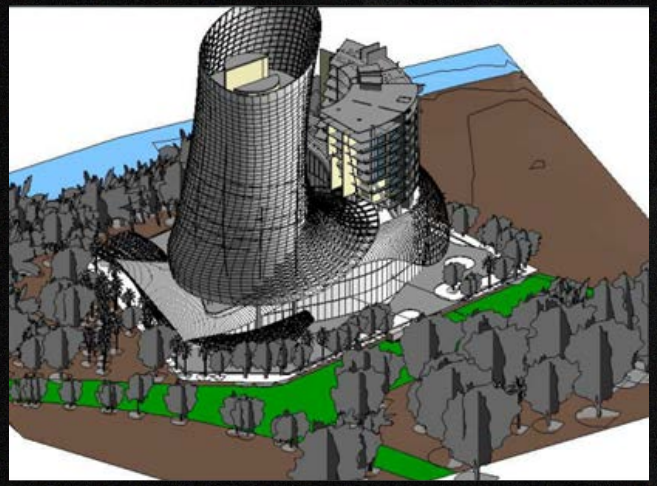
Date of issue **29th April 2015** *Serial No.* **CM0200**

This Certificate Remains the Property of the Hong Kong Institute of Architects.

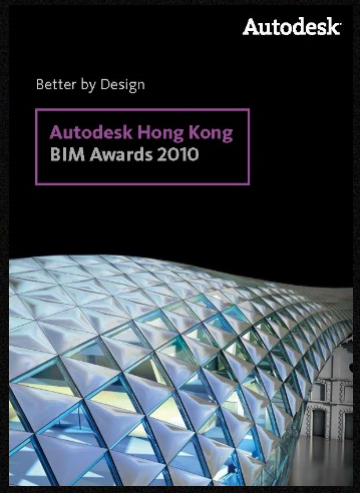

Autodesk
Lead the Way
Autodesk Hong Kong
BIM Awards 2012

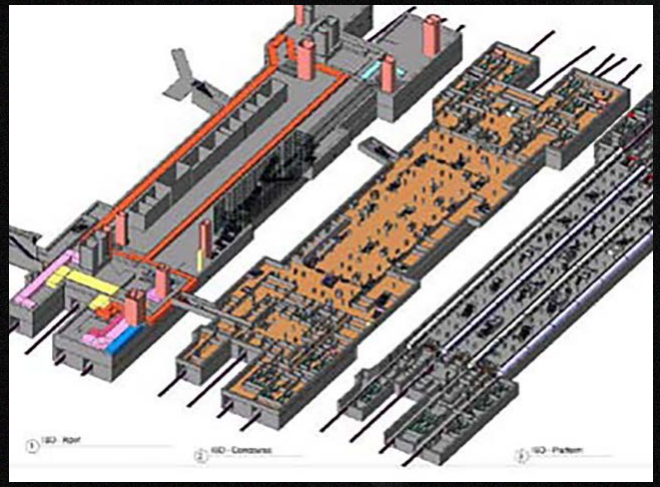
2012


buildingSMART SINGAPORE
BCA ACADEMY
BIM BUZZ@Singapore 2011 Competition
8 -10 September 2011
This certificate is awarded to
BIM EVANGELIST
(Hong Kong)
SPECIAL MENTION FOR OUTSTANDING BIM DESIGN
(Professional Category)
MR WILLIAM LAU
President, buildingSMART Singapore
MR BENEDICT TAN
Managing Director, BCA Academy
novaCITYNETS
Autodesk
Bentley
TEKLA

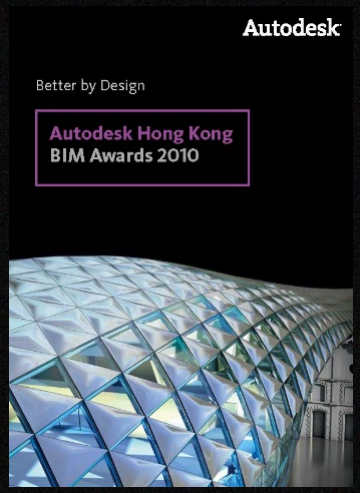


2011


Autodesk
Better by Design
Autodesk Hong Kong
BIM Awards 2010



2010


Autodesk
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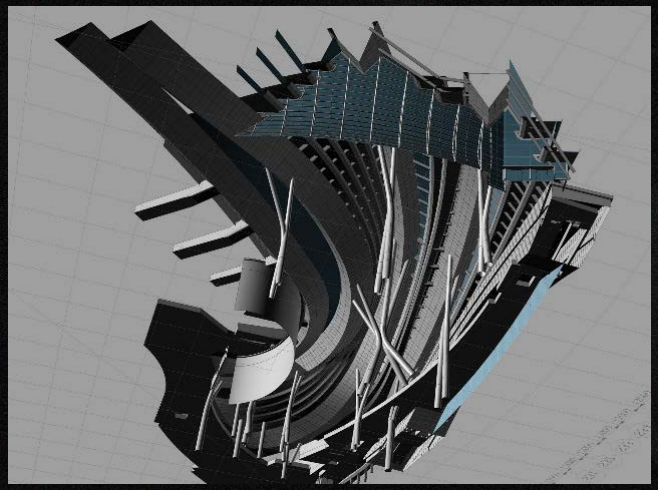
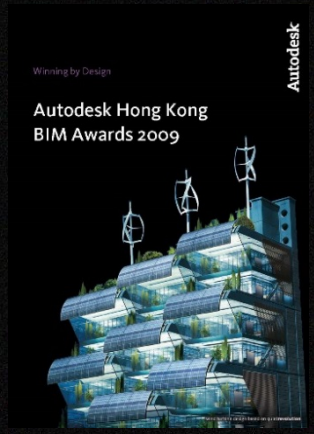
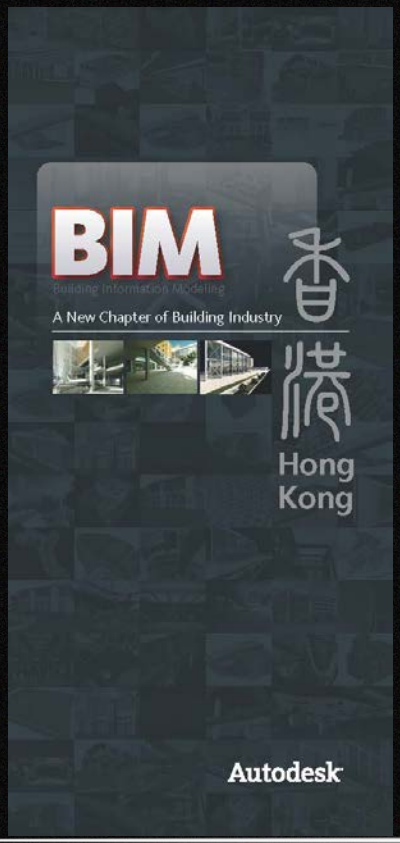
Autodesk Hong Kong
BIM Awards 2010



2010



2009



2007

2007

Leadership

Chairmen of Board
Changsheng Qu

Vice Chairman
Shuang Song

Managing Director
David Fung

BIMer of the Year, BIM Excellence Awards 2014, Construction Industry Council

Vice Chairman of BIM and IT Committee, HKIA 2015-2016

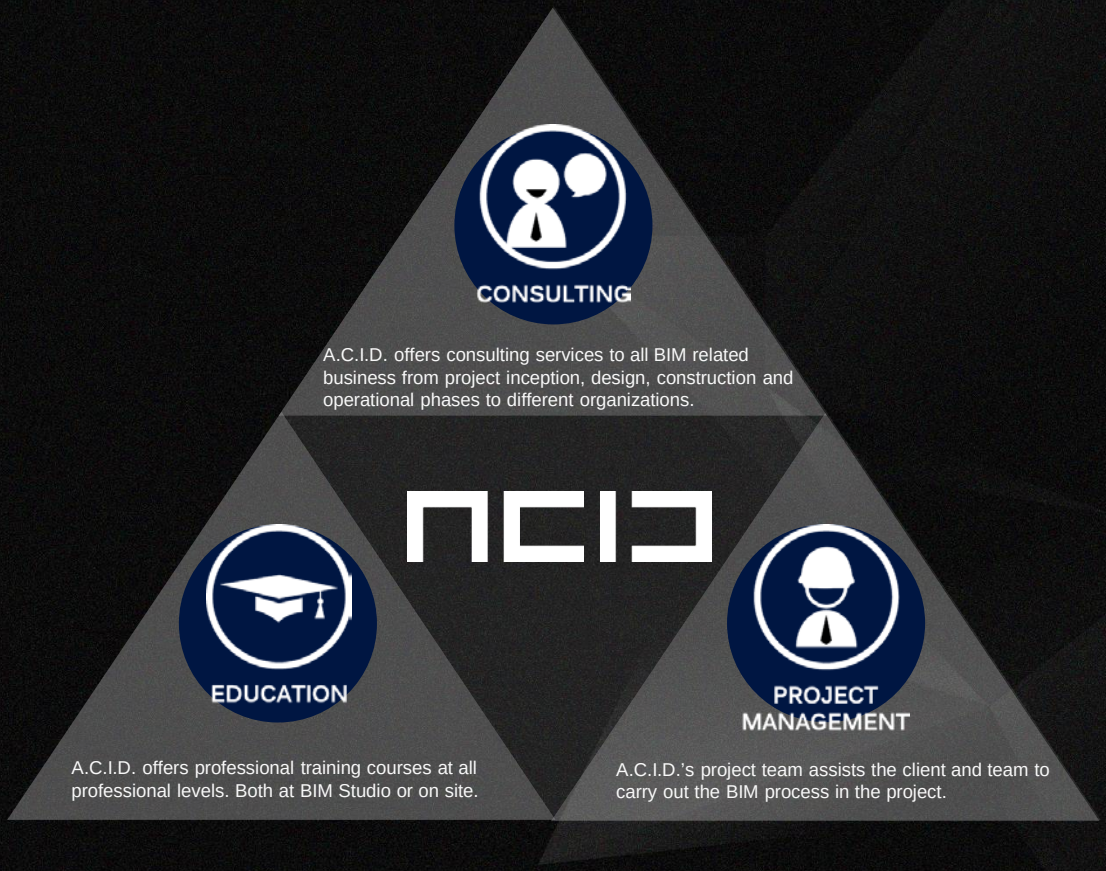
Chairman of HKIBIM 2015-2017

General Manager
Wei Mu

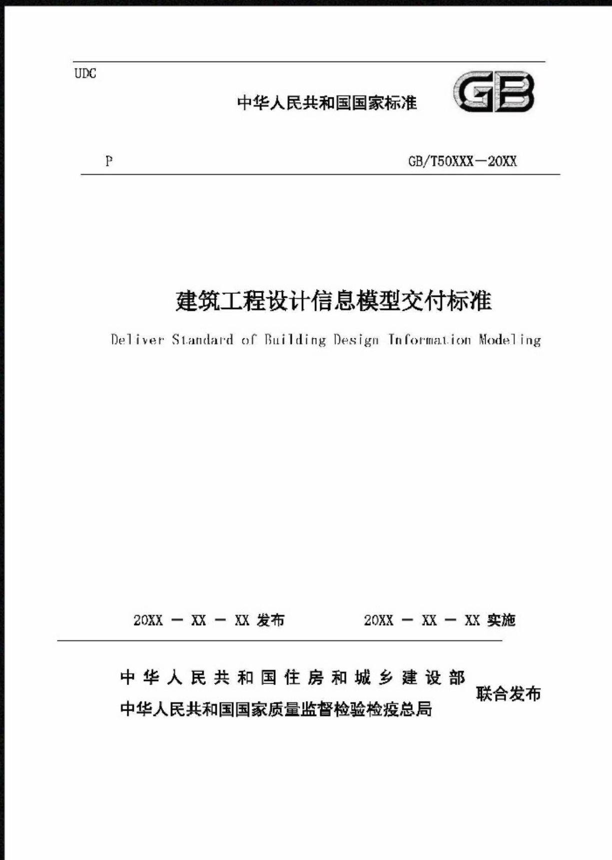
Design Director
Song Qin

BIM Associate
Samantha Hu

Services


CONSULTING
A.C.I.D. offers consulting services to all BIM related business from project inception, design, construction and operational phases to different organizations.
EDUCATION
A.C.I.D. offers professional training courses at all professional levels. Both at BIM Studio or on site.
PROJECT MANAGEMENT
A.C.I.D.'s project team assists the client and team to carry out the BIM process in the project.

- BIM Standards



UDC

中华人民共和国国家标准

GB

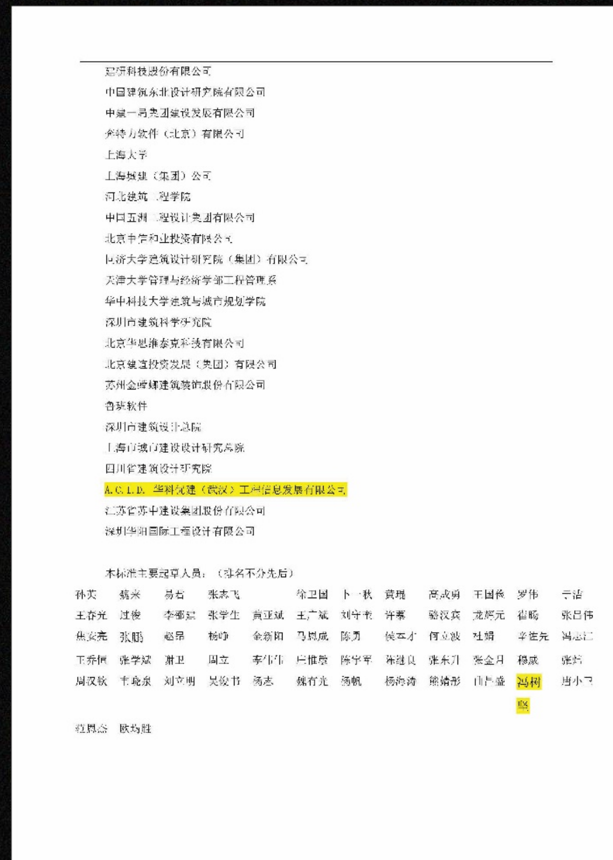
P GB/T50XXX—20XX

建筑工程设计信息模型交付标准

Deliver Standard of Building Design Information Modeling

20XX — XX — XX 发布 20XX — XX — XX 实施

中华人民共和国住房和城乡建设部
中华人民共和国国家质量监督检验检疫总局
联合发布



起研科技股份有限公司
中国建筑东北设计研究院有限公司
中建一局集团建设发展有限公司
奔特力软件（北京）有限公司
上海大学
上海城建（集团）公司
河北建筑工程学院
中国五洲工程设计集团有限公司
北京中信和业投资有限公司
同济大学建筑设计研究院（集团）有限公司
天津大学管理与经济学部工程管理系
华中科技大学建筑与城市规划学院
深圳市建筑科学研究院
北京华思维泰克科技有限公司
北京建工投资发展（集团）有限公司
苏州金螳螂建筑装饰股份有限公司
鲁班软件
深圳市建筑设计总院
上海市城市建设设计研究总院
四川省建筑设计研究院
A. C. I. D. 华科筑建（武汉）工程信息发展有限公司
江苏省苏中建设集团股份有限公司
深圳华阳国际工程设计有限公司

本标准主要起草人员：（排名不分先后）

孙奕 魏来 易右 张志飞 徐卫国 卜一秋 黄琨 高成勇 王国俭 罗伟 于洁
王春光 过俊 李邵建 张学生 黄亚斌 王广斌 刘守乾 许蓁 骆汉宾 龙辉元 崔晓 张吕伟
焦安亮 张鹏 赵昂 杨峥 余新阳 马恩成 陈勇 侯本才 何立波 杜娟 李佐先 冯志江
王乔恒 张学斌 谢卫 周立 李伟伟 吕维荣 陈宇军 朱继良 张东升 张金月 穆威 张炜
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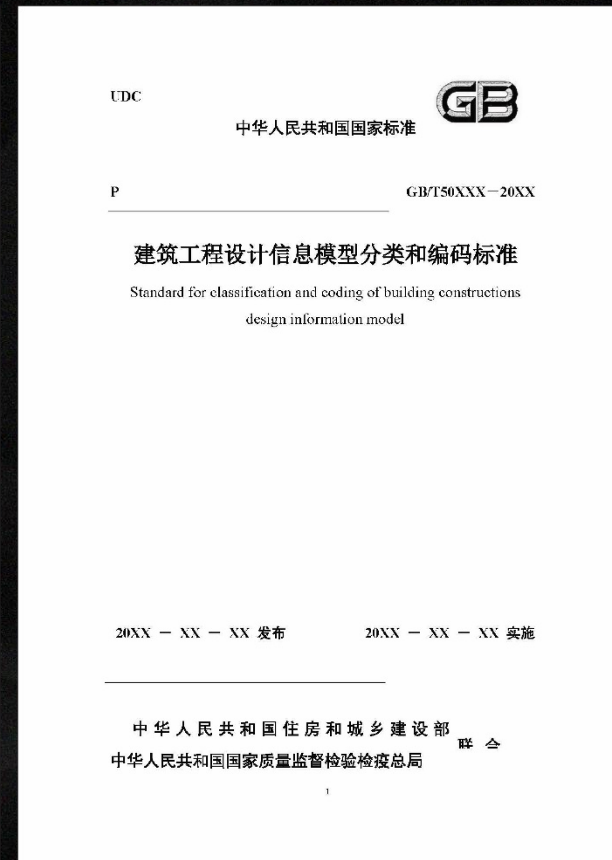

UDC

中华人民共和国国家标准

GB

P GB/T50XXX—20XX

建筑工程设计信息模型分类和编码标准

Standard for classification and coding of building constructions design information model

20XX — XX — XX 发布 20XX — XX — XX 实施

中华人民共和国住房和城乡建设部
中华人民共和国国家质量监督检验检疫总局
联合

1

《建筑工程设计信息模型交付标准》参编单位

《建筑工程设计信息模型出图标准》参编单位

《建筑工程设计信息模型分类和编码标准》参编单位

ACID BIM Manual

Hong Kong Institute of
Building Information Modelling

BIM Project Specification

hong kong

HKIBIM Specification (Rev 2.1) Page 1 of 26

HKIBIM BIM Manual

MTR CORPORATION

OPERATIONS DIVISION

BUILDING INFORMATION MODELING MANUAL

DRAFT

VERSION A	ISSUE DATE 30/09/10
The following pages have been revised and are now included in this version of the Procedure.	
Page (s)	Date of Revision
	30/09/10

	JOB TITLE	NAME	SIGNATURE
BY	Building & Architectural Engineering Manager	David Fung	
CONTROLLER	Civil & Building Engineering Manager	Philip Leung	
APPROVAL	General Manager-Technical & Engineering Services	David Leung	

MTR BIM Manual

- Clients and Strategic Partners

Clients

恒基兆業地產集團 HENDERSON LAND GROUP

MTR港鐵

香港房屋委員會 Hong Kong Housing Authority

ATKINS

VTC

THE HONG KONG POLYTECHNIC UNIVERSITY 香港理工大學

WSP | PARSONS BRINCKERHOFF

Strategic Partners

AUTODESK.

AM Animotion Studio

HKU SPACE 香港大學專業進修學院 HKU School of Professional and Continuing Education

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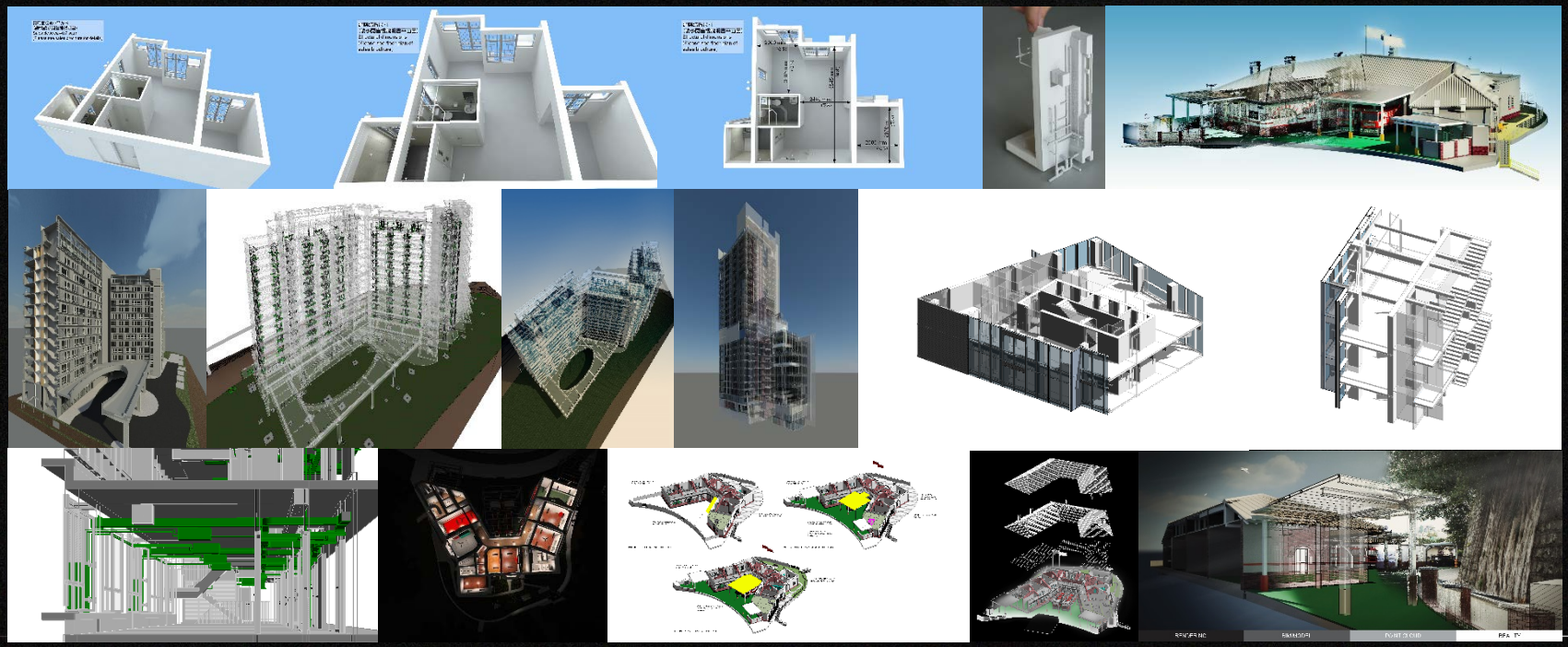
Project 

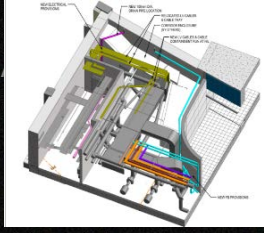
Project





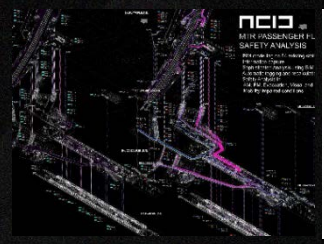
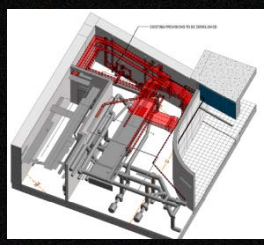

POLYTECHNIC U NIVERSITY

HIGH RISE RESIDENTIAL -
OCEAN HEIGHT

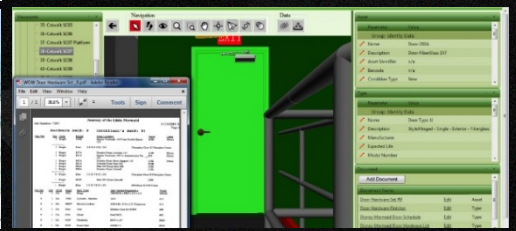
SHATIN-CENTRAL LINK
- DIAMOND HILL STATION, MOS


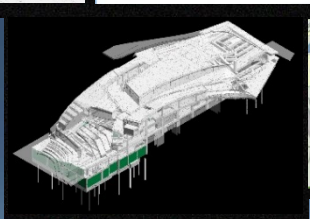
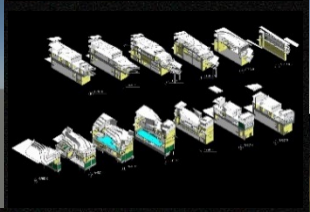
PLANT ROOM MEP DESIGN & DOCUMENTATION

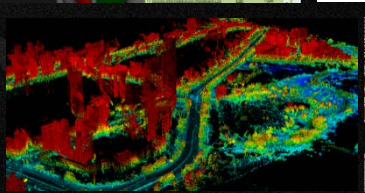
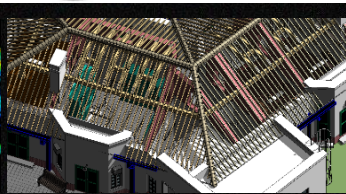
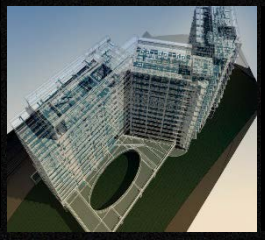
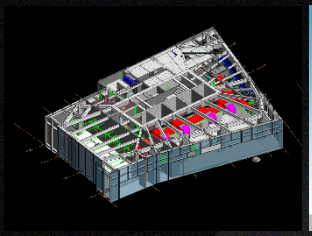

RENDERING
BIM MODEL
POINT CLOUD
REALITY

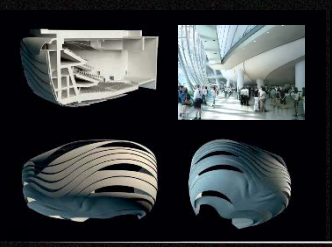
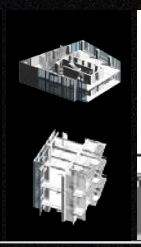
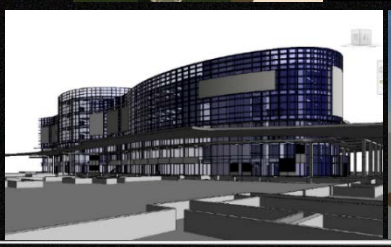

MTR PASSENGER FL
SAFETY ANALYSIS


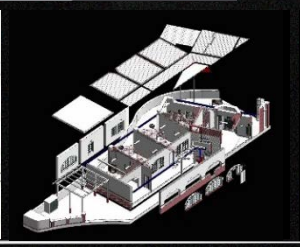
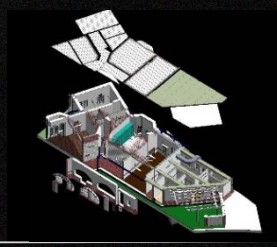
MTR Light Rail System


HERITAGE
INFORMATION
MODELLING
VICTORIA PEAK FIRE STATION




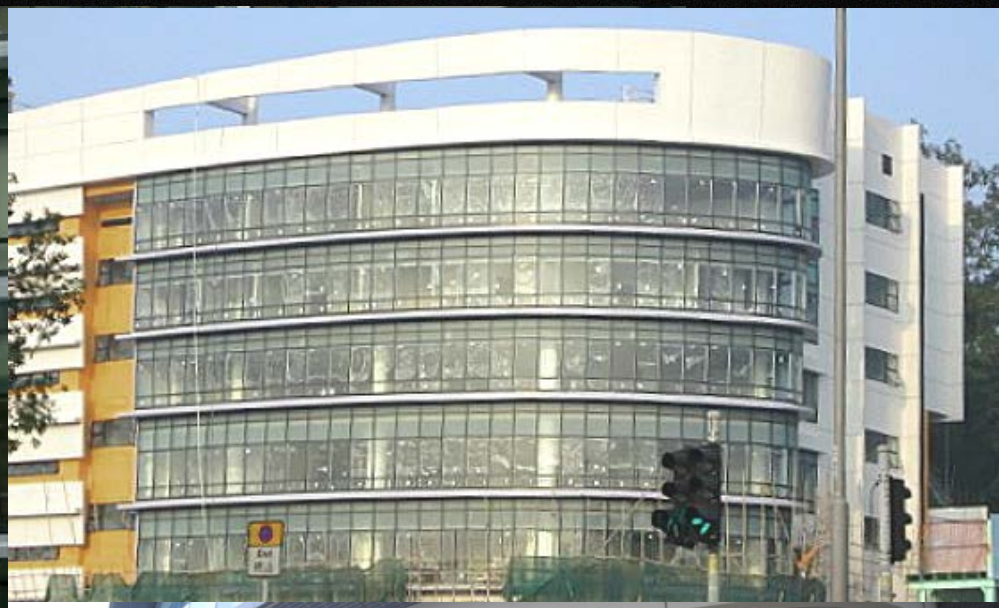




Project

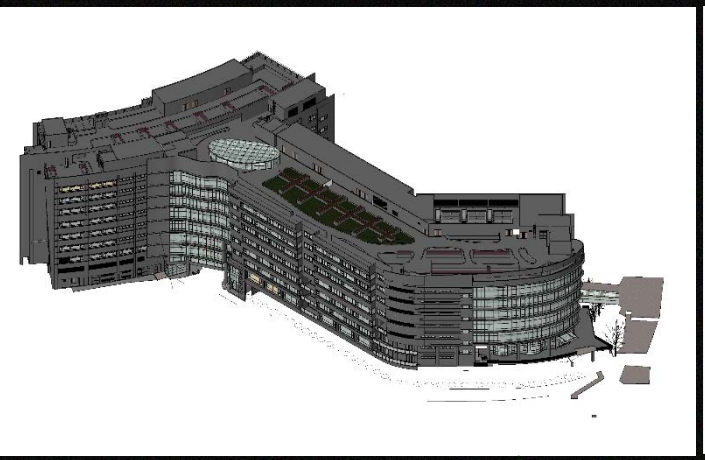
City University of Hong Kong Community College Building

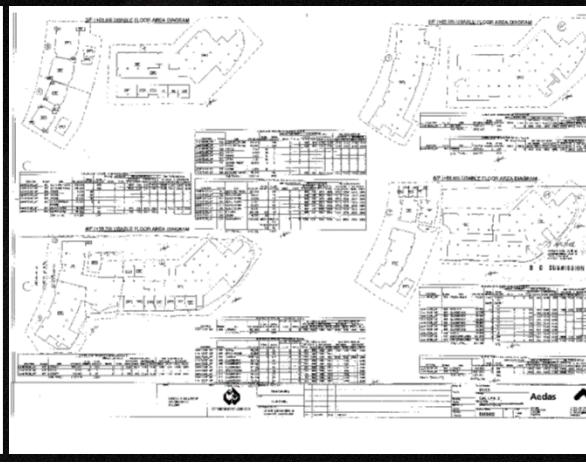
Client : City University of Hong Kong
P.I.C. : David Fung (worked with Aedas)
Period : 2005 – 2008

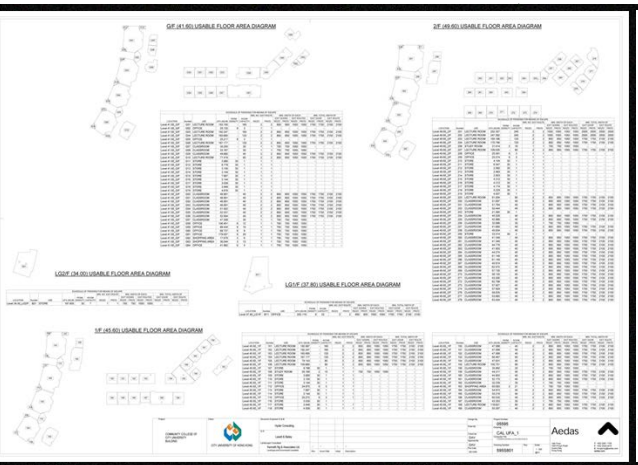
Scope : GFA 42,000 sq.m. building development to accommodate the anticipate staff and students within the campus BIM project. Won **Hong Kong BIM Awards (2007)**. First major completed BIM project from Design, documentation, construction. **Won International Revit Experience Award (2007)**.

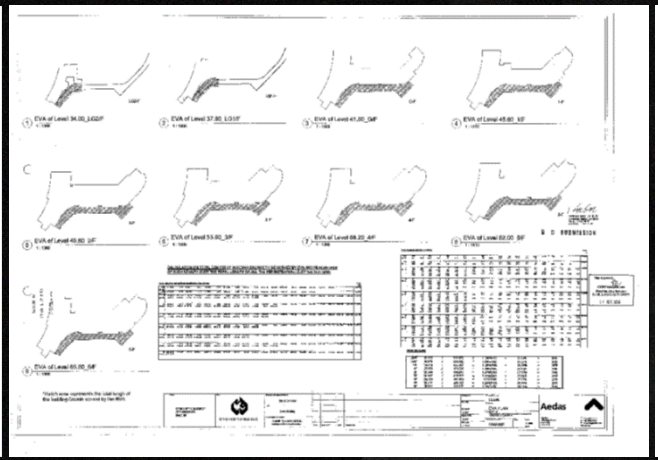


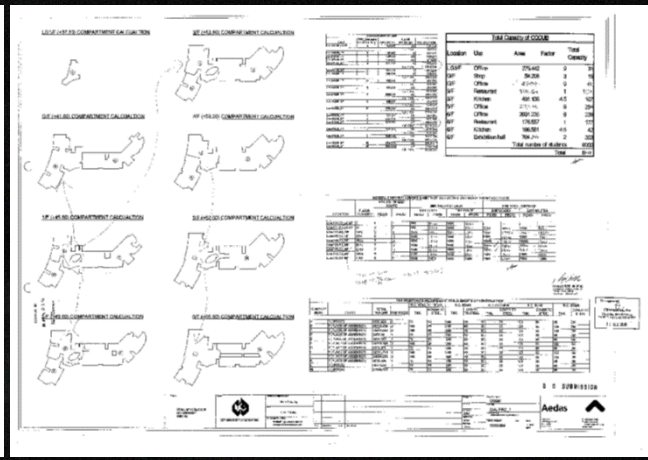

Academic 2 學術樓(二)

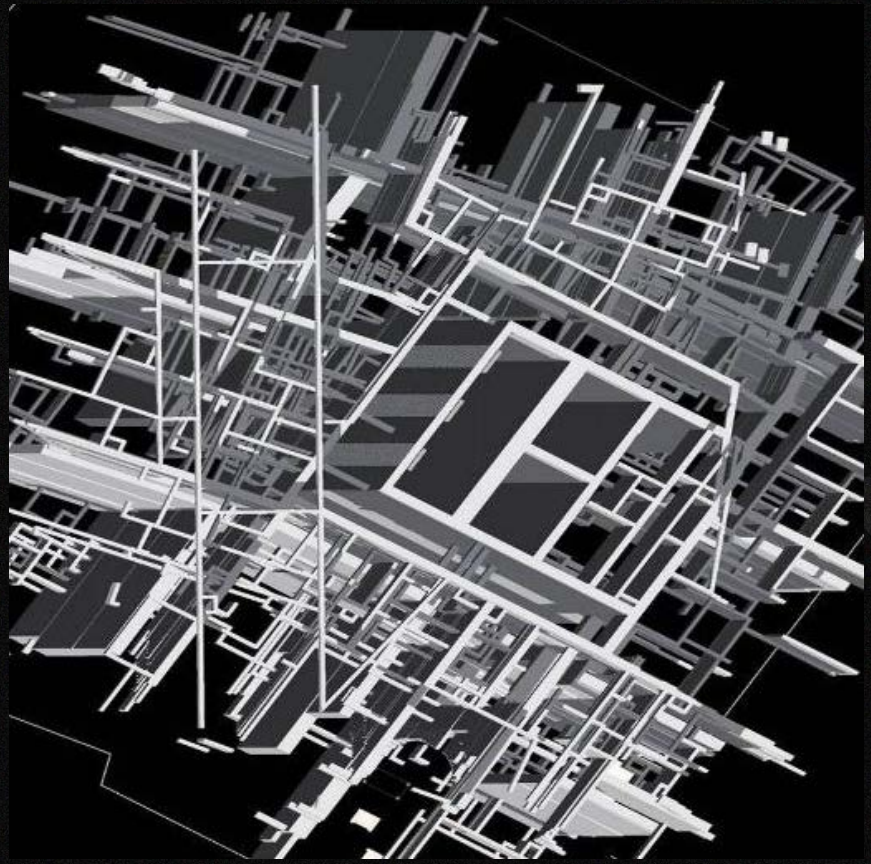












Ocean Heights

Client : DAMAC Properties

P.I.C. : David Fung (worked with Aedas)

Period : 2006 – 2007

Scope : Twisted curve organic shaped office tower using BIM technology in resolving the external façade and the internal structure (2006 – 2007). Won **Hong Kong BIM Award (2007)**.

Hong Kong Polytechnic University Shenzhen Campus

Client : Hong Kong Polytechnic University
P.I.C. : David Fung (worked with Aedas)
Period : 2006 – 2009

Scope : The Hong Kong Polytechnic University Shenzhen Campus, a 12,500 sq.m. academic facility. Complete BIM project from Design to Completion. First China Project all in BIM, including all productions. Won **Hong Kong BIM Award (2009)**.


LIFT LOBBY
DESIGN CONCEPT
POLYTECHNIC UNIVERSITY
- Full BIM Design and Documentation
- Architecture, Structure, MEP disciplines
- All architectural drawings from BIM
- Clash Analysis
- BIM Co-ordination

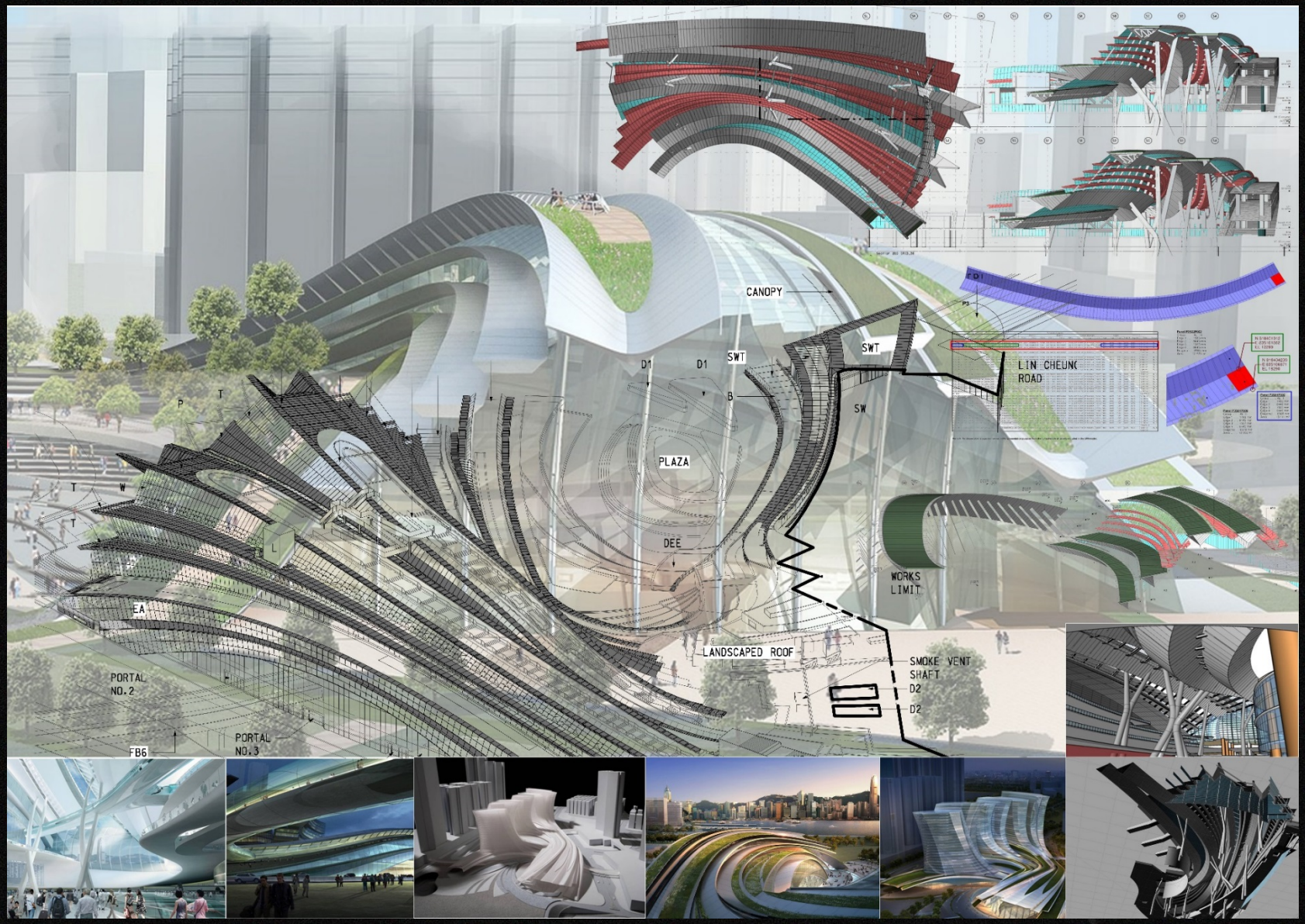
West Kowloon Terminus

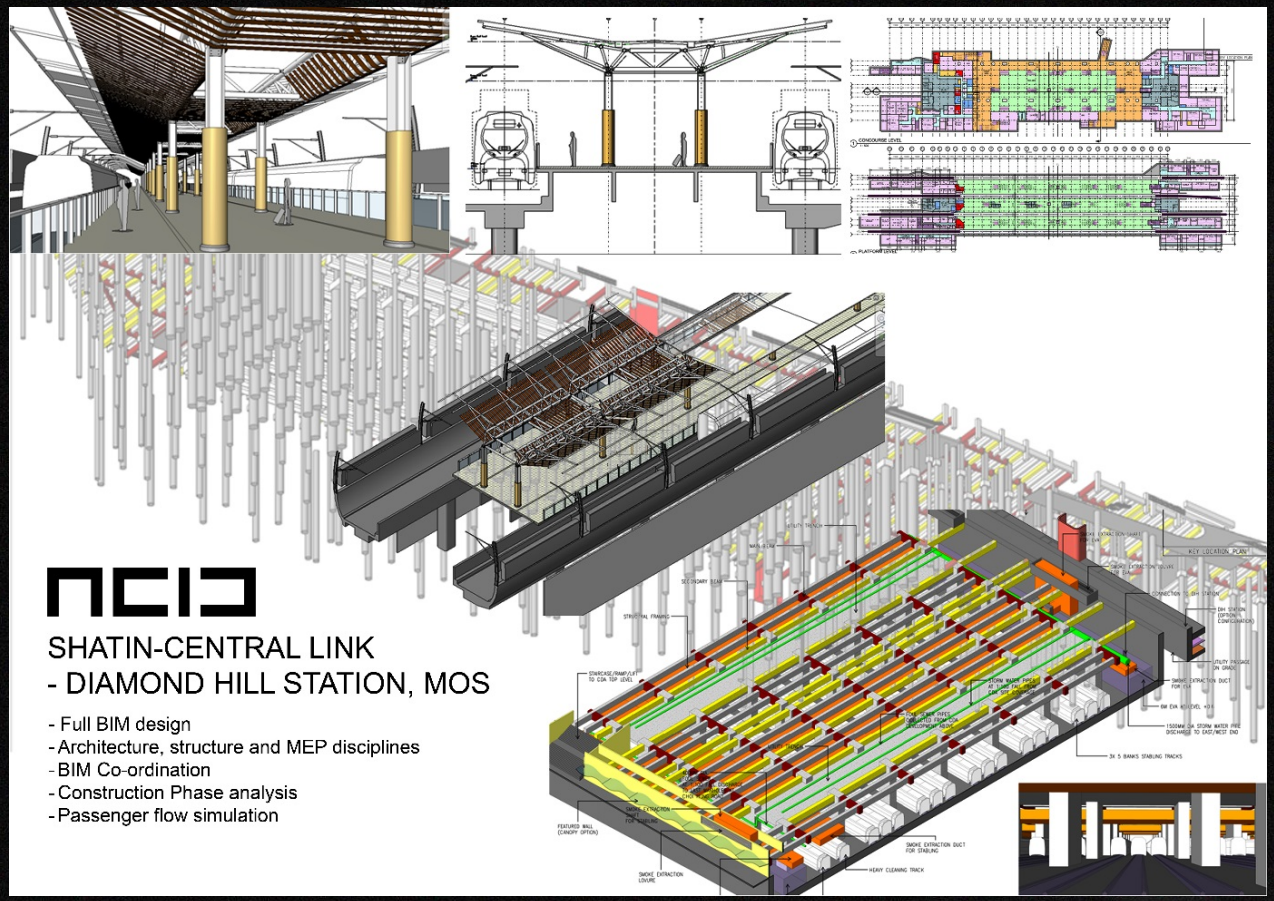
Client : MTR Corporation Limited

P.I.C. : David Fung (worked with Aedas)

Period : 2009 – 2010

Scope : Designing the gigantic organic roof structure for the Hong Kong Express Rail Terminus using BIM, facilitating organic design into documentation, quantity take off and rational manufacturing. Won **Hong Kong BIM Award (2010).**


CANOPY
SWT
SWT
D1
D1
B
SW
LIN CHEUNG ROAD
PLAZA
DEE
WORKS LIMIT
LANDSCAPED ROOF
SMOKE VENT SHAFT
D2
D2
PORTAL NO.2
PORTAL NO.3
FB6
EA



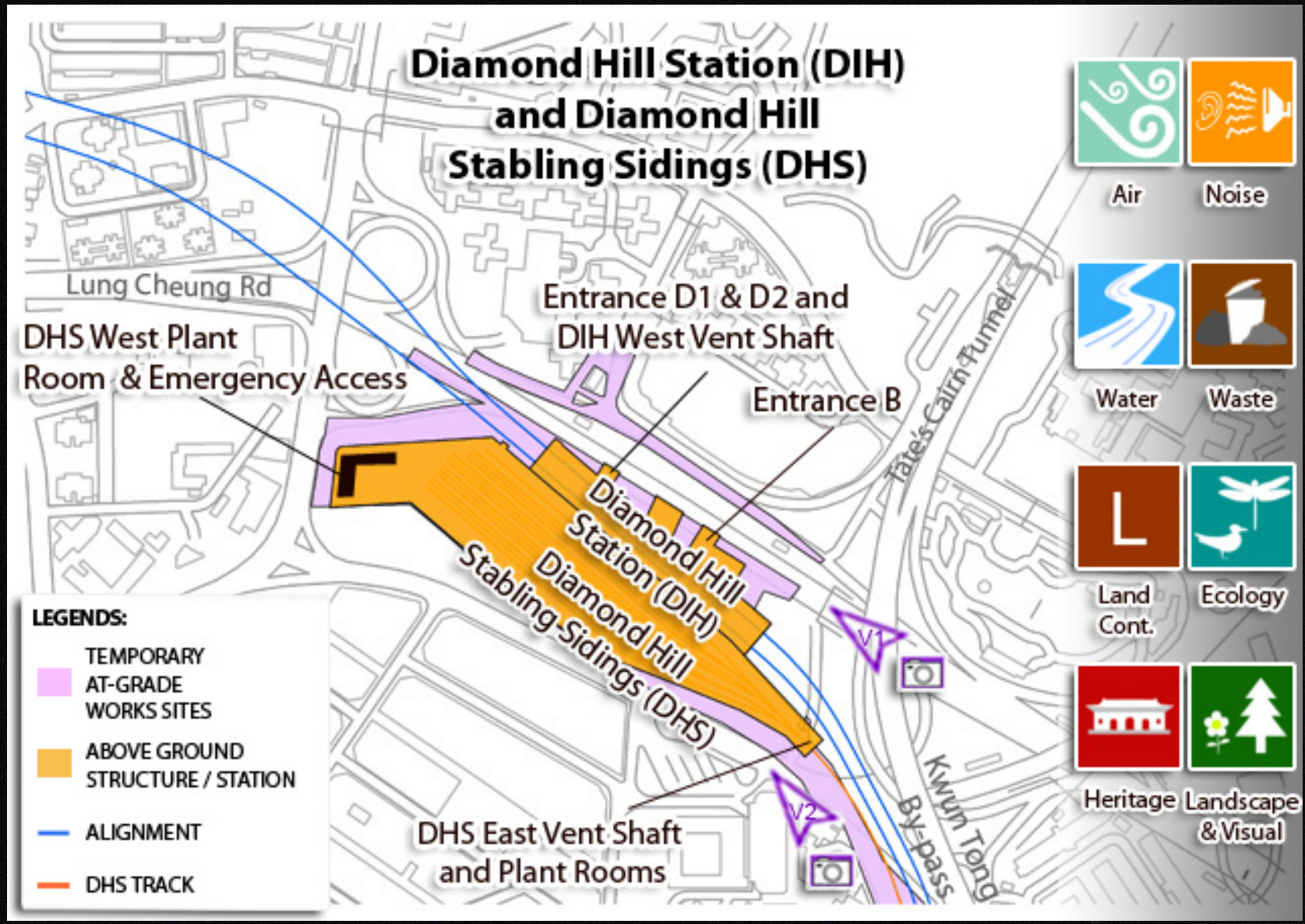
Shatin to Central Link

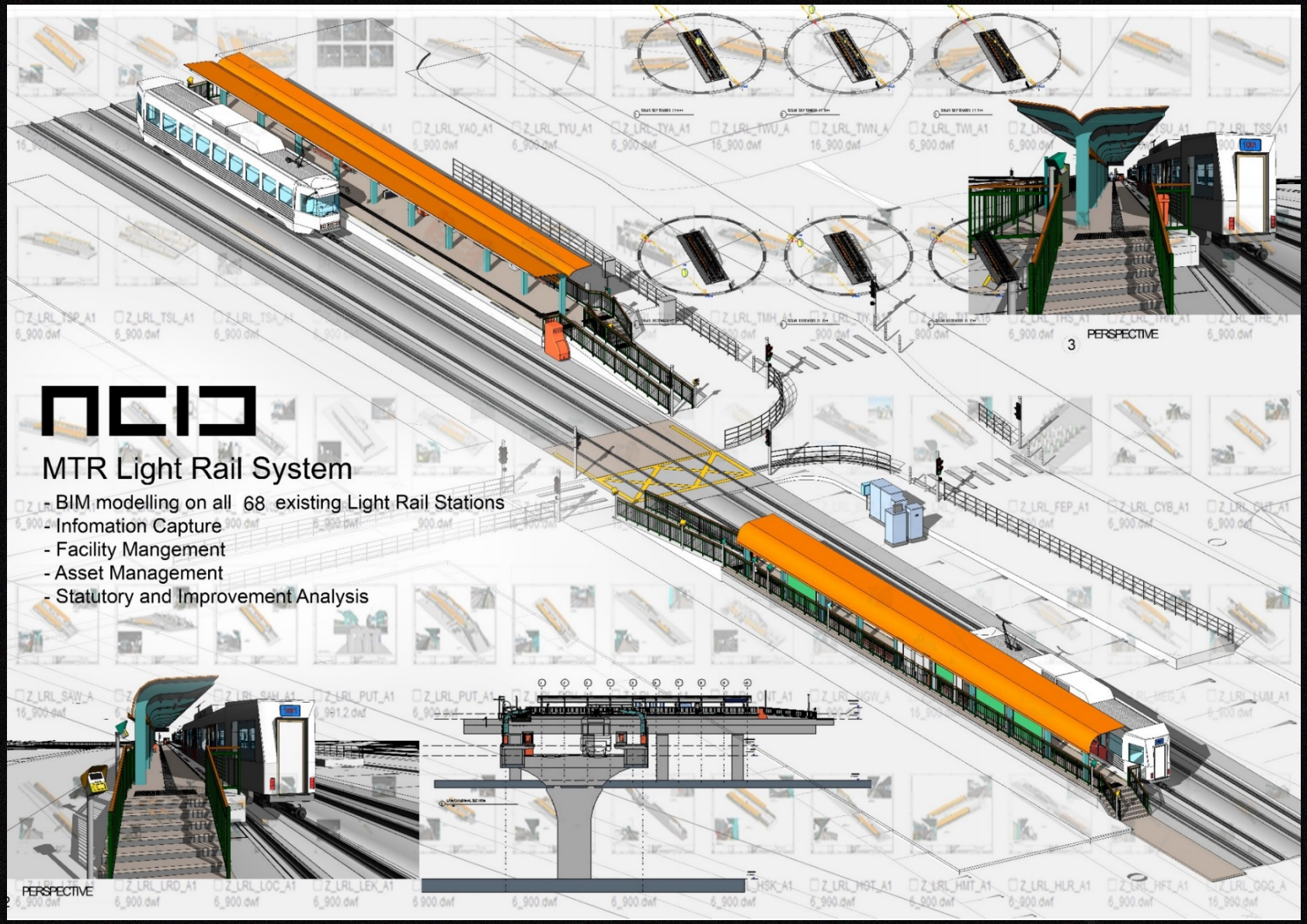
Client : MTR Corporation Limited

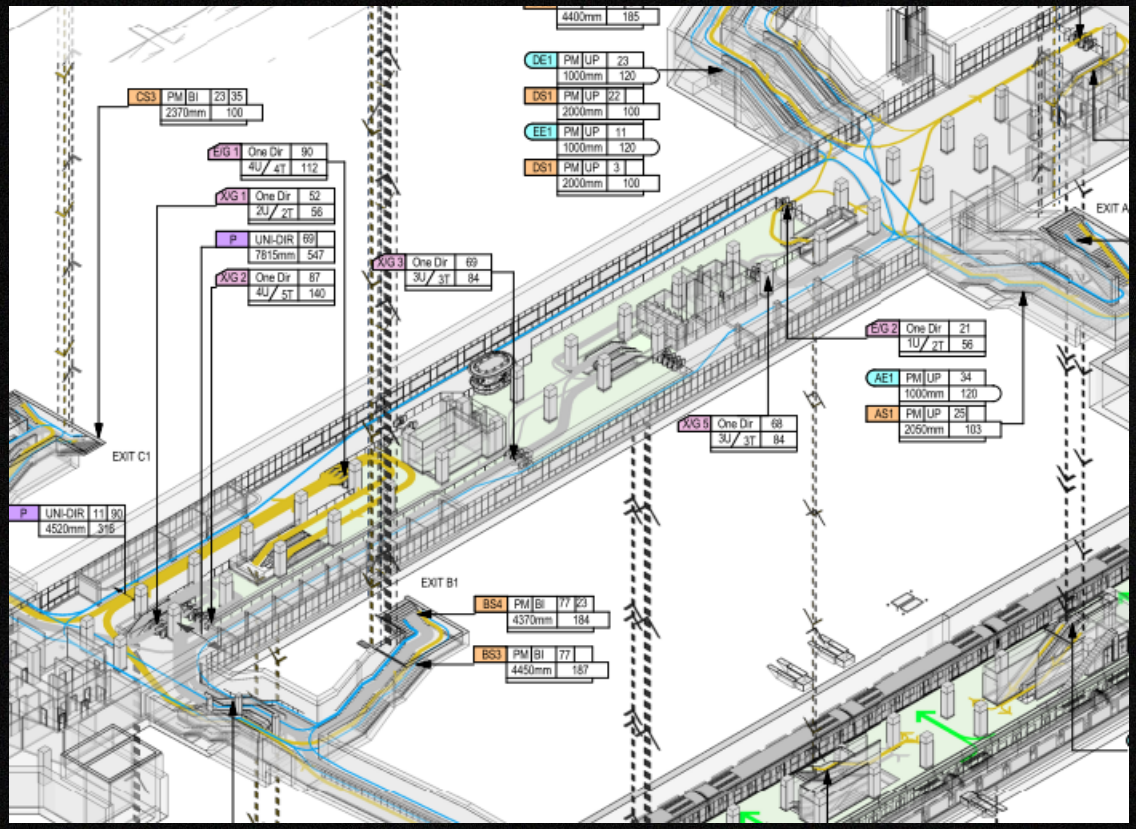
P.I.C. : David Fung (worked with Aedas)

Period : 2009 – 2010

Scope : Various MTR Architectural and MEP engineering design contracts using BIM. Various MTR Architectural and MEP engineering design contracts using BIM.


Diamond Hill Station (DIH)
and Diamond Hill
Stabling Sidings (DHS)
Lung Cheung Rd
DHS West Plant
Room & Emergency Access
Entrance D1 & D2 and
DIH West Vent Shaft
Entrance B
Tate's Cairn Tunnel
Diamond Hill
Station (DIH)
Diamond Hill
Stabling Sidings (DHS)
V1
V2
DHS East Vent Shaft
and Plant Rooms
Kwun Tong
By-pass
LEGENDS:
TEMPORARY
AT-GRADE
WORKS SITES
ABOVE GROUND
STRUCTURE / STATION
ALIGNMENT
DHS TRACK
Air
Noise
Water
Waste
L
Land
Cont.
Ecology
Heritage
Landscape
& Visual


MTR Light Rail System
- BIM modelling on all 68 existing Light Rail Stations
- Infomation Capture
- Facility Mangement
- Asset Management
- Statutory and Improvement Analysis
3
PERSPECTIVE
PERSPECTIVE



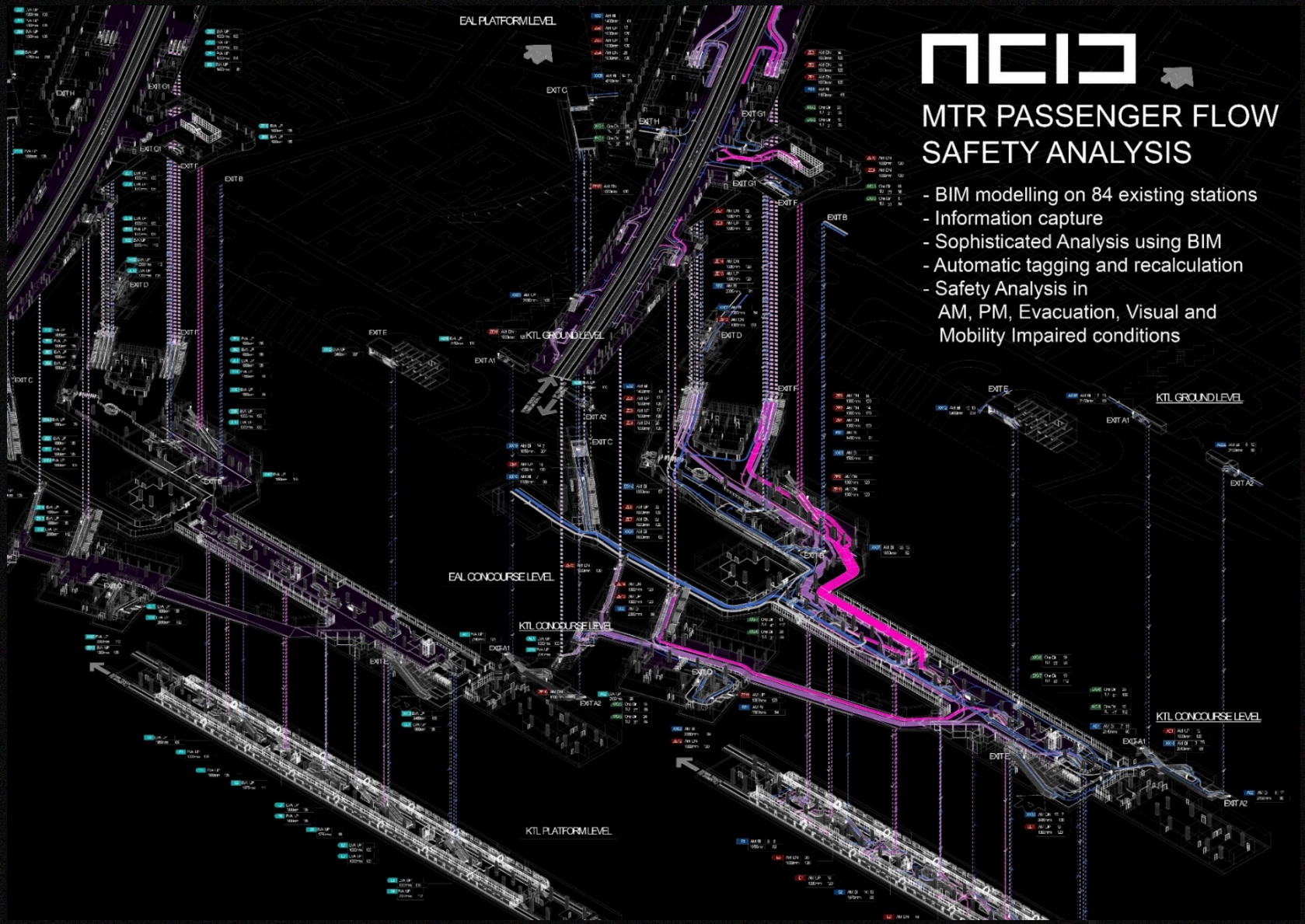
MTR Station Passenger Flow Rate Study

Client : MTR Corporation Limited

P.I.C. : David Fung (worked with MTR)

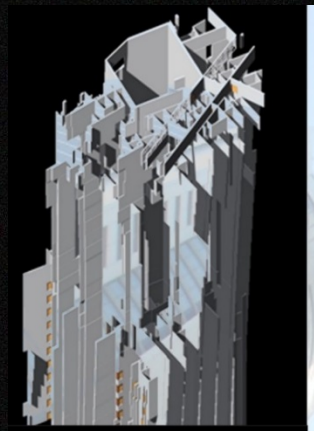
Period : 2010 – 2014

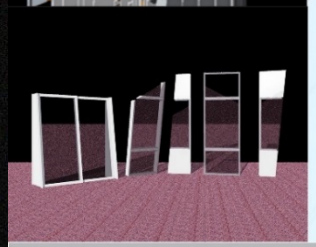
Scope : MTR Passenger Flow Safety study using BIM for analysis and FM for all existing stations. Use of modelling & information embedded in the existing 84 MTR stations; undergo vigorous passenger flow analysis to determine the safety critical areas throughout all station layouts.

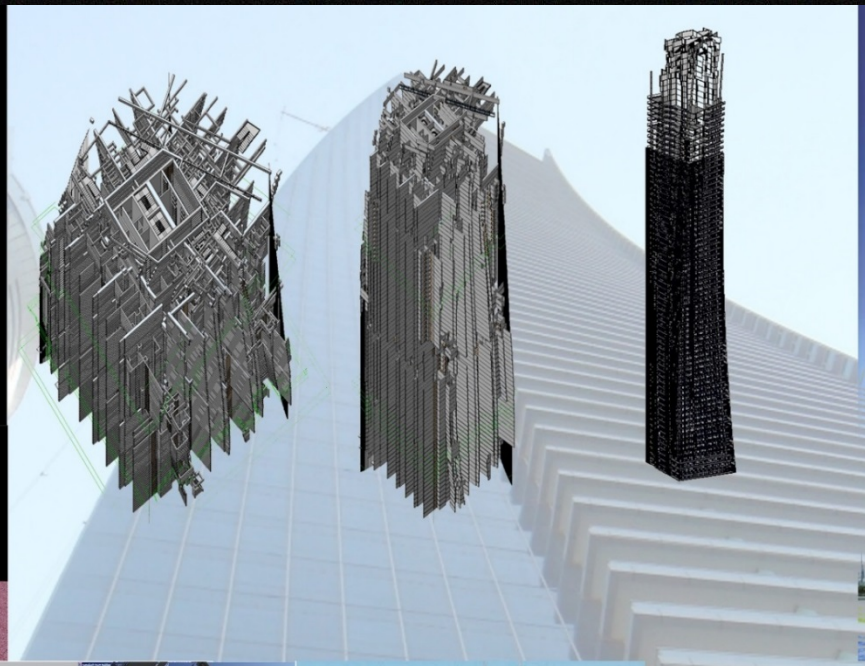


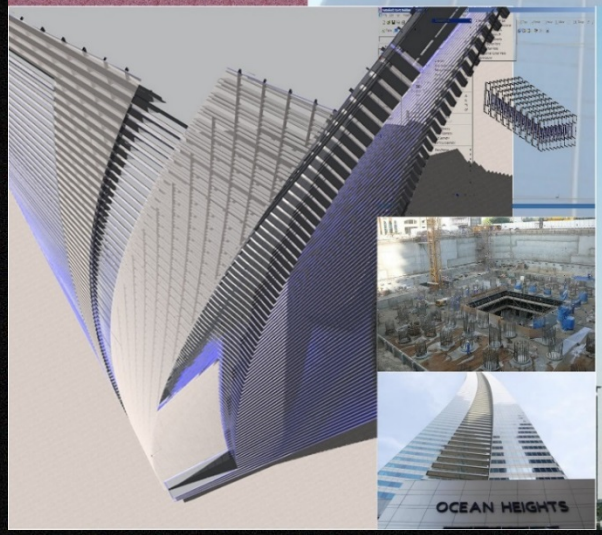
MTR PASSENGER FLOW SAFETY ANALYSIS

- BIM modelling on 84 existing stations
- Information capture
- Sophisticated Analysis using BIM
- Automatic tagging and recalculation
- Safety Analysis in
  AM, PM, Evacuation, Visual and
  Mobility Impaired conditions



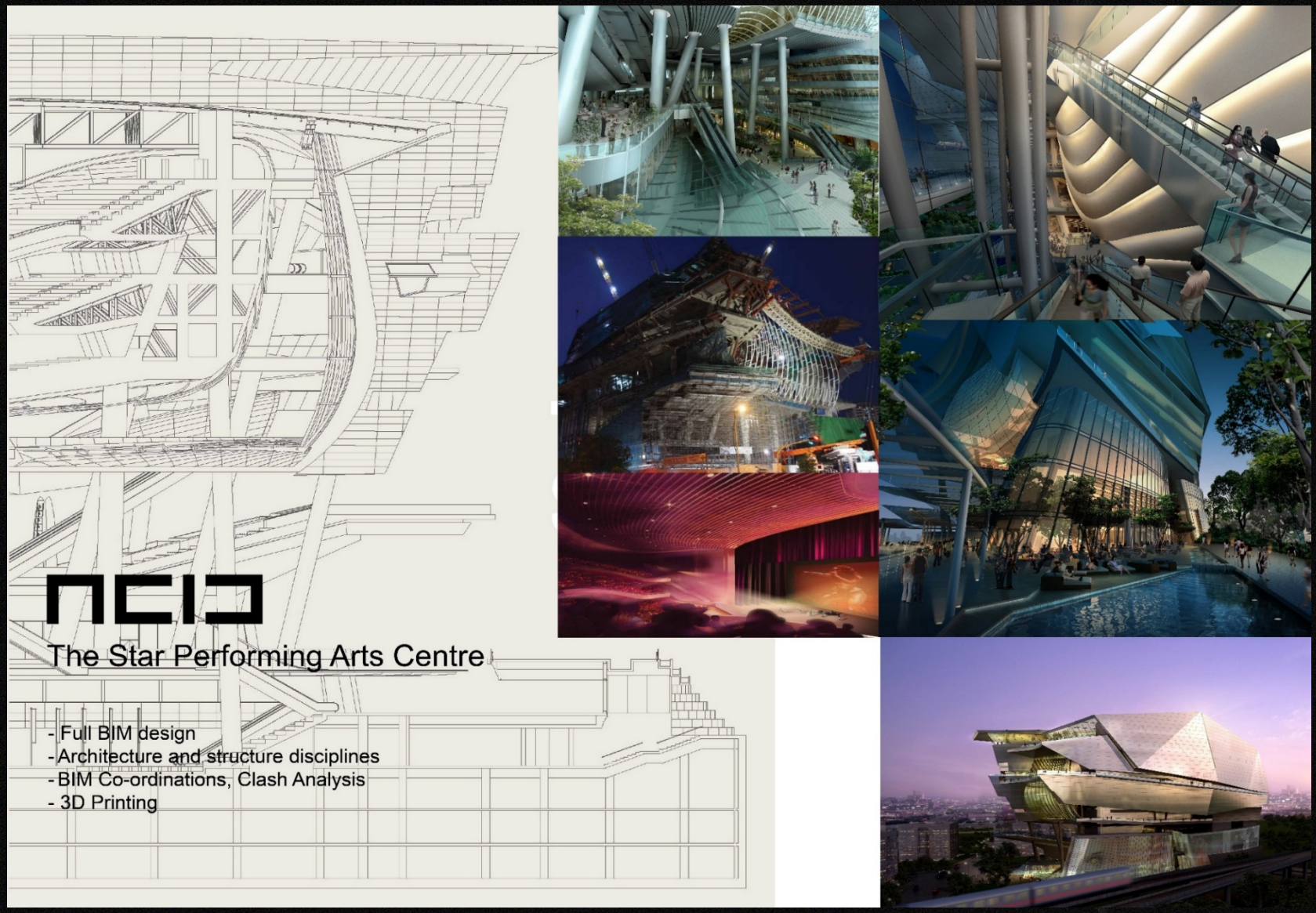


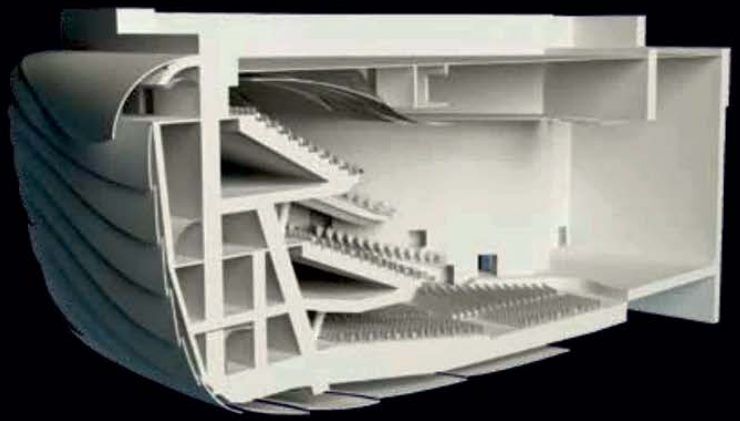


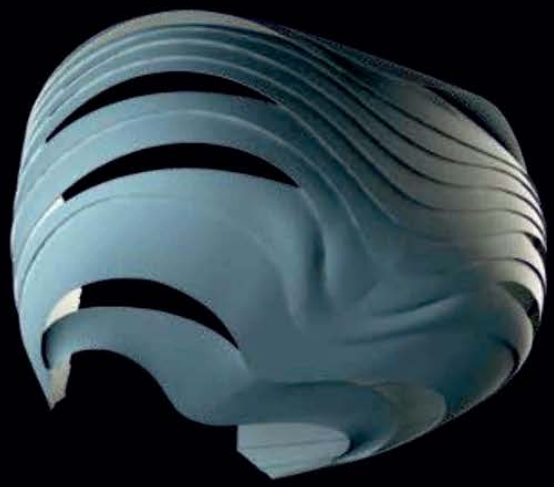


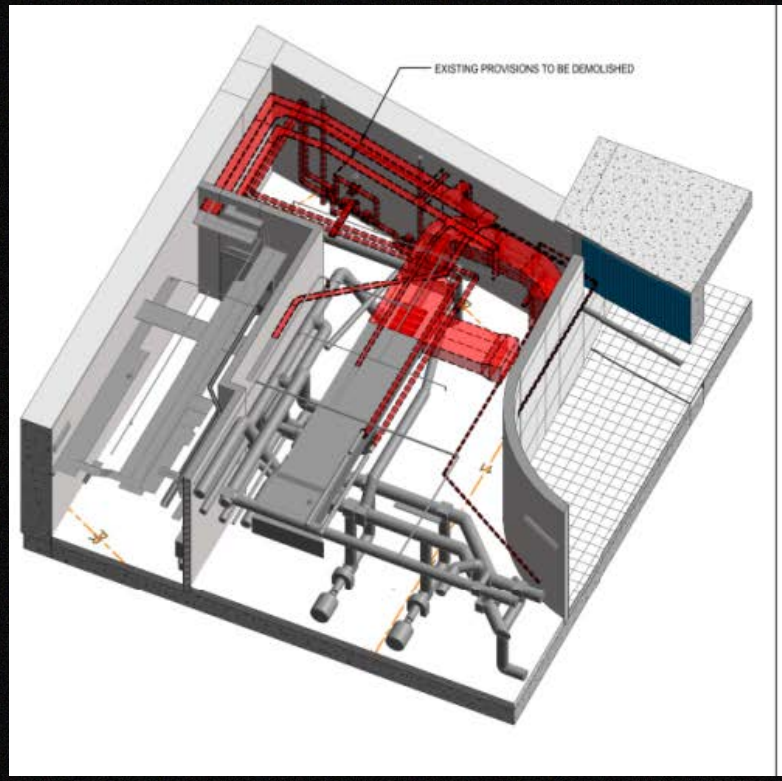
HIGH RISE RESIDENTIAL - OCEAN HEIGHT

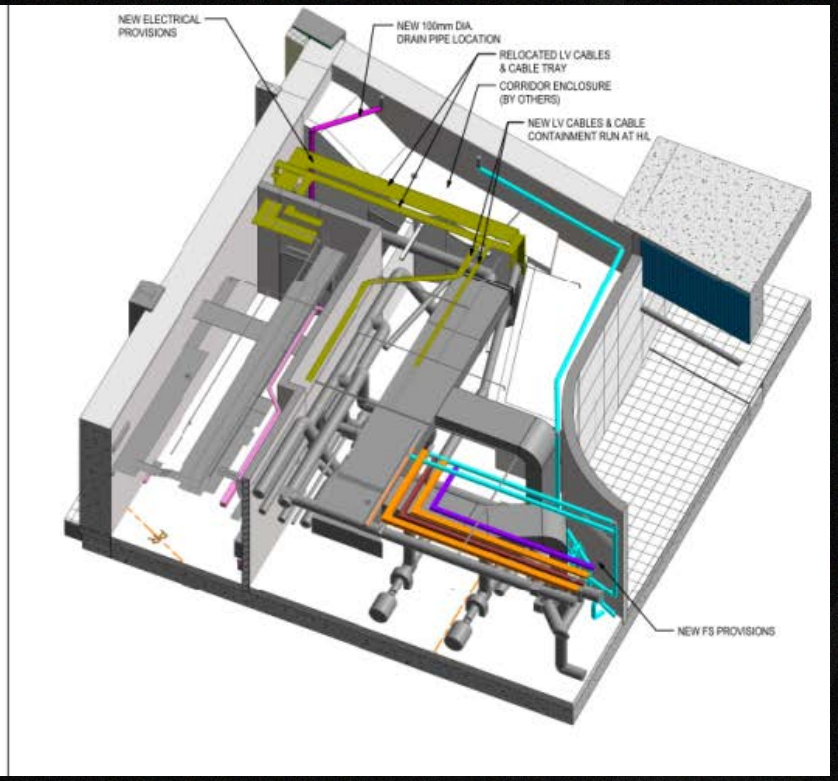
- 83 Storeys Rise - Rise Residential
- Curved form with Facaded flat curtain panel
- BIM Designed - Rationalized flat panels
- BIM data check on Buildability
- Issue information on every different curtain wall panels


The Star Performing Arts Centre
- Full BIM design
- Architecture and structure disciplines
- BIM Co-ordinations, Clash Analysis
- 3D Printing









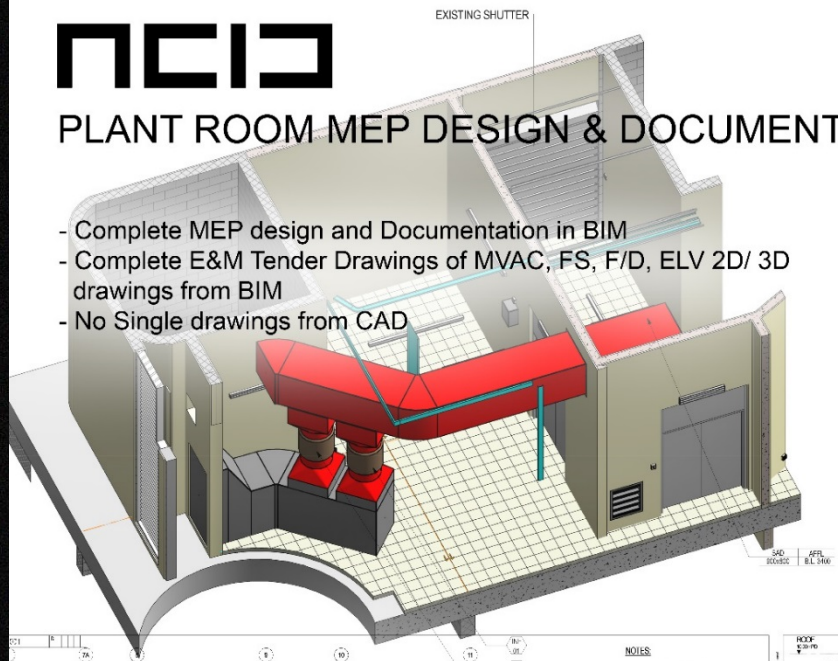
MTR Railway Projects

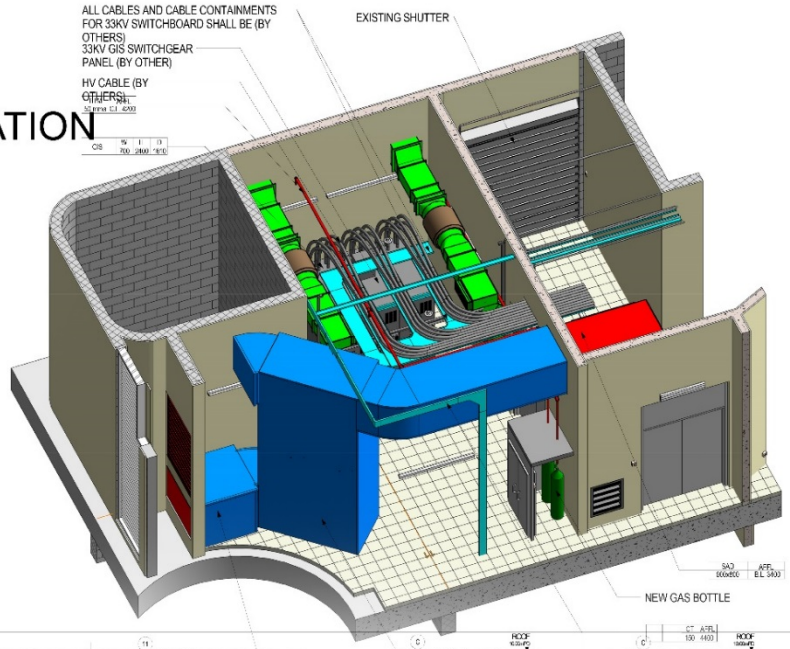
Client : MTR Corporation Limited
P.I.C. : David Fung (worked with MTR)
Period : 2010 – 2014

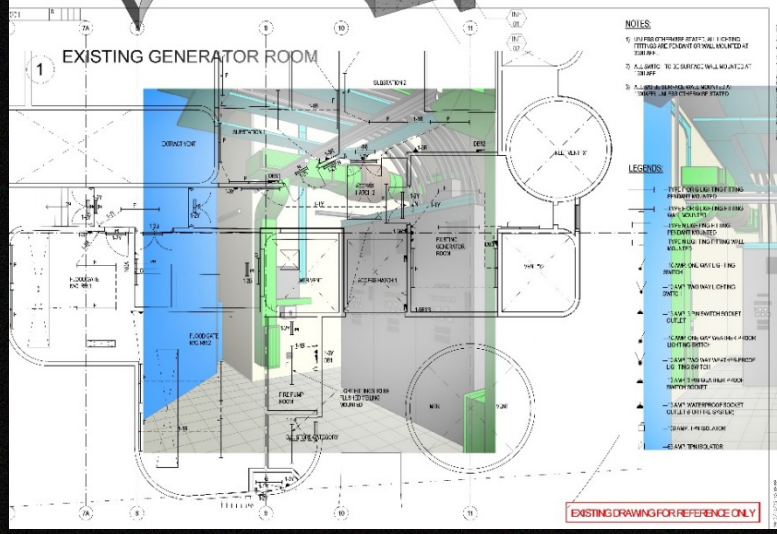
Scope : Various MTR Architectural and MEP engineering design contracts using BIM.

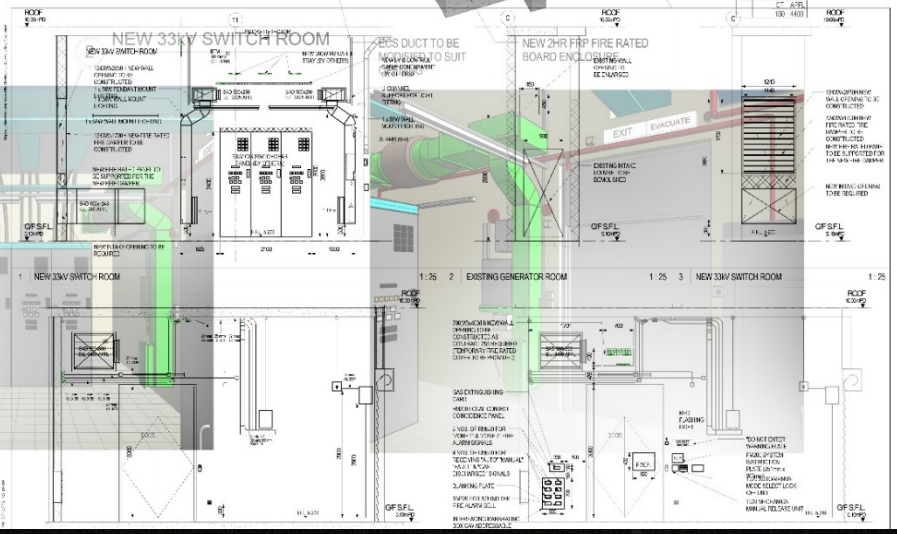
PLANT ROOM MEP DESIGN & DOCUMENTATION

- Complete MEP design and Documentation in BIM
- Complete E&M Tender Drawings of MVAC, FS, F/D, ELV 2D/ 3D drawings from BIM
- No Single drawings from CAD









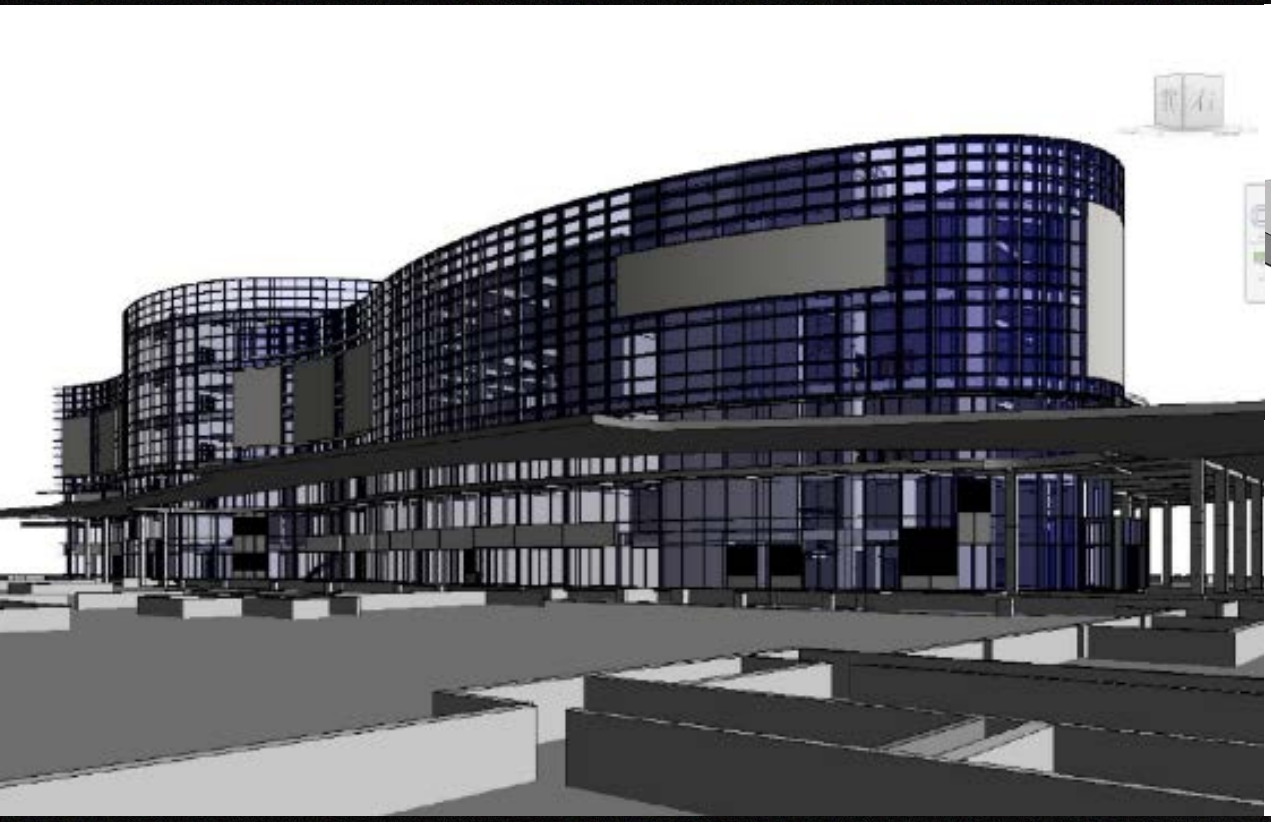
Tang City – 101

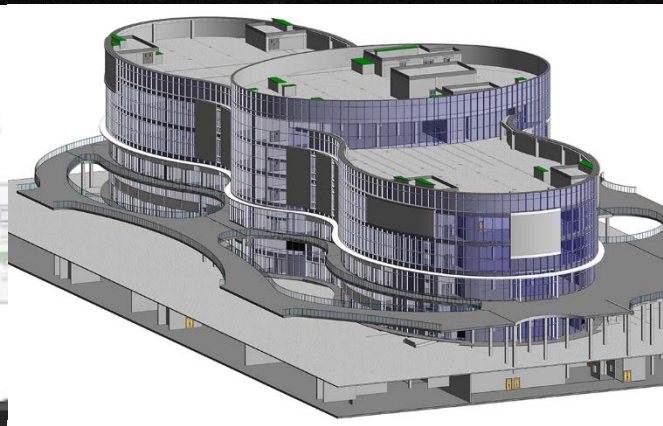
Client : Hebei Tangshan Heng Rong Real Estate Development Co. Ltd.

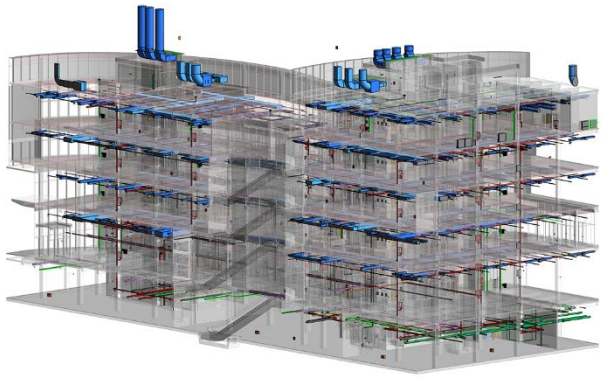
P.I.C. : Greeson Liu

Period : 2013 – 2014

Scope : One of largest residential developments in Tang Shan City, Hebei province. The total area of 462 acres, the plot ratio of 2.38, with a total construction area of nearly one million sq. m. A series different flat type for selection such as high rise apartment and townhouse and villa etc. With 72,000 sq.m. retail area.



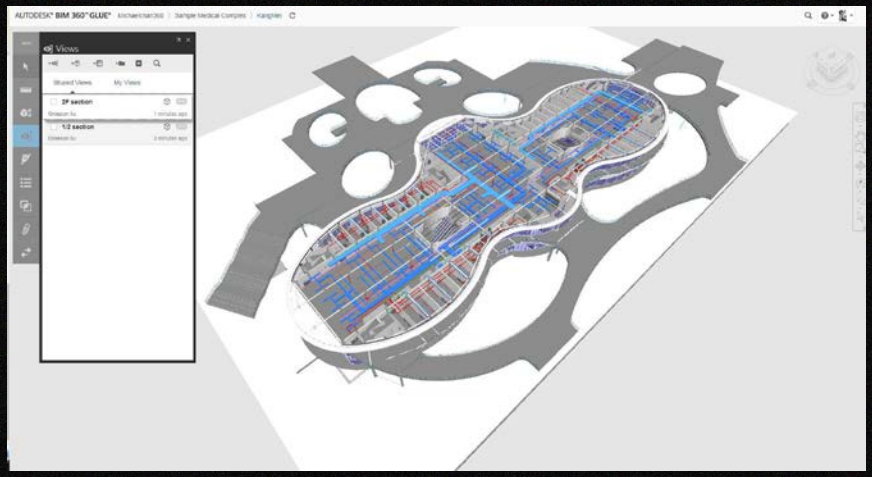


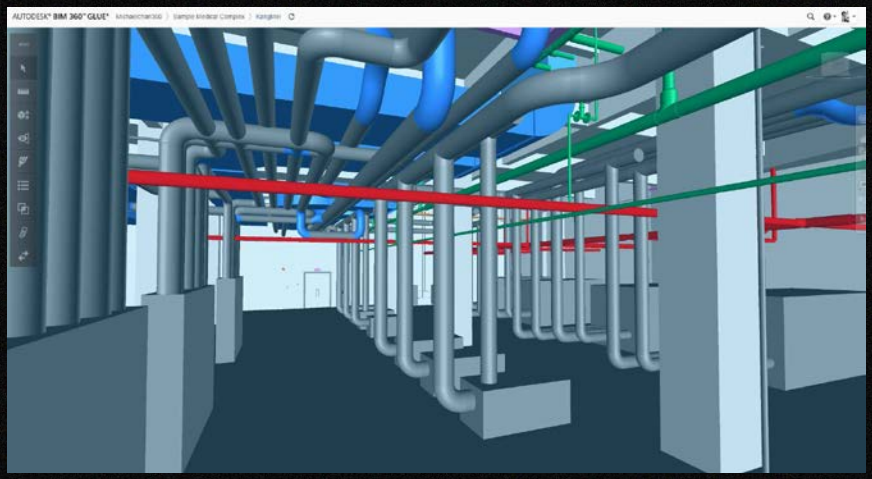


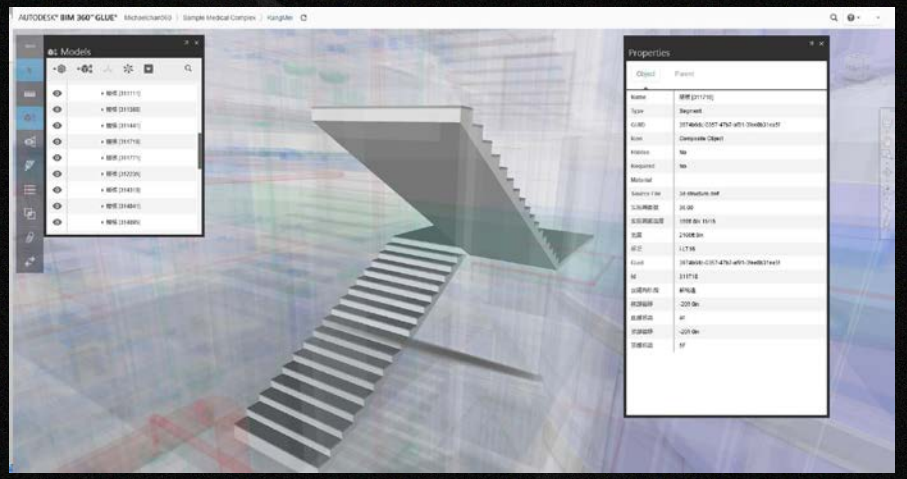
KangMei Office

Client : KangMei Pharmaceutical Co. Ltd. P.I.C. : Hu Hengbin / Greeson Liu (2014)
Period : 2014

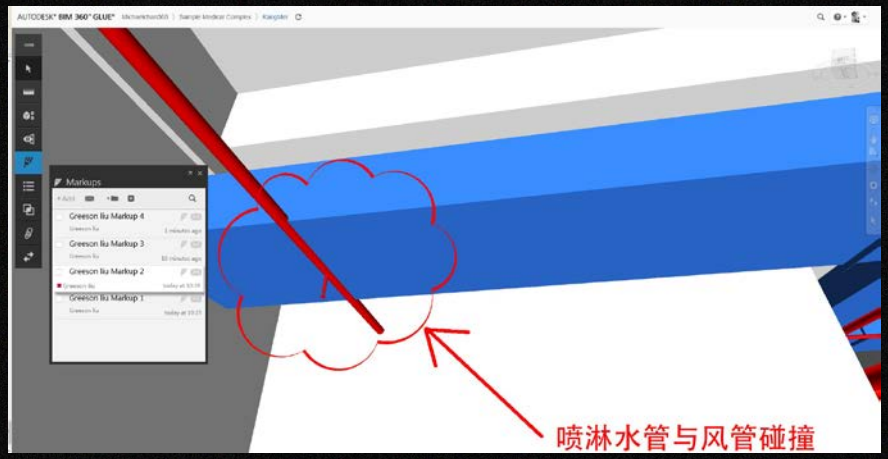
Scope : A mix-used development which includes office, retail, and hotel / service apartment. Full BIM services including BIM modelling, Clash Analysis and Issue of professional drawings for submission and construction.

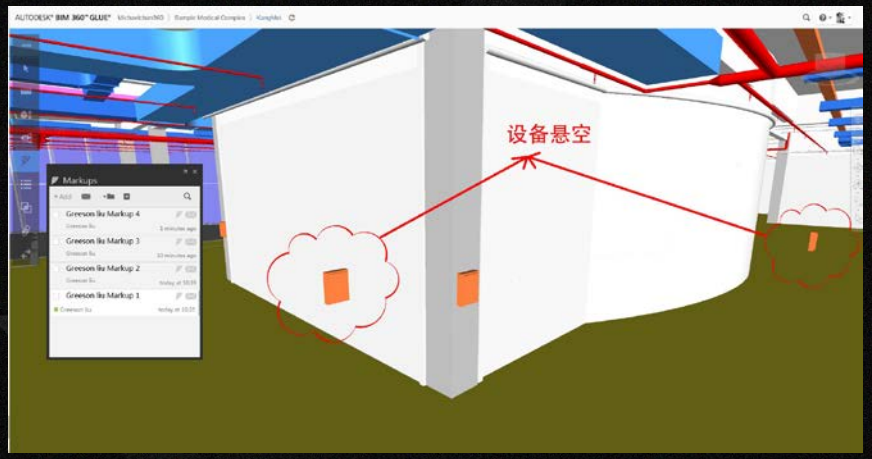


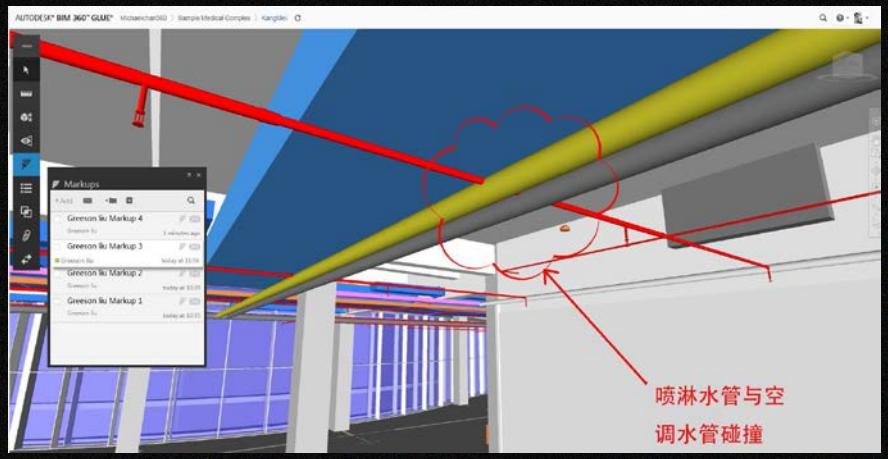


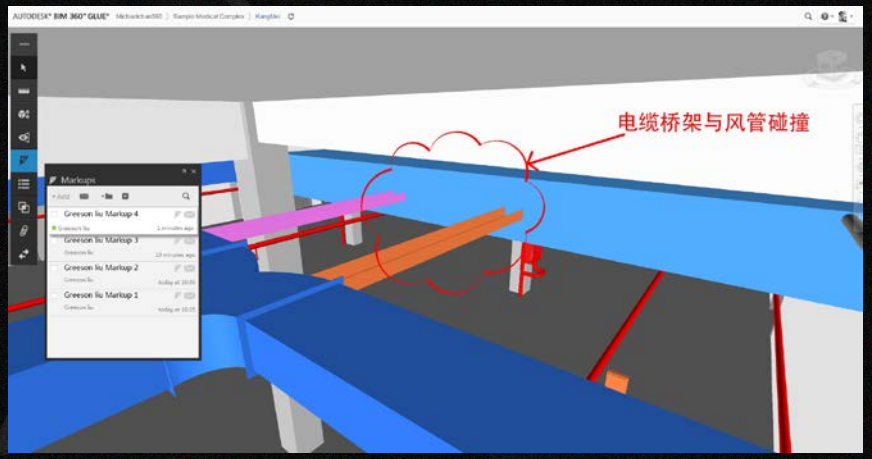


通过基于 BIM 模型的三维协同平台与设计师协同工作

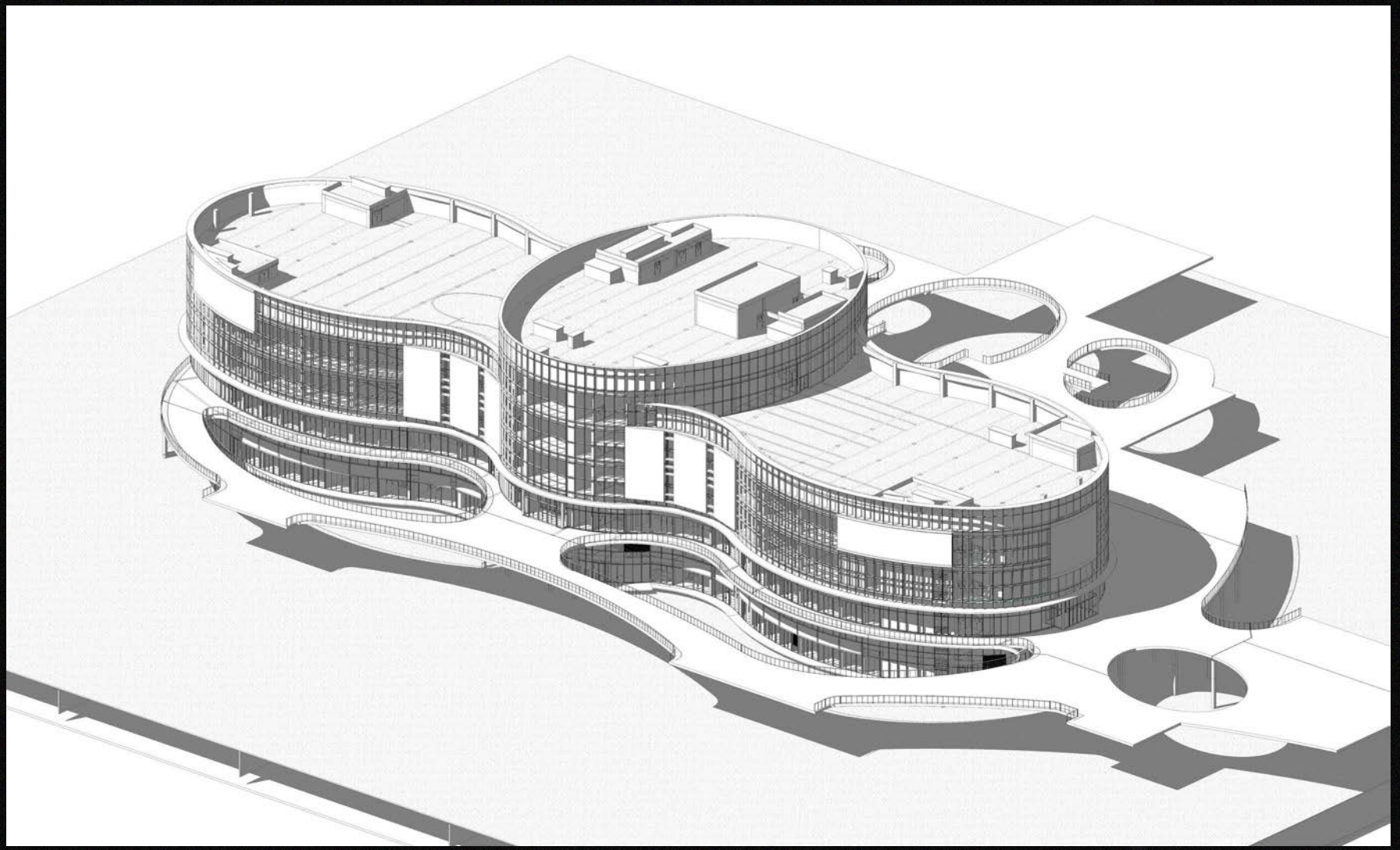




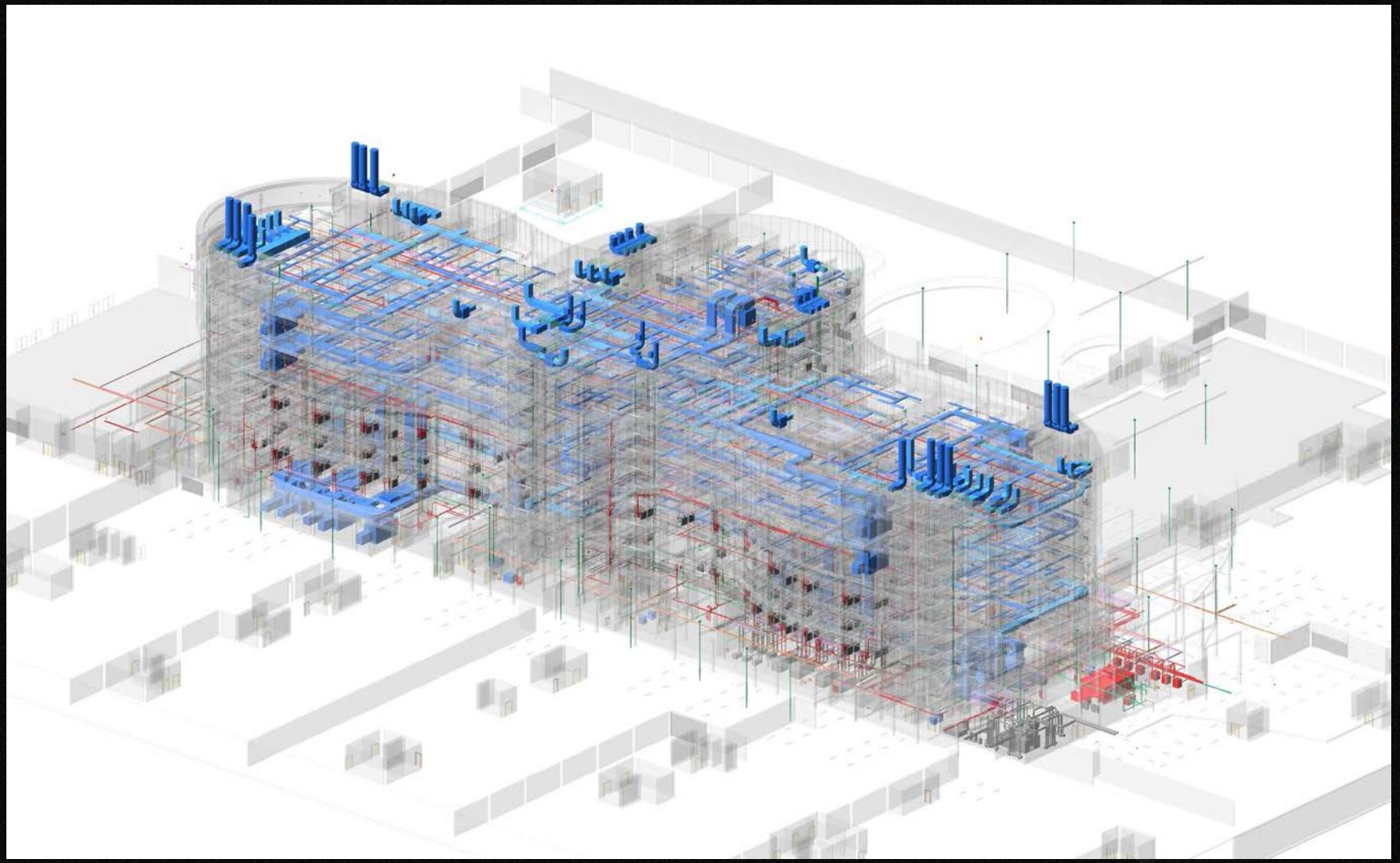




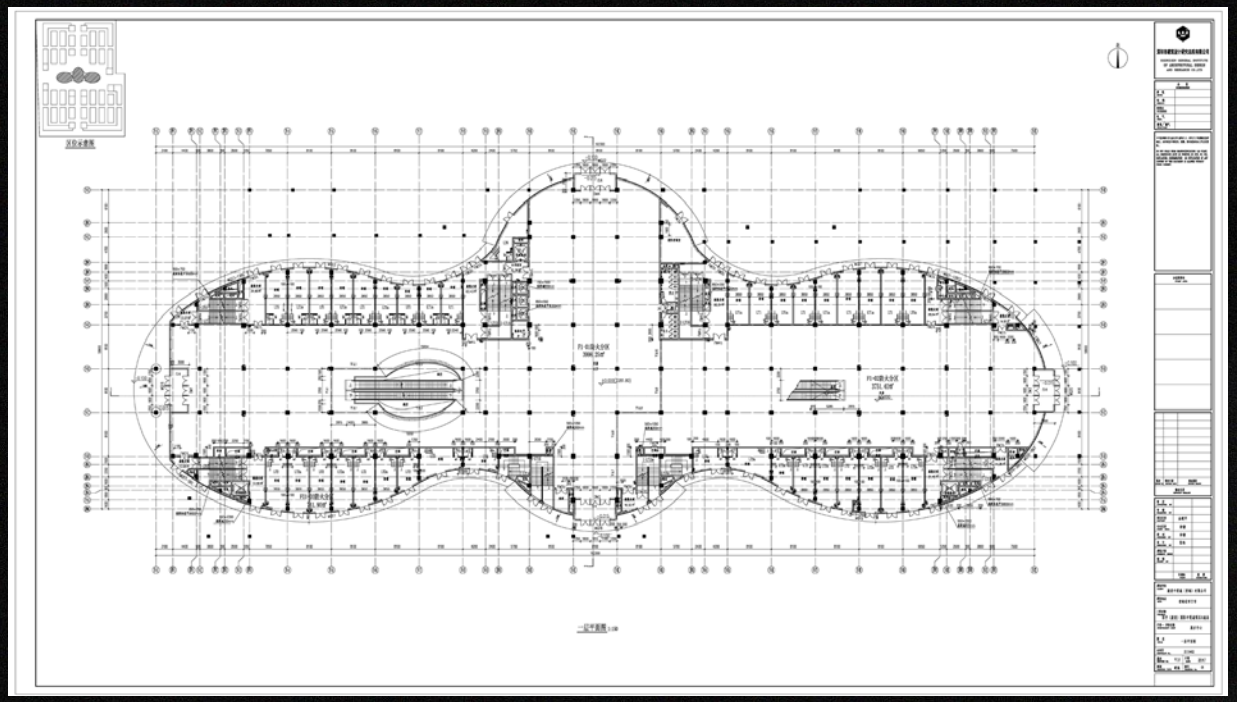
通过基于 BIM 模型的三维协同平台与设计师协同工作

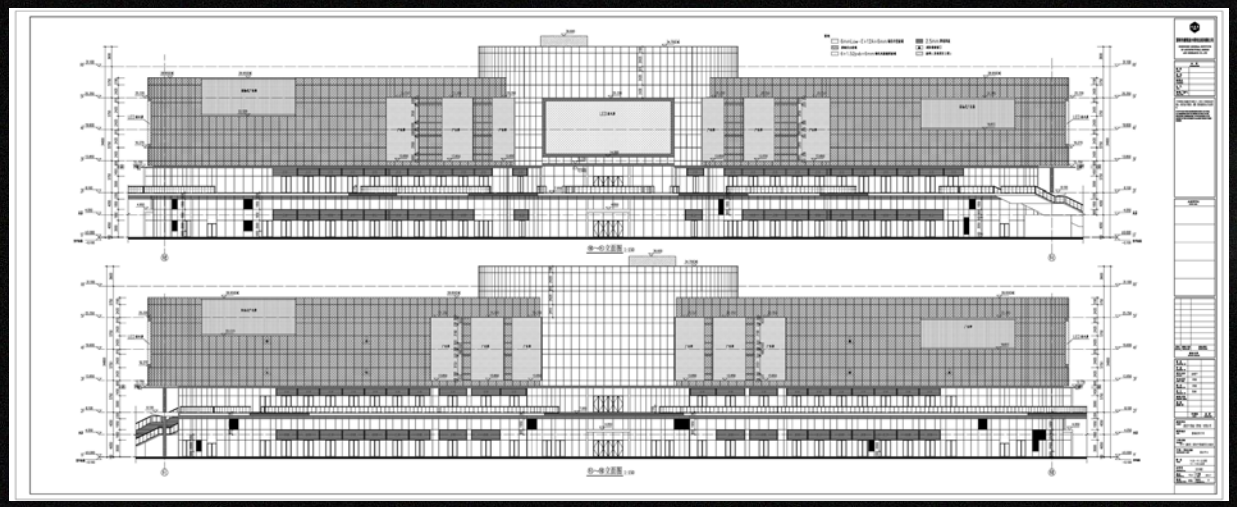


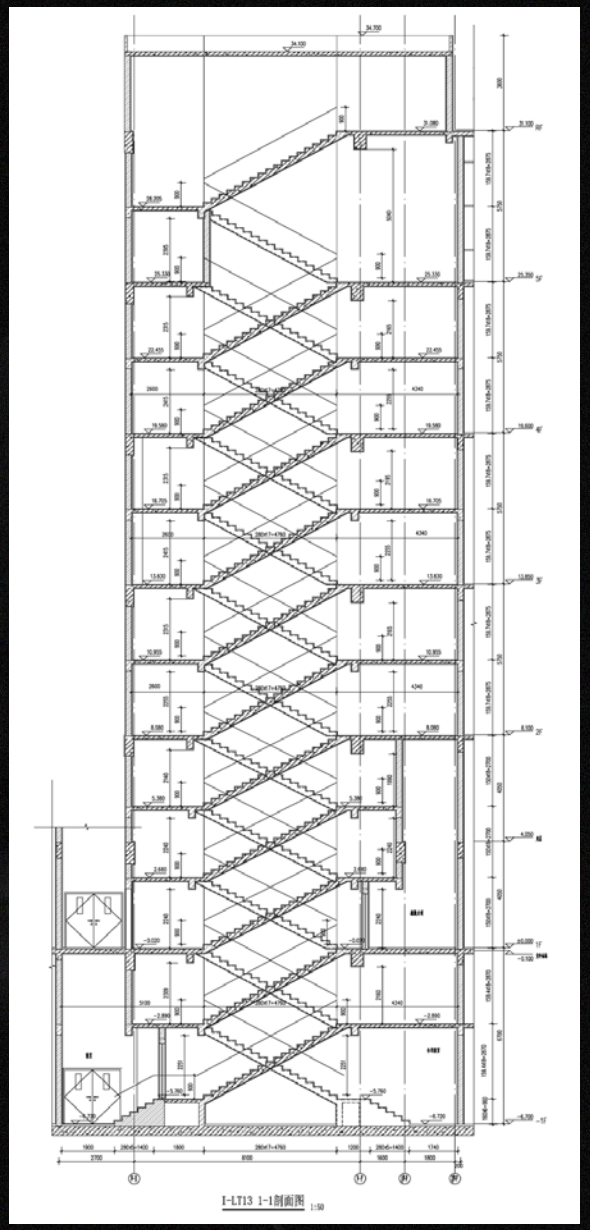
基于 BIM 技术的施工图模型

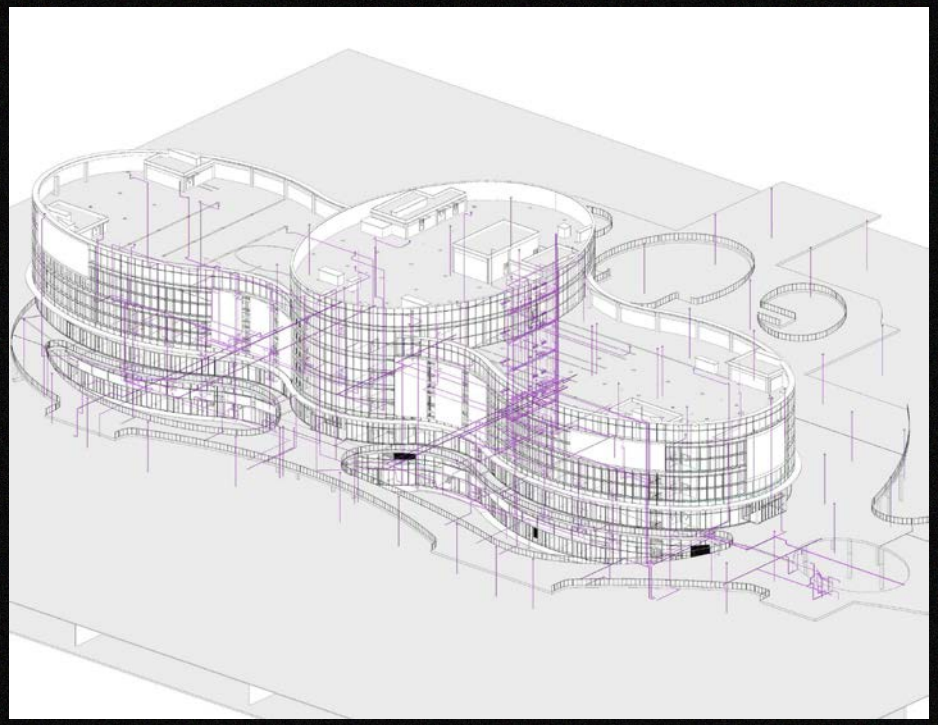


基于 BIM 技术的施工图模型



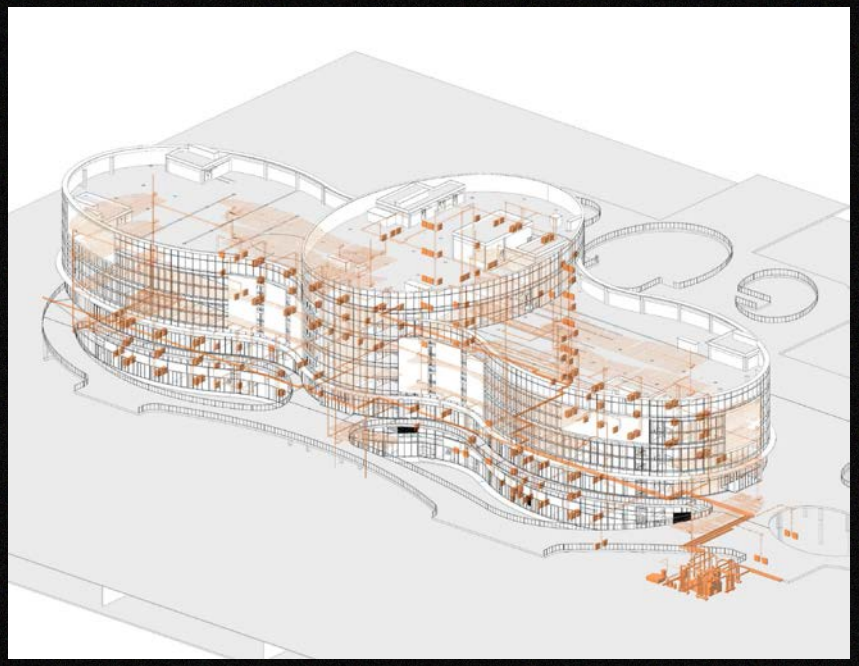



1-LT13 1-1剖面图 1:50



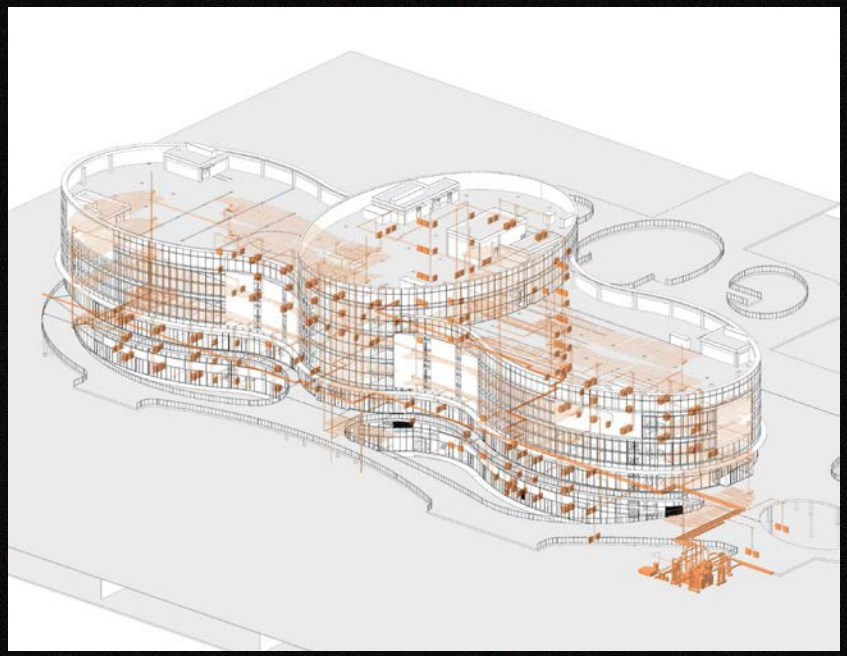
给排水

[族与类型]	[系统分类]	[尺寸]	[内径]	[外径]	[总体大小]	[规格/类型]	[相对粗糙度]	[材质]	[合计]
管道类型: ACID_HVAC 冷水供水管	循环供水	20 mm	20 mm	22 mm	20 mm	CECS 171 - 1.0 MPa	2020	铜	1
管道类型: ACID_HVAC 冷水供水管	循环供水	25 mm	26 mm	28 mm	25 mm	CECS 171 - 1.0 MPa	2620	铜	1
管道类型: ACID_HVAC 冷水供水管	循环供水	40 mm	40 mm	42 mm	40 mm	CECS 171 - 1.0 MPa	3960	铜	10
管道类型: ACID_HVAC 冷水供水管	循环供水	80 mm	82 mm	85 mm	80 mm	CECS 171 - 1.0 MPa	8200	铜	5
管道类型: ACID_HVAC 冷水供水管	循环供水	100 mm	105 mm	108 mm	100 mm	CECS 171 - 1.0 MPa	10500	铜	33
管道类型: ACID_HVAC 冷水供水管	循环供水	125 mm	130 mm	133 mm	125 mm	CECS 171 - 1.0 MPa	13000	铜	45
管道类型: ACID_HVAC 冷水供水管	循环供水	150 mm	155 mm	159 mm	150 mm	CECS 171 - 1.0 MPa	15500	铜	11
管道类型: ACID_HVAC 冷水供水管	循环供水	200 mm	211 mm	219 mm	200 mm	CECS 171 - 1.0 MPa	21100	铜	2
管道类型: ACID_HVAC 冷热水供水管	循环供水	125 mm	130 mm	133 mm	125 mm	CECS 171 - 1.0 MPa	13000	铜	15
管道类型: ACID_HVAC 冷热水供水管	循环供水	150 mm	155 mm	159 mm	150 mm	CECS 171 - 1.0 MPa	15500	铜	2
管道类型: ACID_HVAC 冷热水供水管	循环供水	200 mm	211 mm	219 mm	200 mm	CECS 171 - 1.0 MPa	21100	铜	28
管道类型: ACID_HVAC 冷热水供水管	循环供水	250 mm	259 mm	267 mm	250 mm	CECS 171 - 1.0 MPa	25900	铜	16
管道类型: ACID_HVAC 冷热水供水管	循环供水	300 mm	315 mm	325 mm	300 mm	CECS 171 - 1.0 MPa	31500	铜	25
管道类型: ACID_HVAC 冷热水回水管	循环供水	200 mm	211 mm	219 mm	200 mm	CECS 171 - 1.0 MPa	21100	铜	6
管道类型: ACID FSD 喷淋	循环供水	25 mm	26 mm	28 mm	25 mm	CECS 171 - 1.0 MPa	2620	铜	6
管道类型: ACID FSD 消防	循环供水	65 mm	68 mm	86 mm	65 mm	22	136.6	铁，铸铁	12
管道类型: ACID FSD 消防	循环供水	100 mm	104 mm	122 mm	100 mm	22	208.28	铁，铸铁	15
管道类型: ACID FSD 消防	循环供水	100 mm	105 mm	108 mm	100 mm	CECS 171 - 1.0 MPa	10500	铜	2
管道类型: ACID FSD 消防	循环供水	150 mm	156 mm	175 mm	150 mm	22	311.912	铁，铸铁	13
管道类型: ACID HP 采暖供水	循环供水	40 mm	40 mm	42 mm	40 mm	CECS 171 - 1.0 MPa	3960	铜	6
管道类型: ACID PD 废水	循环供水	50 mm	53 mm	56 mm	50 mm	GB/T 5836	26500	PVC-U	28
管道类型: ACID PD 废水	循环供水	75 mm	78 mm	82 mm	75 mm	GB/T 5836	39000	PVC-U	52
管道类型: ACID PD 废水	循环供水	80 mm	84 mm	90 mm	80 mm	GB/T 5836	42000	PVC-U	3
管道类型: ACID PD 废水	循环供水	100 mm	104 mm	110 mm	100 mm	GB/T 5836	51800	PVC-U	13
管道类型: ACID PD 排水	循环供水	25 mm	28 mm	32 mm	25 mm	GB/T 5836	14000	PVC-U	1
管道类型: ACID PD 排水	循环供水	50 mm	53 mm	56 mm	50 mm	GB/T 5836	26500	PVC-U	120
管道类型: ACID PD 排水	循环供水	75 mm	78 mm	82 mm	75 mm	GB/T 5836	39000	PVC-U	173
管道类型: ACID PD 排水	循环供水	100 mm	0 mm	0 mm	100 mm	GB/T 5836	0	PVC-U	1
管道类型: ACID PD 排水	循环供水	100 mm	104 mm	110 mm	100 mm	GB/T 5836	51800	PVC-U	604
管道类型: ACID PD 排水	循环供水	150 mm	152 mm	160 mm	150 mm	GB/T 5836	76000	PVC-U	59
管道类型: ACID PD 排水	循环供水	200 mm	190 mm	200 mm	200 mm	GB/T 5836	95100	PVC-U	9
管道类型: ACID PD 空调补水	循环供水	15 mm	14 mm	15 mm	15 mm	CECS 171 - 1.0 MPa	1360	铜	5
管道类型: ACID PD 空调补水	循环供水	20 mm	20 mm	22 mm	20 mm	CECS 171 - 1.0 MPa	2020	铜	13
管道类型: ACID PD 空调补水	循环供水	32 mm	33 mm	35 mm	32 mm	CECS 171 - 1.0 MPa	3260	铜	59
管道类型: ACID PD 空调补水	循环供水	50 mm	52 mm	54 mm	50 mm	CECS 171 - 1.0 MPa	5160	铜	2
管道类型: ACID PD 空调补水	循环供水	65 mm	65 mm	67 mm	65 mm	CECS 171 - 1.0 MPa	6460	铜	6
管道类型: ACID PD 空调补水	循环供水	80 mm	82 mm	85 mm	80 mm	CECS 171 - 1.0 MPa	8200	铜	35
管道类型: ACID PD 空调补水	循环供水	100 mm	105 mm	108 mm	100 mm	CECS 171 - 1.0 MPa	10500	铜	3
管道类型: ACID PD 给水	循环供水	10 mm	11 mm	12 mm	10 mm	CECS 171 - 1.0 MPa	1080	铜	81
管道类型: ACID PD 给水	循环供水	15 mm	14 mm	15 mm	15 mm	CECS 171 - 1.0 MPa	1360	铜	473
管道类型: ACID PD 给水	循环供水	20 mm	20 mm	22 mm	20 mm	CECS 171 - 1.0 MPa	2020	铜	401
管道类型: ACID PD 给水	循环供水	25 mm	26 mm	28 mm	25 mm	CECS 171 - 1.0 MPa	2620	铜	266
管道类型: ACID PD 给水	循环供水	32 mm	33 mm	35 mm	32 mm	CECS 171 - 1.0 MPa	3260	铜	144
管道类型: ACID PD 给水	循环供水	40 mm	40 mm	42 mm	40 mm	CECS 171 - 1.0 MPa	3960	铜	12
管道类型: ACID PD 给水	循环供水	50 mm	52 mm	54 mm	50 mm	CECS 171 - 1.0 MPa	5160	铜	89
管道类型: ACID PD 给水	循环供水	65 mm	65 mm	67 mm	65 mm	CECS 171 - 1.0 MPa	6460	铜	7
管道类型: ACID PD 给水	循环供水	80 mm	82 mm	85 mm	80 mm	CECS 171 - 1.0 MPa	8200	铜	12
管道类型: ACID PD 给水	循环供水	100 mm	105 mm	108 mm	100 mm	CECS 171 - 1.0 MPa	10500	铜	16
管道类型: ACID PD 给水	循环供水	150 mm	155 mm	159 mm	150 mm	CECS 171 - 1.0 MPa	15500	铜	19
管道类型: ACID PD 通气	循环供水	100 mm	105 mm	108 mm	100 mm	CECS 171 - 1.0 MPa	10500	铜	56
管道类型: ACID PD 通气	循环供水	150 mm	155 mm	159 mm	150 mm	CECS 171 - 1.0 MPa	15500	铜	19
总计: 3035									



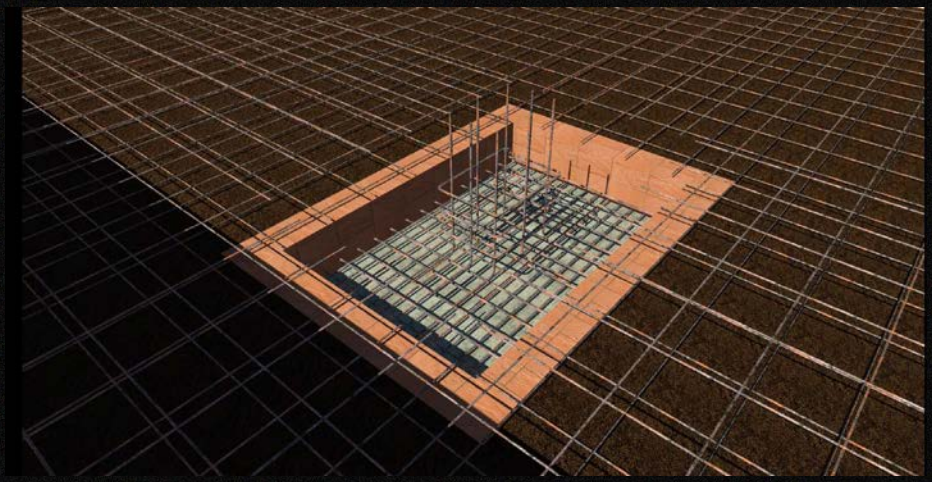
采暖

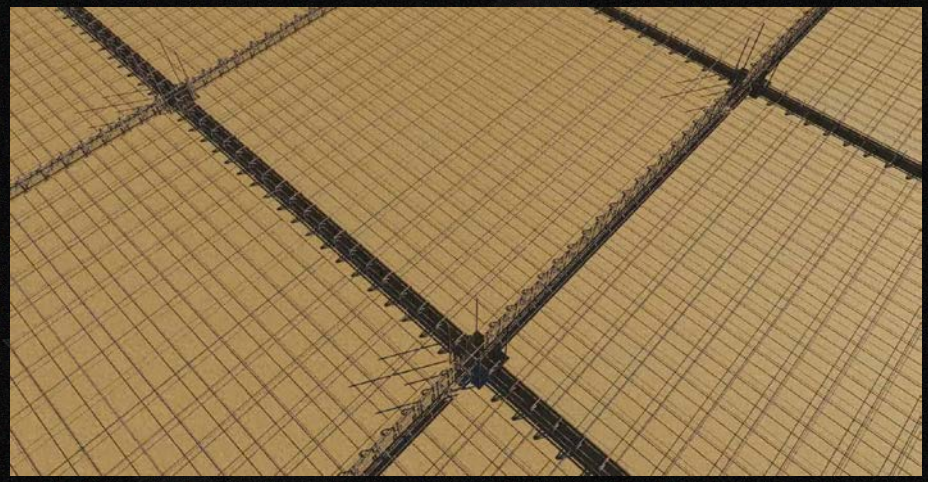
[族与类型]	[系统分类]	[尺寸]	[内径]	[外径]	[总体大小]	[规格/类型]	[相对粗糙度]	[材质]	[合计]
管道类型: ACID HVAC 补水管	家用冷水	15 mm	14 mm	15 mm	15 mm	CECS 171 - 1.0 MPa	1360	铜	20
管道类型: ACID HVAC 补水管	家用冷水	25 mm	26 mm	28 mm	25 mm	CECS 171 - 1.0 MPa	2620	铜	5
管道类型: ACID HP 采暖供水	家用冷水	20 mm	20 mm	22 mm	20 mm	CECS 171 - 1.0 MPa	2020	铜	5
管道类型: ACID HP 采暖供水	家用冷水	20 mm	21 mm	27 mm	20 mm	22	42.6	铁，铸铁	95
管道类型: ACID HP 采暖供水	家用冷水	25 mm	27 mm	34 mm	25 mm	22	54.6	铁，铸铁	8
管道类型: ACID HP 采暖供水	家用冷水	32 mm	42 mm	35 mm	32 mm	22	84.8	铁，铸铁	7
管道类型: ACID HP 采暖供水	家用冷水	40 mm	48 mm	41 mm	40 mm	22	96.6	铁，铸铁	5
管道类型: ACID HP 采暖供水	家用冷水	50 mm	52 mm	54 mm	50 mm	CECS 171 - 1.0 MPa	5160	铜	17
管道类型: ACID HP 采暖供水	家用冷水	50 mm	53 mm	60 mm	50 mm	22	105.4	铁，铸铁	8
管道类型: ACID HP 采暖供水	家用冷水	70 mm	68 mm	76 mm	70 mm	22	136.2	铁，铸铁	3
管道类型: ACID HP 采暖供水	家用冷水	80 mm	82 mm	85 mm	80 mm	CECS 171 - 1.0 MPa	8200	铜	1
管道类型: ACID HP 采暖供水	家用冷水	100 mm	105 mm	108 mm	100 mm	CECS 171 - 1.0 MPa	10500	铜	2
管道类型: ACID HP 采暖供水	家用冷水	125 mm	130 mm	133 mm	125 mm	CECS 171 - 1.0 MPa	13000	铜	1
管道类型: ACID HP 采暖供水	家用冷水	200 mm	211 mm	219 mm	200 mm	CECS 171 - 1.0 MPa	21100	铜	2
管道类型: ACID HP 采暖供水	家用冷水	250 mm	259 mm	267 mm	250 mm	CECS 171 - 1.0 MPa	25900	铜	7
管道类型: ACID HP 采暖供水	家用冷水	300 mm	315 mm	325 mm	300 mm	CECS 171 - 1.0 MPa	31500	铜	1
管道类型: ACID HP 采暖供水	家用热水	20 mm	20 mm	22 mm	20 mm	CECS 171 - 1.0 MPa	2020	铜	24
管道类型: ACID HP 采暖供水	家用热水	20 mm	21 mm	27 mm	20 mm	22	42.6	铁，铸铁	451
管道类型: ACID HP 采暖供水	家用热水	25 mm	27 mm	34 mm	25 mm	22	54.6	铁，铸铁	171
管道类型: ACID HP 采暖供水	家用热水	32 mm	42 mm	35 mm	32 mm	22	84.8	铁，铸铁	154
管道类型: ACID HP 采暖供水	家用热水	40 mm	40 mm	42 mm	40 mm	CECS 171 - 1.0 MPa	3960	铜	5
管道类型: ACID HP 采暖供水	家用热水	40 mm	48 mm	41 mm	40 mm	22	96.6	铁，铸铁	90
管道类型: ACID HP 采暖供水	家用热水	50 mm	52 mm	54 mm	50 mm	CECS 171 - 1.0 MPa	5160	铜	30
管道类型: ACID HP 采暖供水	家用热水	50 mm	53 mm	60 mm	50 mm	22	105.4	铁，铸铁	78
管道类型: ACID HP 采暖供水	家用热水	65 mm	65 mm	67 mm	65 mm	CECS 171 - 1.0 MPa	6460	铜	5
管道类型: ACID HP 采暖供水	家用热水	70 mm	68 mm	76 mm	70 mm	22	136.2	铁，铸铁	20
管道类型: ACID HP 采暖供水	家用热水	80 mm	82 mm	85 mm	80 mm	CECS 171 - 1.0 MPa	8200	铜	12
管道类型: ACID HP 采暖供水	家用热水	80 mm	84 mm	101 mm	80 mm	22	168.656	铁，铸铁	10
管道类型: ACID HP 采暖供水	家用热水	100 mm	105 mm	108 mm	100 mm	CECS 171 - 1.0 MPa	10500	铜	6
管道类型: ACID HP 采暖供水	家用热水	125 mm	130 mm	133 mm	125 mm	CECS 171 - 1.0 MPa	13000	铜	2
管道类型: ACID HP 采暖供水	家用热水	200 mm	209 mm	230 mm	200 mm	22	418.084	铁，铸铁	21
管道类型: ACID HP 采暖供水	家用热水	200 mm	211 mm	219 mm	200 mm	CECS 171 - 1.0 MPa	21100	铜	42
管道类型: ACID HP 采暖供水	家用热水	250 mm	259 mm	267 mm	250 mm	CECS 171 - 1.0 MPa	25900	铜	19
管道类型: ACID HP 采暖供水	家用热水	300 mm	315 mm	325 mm	300 mm	CECS 171 - 1.0 MPa	31500	铜	12
管道类型: ACID HP 采暖供水	家用热水	350 mm	340 mm	377 mm	350 mm	CECS 171 - 1.0 MPa	34000	铜	6
管道类型: ACID HP 采暖回水	家用冷水	20 mm	0 mm	0 mm	20 mm	22	0	铁，铸铁	10
管道类型: ACID HP 采暖回水	家用冷水	20 mm	20 mm	22 mm	20 mm	CECS 171 - 1.0 MPa	2020	铜	30
管道类型: ACID HP 采暖回水	家用冷水	20 mm	21 mm	27 mm	20 mm	22	42.6	铁，铸铁	586
管道类型: ACID HP 采暖回水	家用冷水	25 mm	27 mm	34 mm	25 mm	22	54.6	铁，铸铁	166
管道类型: ACID HP 采暖回水	家用冷水	32 mm	42 mm	35 mm	32 mm	22	84.8	铁，铸铁	140
管道类型: ACID HP 采暖回水	家用冷水	40 mm	40 mm	42 mm	40 mm	CECS 171 - 1.0 MPa	3960	铜	5
管道类型: ACID HP 采暖回水	家用冷水	40 mm	48 mm	41 mm	40 mm	22	96.6	铁，铸铁	84
管道类型: ACID HP 采暖回水	家用冷水	50 mm	52 mm	54 mm	50 mm	CECS 171 - 1.0 MPa	5160	铜	20
管道类型: ACID HP 采暖回水	家用冷水	50 mm	53 mm	60 mm	50 mm	22	105.4	铁，铸铁	71
管道类型: ACID HP 采暖回水	家用冷水	65 mm	65 mm	67 mm	65 mm	CECS 171 - 1.0 MPa	6460	铜	6
管道类型: ACID HP 采暖回水	家用冷水	70 mm	68 mm	76 mm	70 mm	22	136.2	铁，铸铁	17
管道类型: ACID HP 采暖回水	家用冷水	80 mm	82 mm	85 mm	80 mm	CECS 171 - 1.0 MPa	8200	铜	11
管道类型: ACID HP 采暖回水	家用冷水	80 mm	84 mm	101 mm	80 mm	22	168.656	铁，铸铁	11
管道类型: ACID HP 采暖回水	家用冷水	125 mm	130 mm	133 mm	125 mm	CECS 171 - 1.0 MPa	13000	铜	2
管道类型: ACID HP 采暖回水	家用冷水	200 mm	211 mm	219 mm	200 mm	CECS 171 - 1.0 MPa	21100	铜	51
管道类型: ACID HP 采暖回水	家用冷水	250 mm	259 mm	267 mm	250 mm	CECS 171 - 1.0 MPa	25900	铜	4
管道类型: ACID HP 采暖回水	家用冷水	300 mm	315 mm	325 mm	300 mm	CECS 171 - 1.0 MPa	31500	铜	5
管道类型: ACID HP 采暖回水	家用热水	20 mm	20 mm	22 mm	20 mm	CECS 171 - 1.0 MPa	2020	铜	4
管道类型: ACID HP 采暖回水	家用热水	20 mm	21 mm	27 mm	20 mm	22	42.6	铁，铸铁	75
管道类型: ACID HP 采暖回水	家用热水	50 mm	53 mm	60 mm	50 mm	22	105.4	铁，铸铁	1
管道类型: ACID PD 给水	家用冷水	15 mm	14 mm	15 mm	15 mm	CECS 171 - 1.0 MPa	1360	铜	10
管道类型: 标准	家用热水	20 mm	20 mm	22 mm	20 mm	CECS 171 - 1.0 MPa	2020	铜	2
总计: 2658									

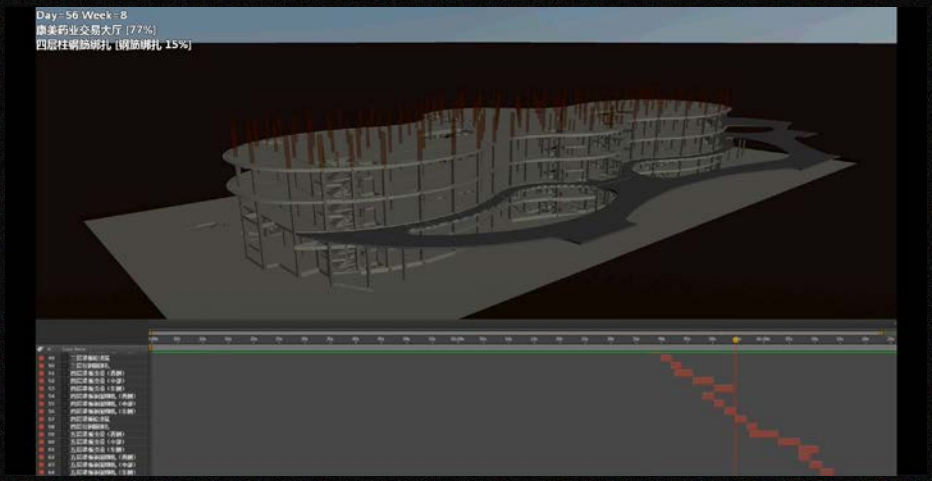


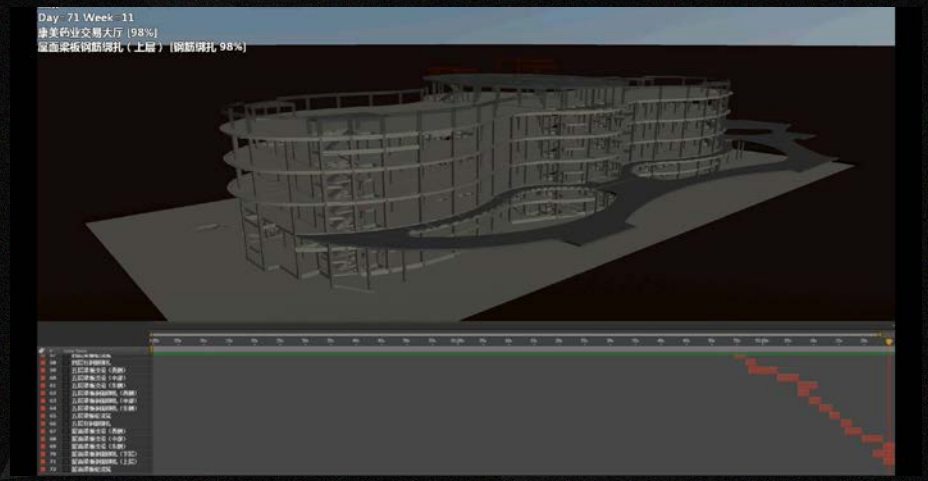
采暖

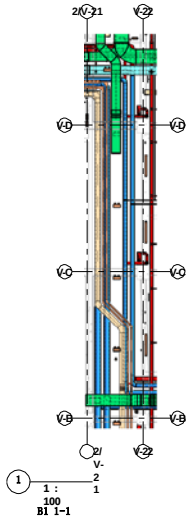
[族与类型]	[系统分类]	[尺寸]	[内径]	[外径]	[总体大小]	[规格/类型]	[相对粗糙度]	[材质]	[合计]
管道类型: ACID HVAC 补水管	家用冷水	15 mm	14 mm	15 mm	15 mm	CECS 171 - 1.0 MPa	1360	铜	20
管道类型: ACID HVAC 补水管	家用冷水	25 mm	26 mm	28 mm	25 mm	CECS 171 - 1.0 MPa	2620	铜	5
管道类型: ACID HP 采暖供水	家用冷水	20 mm	20 mm	22 mm	20 mm	CECS 171 - 1.0 MPa	2020	铜	5
管道类型: ACID HP 采暖供水	家用冷水	20 mm	21 mm	27 mm	20 mm	22	42.6	铁，铸铁	95
管道类型: ACID HP 采暖供水	家用冷水	25 mm	27 mm	34 mm	25 mm	22	54.6	铁，铸铁	8
管道类型: ACID HP 采暖供水	家用冷水	32 mm	42 mm	35 mm	32 mm	22	84.8	铁，铸铁	7
管道类型: ACID HP 采暖供水	家用冷水	40 mm	48 mm	41 mm	40 mm	22	96.6	铁，铸铁	5
管道类型: ACID HP 采暖供水	家用冷水	50 mm	52 mm	54 mm	50 mm	CECS 171 - 1.0 MPa	5160	铜	17
管道类型: ACID HP 采暖供水	家用冷水	50 mm	53 mm	60 mm	50 mm	22	105.4	铁，铸铁	8
管道类型: ACID HP 采暖供水	家用冷水	70 mm	68 mm	76 mm	70 mm	22	136.2	铁，铸铁	3
管道类型: ACID HP 采暖供水	家用冷水	80 mm	82 mm	85 mm	80 mm	CECS 171 - 1.0 MPa	8200	铜	1
管道类型: ACID HP 采暖供水	家用冷水	100 mm	105 mm	108 mm	100 mm	CECS 171 - 1.0 MPa	10500	铜	2
管道类型: ACID HP 采暖供水	家用冷水	125 mm	130 mm	133 mm	125 mm	CECS 171 - 1.0 MPa	13000	铜	1
管道类型: ACID HP 采暖供水	家用冷水	200 mm	211 mm	219 mm	200 mm	CECS 171 - 1.0 MPa	21100	铜	2
管道类型: ACID HP 采暖供水	家用冷水	250 mm	259 mm	267 mm	250 mm	CECS 171 - 1.0 MPa	25900	铜	7
管道类型: ACID HP 采暖供水	家用冷水	300 mm	315 mm	325 mm	300 mm	CECS 171 - 1.0 MPa	31500	铜	1
管道类型: ACID HP 采暖供水	家用热水	20 mm	20 mm	22 mm	20 mm	CECS 171 - 1.0 MPa	2020	铜	24
管道类型: ACID HP 采暖供水	家用热水	20 mm	21 mm	27 mm	20 mm	22	42.6	铁，铸铁	451
管道类型: ACID HP 采暖供水	家用热水	25 mm	27 mm	34 mm	25 mm	22	54.6	铁，铸铁	171
管道类型: ACID HP 采暖供水	家用热水	32 mm	42 mm	35 mm	32 mm	22	84.8	铁，铸铁	154
管道类型: ACID HP 采暖供水	家用热水	40 mm	40 mm	42 mm	40 mm	CECS 171 - 1.0 MPa	3960	铜	5
管道类型: ACID HP 采暖供水	家用热水	40 mm	48 mm	41 mm	40 mm	22	96.6	铁，铸铁	90
管道类型: ACID HP 采暖供水	家用热水	50 mm	52 mm	54 mm	50 mm	CECS 171 - 1.0 MPa	5160	铜	30
管道类型: ACID HP 采暖供水	家用热水	50 mm	53 mm	60 mm	50 mm	22	105.4	铁，铸铁	78
管道类型: ACID HP 采暖供水	家用热水	65 mm	65 mm	67 mm	65 mm	CECS 171 - 1.0 MPa	6460	铜	5
管道类型: ACID HP 采暖供水	家用热水	70 mm	68 mm	76 mm	70 mm	22	136.2	铁，铸铁	20
管道类型: ACID HP 采暖供水	家用热水	80 mm	82 mm	85 mm	80 mm	CECS 171 - 1.0 MPa	8200	铜	12
管道类型: ACID HP 采暖供水	家用热水	80 mm	84 mm	101 mm	80 mm	22	168.656	铁，铸铁	10
管道类型: ACID HP 采暖供水	家用热水	100 mm	105 mm	108 mm	100 mm	CECS 171 - 1.0 MPa	10500	铜	6
管道类型: ACID HP 采暖供水	家用热水	125 mm	130 mm	133 mm	125 mm	CECS 171 - 1.0 MPa	13000	铜	2
管道类型: ACID HP 采暖供水	家用热水	200 mm	209 mm	230 mm	200 mm	22	418.084	铁，铸铁	21
管道类型: ACID HP 采暖供水	家用热水	200 mm	211 mm	219 mm	200 mm	CECS 171 - 1.0 MPa	21100	铜	42
管道类型: ACID HP 采暖供水	家用热水	250 mm	259 mm	267 mm	250 mm	CECS 171 - 1.0 MPa	25900	铜	19
管道类型: ACID HP 采暖供水	家用热水	300 mm	315 mm	325 mm	300 mm	CECS 171 - 1.0 MPa	31500	铜	12
管道类型: ACID HP 采暖供水	家用热水	350 mm	340 mm	377 mm	350 mm	CECS 171 - 1.0 MPa	34000	铜	6
管道类型: ACID HP 采暖回水	家用冷水	20 mm	0 mm	0 mm	20 mm	22	0	铁，铸铁	10
管道类型: ACID HP 采暖回水	家用冷水	20 mm	20 mm	22 mm	20 mm	CECS 171 - 1.0 MPa	2020	铜	30
管道类型: ACID HP 采暖回水	家用冷水	20 mm	21 mm	27 mm	20 mm	22	42.6	铁，铸铁	586
管道类型: ACID HP 采暖回水	家用冷水	25 mm	27 mm	34 mm	25 mm	22	54.6	铁，铸铁	166
管道类型: ACID HP 采暖回水	家用冷水	32 mm	42 mm	35 mm	32 mm	22	84.8	铁，铸铁	140
管道类型: ACID HP 采暖回水	家用冷水	40 mm	40 mm	42 mm	40 mm	CECS 171 - 1.0 MPa	3960	铜	5
管道类型: ACID HP 采暖回水	家用冷水	40 mm	48 mm	41 mm	40 mm	22	96.6	铁，铸铁	84
管道类型: ACID HP 采暖回水	家用冷水	50 mm	52 mm	54 mm	50 mm	CECS 171 - 1.0 MPa	5160	铜	20
管道类型: ACID HP 采暖回水	家用冷水	50 mm	53 mm	60 mm	50 mm	22	105.4	铁，铸铁	71
管道类型: ACID HP 采暖回水	家用冷水	65 mm	65 mm	67 mm	65 mm	CECS 171 - 1.0 MPa	6460	铜	6
管道类型: ACID HP 采暖回水	家用冷水	70 mm	68 mm	76 mm	70 mm	22	136.2	铁，铸铁	17
管道类型: ACID HP 采暖回水	家用冷水	80 mm	82 mm	85 mm	80 mm	CECS 171 - 1.0 MPa	8200	铜	11
管道类型: ACID HP 采暖回水	家用冷水	80 mm	84 mm	101 mm	80 mm	22	168.656	铁，铸铁	11
管道类型: ACID HP 采暖回水	家用冷水	125 mm	130 mm	133 mm	125 mm	CECS 171 - 1.0 MPa	13000	铜	2
管道类型: ACID HP 采暖回水	家用冷水	200 mm	211 mm	219 mm	200 mm	CECS 171 - 1.0 MPa	21100	铜	51
管道类型: ACID HP 采暖回水	家用冷水	250 mm	259 mm	267 mm	250 mm	CECS 171 - 1.0 MPa	25900	铜	4
管道类型: ACID HP 采暖回水	家用冷水	300 mm	315 mm	325 mm	300 mm	CECS 171 - 1.0 MPa	31500	铜	5
管道类型: ACID HP 采暖回水	家用热水	20 mm	20 mm	22 mm	20 mm	CECS 171 - 1.0 MPa	2020	铜	4
管道类型: ACID HP 采暖回水	家用热水	20 mm	21 mm	27 mm	20 mm	22	42.6	铁，铸铁	75
管道类型: ACID HP 采暖回水	家用热水	50 mm	53 mm	60 mm	50 mm	22	105.4	铁，铸铁	1
管道类型: ACID PD 给水	家用冷水	15 mm	14 mm	15 mm	15 mm	CECS 171 - 1.0 MPa	1360	铜	10
管道类型: 标准	家用热水	20 mm	20 mm	22 mm	20 mm	CECS 171 - 1.0 MPa	2020	铜	2
总计: 2658									

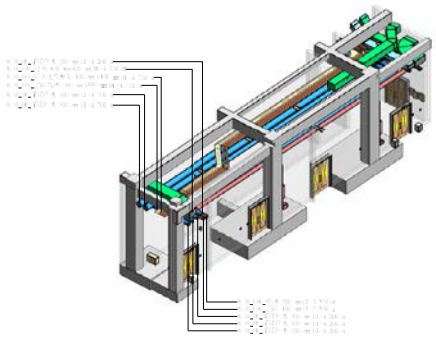





Day : 56 Week : 8
康美药业交易大厅 [77%]
四层柱钢筋绑扎 [钢筋绑扎 15%]


Day : 71 Week : 11
康美药业交易大厅 [98%]
屋面梁板钢筋绑扎（上层）[钢筋绑扎 98%]


1
1 :
100
B1 1-1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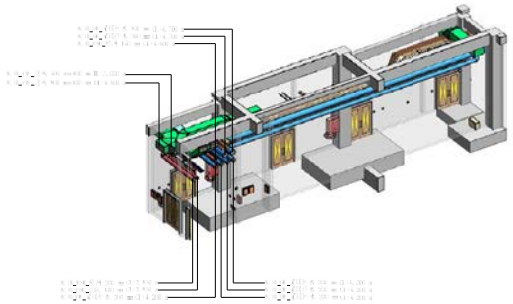
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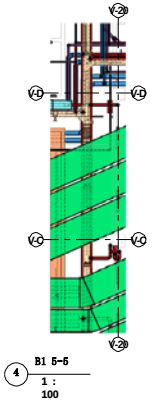
B1-1/2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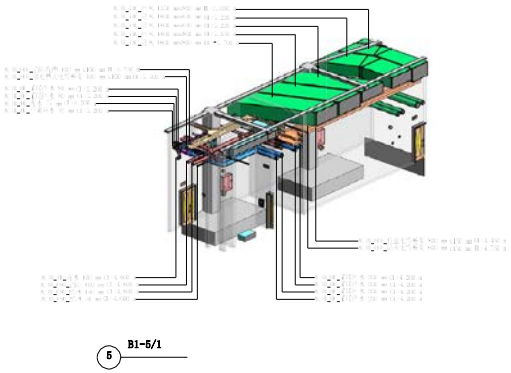
B1 5-5
1 :
100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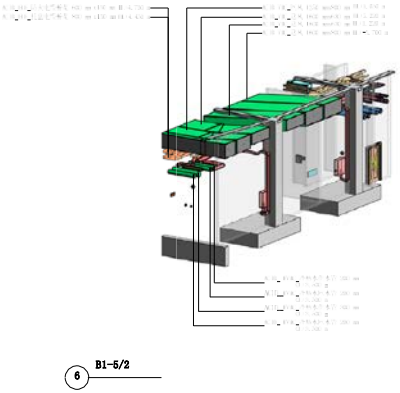
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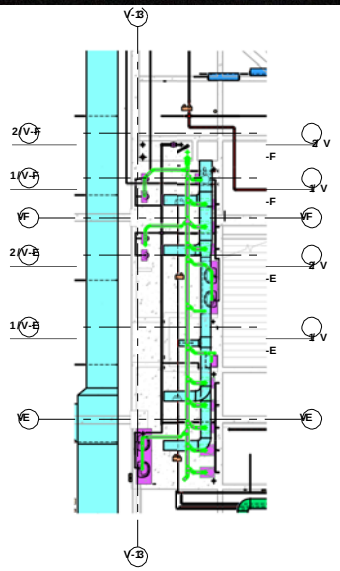
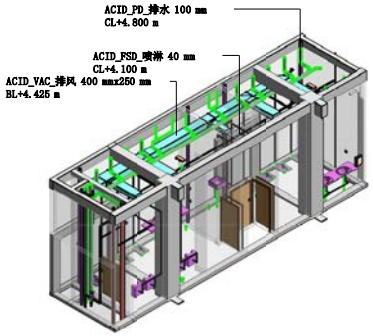
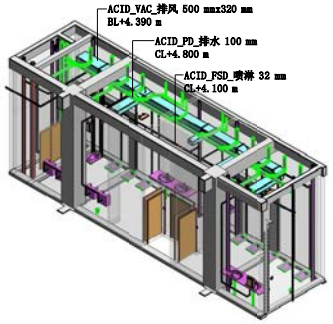
B1-5/2



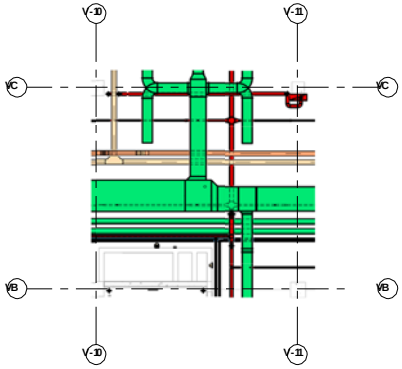
5 3F 卫生间
1 : 100



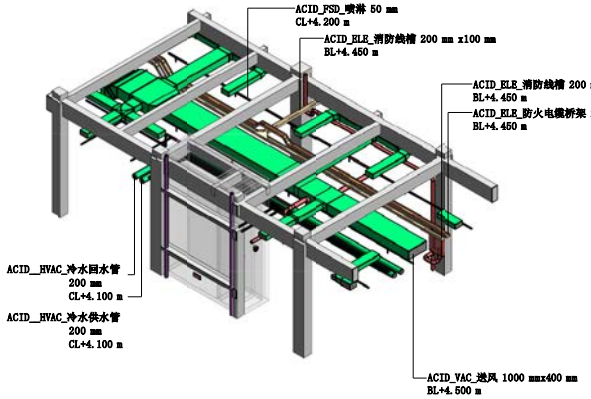
2 F3-卫生间1



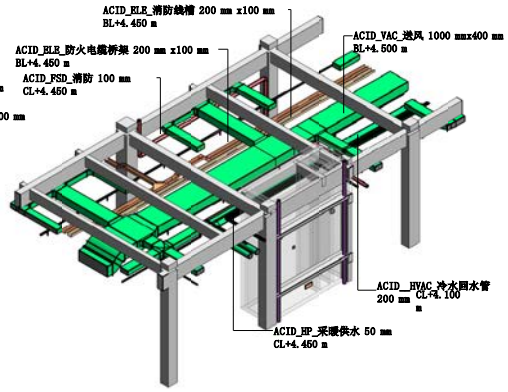
4 F3-卫生间2



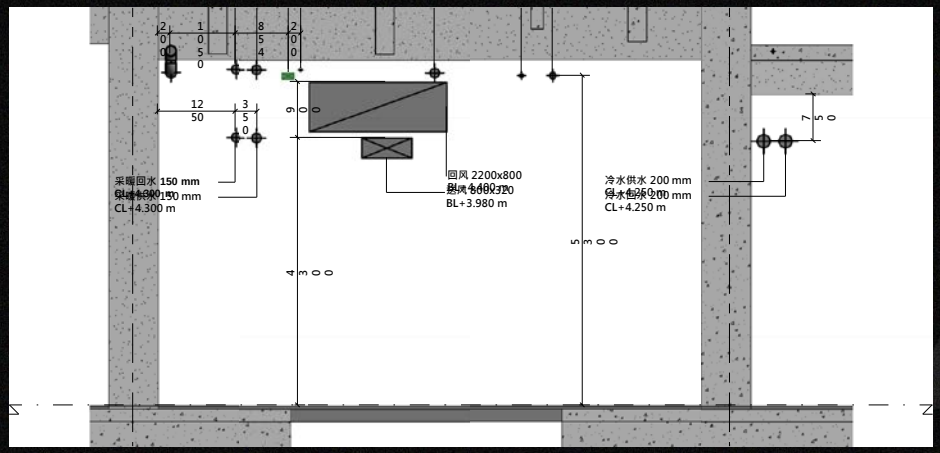
7 3F 1-1
1 : 100

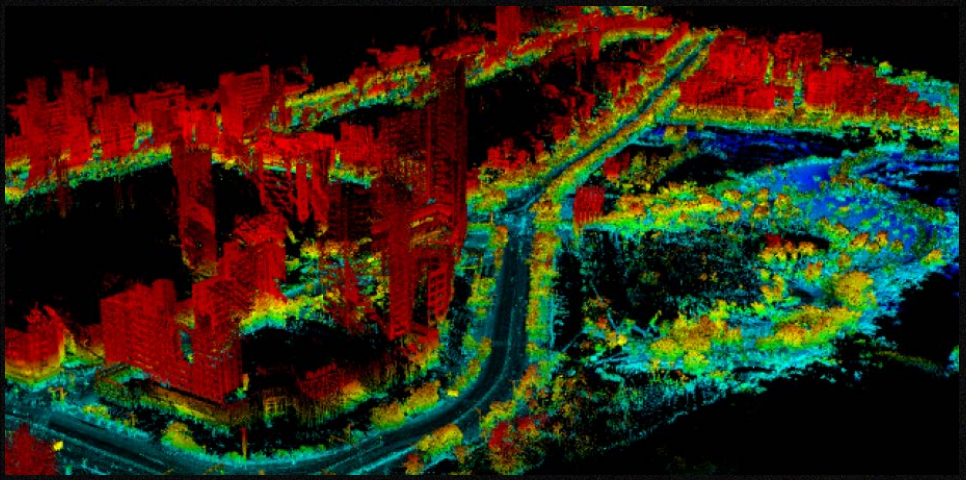


3 F3-1/1



1 F3-1/2


回风 2200x800
BL+3.980 m
冷水供水 200 mm
CL+4.250 m



Sanya – A Digital City

Client : Sanya Municipal People's Government
P.I.C. : David Fung
Period : 2013

Scope : Scanning the roads, greened areas and buildings of the city with Point Cloud Technology. The scanning speed can be up to 50,000 points per second with less than 3mm deviation. The scanned area is as large as 300m. The generated point cloud data has been output to BIM software for model building and restoration in the virtual world. Such application took BIM to a whole new level and granted BIM a revolutionary concept, CIM (City Information Modelling), which can be applied in municipal management, city planning and traffic dispersion. Integrating with the data of drainage and electricity provided by the government departments, viewable objects (e.g. buildings, trees) and the non-viewable objects (e.g. underground drainage system, electricity system) in reality can be combined so as to provide accurate information on the roads and pipelines enhancement.

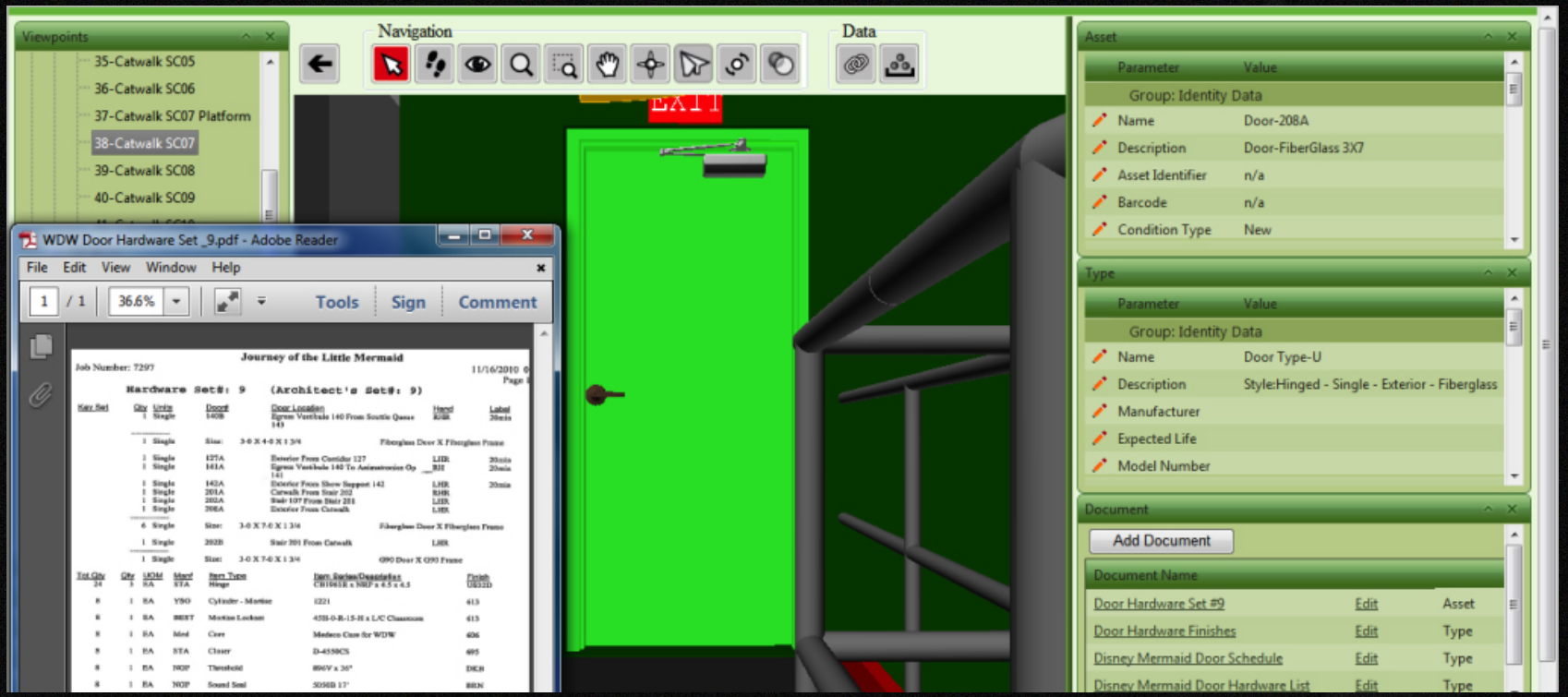
Photogrammetry and Laser Scanning Service

Client : Hong Kong Private Developer

P.I.C. : David Fung

Period : 2014

Scope : Photos of high profile buildings which captured by Unmanned Aerial Vehicles can be generated into point cloud data then BIM models. The accuracy of photogrammetry is inevitably affected by photo quality, however, as photogrammetry allows a prompt collection of a large number of architectural photos from the sky or inaccessible areas, it has undoubtedly become the first choice for restoring the city landscape and historical buildings.



EMSD Management Project

Client : EMSD

P.I.C. : David Fung

Period : 2014

Scope : Building BIM models with existing information and programming architectural management and maintenance with property management software. When problems arise, the causes and the solutions can be identified immediately with the help of the program. It will be extensively applied in hospital management.

ZouCheng Project

Client : ZouCheng People's Government

P.I.C. : David Fung

Period : 2015-

Scope : Combining the residential and commercial development, together with park and community amenities, this is one of the largest residential developments in ZouCheng. The total area is 462,000 sq.m. with a total construction area of 336,000 sq.m.

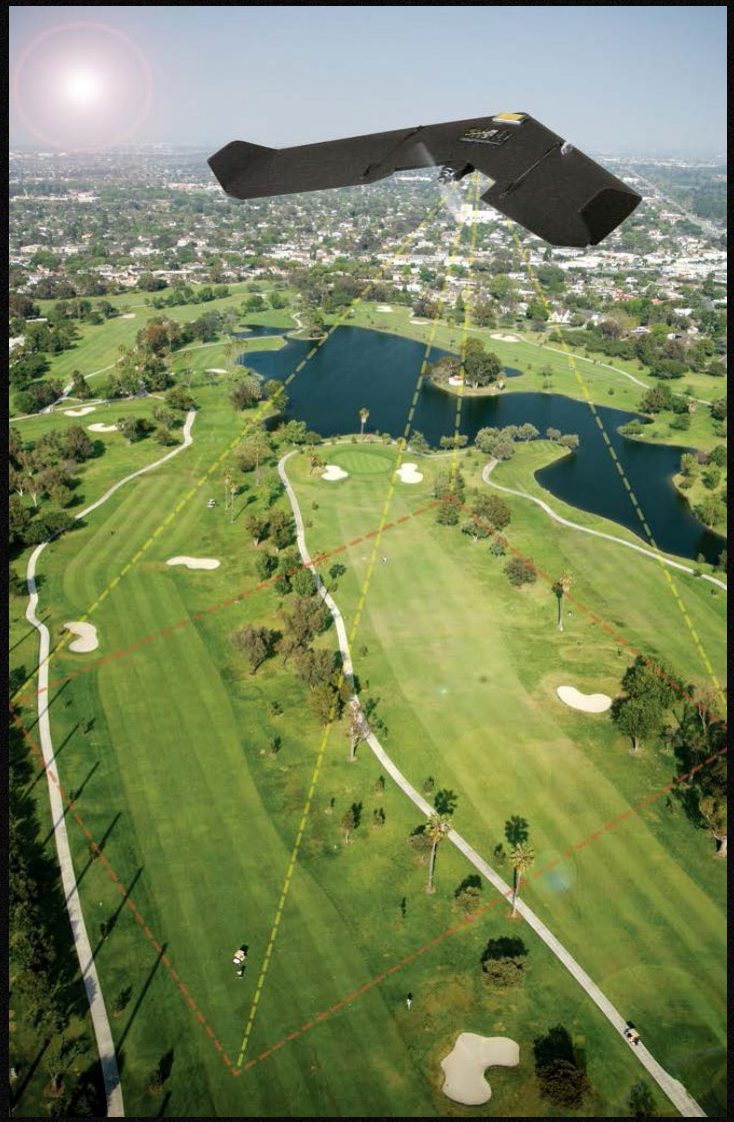
Yili Shanhaisong Project, Qinzhou City

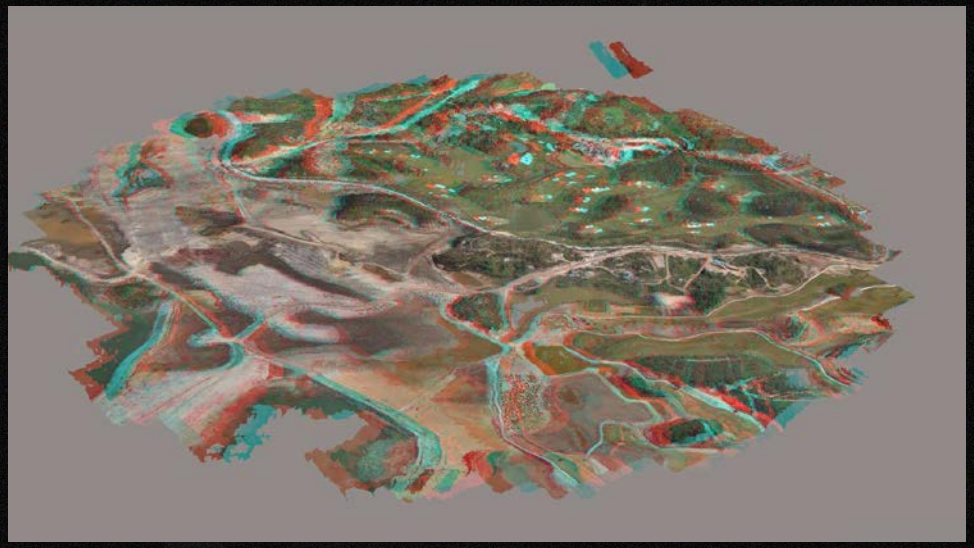
Client : Guangxi Binhai City Development Co. Ltd.

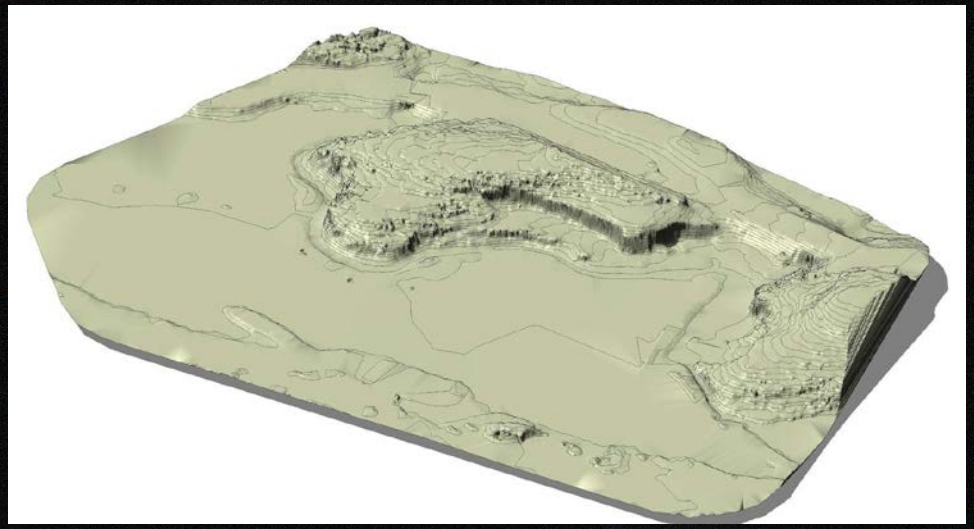
P.I.C. : Mu Wei

Period : 2014-

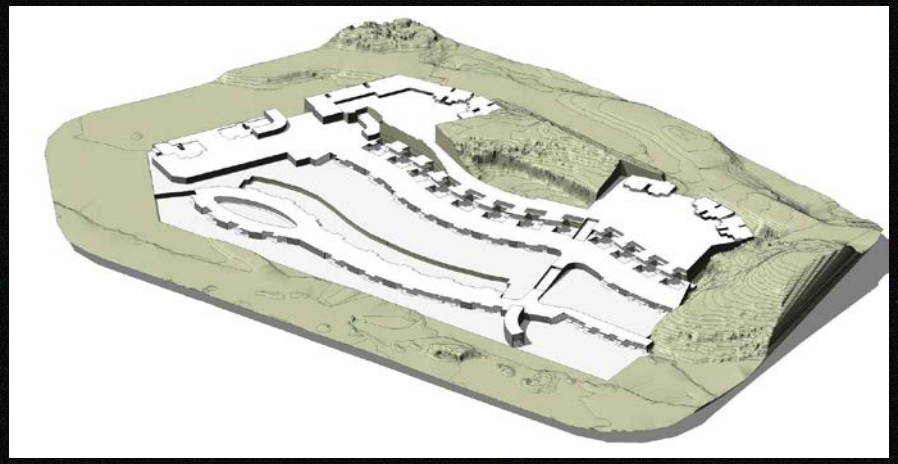
Scope : Consists of hotel, clubhouse and golf course with consistent planning, so as to increase the overall value. The total area of 186,000 sq.m., the plot ratio of 0.9 - 1.3 with total construction area more than 200,000 sq.m. Full services include feasibility analysis, project planning, construction drawings design, construction management and property management.

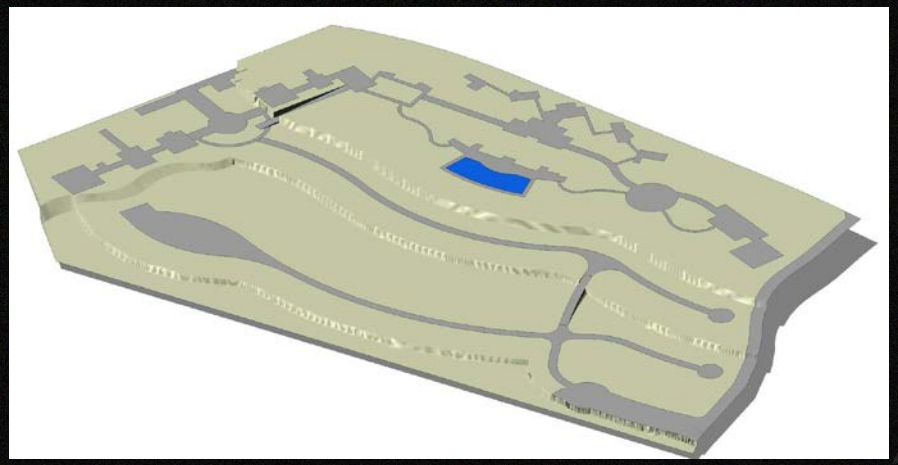


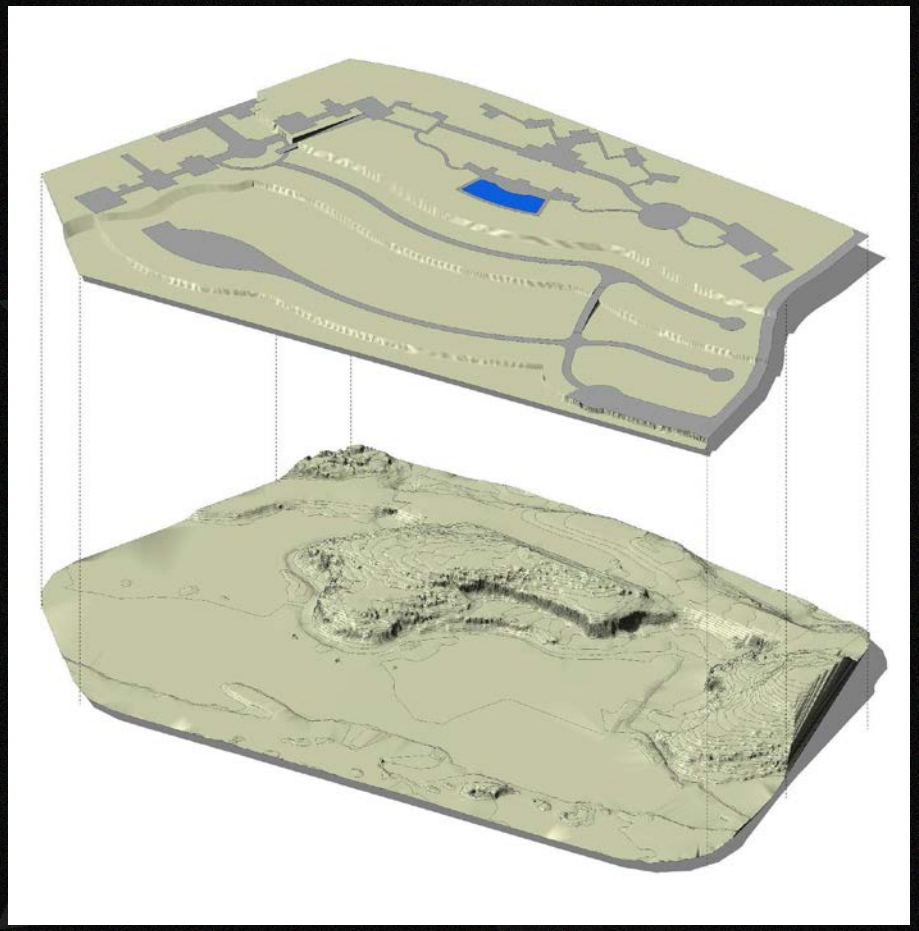




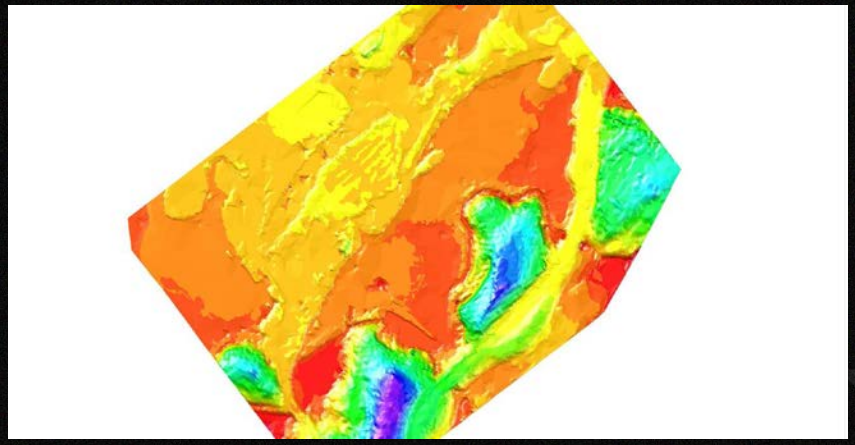
Photogrammetry







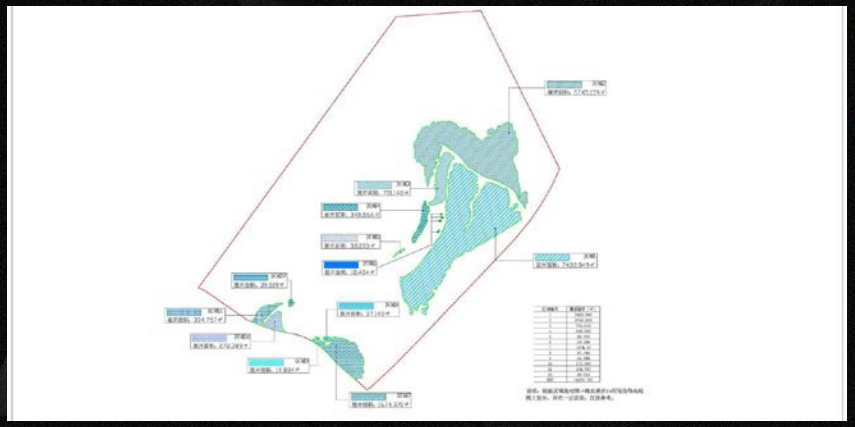
Site Analysis



场地汇水分析

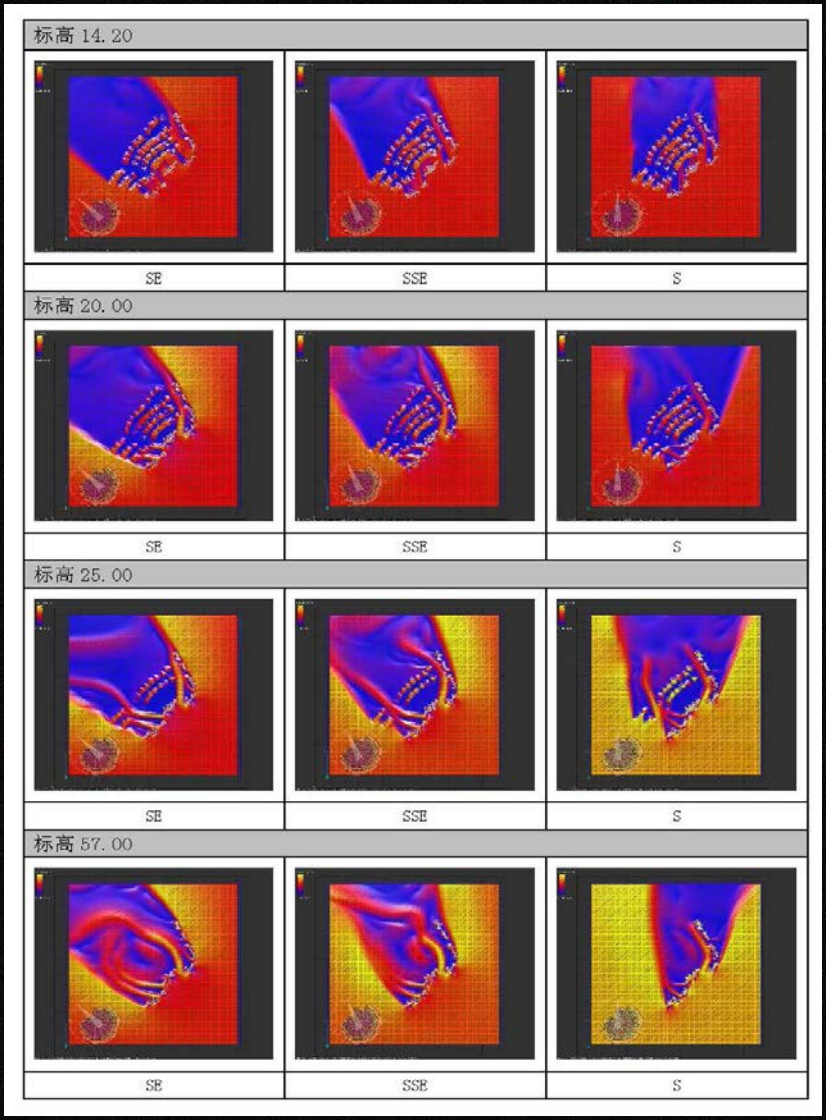
场地植被表面积统计

现状场地高程和设计高程对比

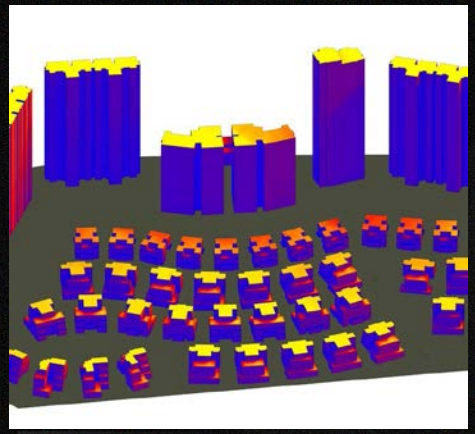


场地任意断面生成

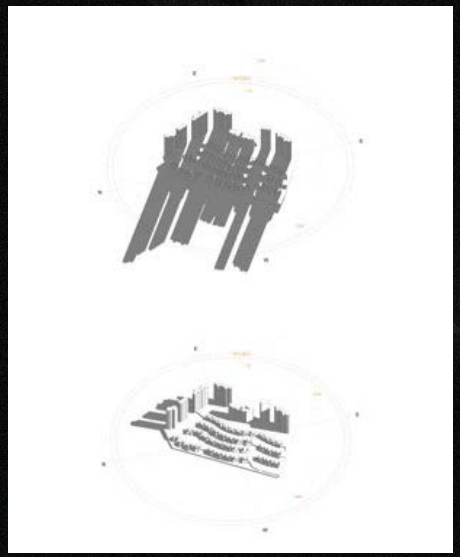
设计方案

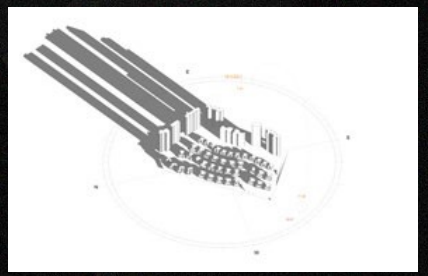


场地风环境分析



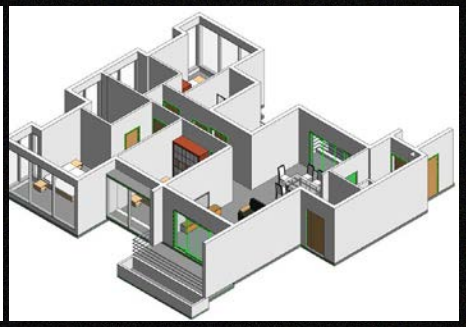
日照辐射分析





日照遮挡分析

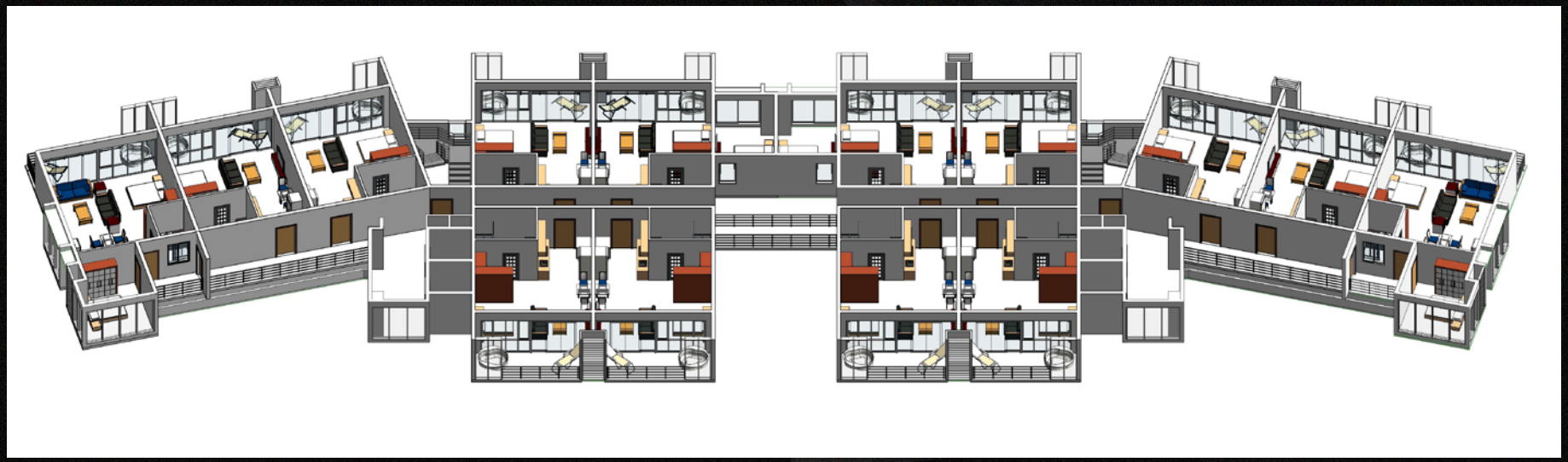
户型 A-1



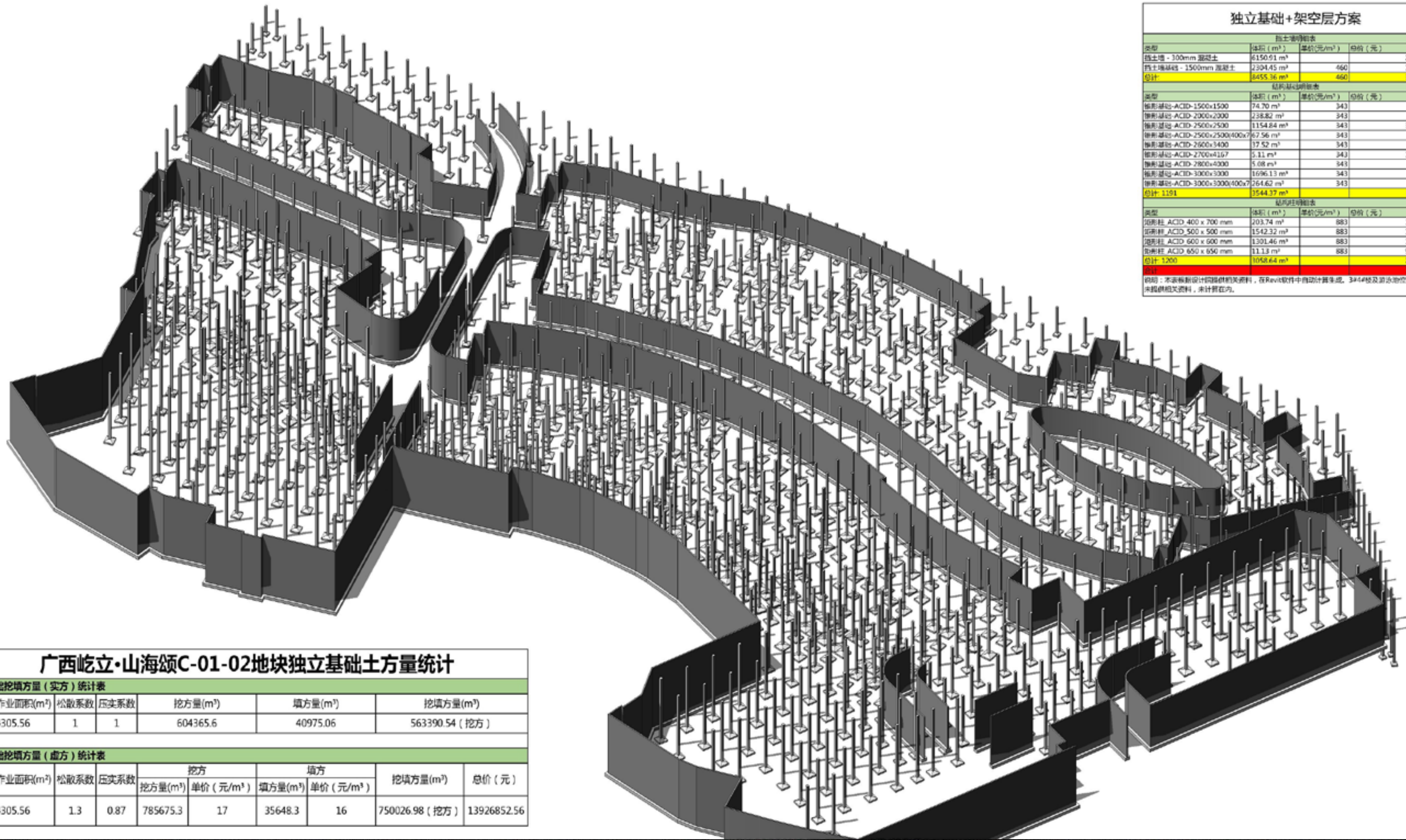
户型 A-2

复式户型 1

复式户型 2



花园洋房标准层



独立基础+架空层方案

挡土墙明细表			
类型	体积（m³）	单价(元/m³）	总价（元）
挡土墙 - 300mm 混凝土	6150.91 m³		2829419.331
挡土墙基础 - 1500mm 混凝土	2304.45 m³	460	1060045.982
总计:	8455.36 m³	460	3889465.313
结构基础明细表			
类型	体积（m³）	单价(元/m³）	总价（元）
矩形基础-ACID-1500x1500	74.70 m³	343	25622.239
矩形基础-ACID-2000x2000	238.82 m³	343	81913.888
矩形基础-ACID-2500x2500	1154.84 m³	343	396109.3251
矩形基础-ACID-2500x2500(400x7	67.56 m³	343	23173.9375
矩形基础-ACID-2600x3400	37.52 m³	343	12869.36
矩形基础-ACID-2700x4167	5.11 m³	343	1753.246215
矩形基础-ACID-2800x4000	5.08 m³	343	1742.9202
矩形基础-ACID-3000x3000	1696.13 m³	343	581771.529
矩形基础-ACID-3000x3000(400x7	264.62 m³	343	90762.945
总计: 1191	3544.37 m³		1215719.39
结构柱明细表			
类型	体积（m³）	单价(元/m³）	总价（元）
矩形柱_ACID 400 x 700 mm	203.74 m³	883	179900.3672
矩形柱_ACID_500 x 500 mm	1542.32 m³	883	1361868.769
矩形柱_ACID_600 x 600 mm	1301.46 m³	883	1149186.478
矩形柱_ACID 650 x 650 mm	11.13 m³	883	9824.494591
总计: 1200	3058.64 m³		2700780.109
合计			7805964.812

说明：本表根据设计院提供相关资料，在Revit软件中自动计算生成。3#4#楼及游泳池位置由于设计院未提供相关资料，未计算在内。

广西屹立·山海颂C-01-02地块独立基础土方量统计

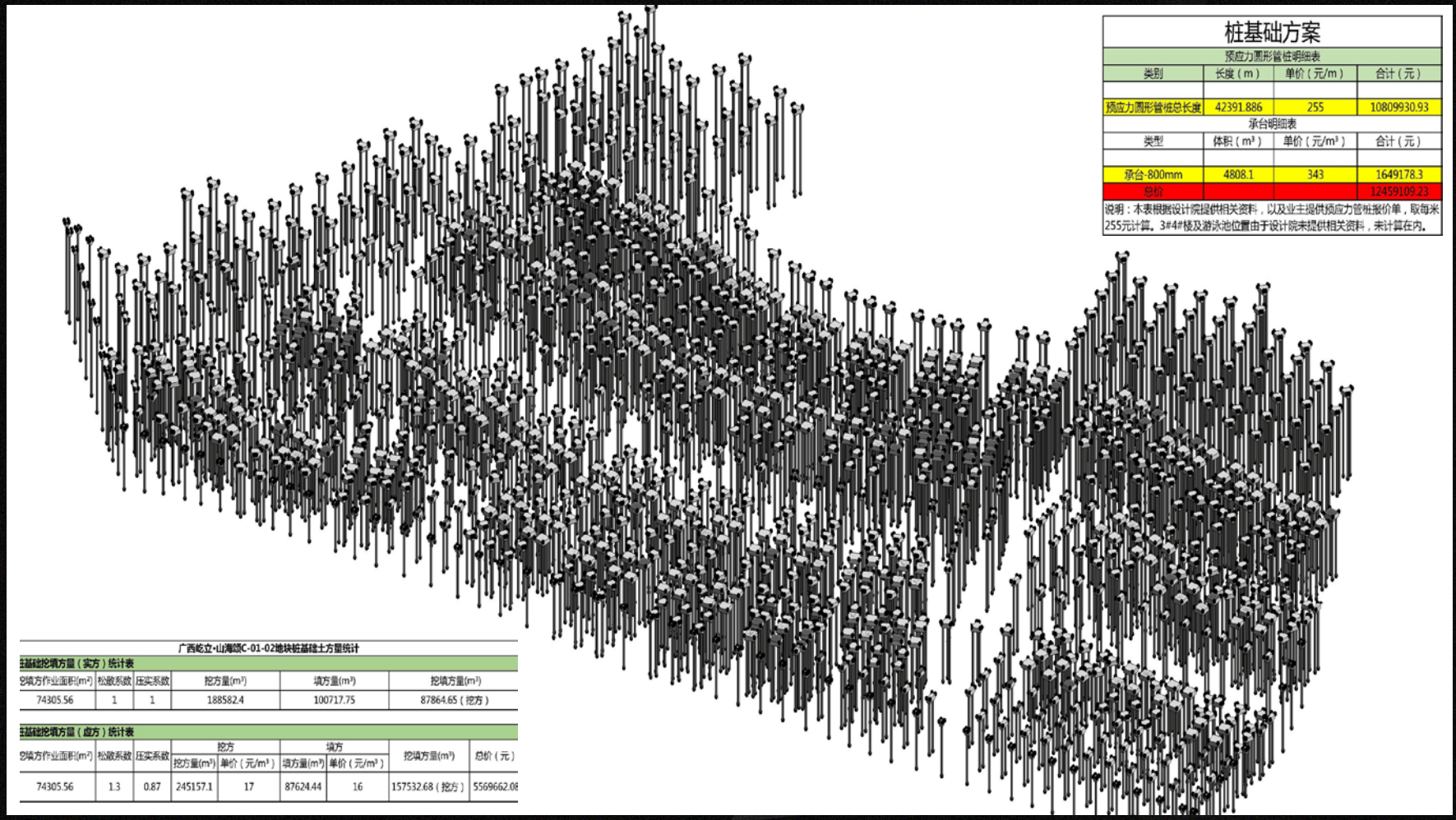
独立基础挖填方量（实方）统计表

挖填方作业面积(m²)	松散系数	压实系数	挖方量(m³)	填方量(m³)	挖填方量(m³)
74305.56	1	1	604365.6	40975.06	563390.54（挖方）

独立基础挖填方量（虚方）统计表

挖填方作业面积(m²)	松散系数	压实系数	挖方		填方		挖填方量(m³)	总价（元）
			挖方量(m³)	单价（元/m³）	填方量(m³)	单价（元/m³）		
74305.56	1.3	0.87	785675.3	17	35648.3	16	750026.98（挖方）	13926852.56

独立基础 + 架空层地基处理方案



桩基础方案

预应力圆形管桩明细表			
类别	长度（m）	单价（元/m）	合计（元）
预应力圆形管桩总长度	42391.886	255	10809930.93
承台明细表			
类型	体积（m^3）	单价（元/m^3）	合计（元）
承台-800mm	4808.1	343	1649178.3
总价			12459109.23

说明：本表根据设计院提供相关资料，以及业主提供预应力管桩报价单，取每米255元计算。3#4#楼及游泳池位置由于设计院未提供相关资料，未计算在内。

广西屹立·山海院C-01-02地块桩基础土方量统计

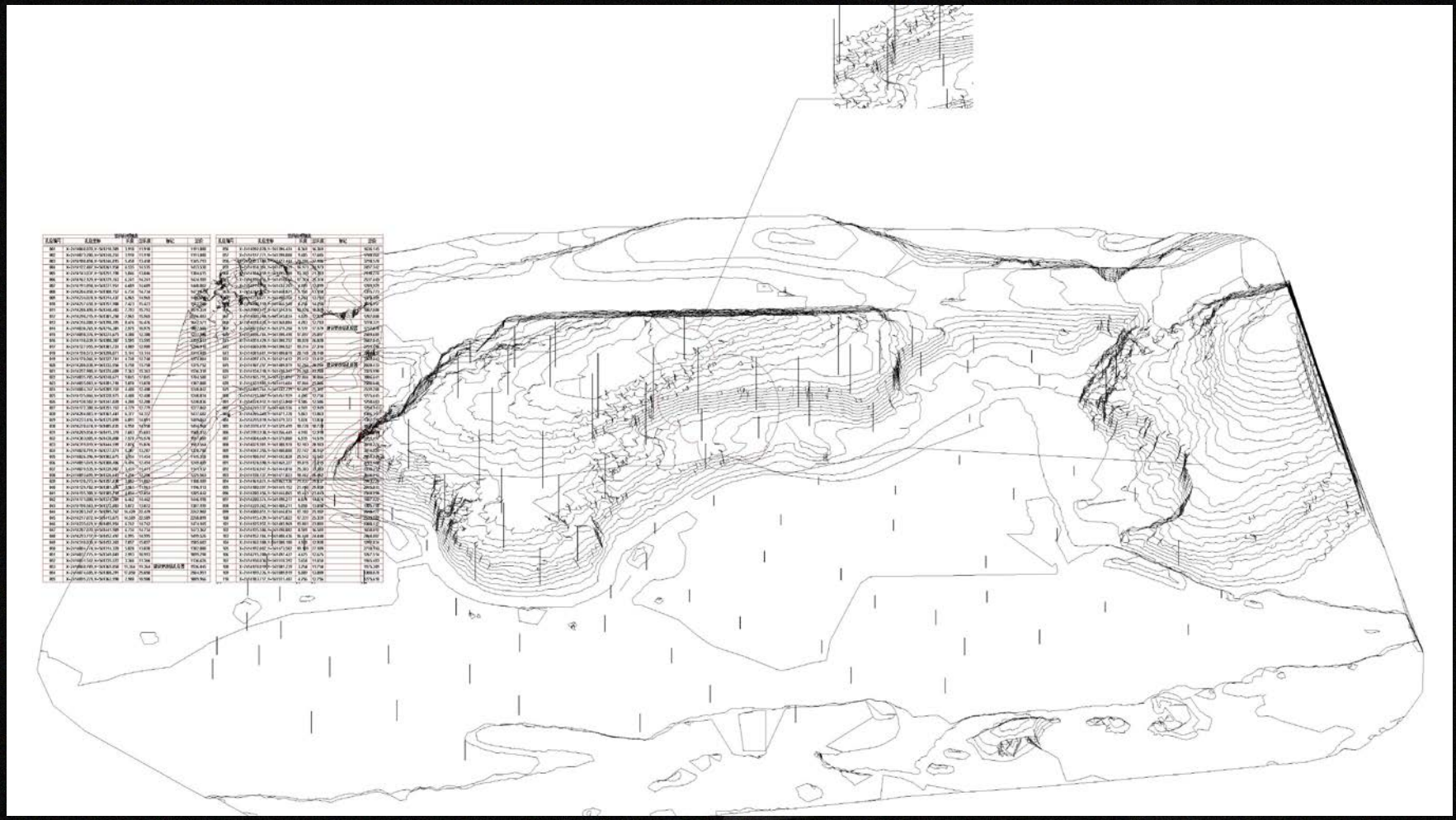
桩基础挖填方量（实方）统计表

挖填方作业面积(m^2)	松散系数	压实系数	挖方量(m^3)	填方量(m^3)	挖填方量(m^3)
74305.56	1	1	188582.4	100717.75	87864.65（挖方）

桩基础挖填方量（虚方）统计表

挖填方作业面积(m^2)	松散系数	压实系数	挖方		填方		挖填方量(m^3)	总价（元）
			挖方量(m^3)	单价（元/m^3）	填方量(m^3)	单价（元/m^3）		
74305.56	1.3	0.87	245157.1	17	87624.44	16	157532.68（挖方）	5569662.08

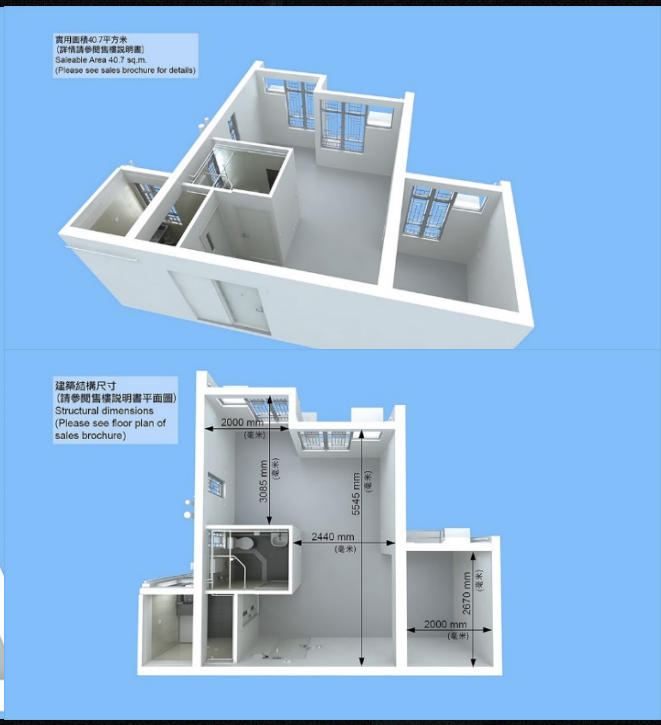
桩基地基处理方案



详勘钻孔造价估算

设计方案对比 - 销售价格估算

设计方案对比 - 销售价格估算



HKHA HOS Project – Video and 3D Printing from BIM

Client : Hong Kong Housing Authority

P.I.C. : Samantha Hu

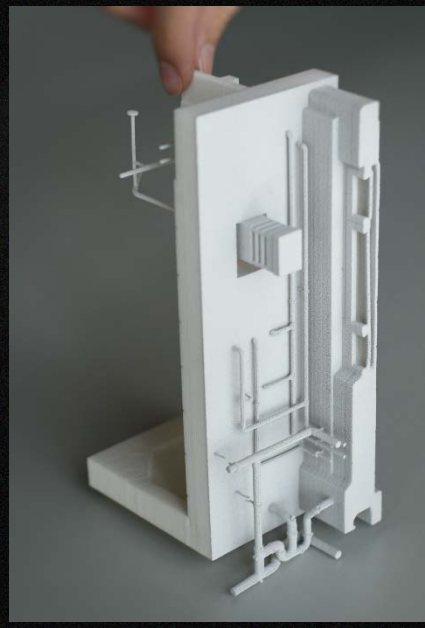
Period : 2014

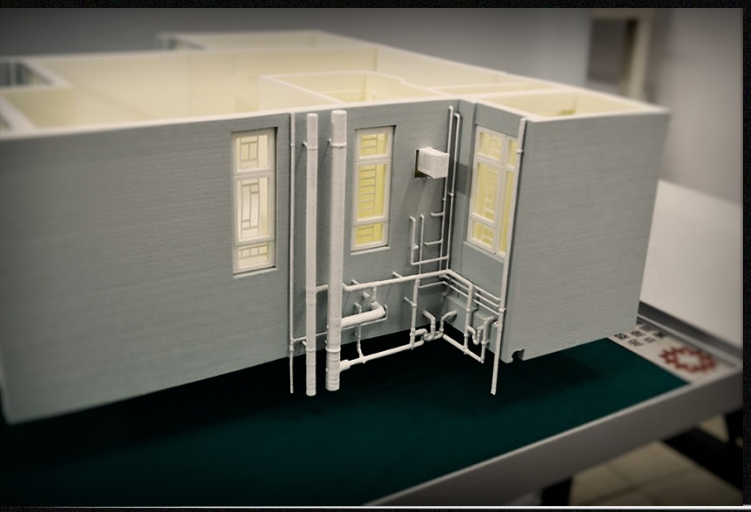
Scope : BIM models are built for two typical flats in HKHA HOS Project based on the existing drawings. With rendering and post-production processes, perspectives and 3D animation are produced.

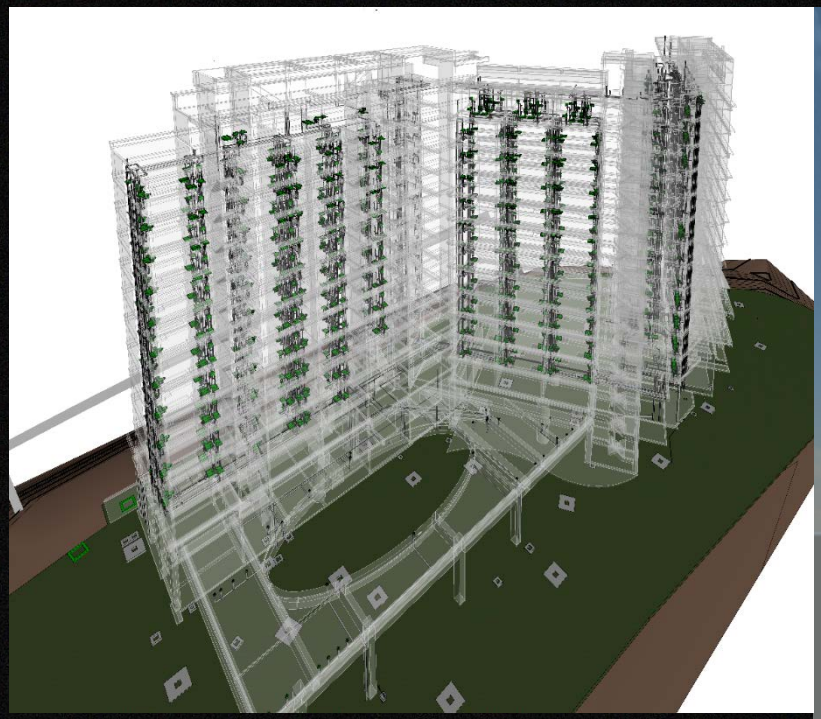
Output of BIM models to 3D printing technology provides a fast and accurate way of bringing virtual models into reality.


Mei Pak Court
Flat 2, 12/F to 32/F
Saleable Area 34.5 sq.m.


Sheung Chui Court
Flat 12, 1/F to 34/F, Block 8



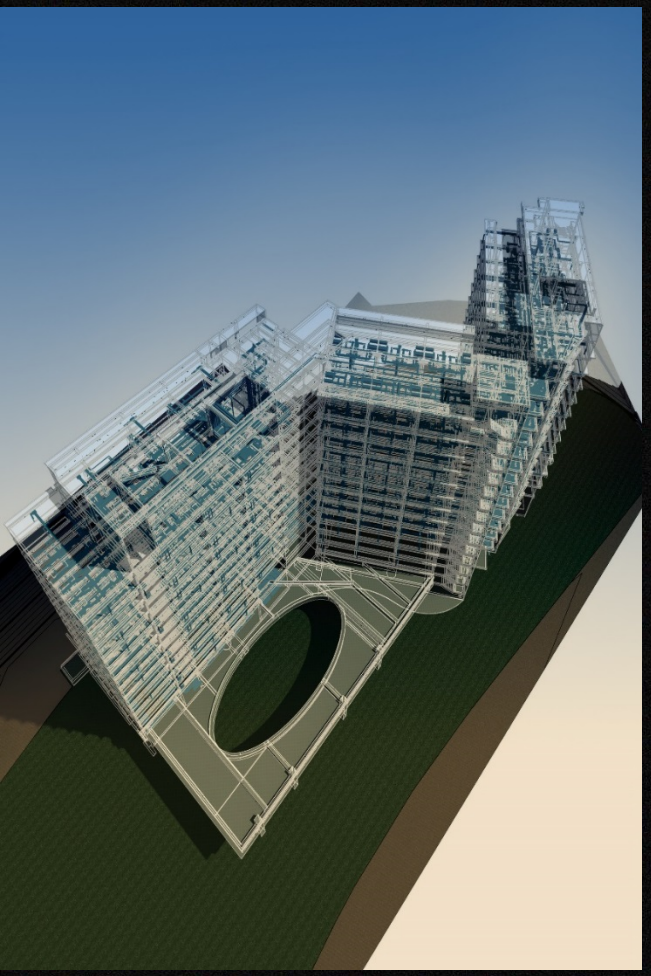


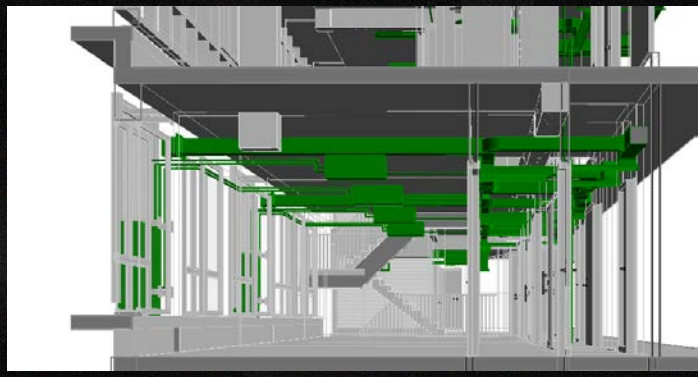


VTC Student Dormitory

Client : Vocational Training Council
P.I.C. : Samantha Hu
Period : 2014-

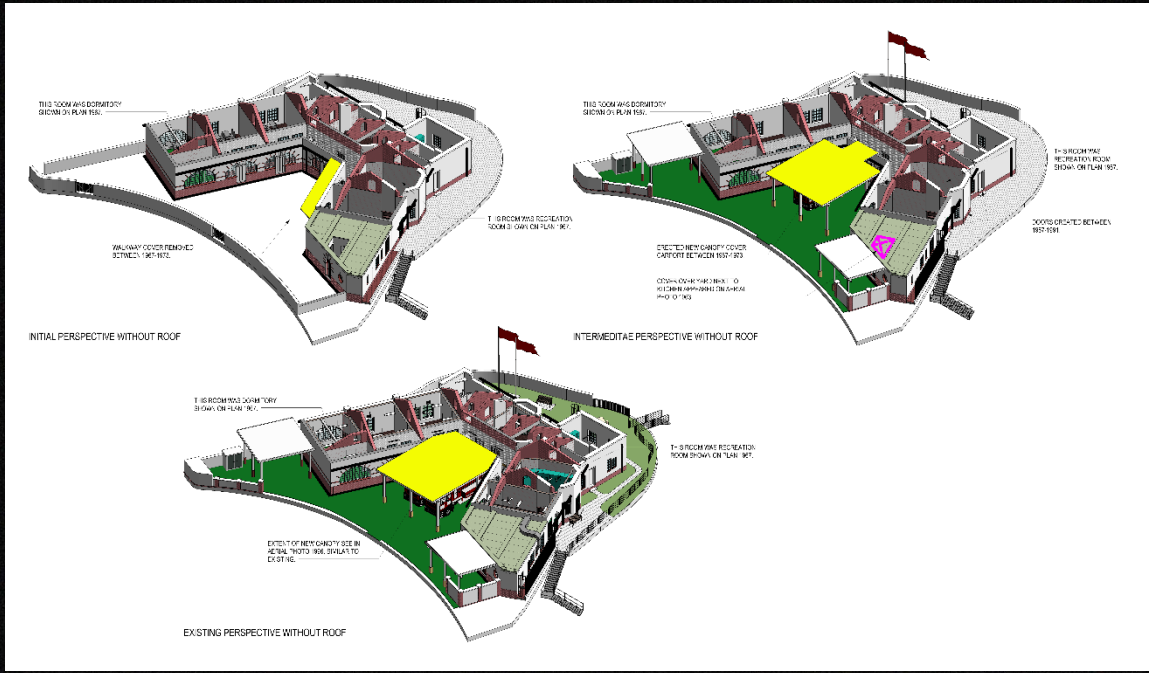
Scope : BIM models for architecture, structure and MEP were built to check CSD, clash report to be generated from Glue. Models were exported to Navisworks for 4D construction management and to generate 6 videos to present the construction methodology.

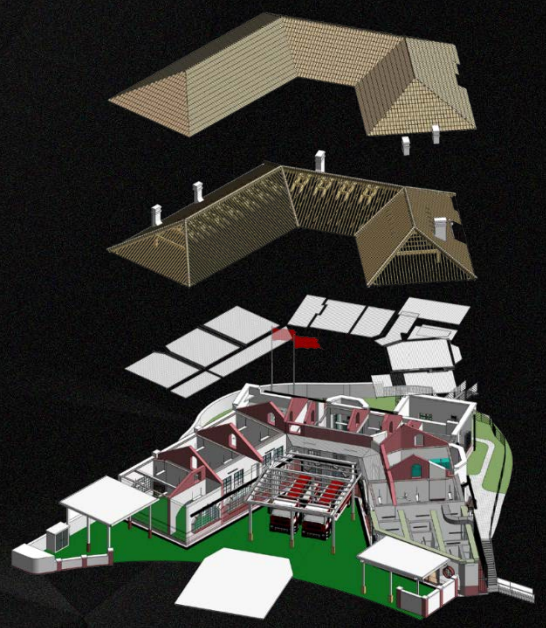




HERITAGE INFORMATION MODELLING

VICTORIA PEAK FIRE STATION





ASD Heritage Consultancy - Victoria Peak Fire Station

Client : Architectural Services Department, HK

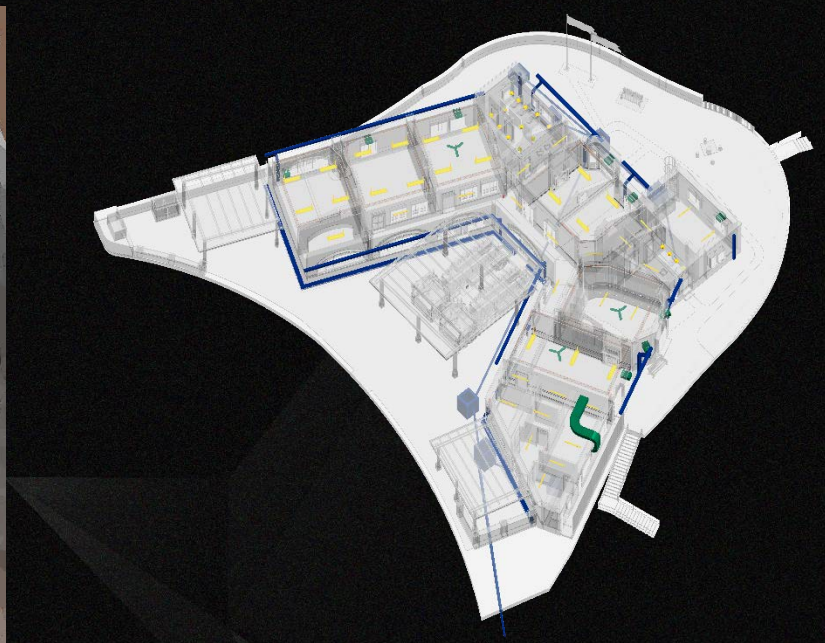
P.I.C. : David Fung

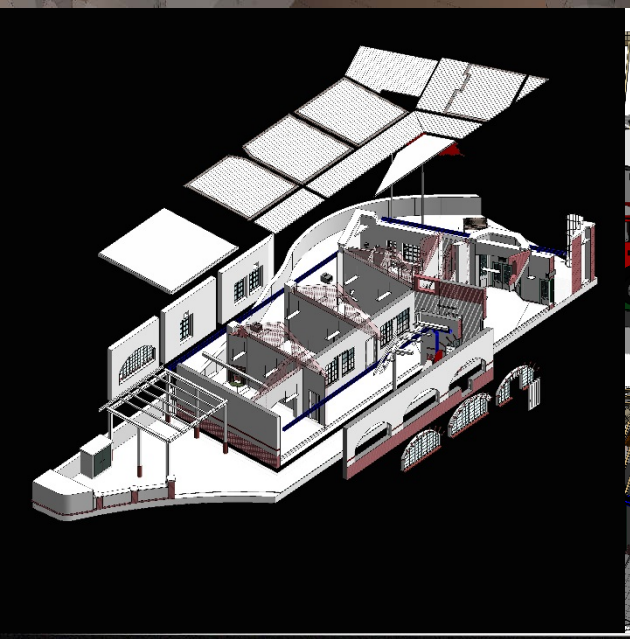
Period : 2014-2015

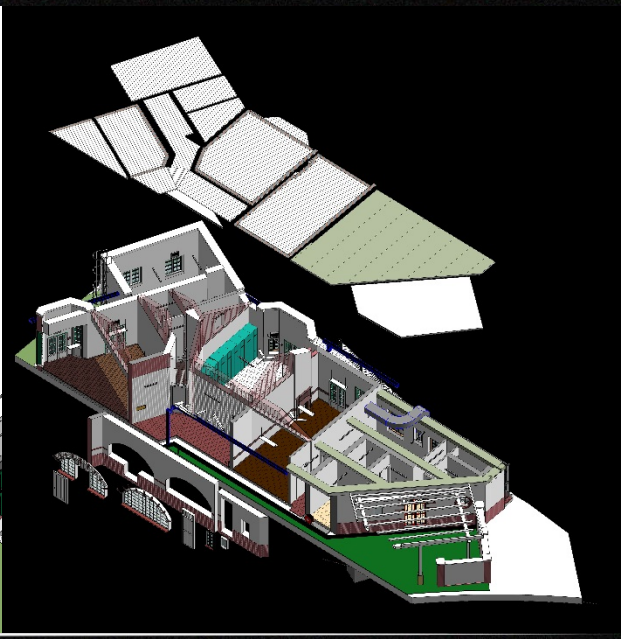
Historical building located on top of the Victoria Peak, Hong Kong Island. The building was built as student dormitories and renovated to a fire station at 60s. Laser scanning and photogrammetry were used to collect existing information, the building is built in Revit, and AR, RFID, NFC will be introduced to tell people the story of the building. **Winner of buildingSMART Hong Kong International BIM Award 2015.**

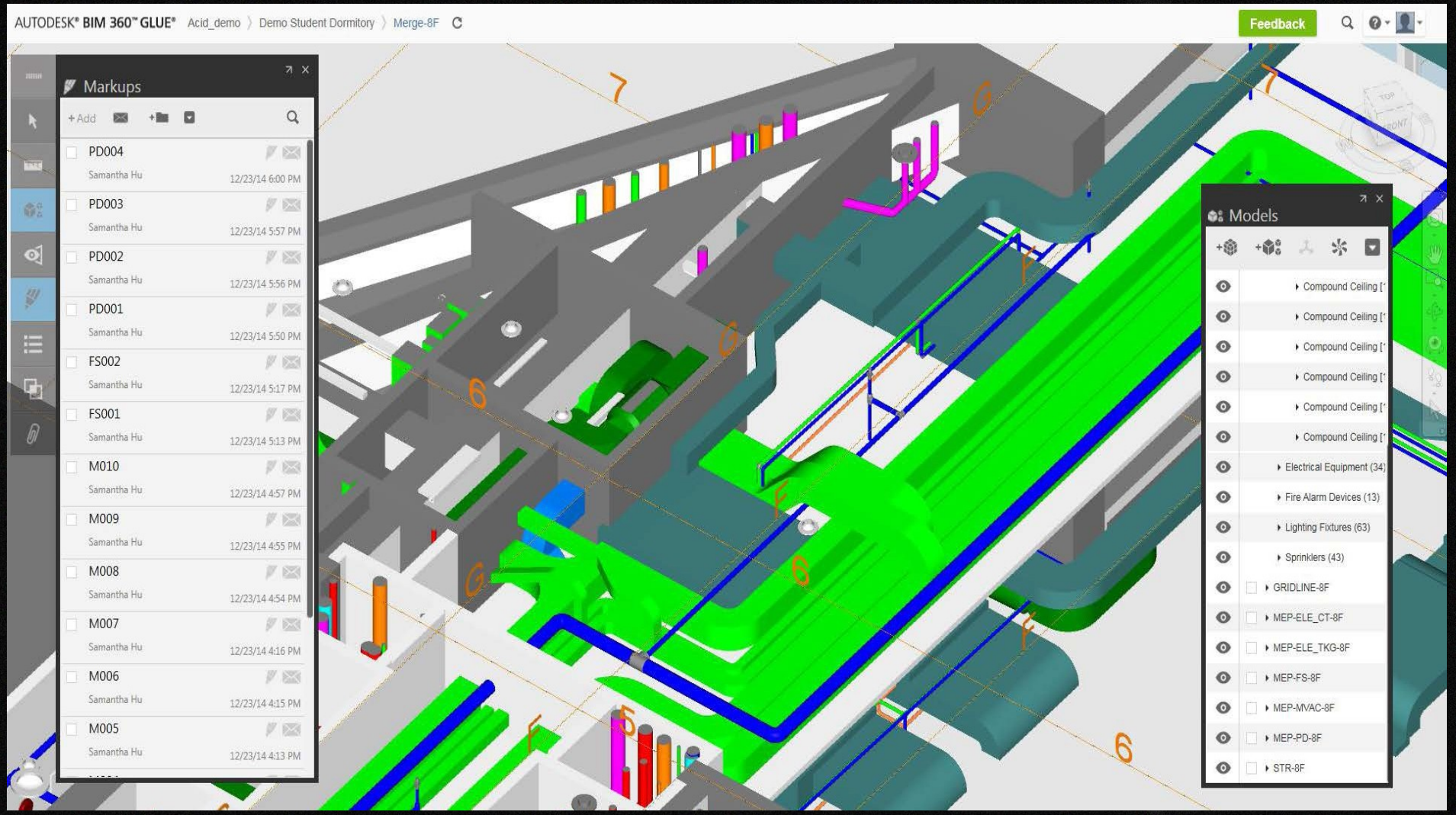
Point Cloud | BIM Process | Visualization

RENDERING | BIM MODEL | POINT CLOUD | REALITY





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Demo Student Dormitory
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Feedback
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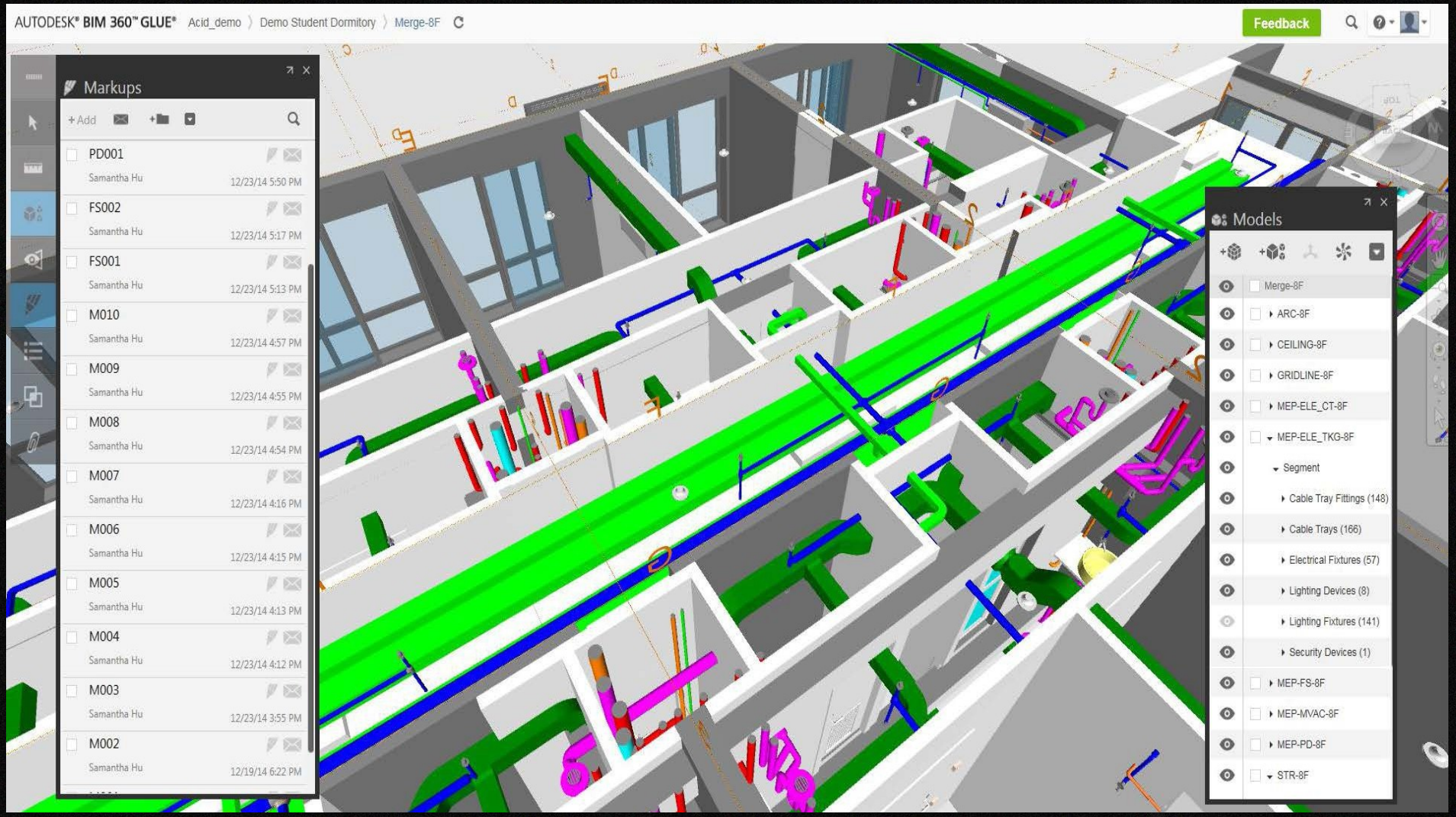
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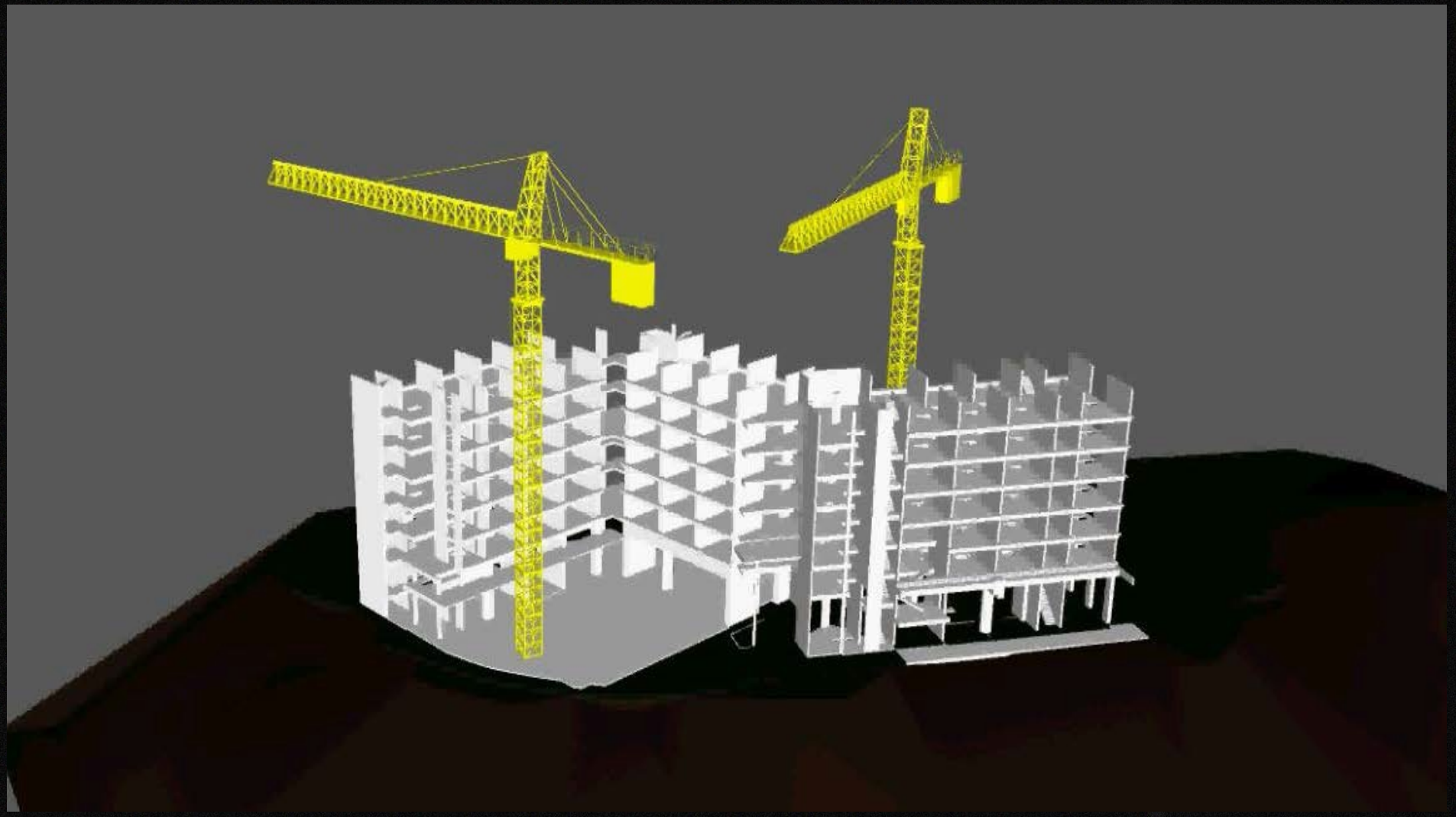
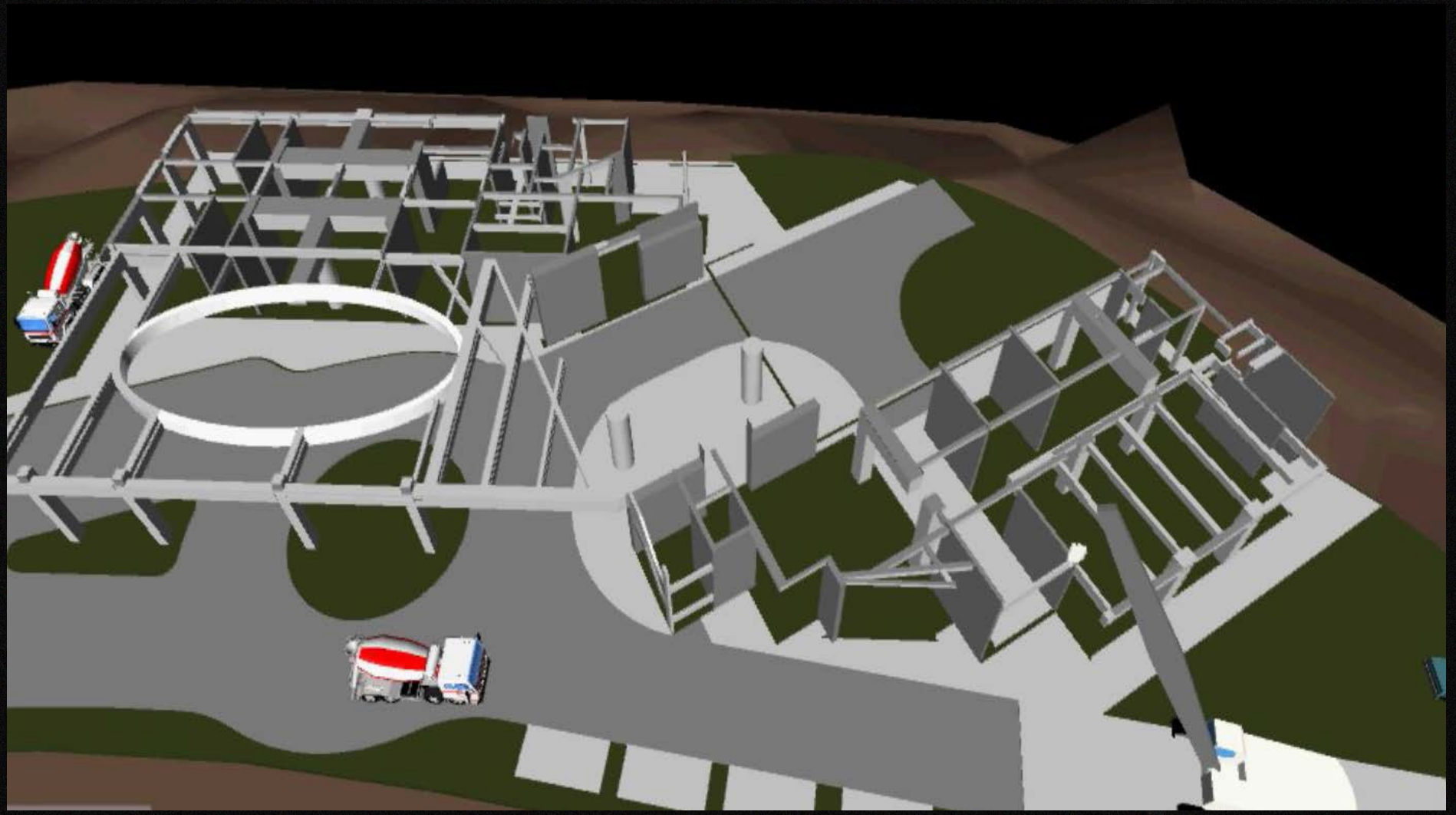
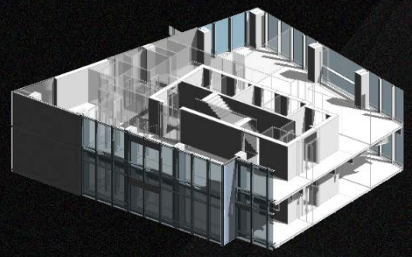
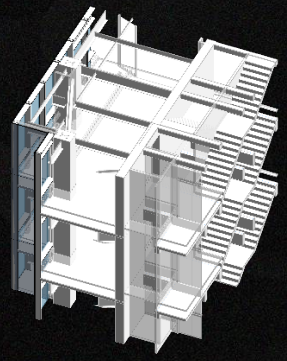


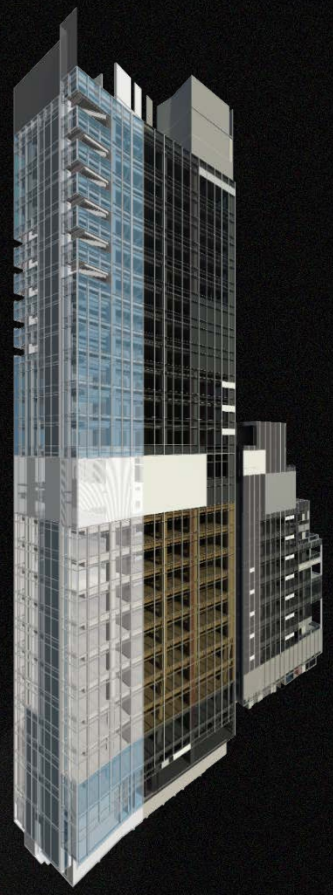
施工进度模拟



施工组织模拟







Twin Commercial Tower, Pottinger Street, Henderson

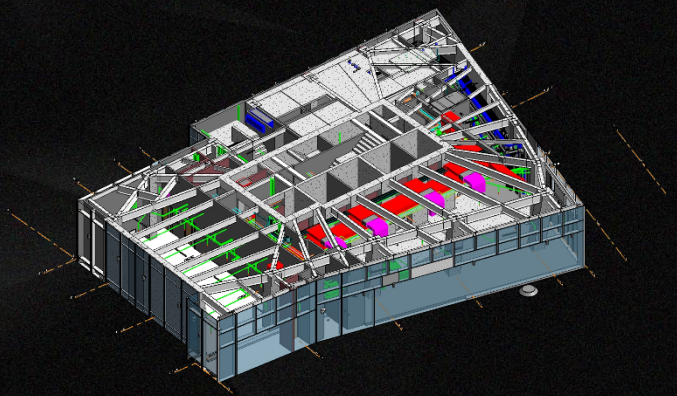
Client : Henderson (恒基兆业地产发展有限公司)

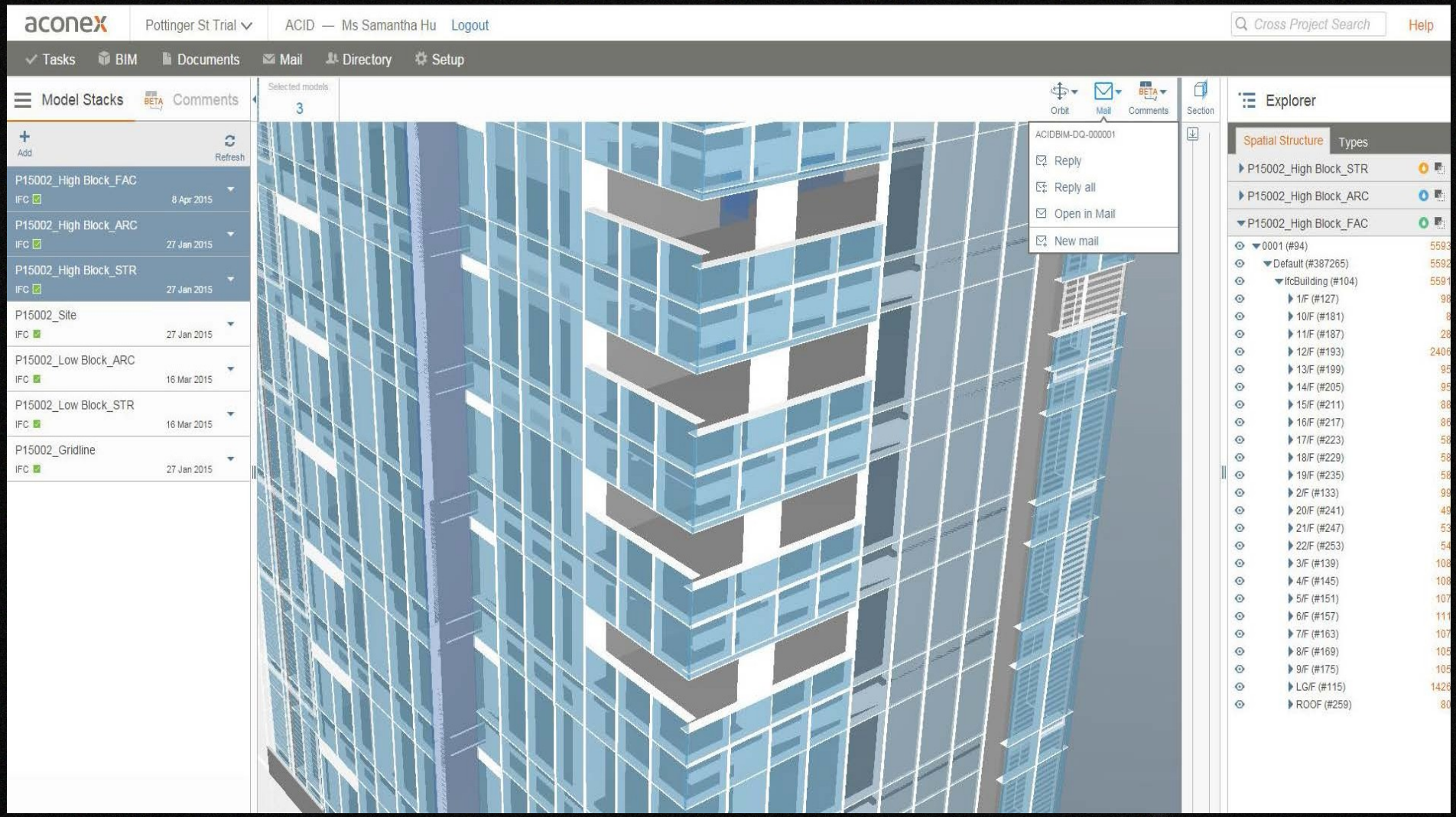
P.I.C. : Samantha Hu

Period : 2014-

Scope : The building locates in Central, Hong Kong, as the plot ratio in HK is not allow to greater than 15 for non-commercial building, the total GFA is 12,634.251 sq.m. for this site which area is 842.251 sq.m.

Several teams involved in the project in different locations and share the cloud platform. Client, designer and consultant work with cloud to co-ordinate, monitor the program.

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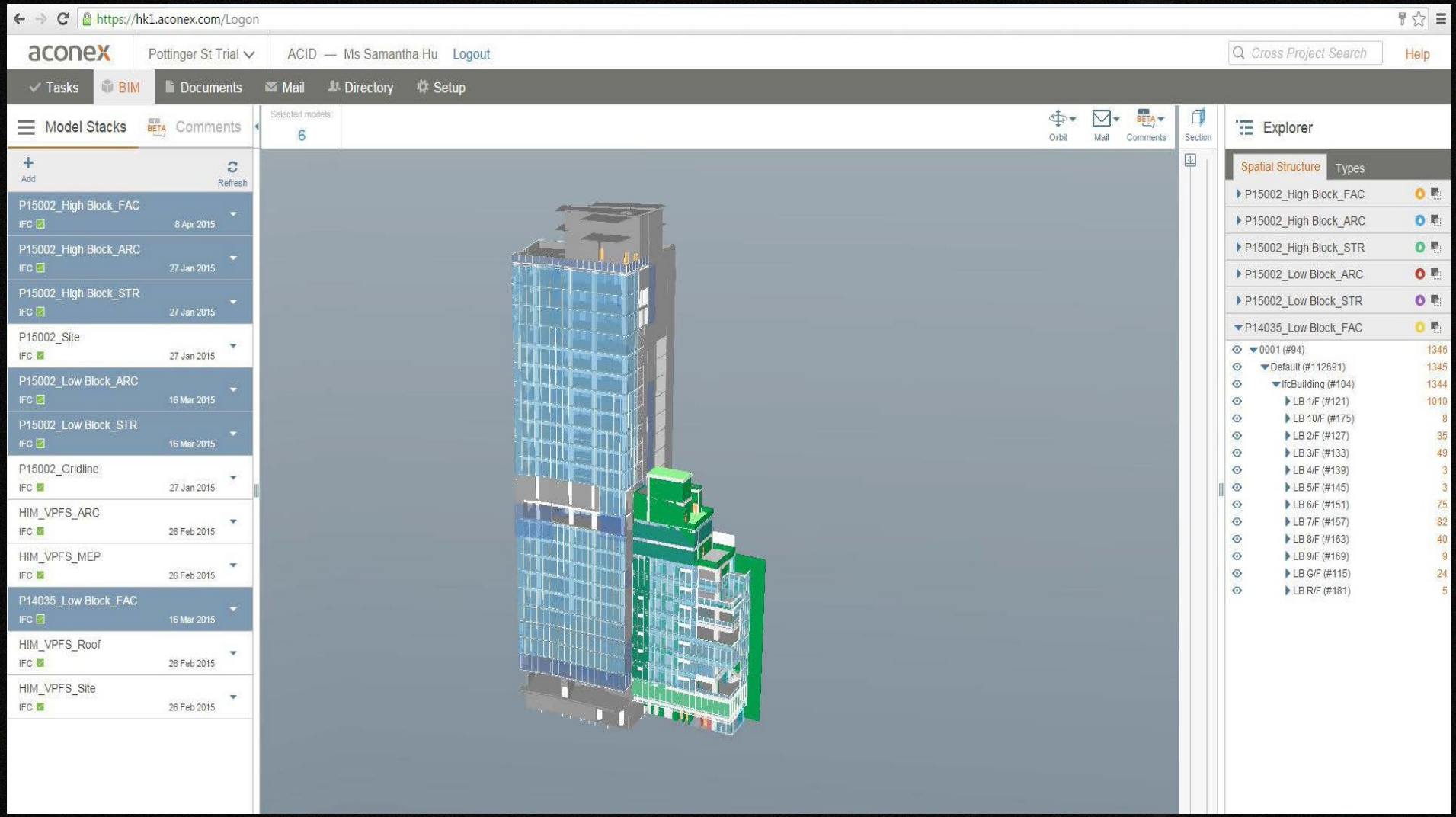
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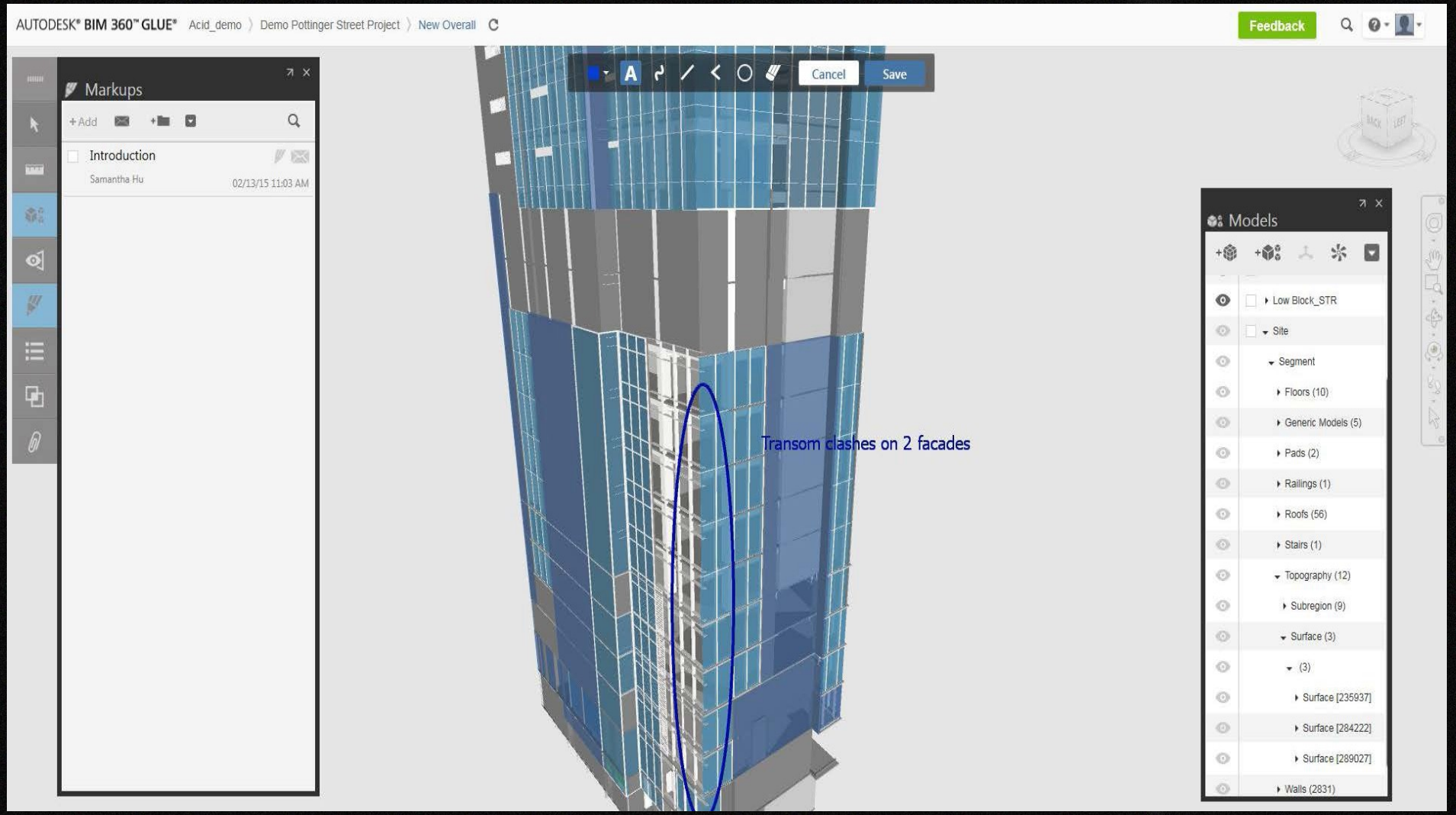
AUTODESK® BIM 360™ GLUE®
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Markups
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Stairs (1)
Topography (12)
Subregion (9)
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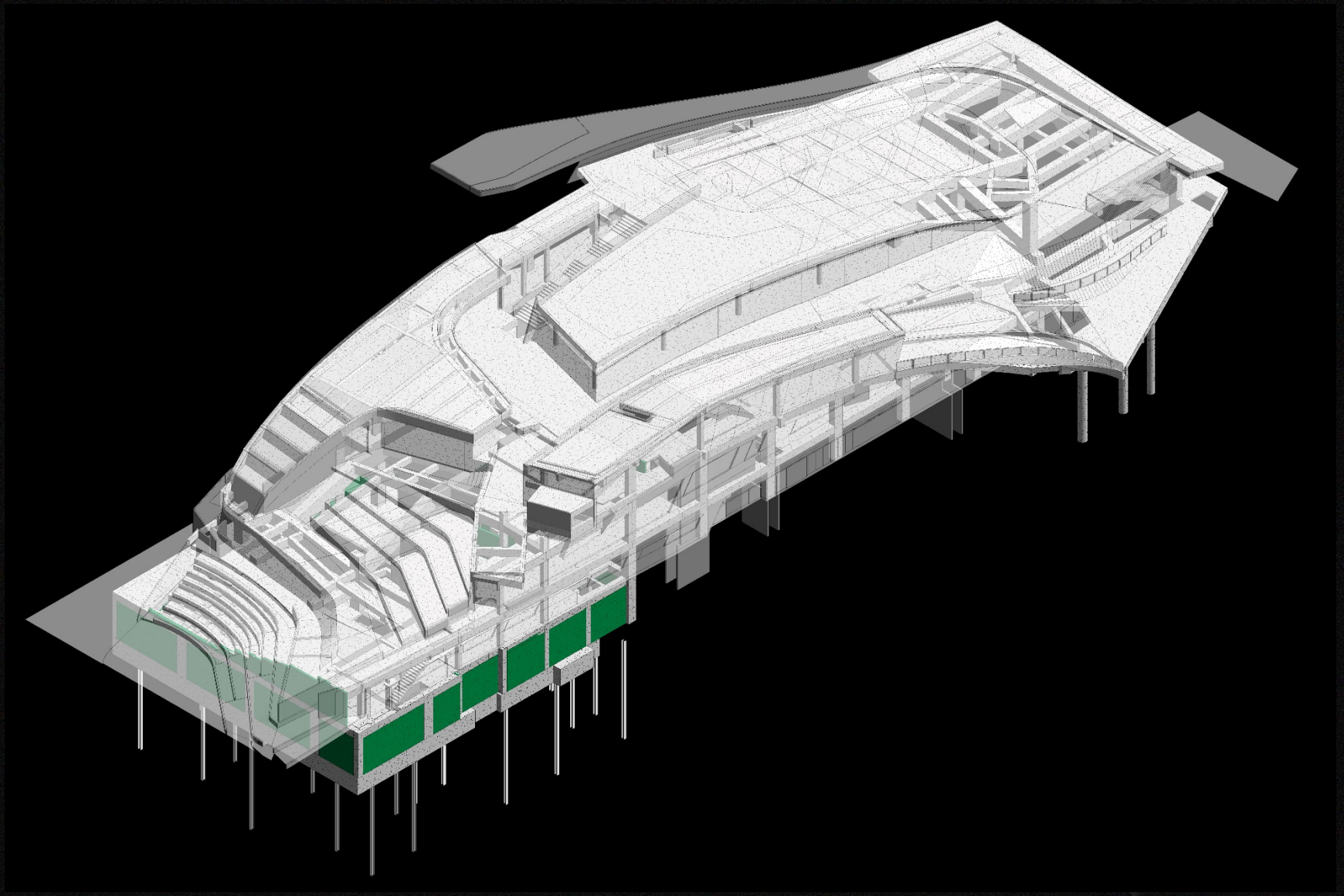
Redevelopment of Block X, the Hong Kong Polytechnic University

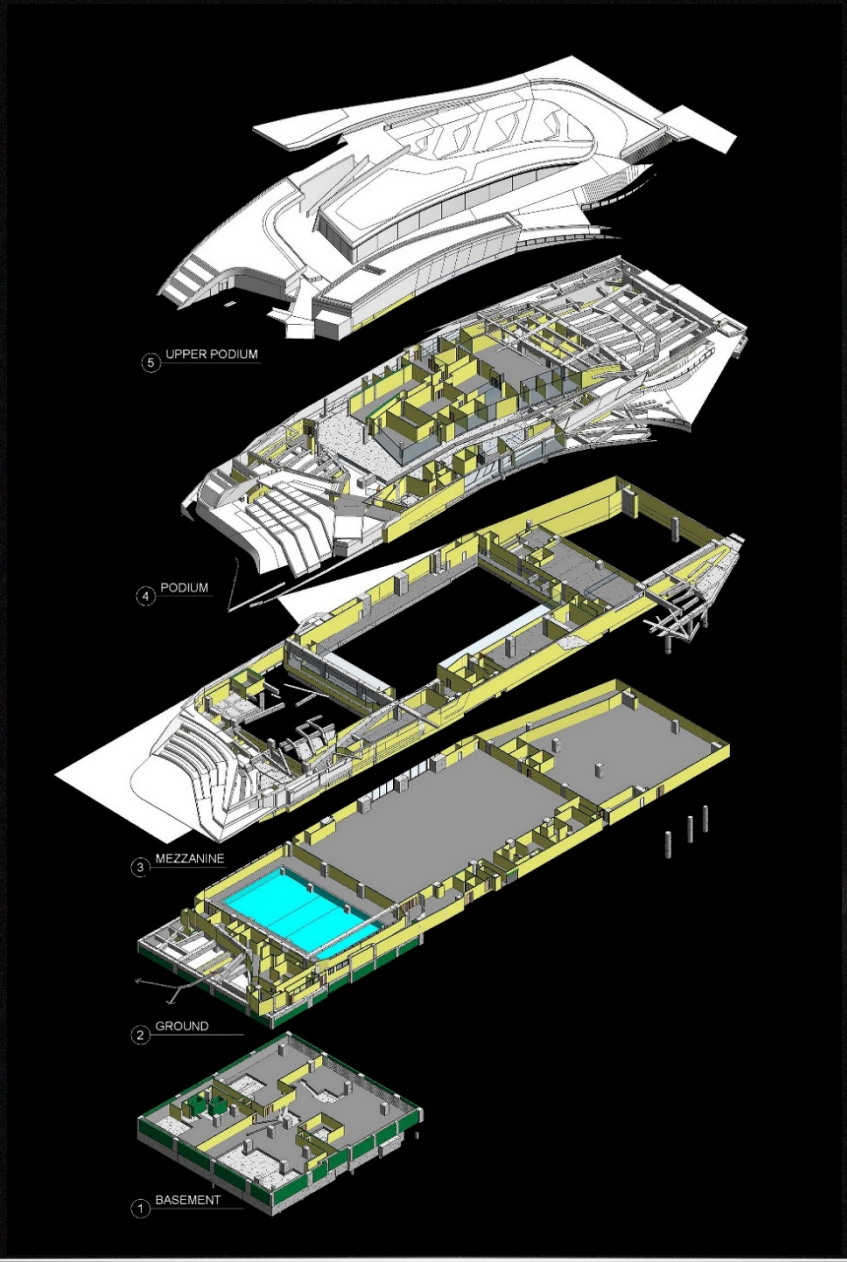
Client : Andrew Lee King Fun & Associates Architects Ltd.

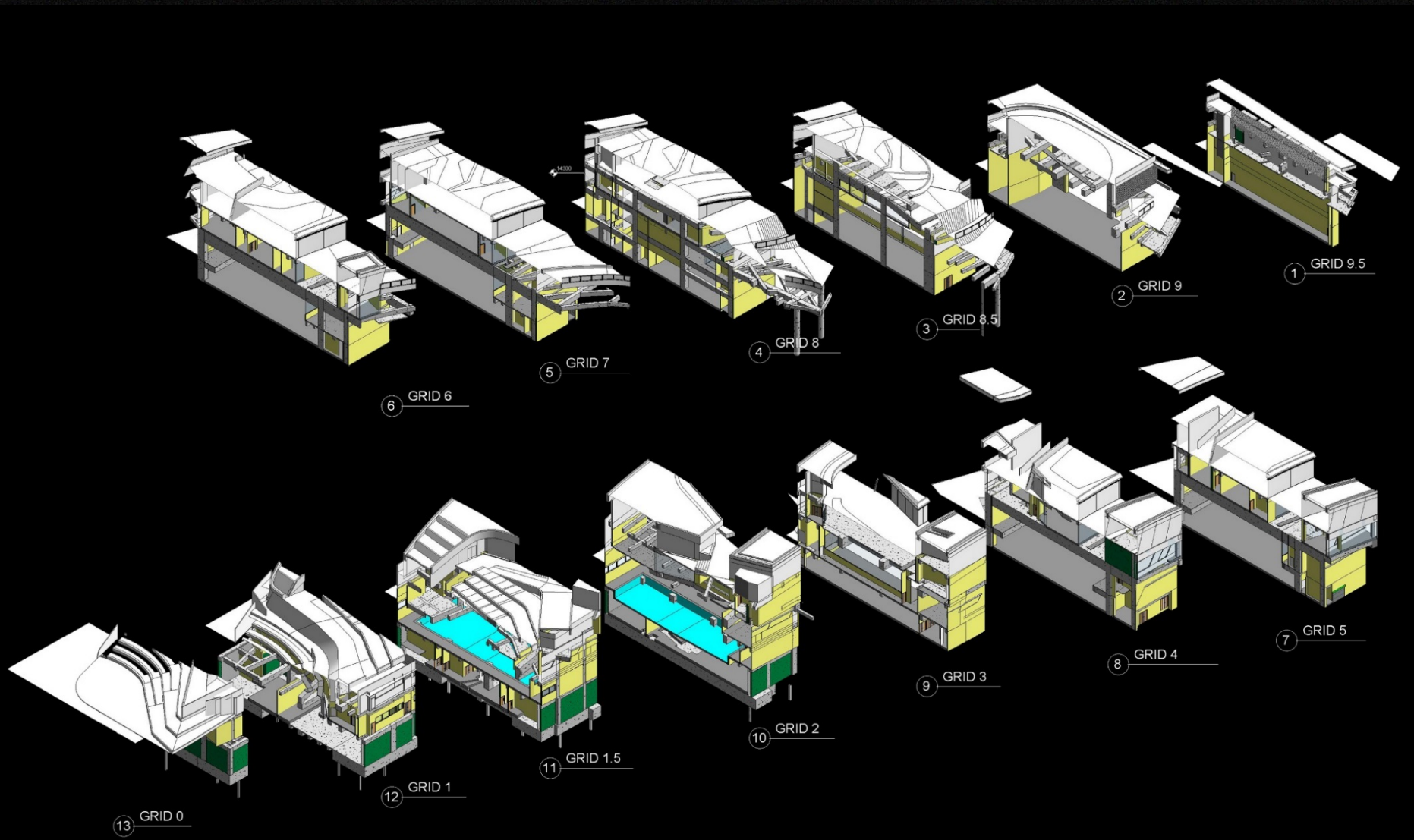
P.I.C. : David Fung

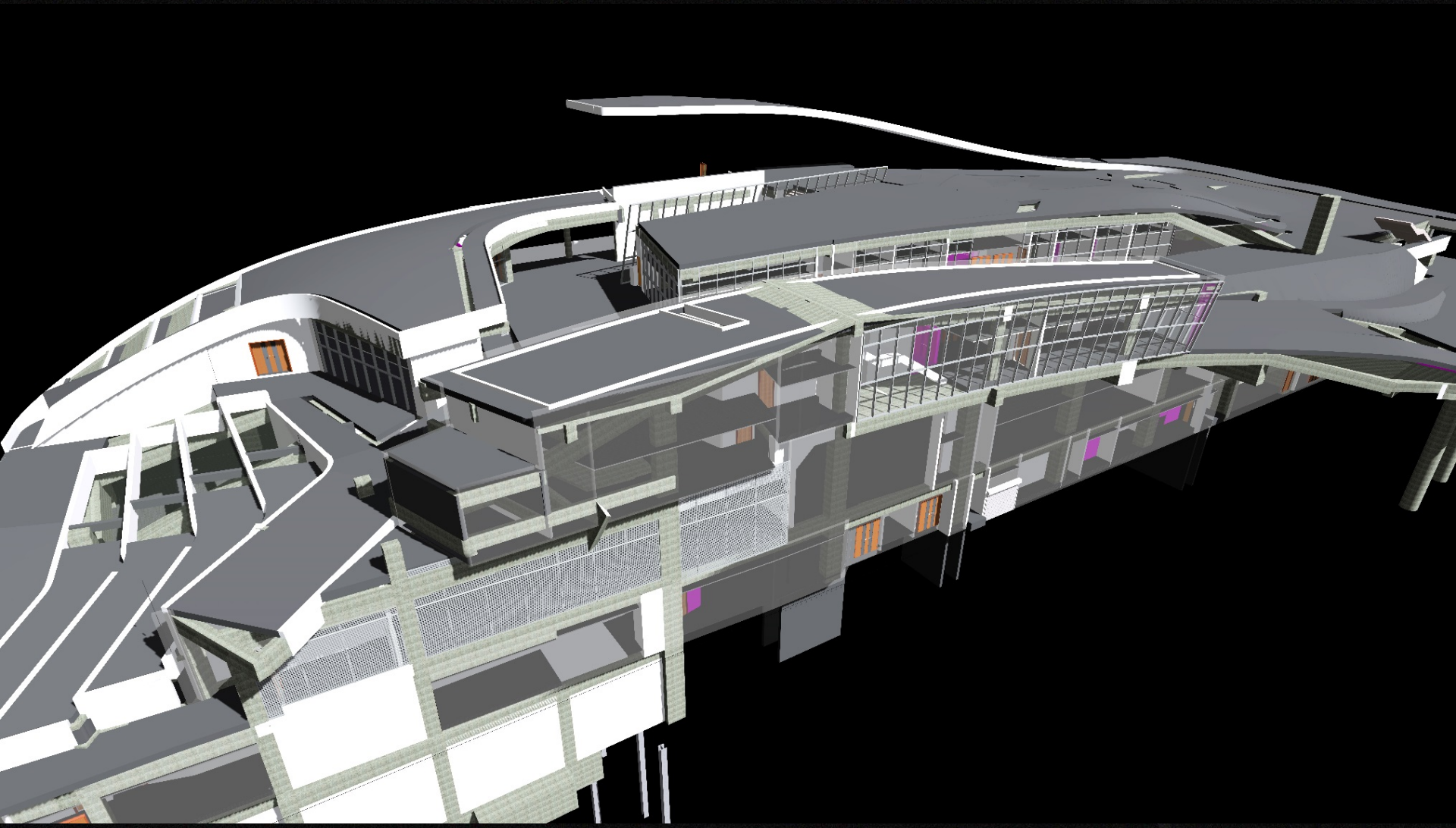
Period : 2015-

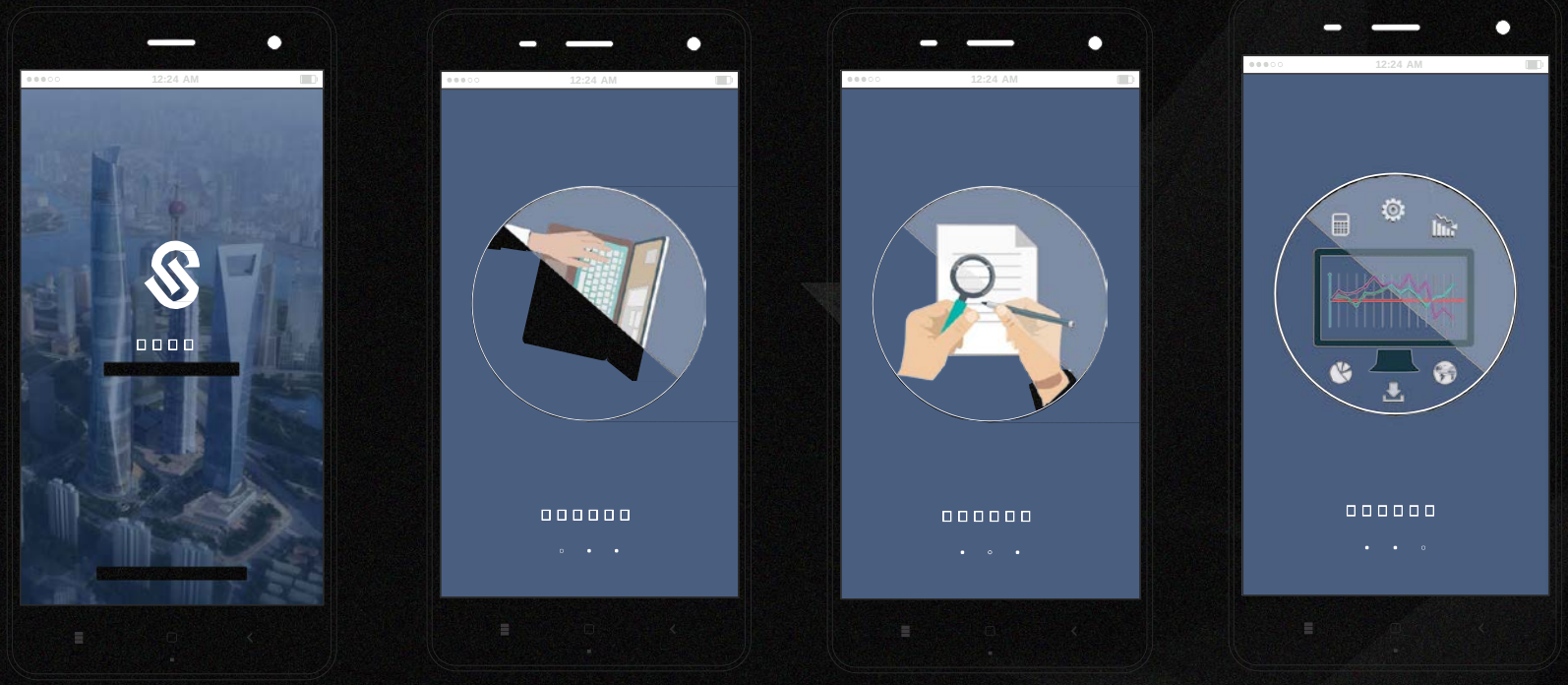
Scope : A multi-functional building in university Hung Hom campus, will connect the surrounding building (Innovation Tower) in the future. BIM model for all discipline will be set up in Revit, clash detection done in Glue as other projects. The as-built model to be collected from contractor, after run through the COBie system, the model will be transfer to EcoDomus and Maximo for facility management.



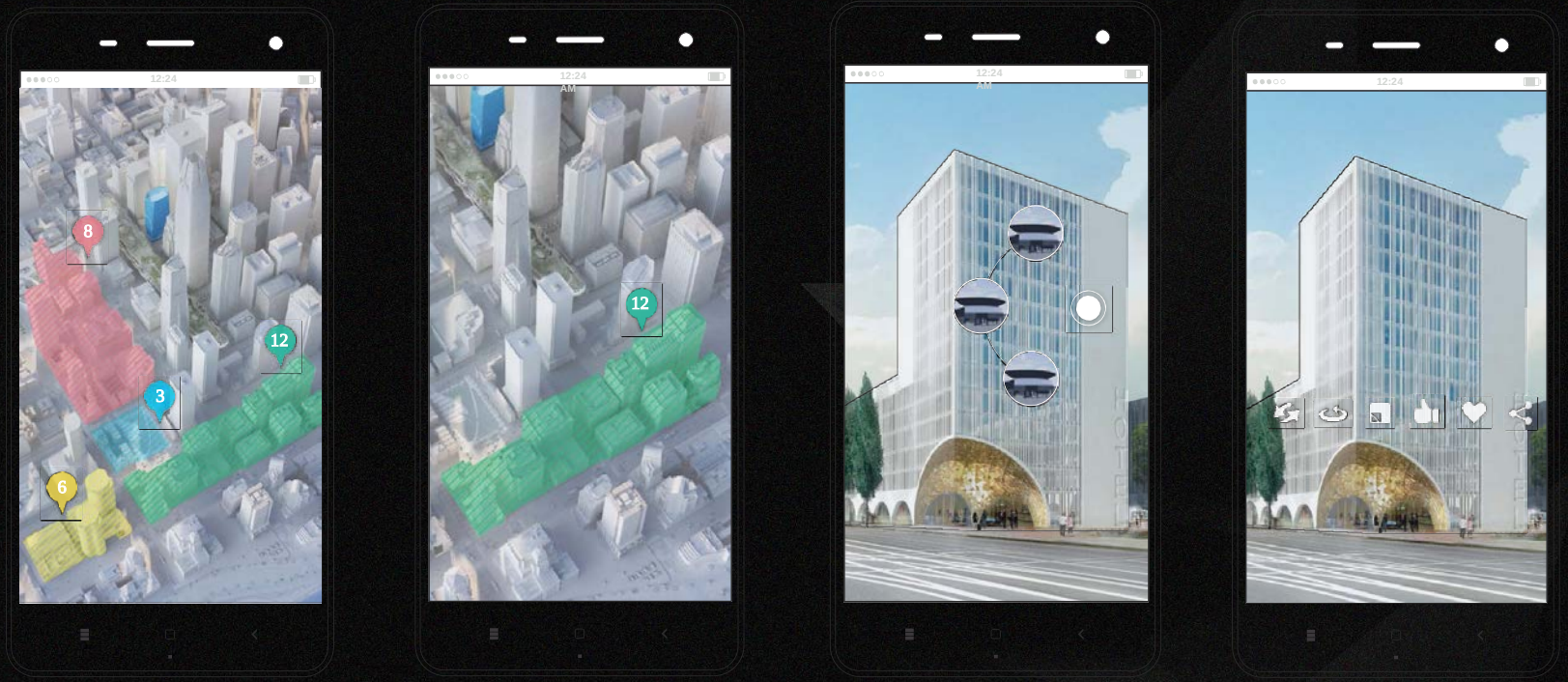

5 UPPER PODIUM
4 PODIUM
3 MEZZANINE
2 GROUND
1 BASEMENT


1 GRID 9.5
2 GRID 9
3 GRID 8.5
4 GRID 8
5 GRID 7
6 GRID 6
7 GRID 5
8 GRID 4
9 GRID 3
10 GRID 2
11 GRID 1.5
12 GRID 1
13 GRID 0





项目展示



项目展示


搜索
选择位置
图层
我的位置
实时场景
用工红线
地下模式
测量
视口录制
设置
静安区
浦东区
黄浦区
宝山区
徐汇区
距离
面积
测量面积
352.23毫米

项目展示

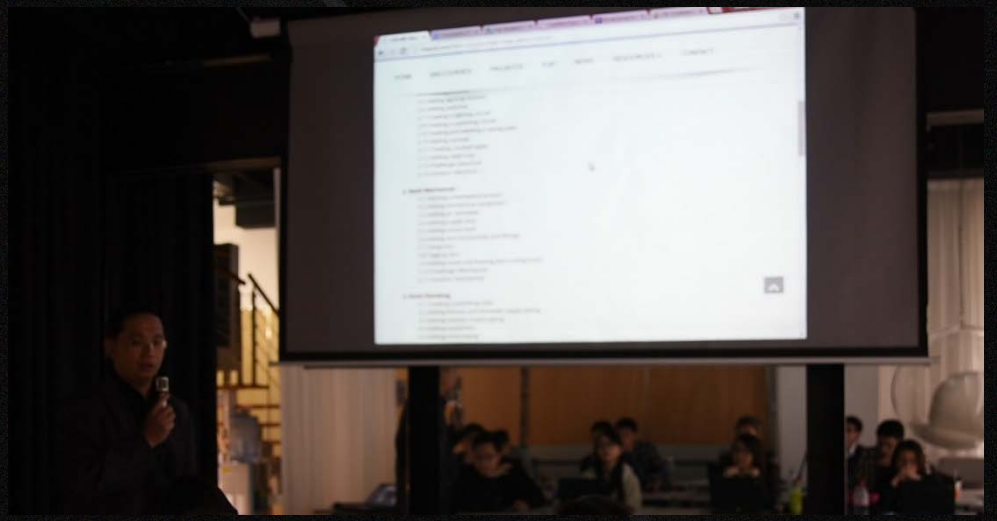

视口录制
00:32:16
漫游
高度
速度
视角
环境
高度
速度
视角
盘旋
高度
速度
视角
500MM
800MM
2000MM
显示模式
飞行模式
飞行速度
漫游模式
漫游速度
漫游高度
开启碰撞
场景设置
夜间模式
烘焙模式
原版模式
系统设置
显示导航图标
开启编辑模式
开启标注
开启GPS定位
问卷调查

项目展示

Education


Detailed Design
Analysis
Documentation
VISUALIZATION
Building Information Modeling
Construction 4D/5D
Construction Logistics
Autodesk


建築署 Architectural Services Department



BIM Courses

01 [CEI] CEI
Basic (Revit) 8 hrs.

02 [CEII-A] CEII
Architecture (Revit) 32 hrs.

03 [CEII-S] CEII
Structure (Revit) 32 hrs.

04 [CEII-M] CEII
MEP (Revit) 32 hrs.

05 [CEII-F] CEII
Families (Revit) 21 hrs.

06 [CEIII-A] CEIII
Architecture (Revit) 36 hrs.

07 [CEIII-S] CEIII
Structure (Revit) 24 hrs.

08 [CEIII-M] CEIII
MEP (Revit) 24 hrs.

09 [CEIII-Q] CEIII
Cost Management 24 hrs.

10 [CEIII-C] CEIII
Construction Management 32 hrs.

11 [CEIII-B] CEIII
BIM Management 30 hrs.

http://hkacid.com/bim-courses/

http://www.hkibim.org/?page_id=80

Contact

hongkong@a-c-i-d.com

+852 3468 5250

+852 3585 5599

A.C.I.D. – HK

hkacid.com

A.C.I.D. – China

www.a-c-i-d.com

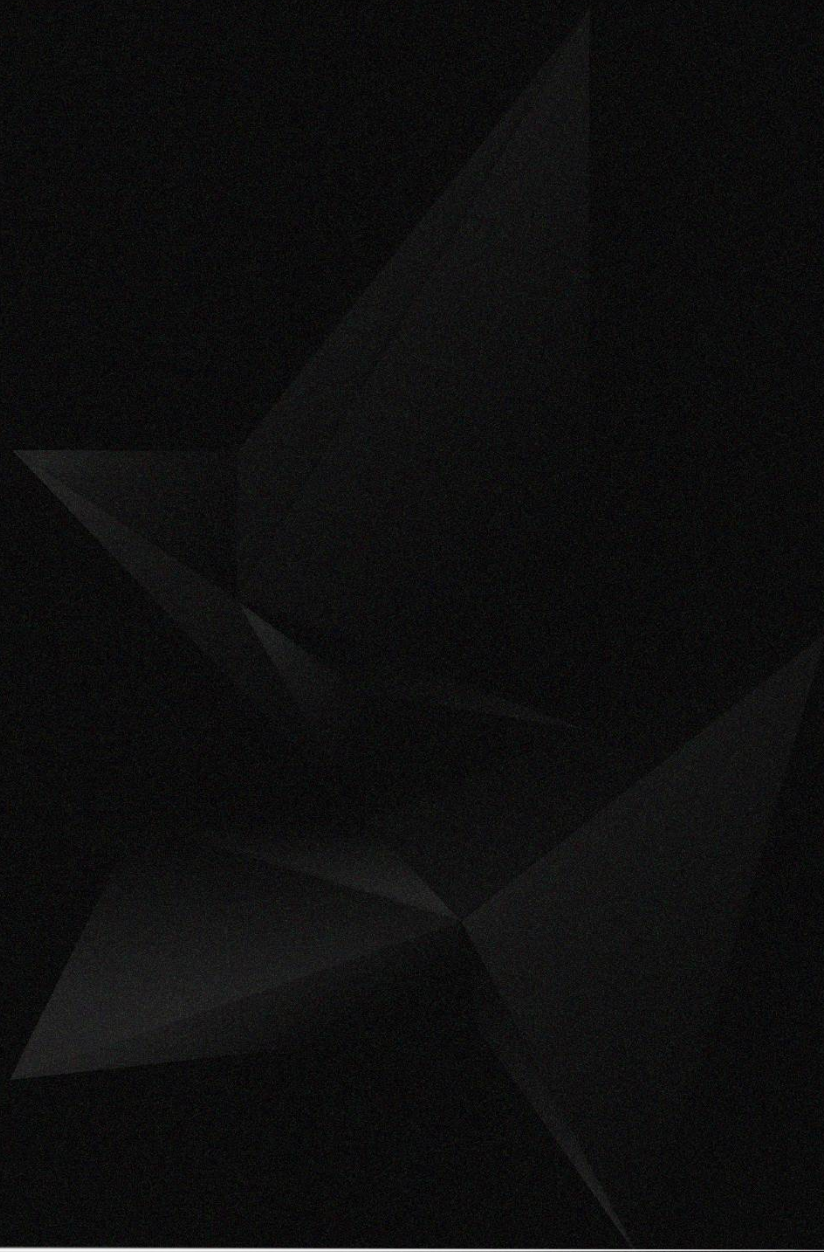
BIM Studio

香港荃灣海盛路3號 TML 廣場35樓A2

A2, 35/F, TML Tower,

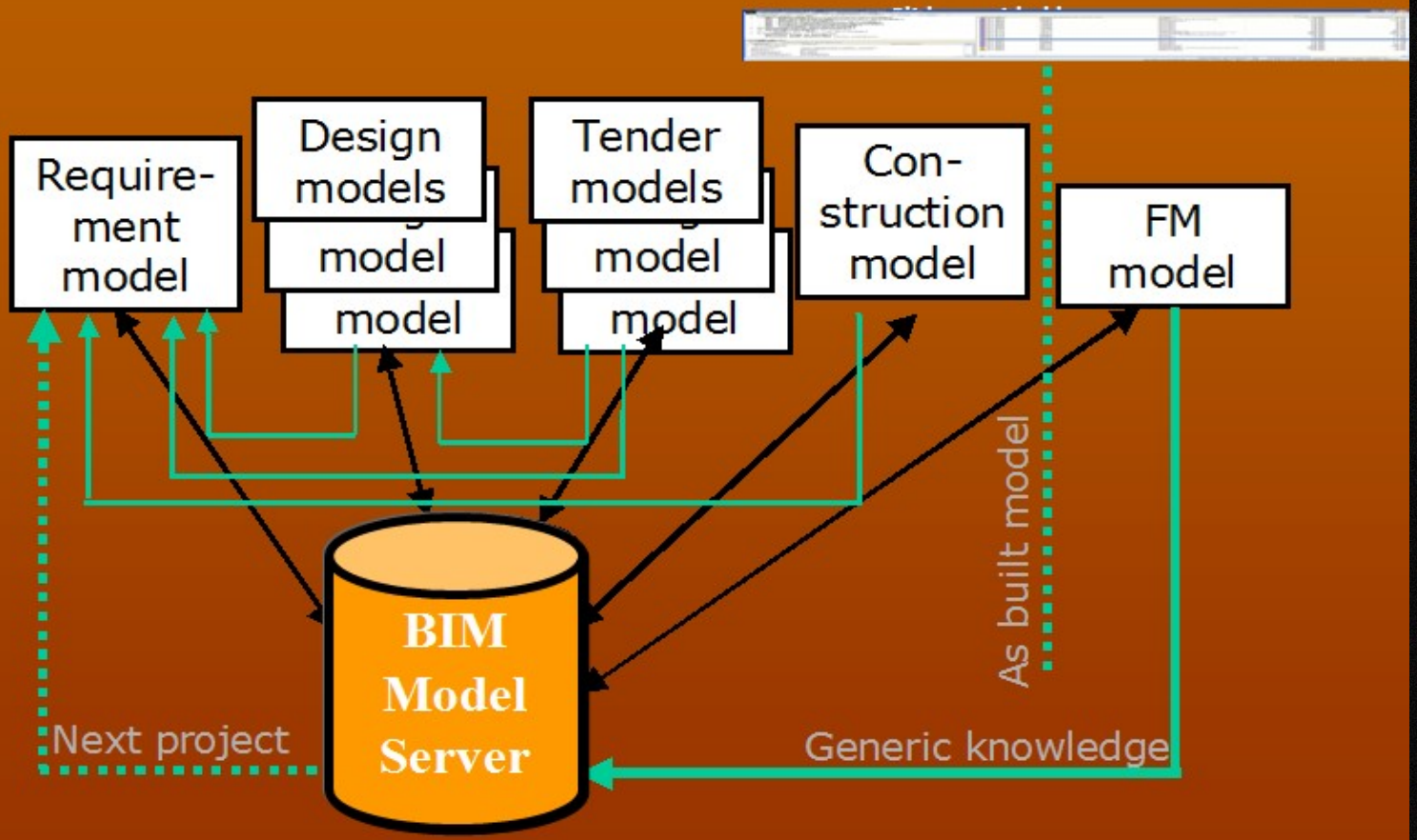
3 Hoi Shing Road, Tsuen Wan, Hong Kong

- Thank you!

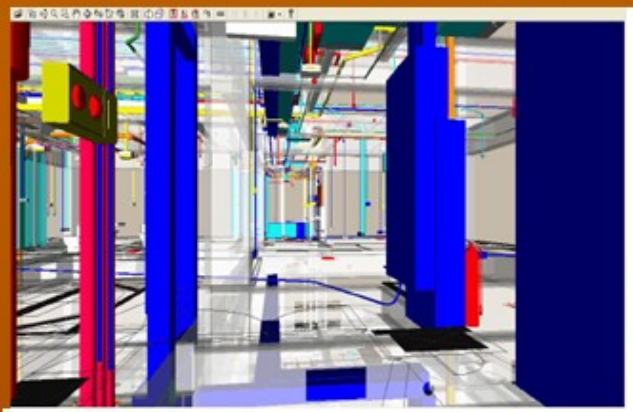


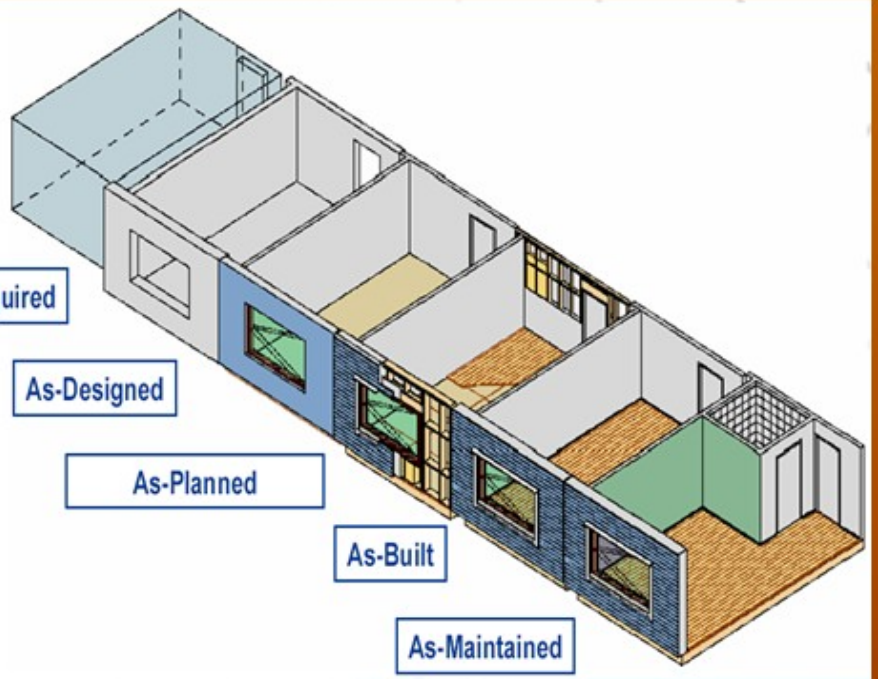
BIM Evolution -Information Flow

Different Models at different stages



Model evolution





Bring BIM To Site For Asset Construction and Operation

Building Component Management S.S

Barcode & RFID

Delivery Instruction Sheet

Factory

Inventory

QA/QC

Shop Drawing CAD

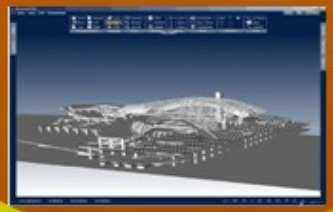
3 D Building Model Data

Material Plan S.S

Material Management Database

Erection Site Management S.S

Actual Management S.S



Operation-BIM Demand Cross-Platform Approach

On Site

Remote (Mobile)

Enterprise

Energy Management

Climate Control

Energy+Comfort

Inventory

Space Planning

Assets

Access Control

People

Work Orders

Network Management

Security

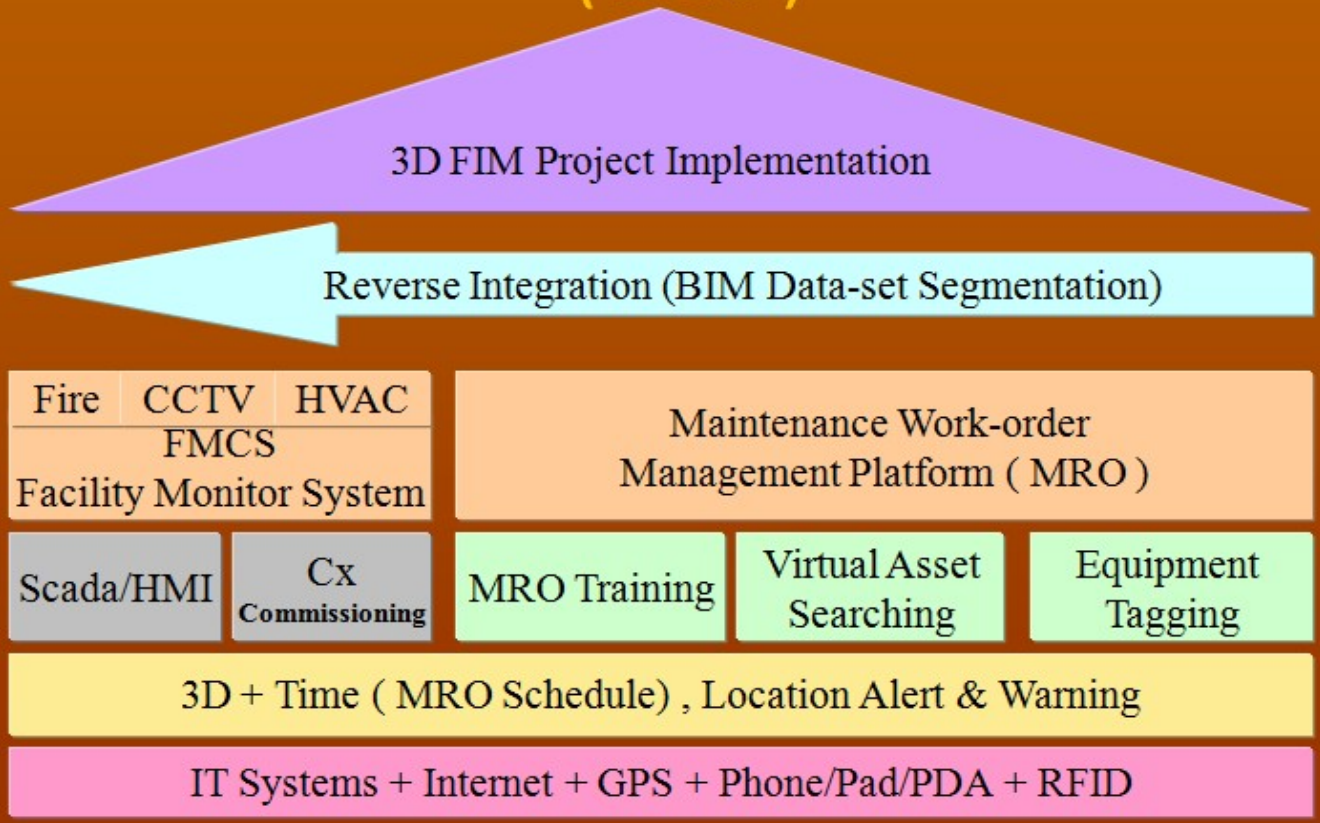
Servers

IT

We Need To Bring Operation-BIM To Site

3D FIM Framework

Maintenance , Repair & Operation (MRO)



VDC Team Management Model Layer-1

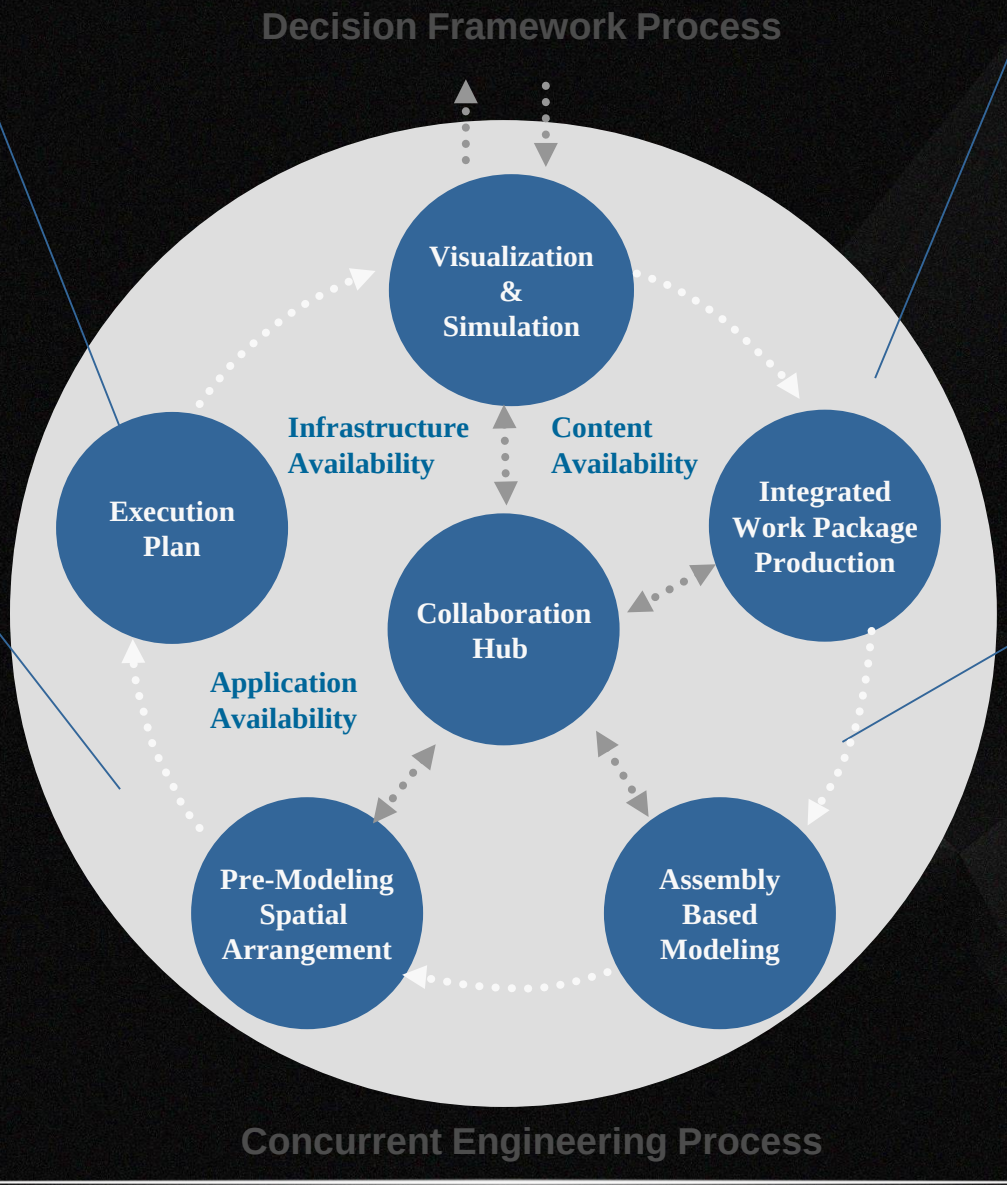
Design and Build

VDC BIM Manager

- **P 1** Value Planning
- **P2** Deliverable Planning
- **P3** Resource Planning
- **P4** Execution Planning
- **P5** Modeling Planning
- **P6** Innovation Planning

VDC CSD Engineer (Pre-Construction)

- **E 1** Technical Solution Planning.
- **E 2** **MEP** Trade Routing Planning.
- **E 3** Define Resolution Direction.
- **E 4** Ensure continuous design process integration.
- **E 5** Define Work Breakdown strategy .
- **E 6** Identify and allocate costs.



VDC Site Manager

- **S 1** Define Site VDC Process.
- **S 2** Define the deliverable issuance procedure.
- **S 3** Determine updating and change management.
- **S 4** Define the Trade Collaboration procedure,
- **S 5** Manage the IT investment.

VDC CSD Engineer (Construction)

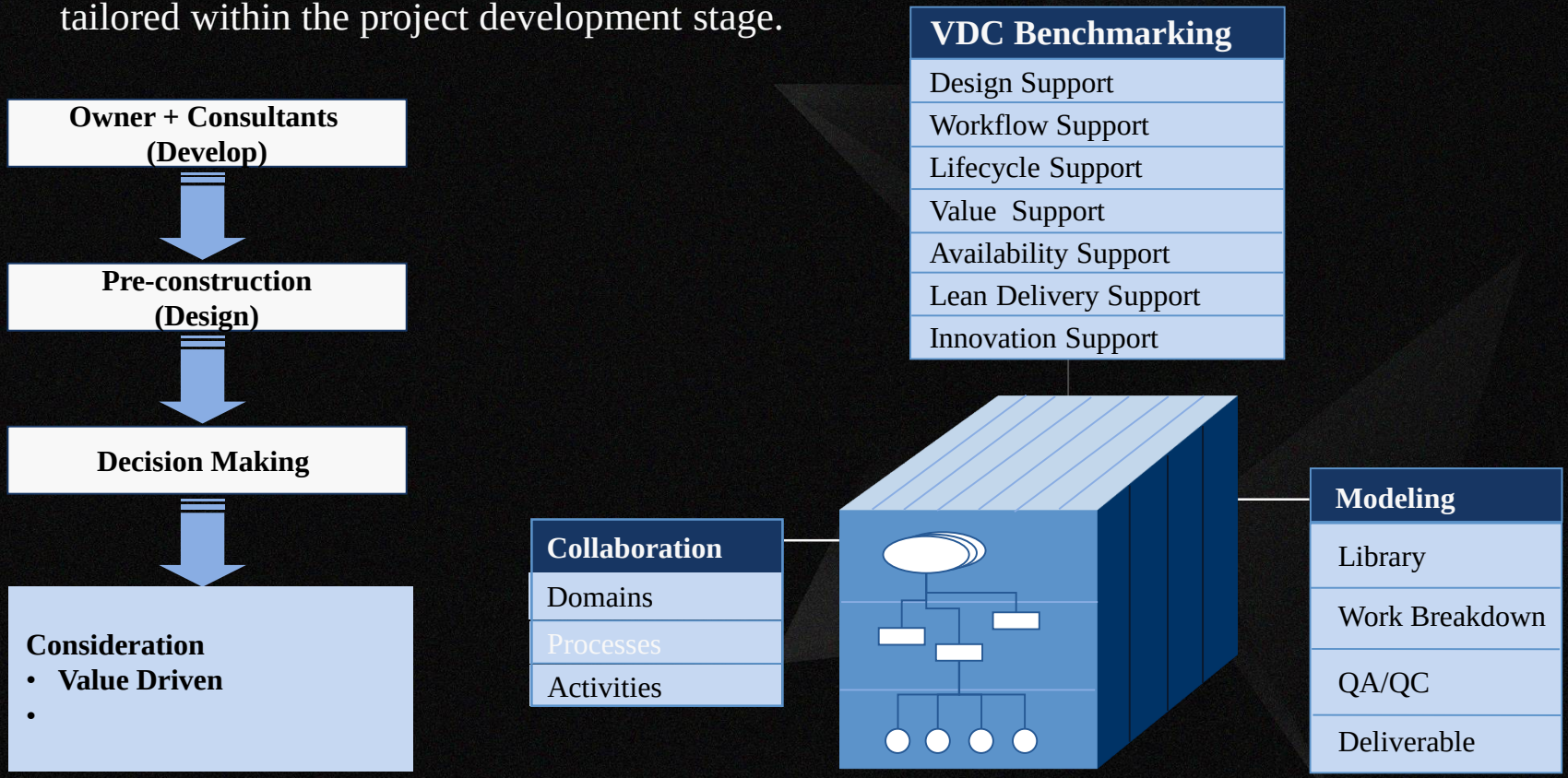
- **C 1** Identify automated solutions.
- **C 2** Detail Trade Modeling Requirement.
- **C 3** Arrange Continuous Sub-contractor validation.
- **C 4** Enable Assembly Modeling.
- **C 5** **Deliverable** QA / QC .
- **C 6** Manage changes.

VDC Management Focus

Design and Build

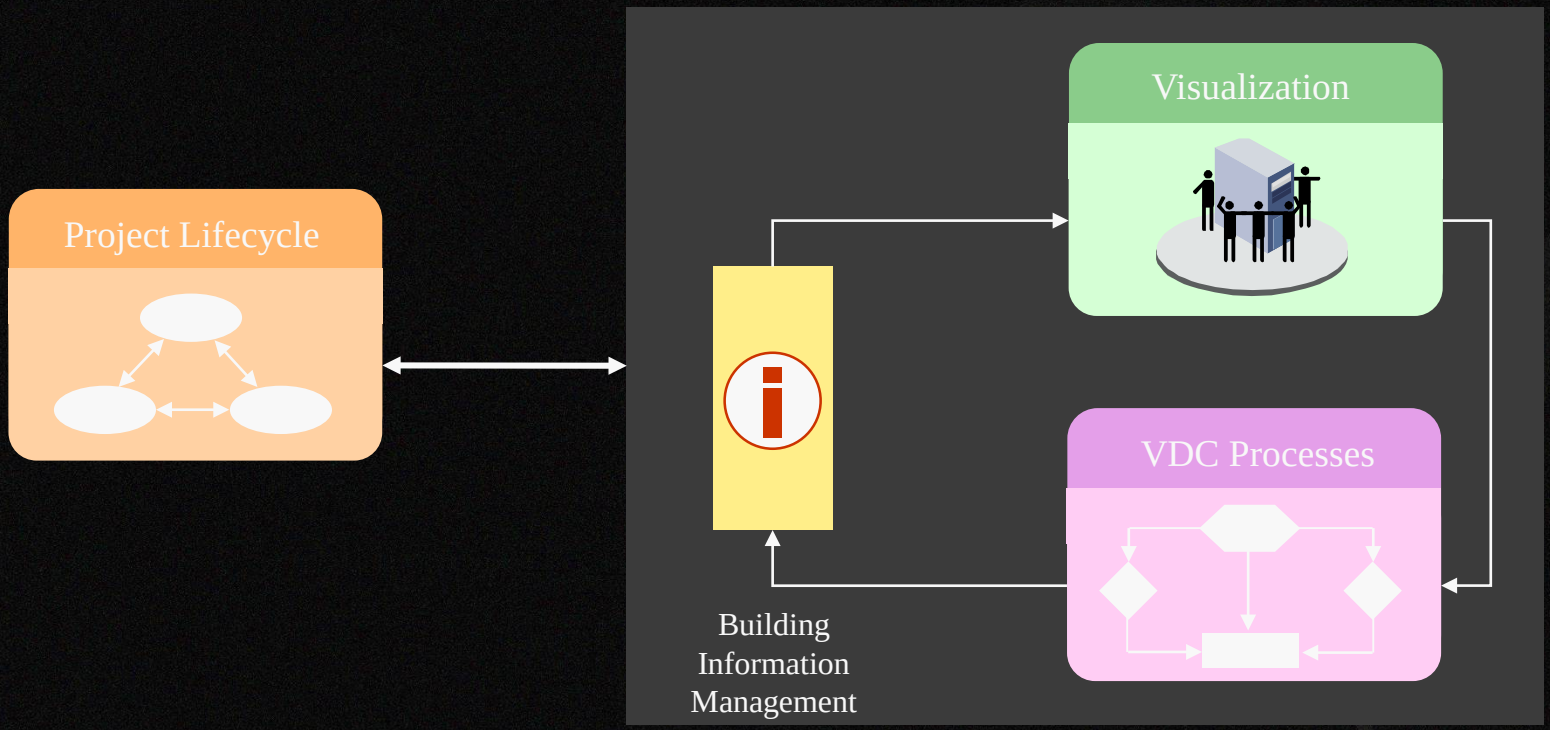
As Lean Delivery Approach framework for VDC collaboration process focuses on two key areas:

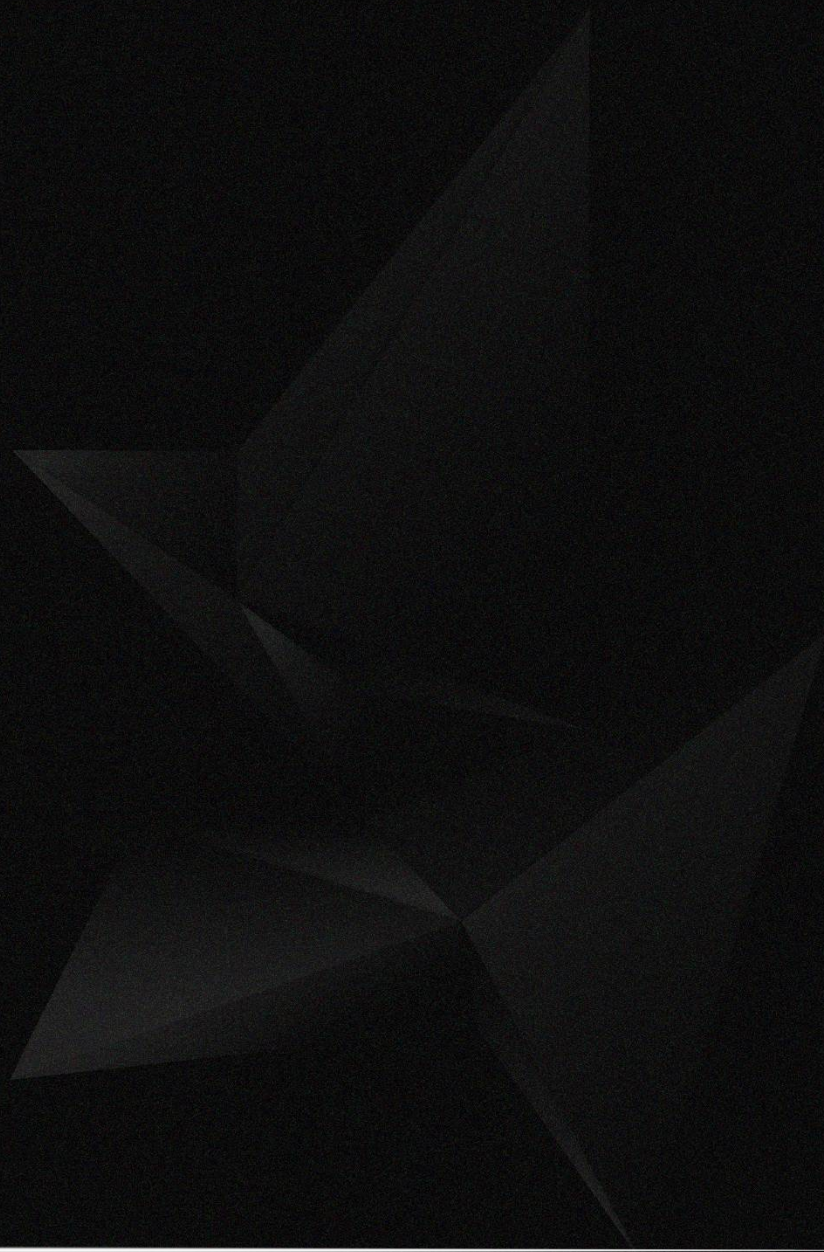
- Providing the model based information content required to support Base-Of-Design (BOD) verification and layout planning.
- Managing team activities as the result of the VDC Process-related best practice that need to be tailored within the project development stage.



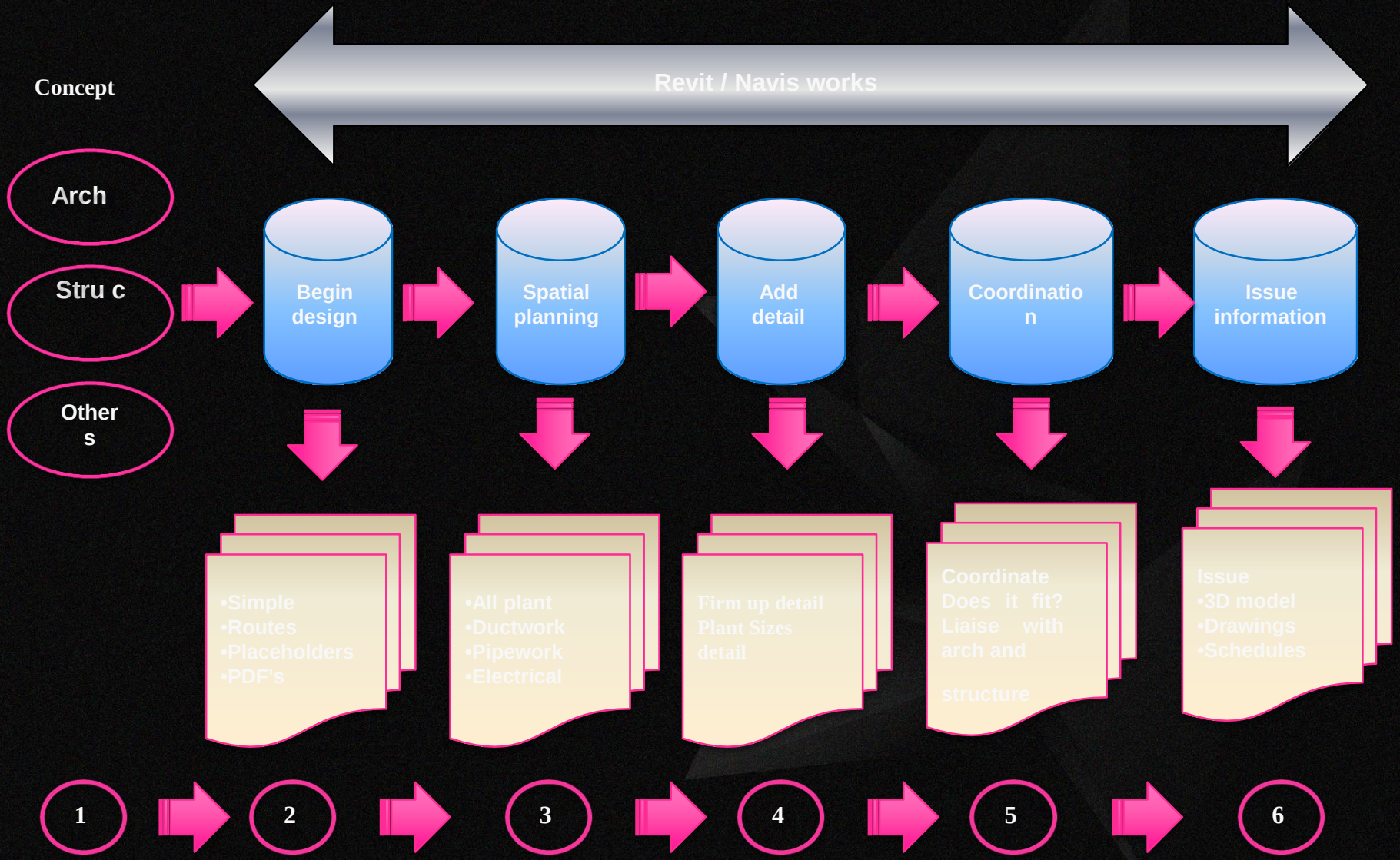
VDC Management Focus

The objective is to facilitate on-time Integrated Work Package deliverables to site team whilst managing the Model Based Project Life Cycle Workflow.

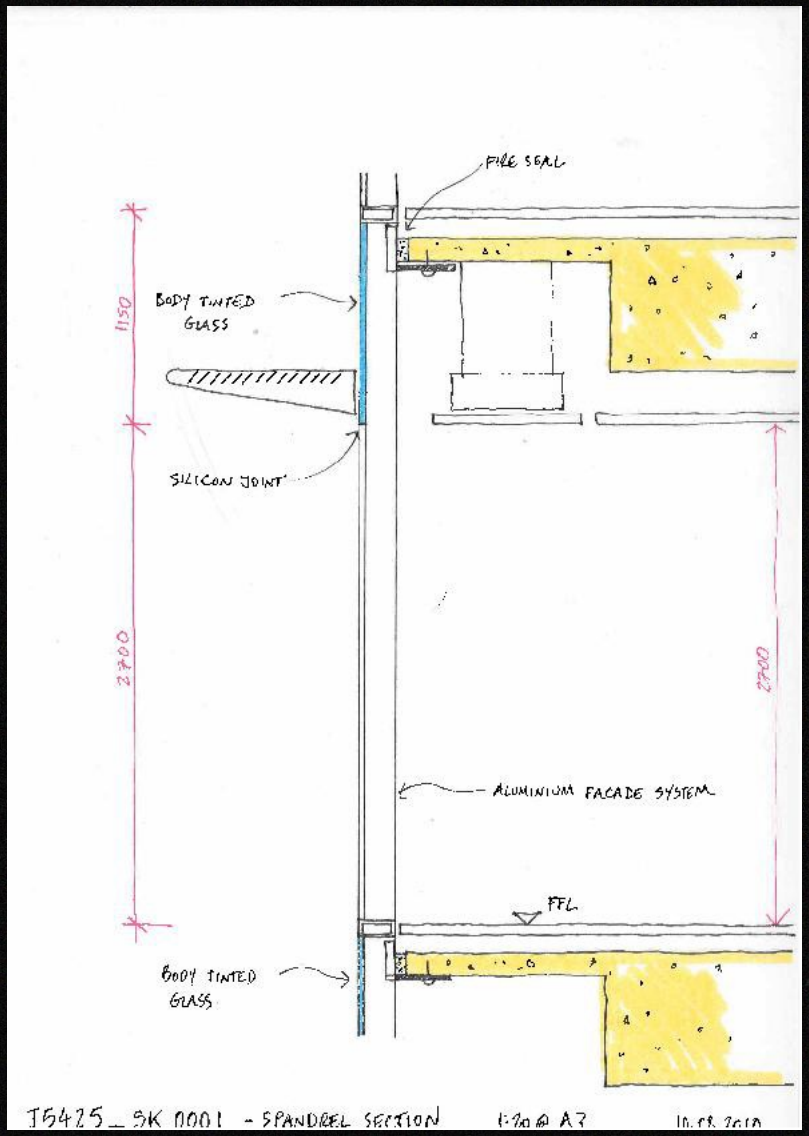


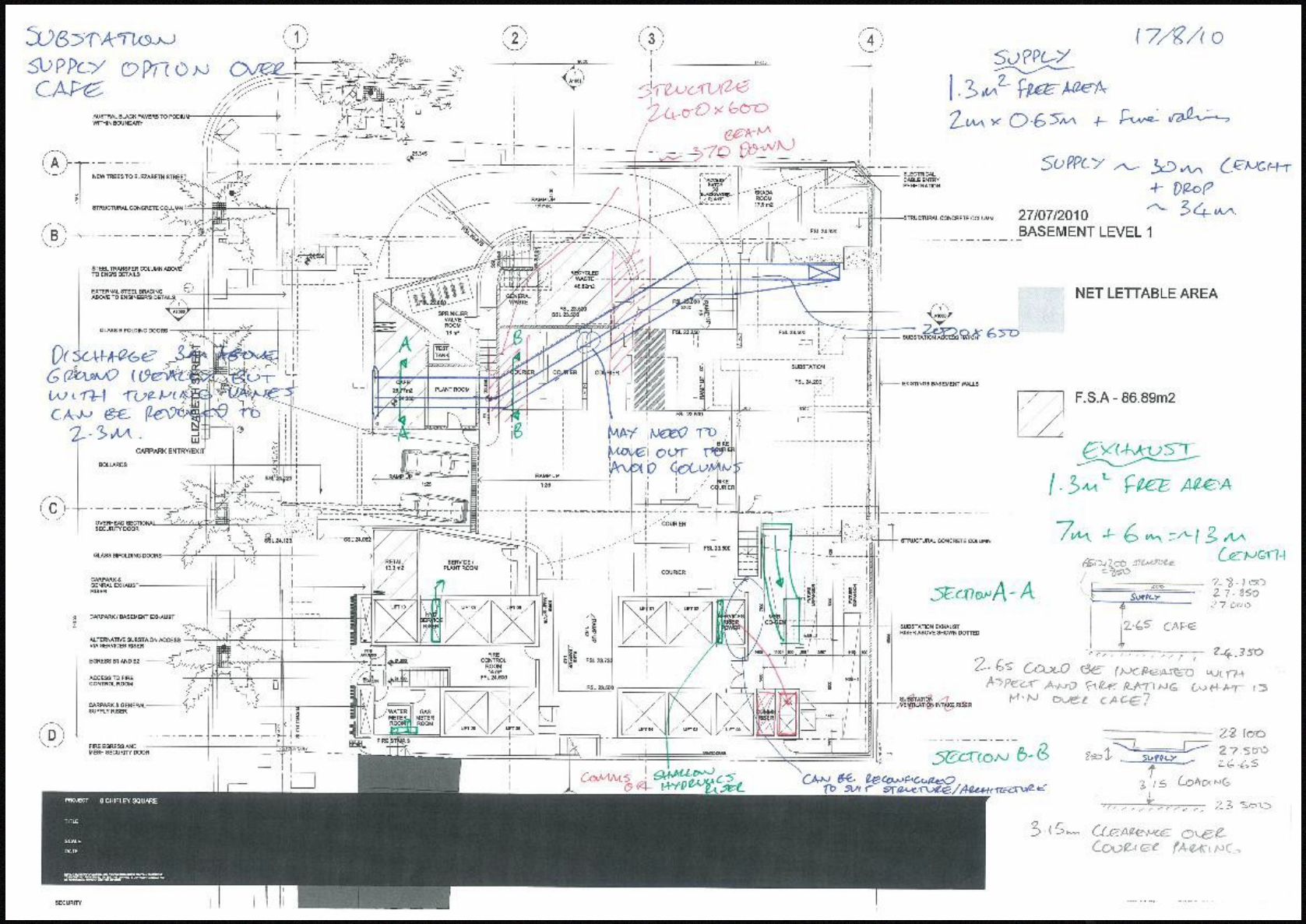


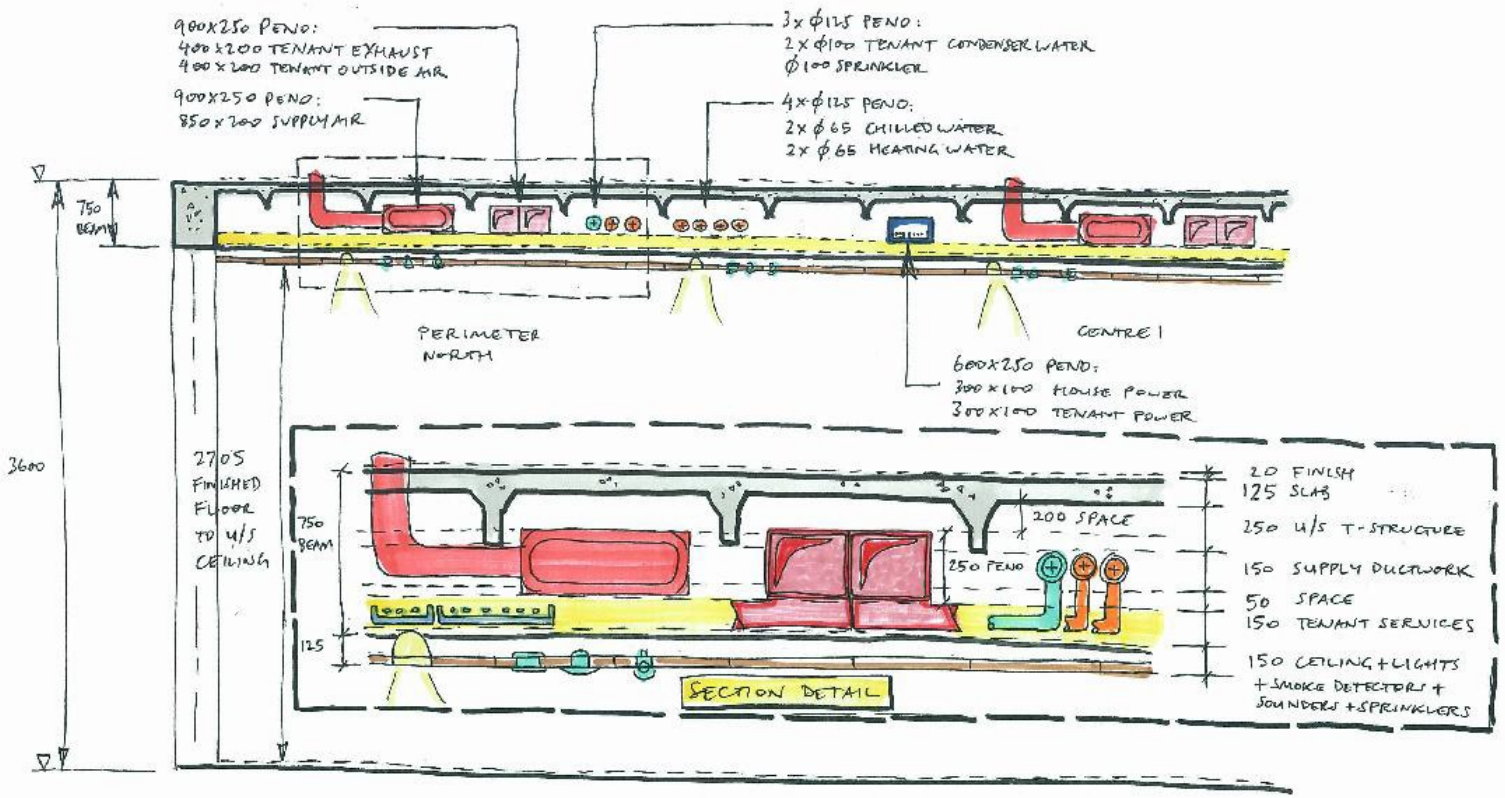
- Client - concept
- Architect provides visual images etc.
- Structural involvement (can we build it?)
- PDF„s, hand sketches / Google sketch up etc..
- No 2D or 3D cad
- Oh...and lots of “MEETINGS”


Concept
Revit / Navis works
Arch
Stru c
Other s
Begin design
Spatial planning
Add detail
Coordinatio n
Issue information
•Simple
•Routes
•Placeholders
•PDF's
•All plant
•Ductwork
•Pipework
•Electrical
Firm up detail
Plant Sizes
detail
Coordinate
Does it fit?
Liaise with arch and
structure
Issue
•3D model
•Drawings
•Schedules
1
2
3
4
5
6

- Concept
- Client and design team discuss concept.
- Produce hand sketches, PDF's
- Cad not engaged.
- Agree services zoning strategy?


FIRE SEAL
BODY TINTED GLASS
1150
SILICON JOINT
2700
2700
ALUMINIUM FACADE SYSTEM
FFL
BODY TINTED GLASS
J5425_SK 0001 - SPANDREL SECTION


SUBSTATION
SUPPLY OPTION OVER
CAFE
17/8/10
SUPPLY
1.3m² FREE AREA
2m x 0.65m + five louvres
STRUCTURE
2400x600
BEAM
~370 DOWN
SUPPLY ~ 30m LENGHT
+ DROP
~ 34m
27/07/2010
BASEMENT LEVEL 1
NET LETTABLE AREA
F.S.A - 86.89m2
DISCHARGE 3m ABOVE
GROUND (VERTICAL) BUT
WITH TURNING VANES
CAN BE REDUCED TO
2-3m.
MAY NEED TO
MOVE OUT TO
AVOID COLUMNS
EXHAUST
1.3m² FREE AREA
7m + 6m = 13m
LENGTH
SECTION A-A
SUPPLY
2.65 CAFE
2.65 COULD BE INCREATED WITH
ASPECT AND FIRE RATING (WHAT IS
MIN OVER CAFE?
SECTION B-B
SUPPLY
3.15 LOADING
3.15m CLEARENCE OVER
COURIER PARKING
COMMS OR SMALLOW HYDRAULICS RISER
CAN BE RECONFIGURED
TO SUIT STRUCTURE/ARCHITECTURE
CARPARK ENTRY/EXIT
ELIZABETH STREET
COURIER
SUBSTATION
PROJECT 8 CHIFLEY SQUARE



NOTES:

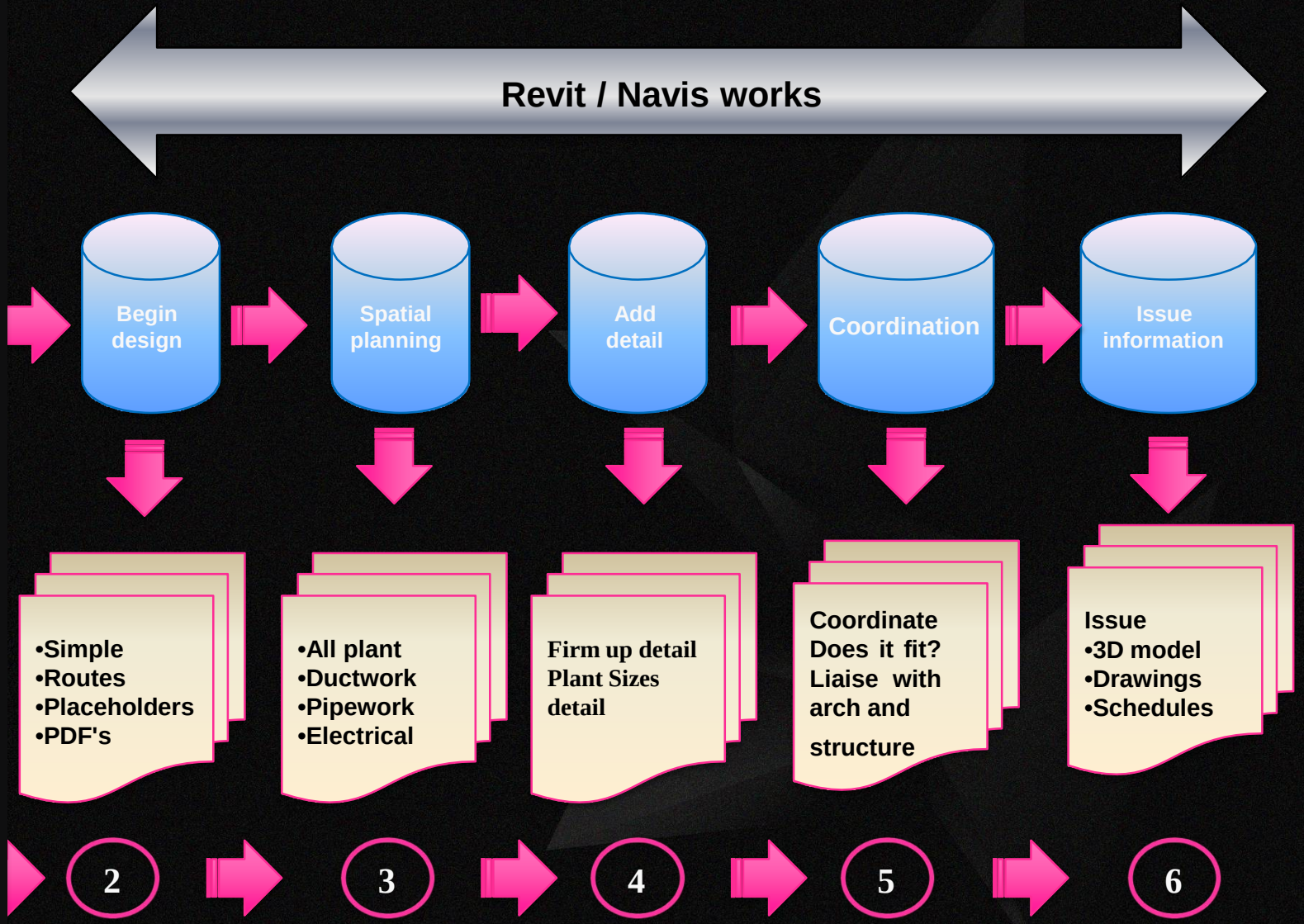
1.) PRELIMINARY SERVICES & SIZES NOMINATED, REVIEW OF FIT OUT & FLEXIBILITY REQUIRED

2) PENETRATIONS NOMINATED AT CENTRE OF BEAM. POTENTIAL TO RAISE PENETRATIONS UP TO SOFFIT TBC BY STRUCTURAL ENGINEER. MAY BE ABLE TO RAISE CEILING 100-200mm?

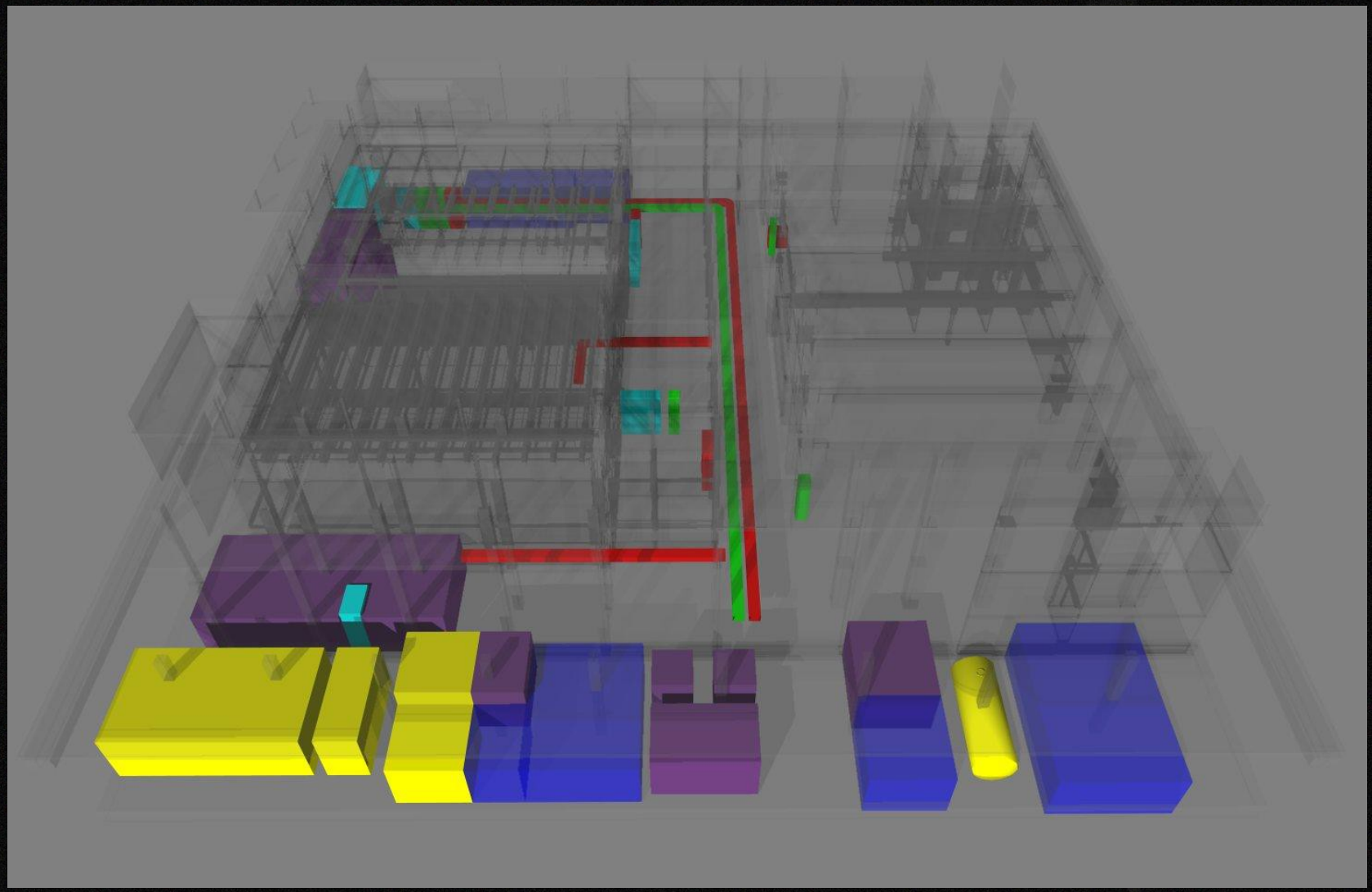
3.) SERVICES NOMINATED MAY BE MIRRORED FOR OTHER AREAS OF FLOOR PLATE.

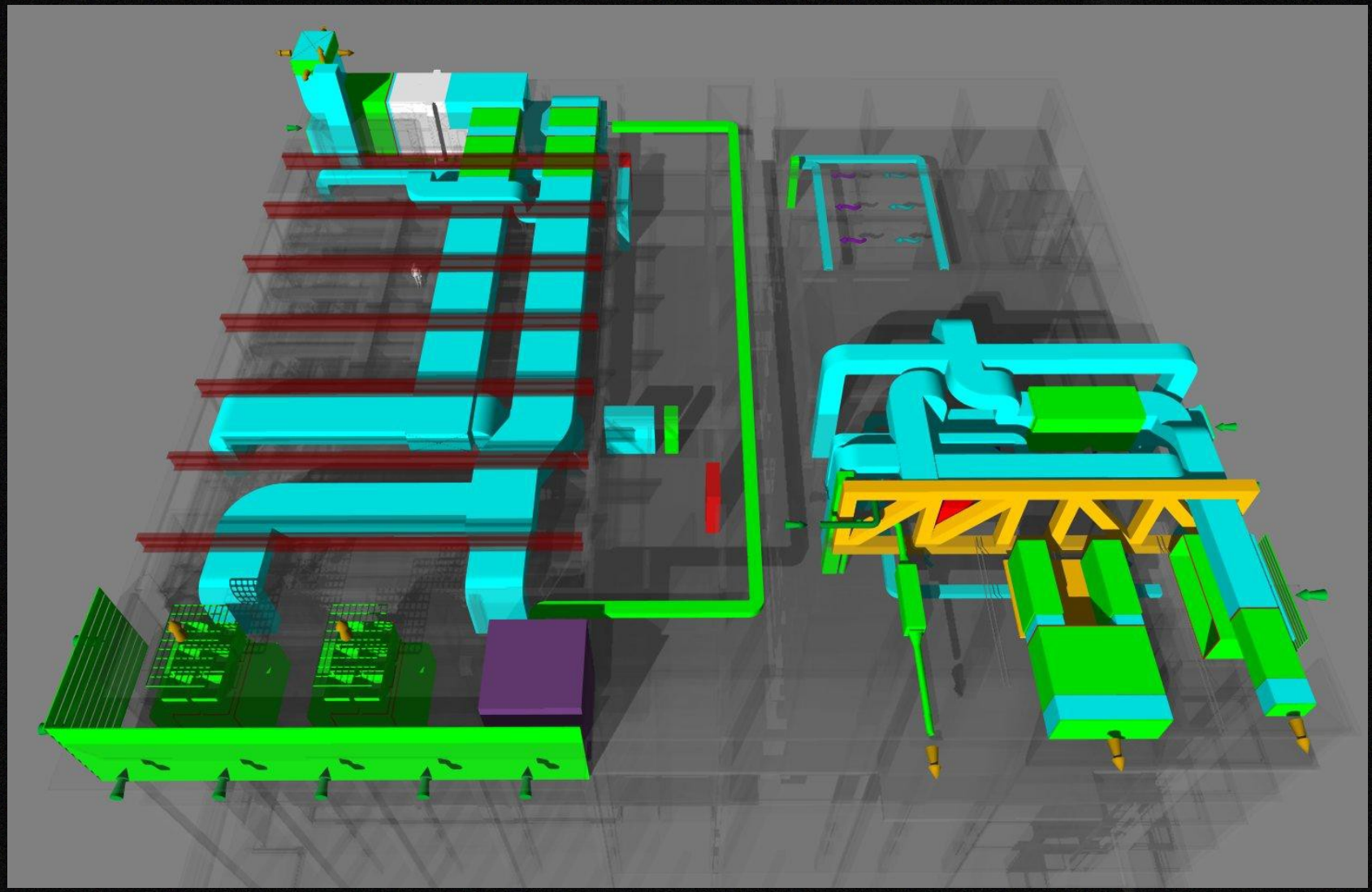
SEVICES SECTION

205953/00 ARUP SERVICES SECTION 1 of 2 20/4/10 AB

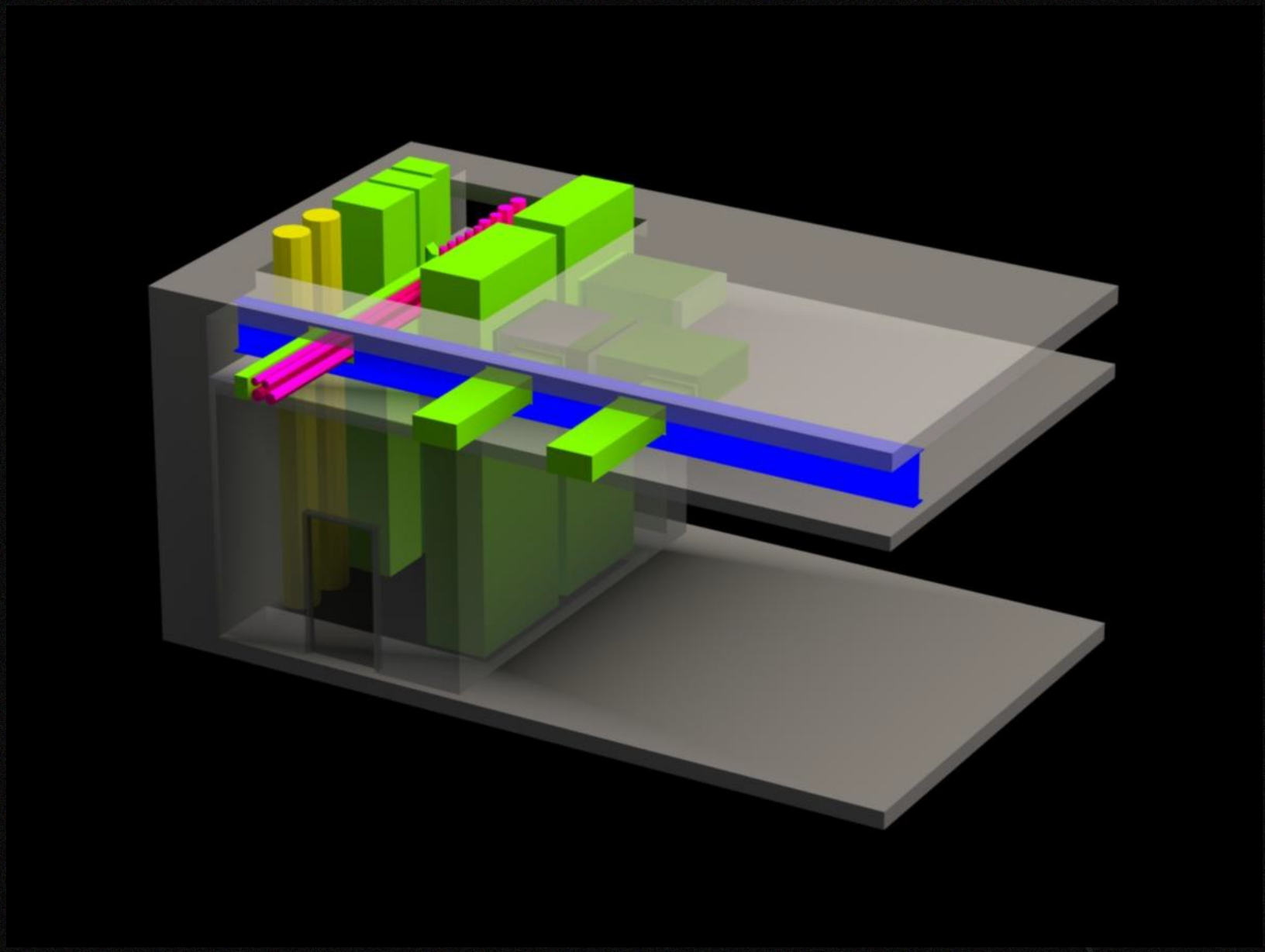

Revit / Navis works
Begin design
Spatial planning
Add detail
Coordination
Issue information
•Simple
•Routes
•Placeholders
•PDF's
•All plant
•Ductwork
•Pipework
•Electrical
Firm up detail
Plant Sizes
detail
Coordinate
Does it fit?
Liaise with
arch and
structure
Issue
•3D model
•Drawings
•Schedules
2
3
4
5
6

- Begin design.
- Design begins to evolve from step 1 meetings.
- Simple shapes to represent plant items.
- Cad may be engaged?
- Lots of options.

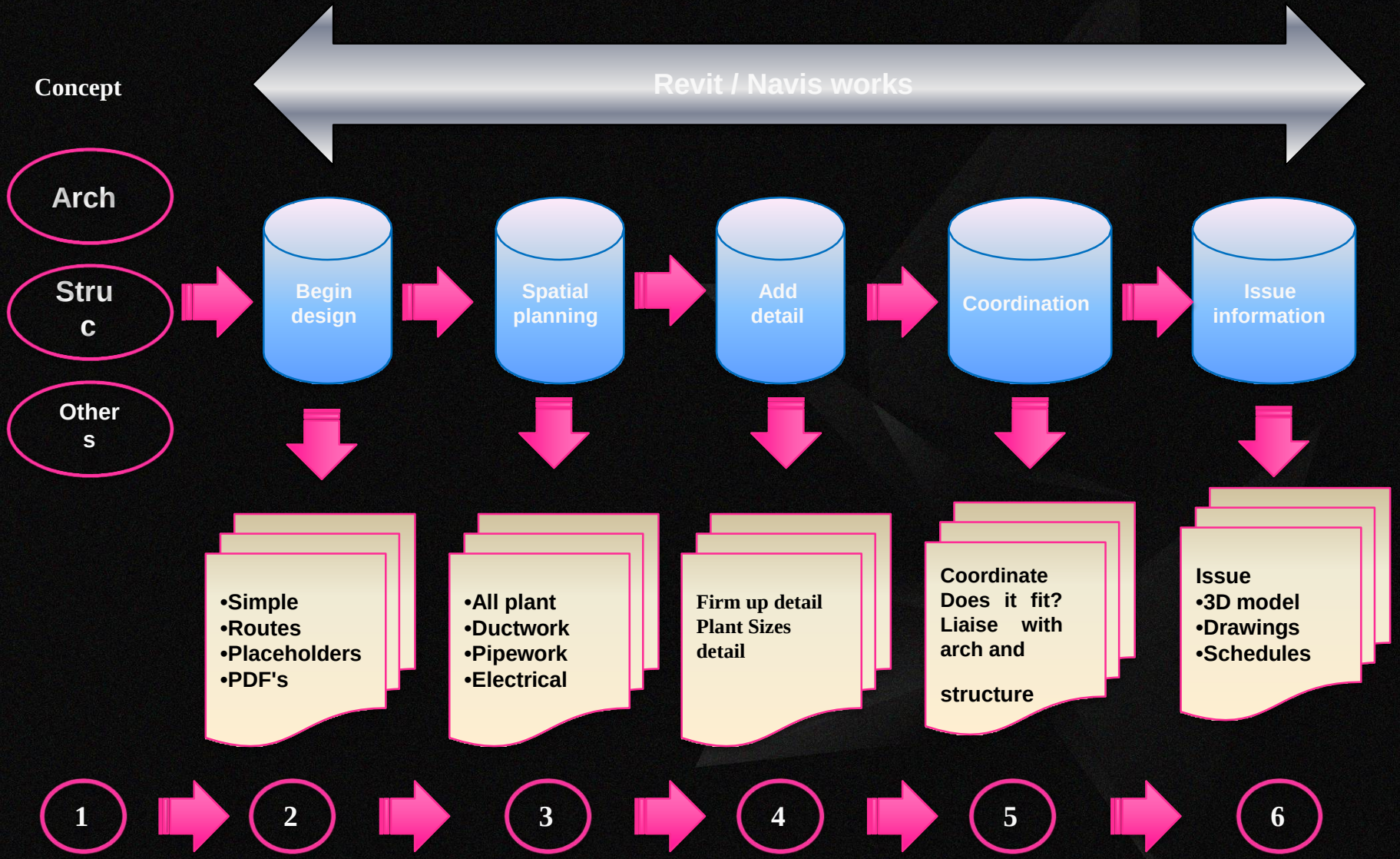




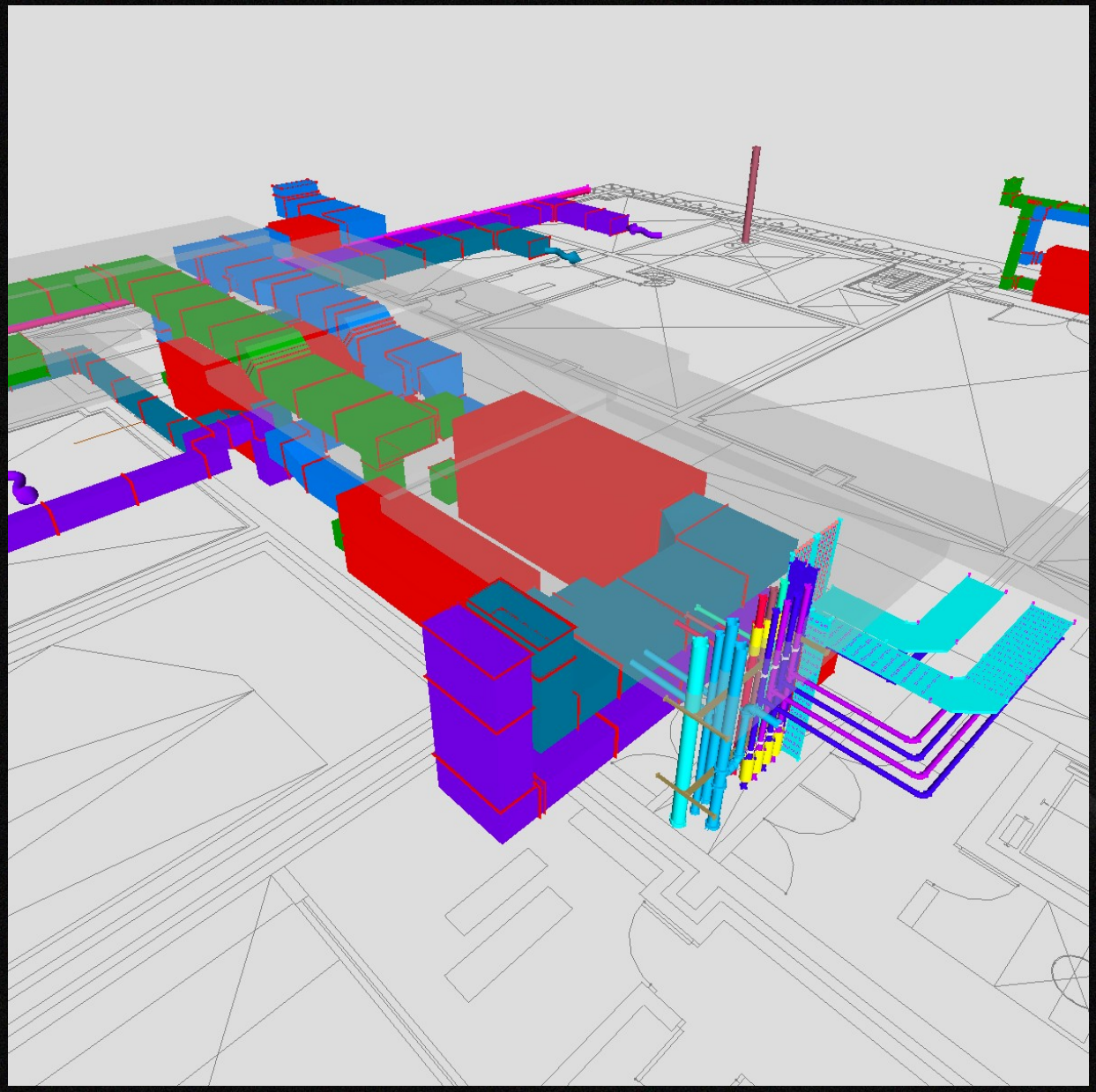
Sample step 2

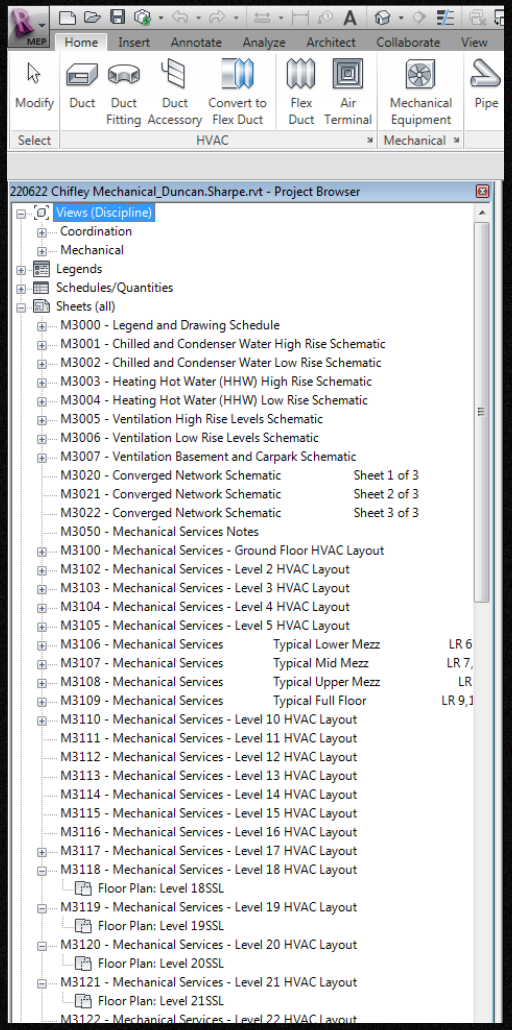


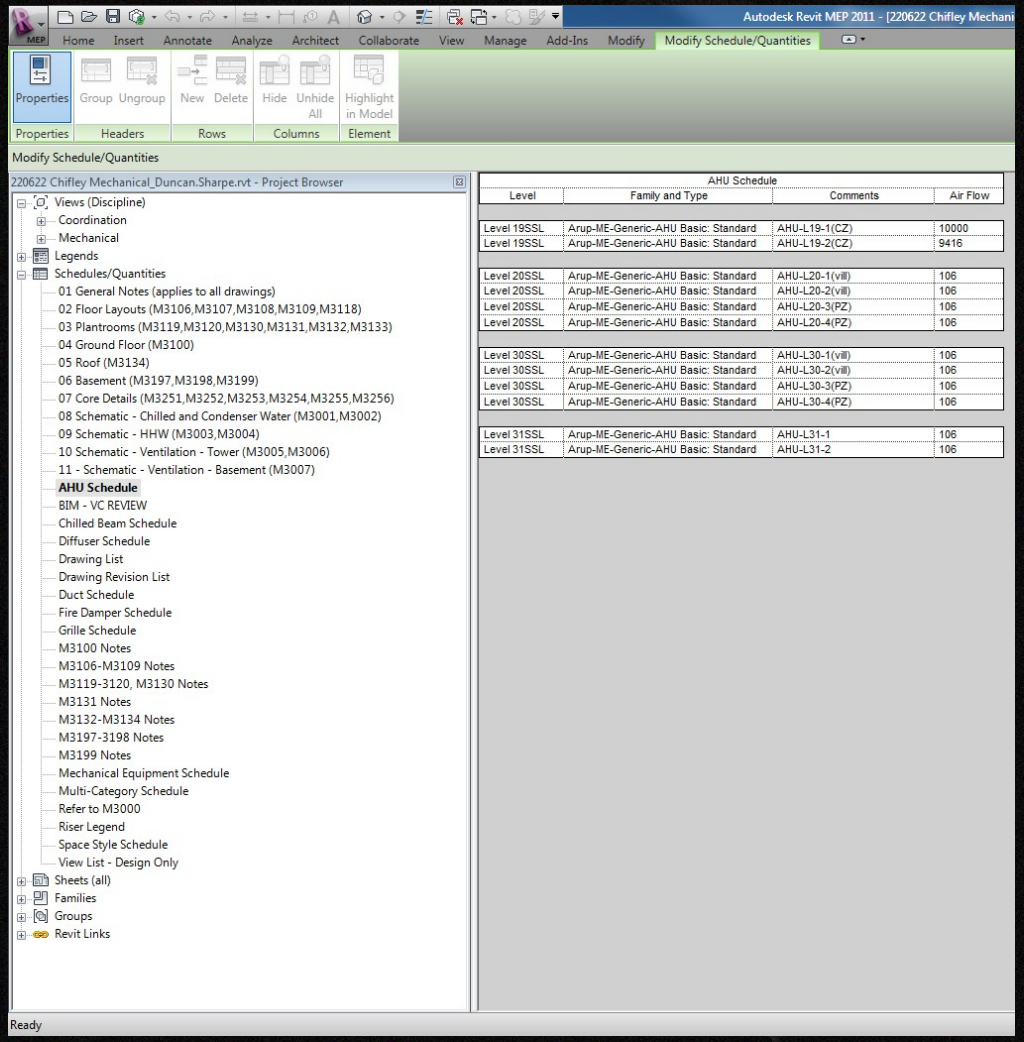
Sample step 2

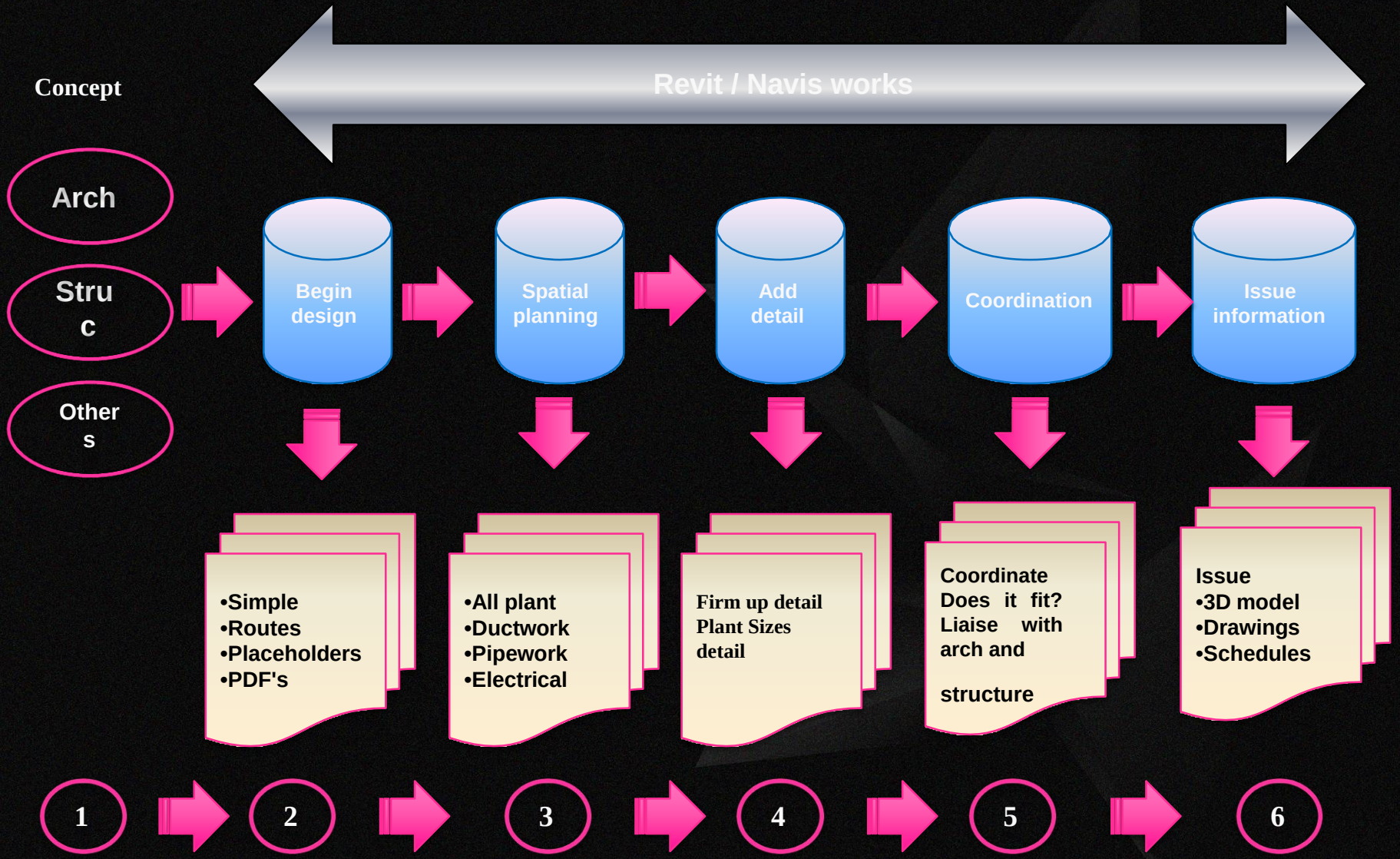

Concept
Revit / Navis works
Arch
Struc
Others
Begin design
Spatial planning
Add detail
Coordination
Issue information
•Simple
•Routes
•Placeholders
•PDF's
•All plant
•Ductwork
•Pipework
•Electrical
Firm up detail
Plant Sizes
detail
Coordinate
Does it fit?
Liaise with
arch and
structure
Issue
•3D model
•Drawings
•Schedules
1
2
3
4
5
6

- Spatial planning.
- Design evolves from step 2 meetings.
- Service routes / strategy are agreed.
- Cad and engineers collaborate.

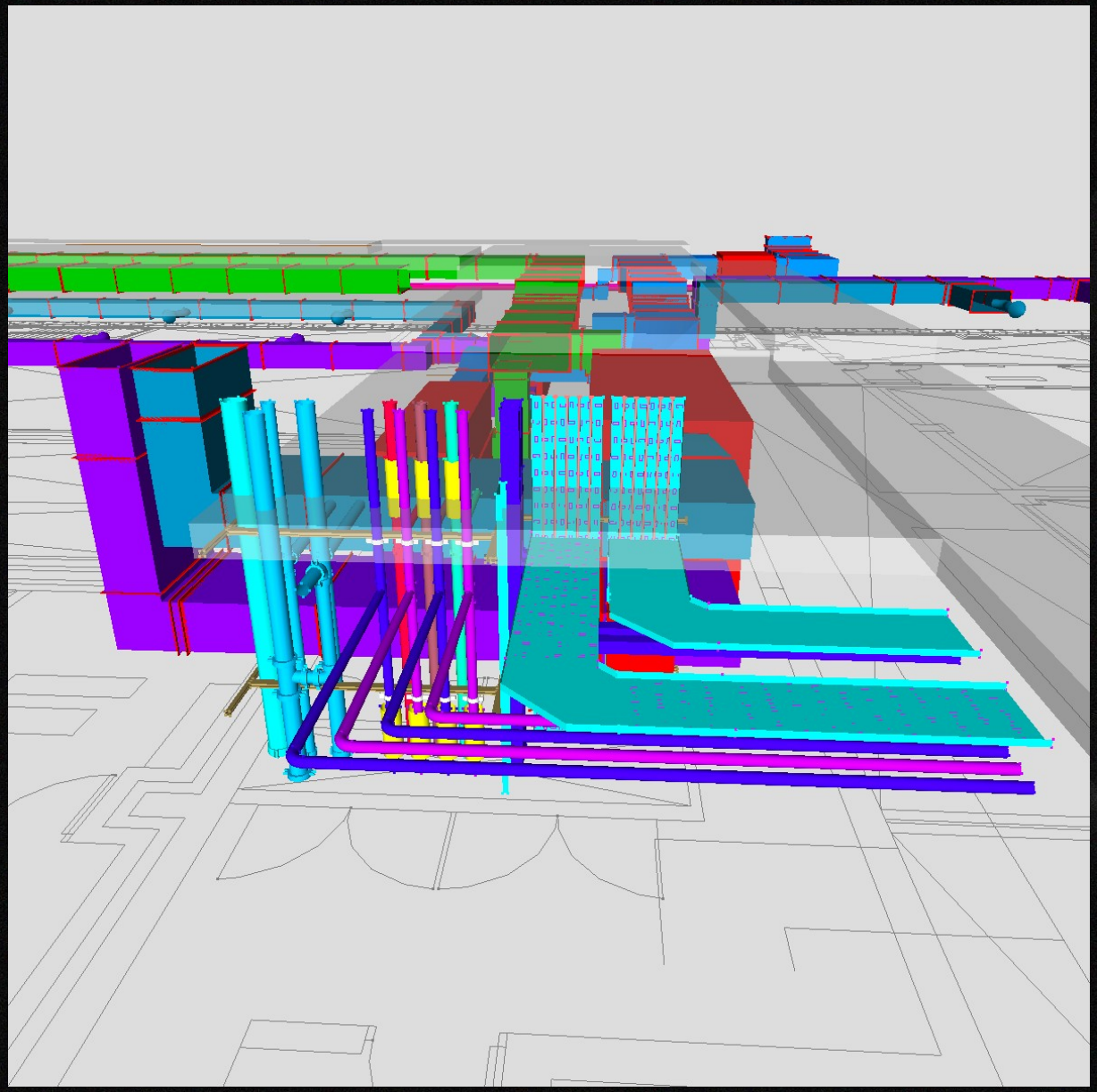



Home Insert Annotate Analyze Architect Collaborate View
Modify Duct Duct Fitting Duct Accessory Convert to Flex Duct Flex Duct Air Terminal Mechanical Equipment Pipe
Select HVAC Mechanical
220622 Chifley Mechanical_Duncan.Sharpe.rvt - Project Browser
Views (Discipline)
Coordination
Mechanical
Legends
Schedules/Quantities
Sheets (all)
M3000 - Legend and Drawing Schedule
M3001 - Chilled and Condenser Water High Rise Schematic
M3002 - Chilled and Condenser Water Low Rise Schematic
M3003 - Heating Hot Water (HHW) High Rise Schematic
M3004 - Heating Hot Water (HHW) Low Rise Schematic
M3005 - Ventilation High Rise Levels Schematic
M3006 - Ventilation Low Rise Levels Schematic
M3007 - Ventilation Basement and Carpark Schematic
M3020 - Converged Network Schematic Sheet 1 of 3
M3021 - Converged Network Schematic Sheet 2 of 3
M3022 - Converged Network Schematic Sheet 3 of 3
M3050 - Mechanical Services Notes
M3100 - Mechanical Services - Ground Floor HVAC Layout
M3102 - Mechanical Services - Level 2 HVAC Layout
M3103 - Mechanical Services - Level 3 HVAC Layout
M3104 - Mechanical Services - Level 4 HVAC Layout
M3105 - Mechanical Services - Level 5 HVAC Layout
M3106 - Mechanical Services Typical Lower Mezz LR 6
M3107 - Mechanical Services Typical Mid Mezz LR 7,
M3108 - Mechanical Services Typical Upper Mezz LR
M3109 - Mechanical Services Typical Full Floor LR 9,1
M3110 - Mechanical Services - Level 10 HVAC Layout
M3111 - Mechanical Services - Level 11 HVAC Layout
M3112 - Mechanical Services - Level 12 HVAC Layout
M3113 - Mechanical Services - Level 13 HVAC Layout
M3114 - Mechanical Services - Level 14 HVAC Layout
M3115 - Mechanical Services - Level 15 HVAC Layout
M3116 - Mechanical Services - Level 16 HVAC Layout
M3117 - Mechanical Services - Level 17 HVAC Layout
M3118 - Mechanical Services - Level 18 HVAC Layout
Floor Plan: Level 18SSL
M3119 - Mechanical Services - Level 19 HVAC Layout
Floor Plan: Level 19SSL
M3120 - Mechanical Services - Level 20 HVAC Layout
Floor Plan: Level 20SSL
M3121 - Mechanical Services - Level 21 HVAC Layout
Floor Plan: Level 21SSL
M3122 - Mechanical Services - Level 22 HVAC Layout

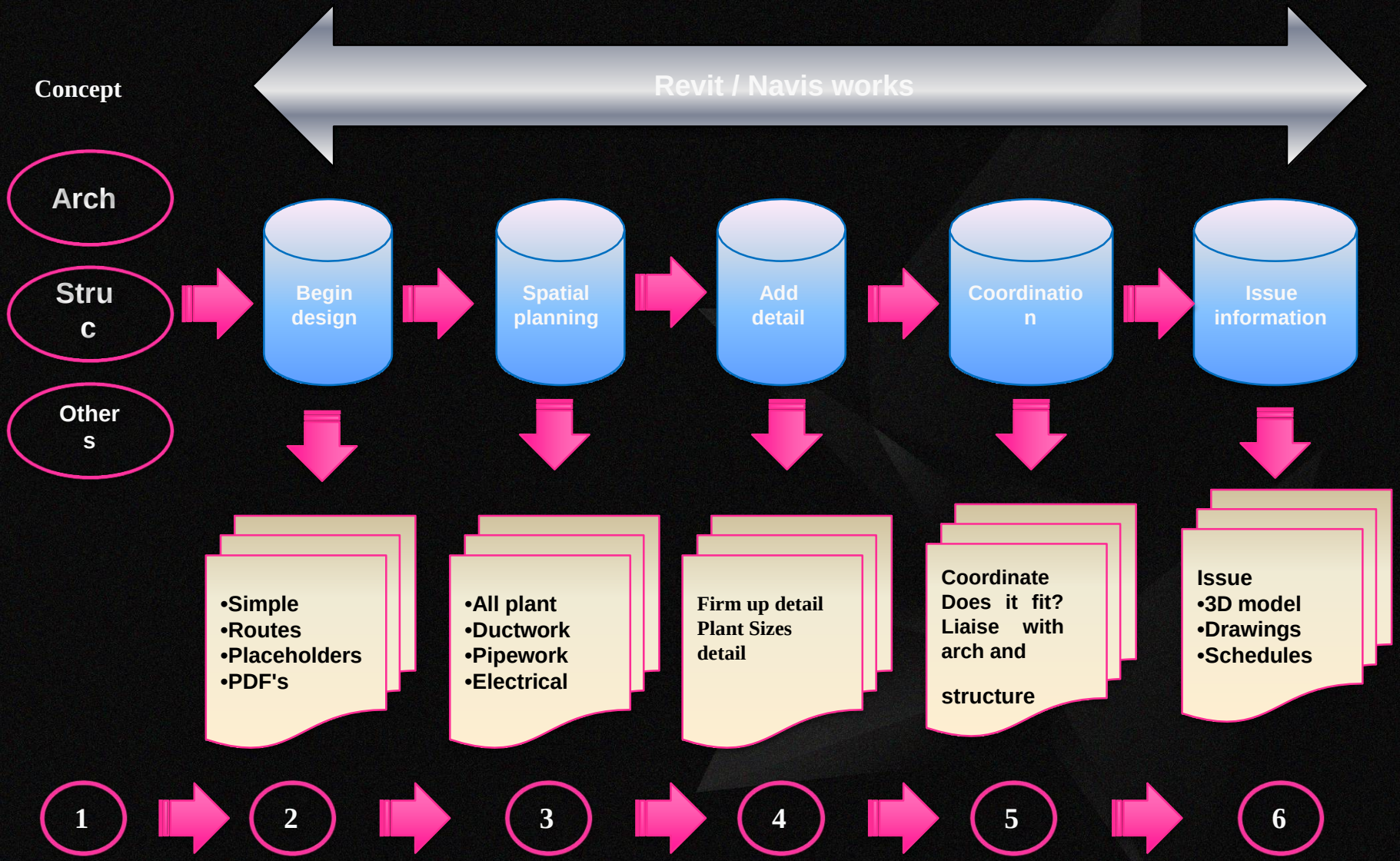

Autodesk Revit MEP 2011 - [220622 Chifley Mechani
Home Insert Annotate Analyze Architect Collaborate View Manage Add-Ins Modify Modify Schedule/Quantities
Properties Group Ungroup New Delete Hide Unhide All Highlight in Model
Properties Headers Rows Columns Element
Modify Schedule/Quantities
220622 Chifley Mechanical_Duncan.Sharpe.rvt - Project Browser
Views (Discipline)
Coordination
Mechanical
Legends
Schedules/Quantities
01 General Notes (applies to all drawings)
02 Floor Layouts (M3106,M3107,M3108,M3109,M3118)
03 Plantrooms (M3119,M3120,M3130,M3131,M3132,M3133)
04 Ground Floor (M3100)
05 Roof (M3134)
06 Basement (M3197,M3198,M3199)
07 Core Details (M3251,M3252,M3253,M3254,M3255,M3256)
08 Schematic - Chilled and Condenser Water (M3001,M3002)
09 Schematic - HHW (M3003,M3004)
10 Schematic - Ventilation - Tower (M3005,M3006)
11 - Schematic - Ventilation - Basement (M3007)
AHU Schedule
BIM - VC REVIEW
Chilled Beam Schedule
Diffuser Schedule
Drawing List
Drawing Revision List
Duct Schedule
Fire Damper Schedule
Grille Schedule
M3100 Notes
M3106-M3109 Notes
M3119-3120, M3130 Notes
M3131 Notes
M3132-M3134 Notes
M3197-3198 Notes
M3199 Notes
Mechanical Equipment Schedule
Multi-Category Schedule
Refer to M3000
Riser Legend
Space Style Schedule
View List - Design Only
Sheets (all)
Families
Groups
Revit Links
AHU Schedule
Level Family and Type Comments Air Flow
Level 19SSL Arup-ME-Generic-AHU Basic: Standard AHU-L19-1(CZ) 10000
Level 19SSL Arup-ME-Generic-AHU Basic: Standard AHU-L19-2(CZ) 9416
Level 20SSL Arup-ME-Generic-AHU Basic: Standard AHU-L20-1(vill) 106
Level 20SSL Arup-ME-Generic-AHU Basic: Standard AHU-L20-2(vill) 106
Level 20SSL Arup-ME-Generic-AHU Basic: Standard AHU-L20-3(PZ) 106
Level 20SSL Arup-ME-Generic-AHU Basic: Standard AHU-L20-4(PZ) 106
Level 30SSL Arup-ME-Generic-AHU Basic: Standard AHU-L30-1(vill) 106
Level 30SSL Arup-ME-Generic-AHU Basic: Standard AHU-L30-2(vill) 106
Level 30SSL Arup-ME-Generic-AHU Basic: Standard AHU-L30-3(PZ) 106
Level 30SSL Arup-ME-Generic-AHU Basic: Standard AHU-L30-4(PZ) 106
Level 31SSL Arup-ME-Generic-AHU Basic: Standard AHU-L31-1 106
Level 31SSL Arup-ME-Generic-AHU Basic: Standard AHU-L31-2 106
Ready


Concept
Revit / Navis works
Arch
Struc
Others
Begin design
Spatial planning
Add detail
Coordination
Issue information
•Simple
•Routes
•Placeholders
•PDF's
•All plant
•Ductwork
•Pipework
•Electrical
Firm up detail
Plant Sizes
detail
Coordinate
Does it fit?
Liaise with
arch and
structure
Issue
•3D model
•Drawings
•Schedules
1
2
3
4
5
6

- Add detail.
- Model all services – duct/pipe/Elec systems.
- Plant items are now more accurately sized.
- Use approved content / families.
- Generic content.



Sample step 4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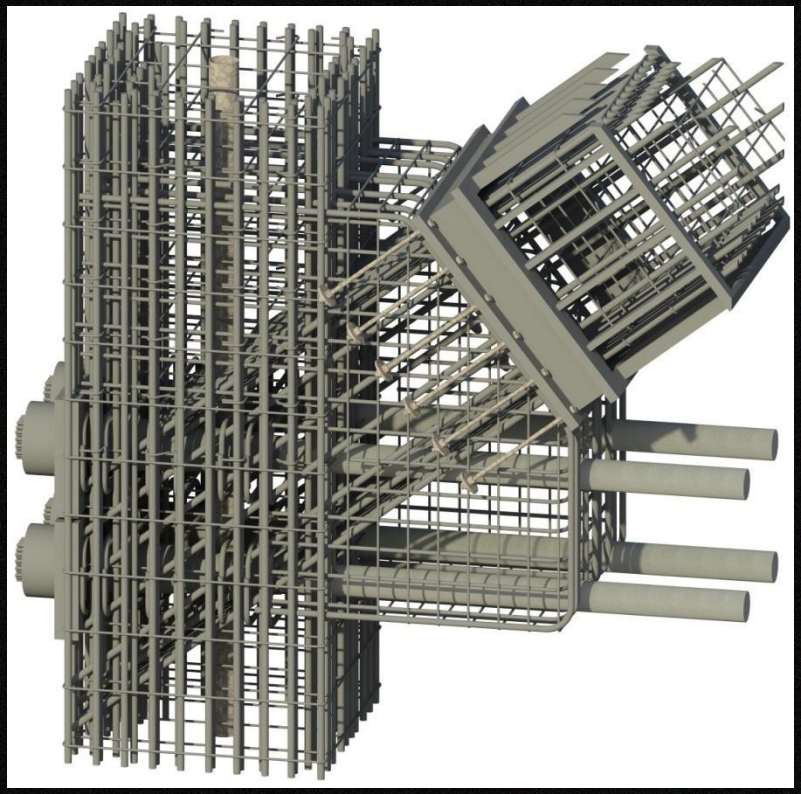
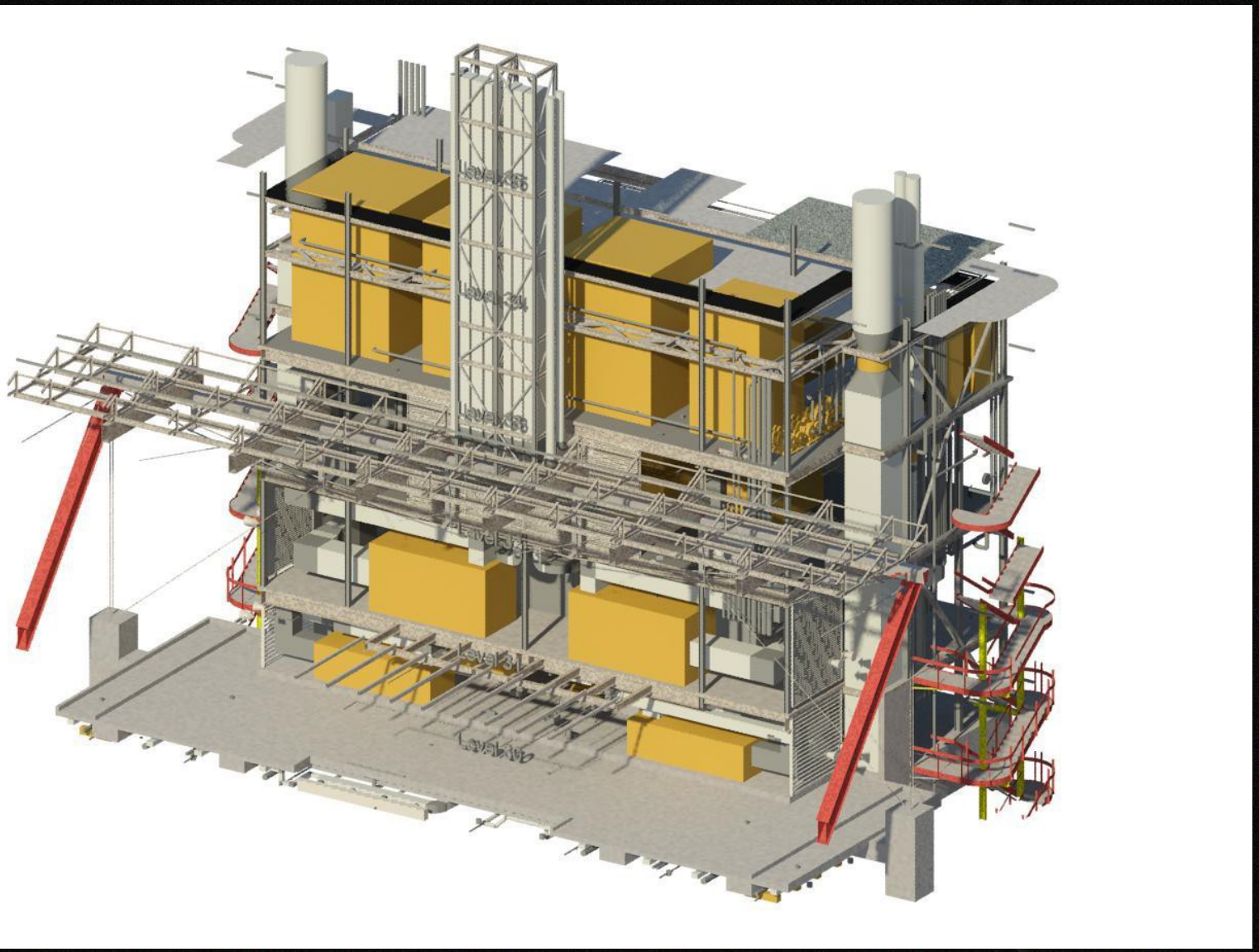
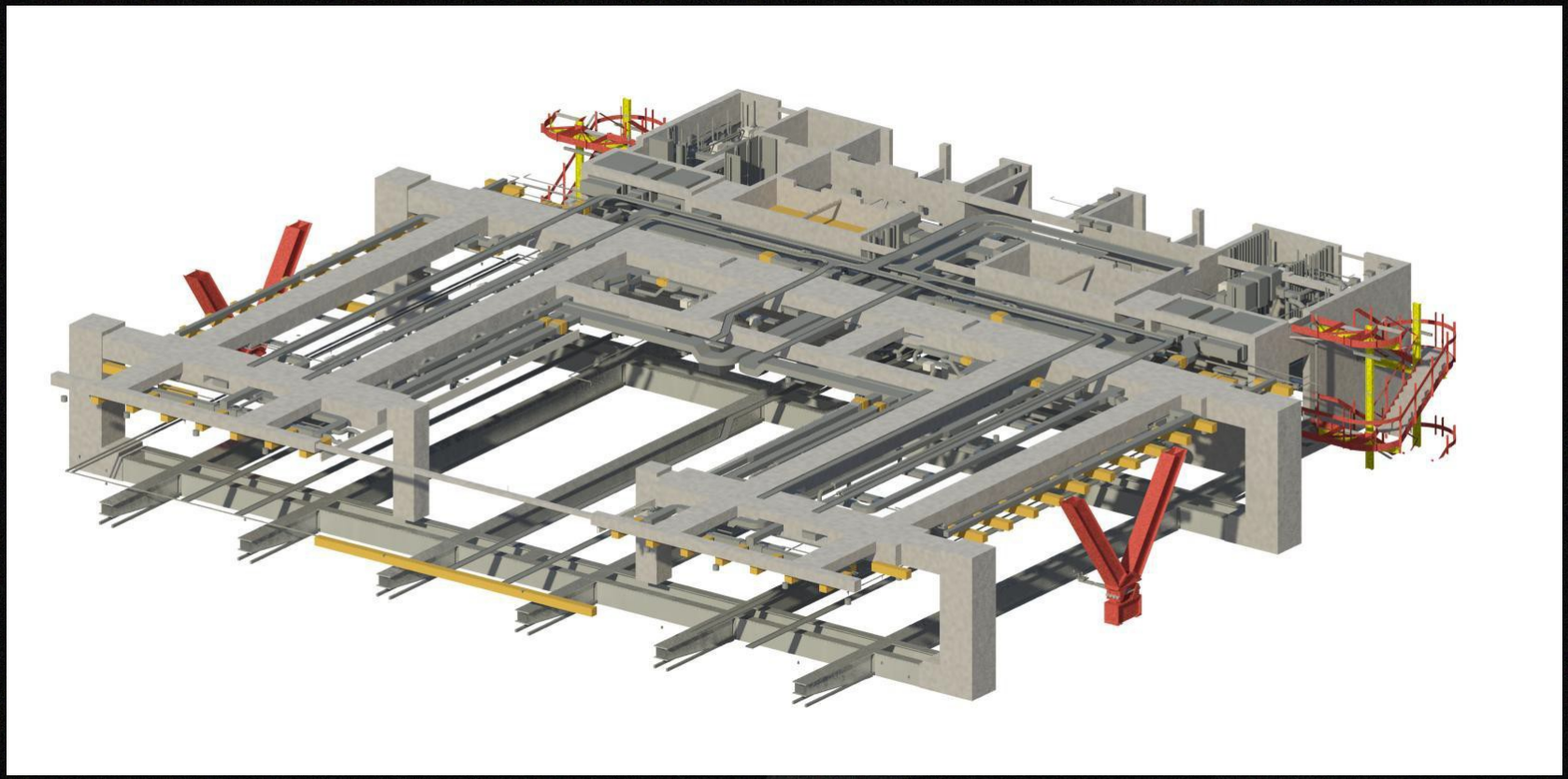
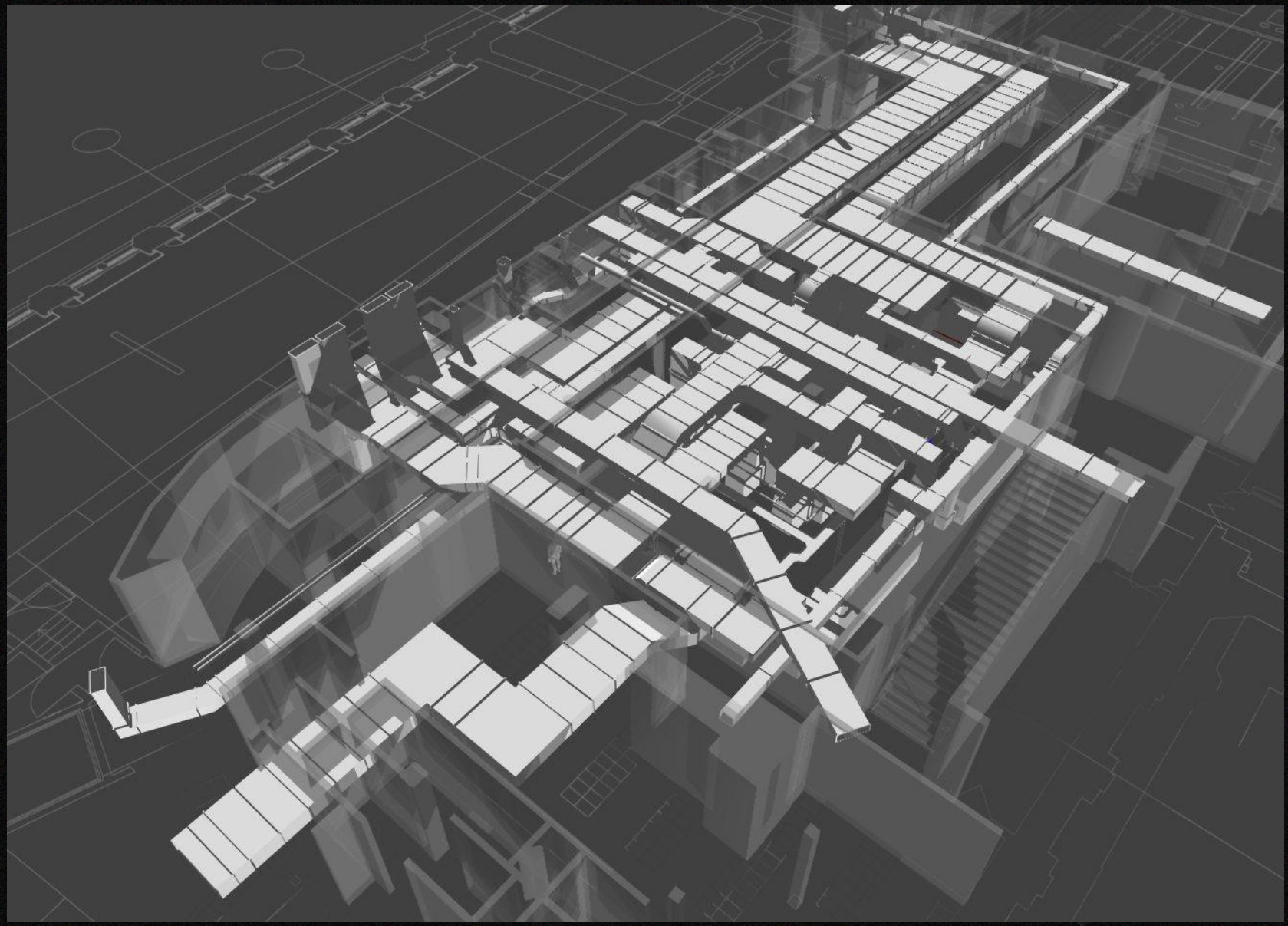
- **Coordination.**
- **Accurate coordination between services / structure and architecture.**
- **Information is passed between all members of the design team in 3D format.**
- **Plant items have property fields which may be empty and ready for population by contractors.**



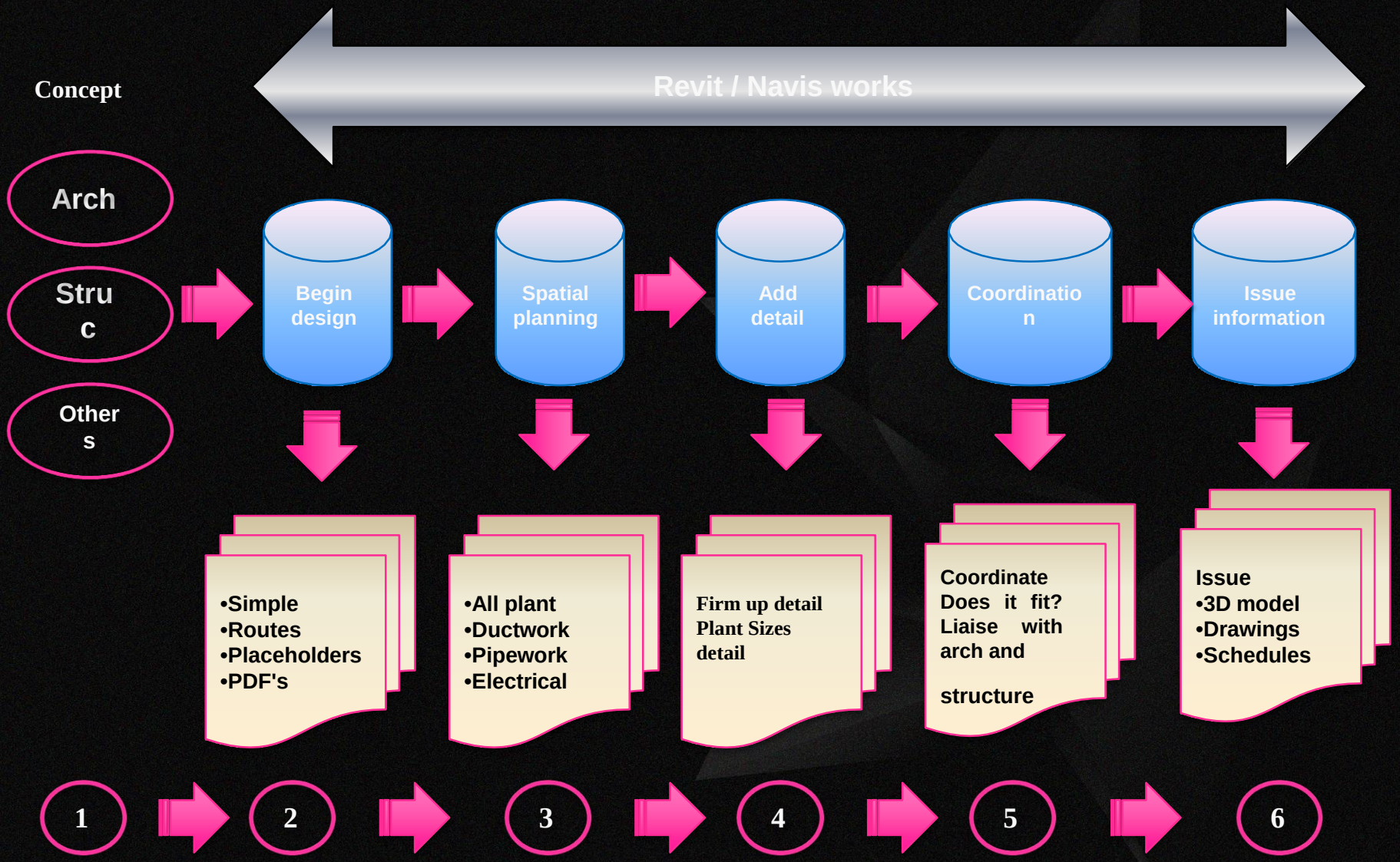




Typical Revit MEP model



Typical CadDuct model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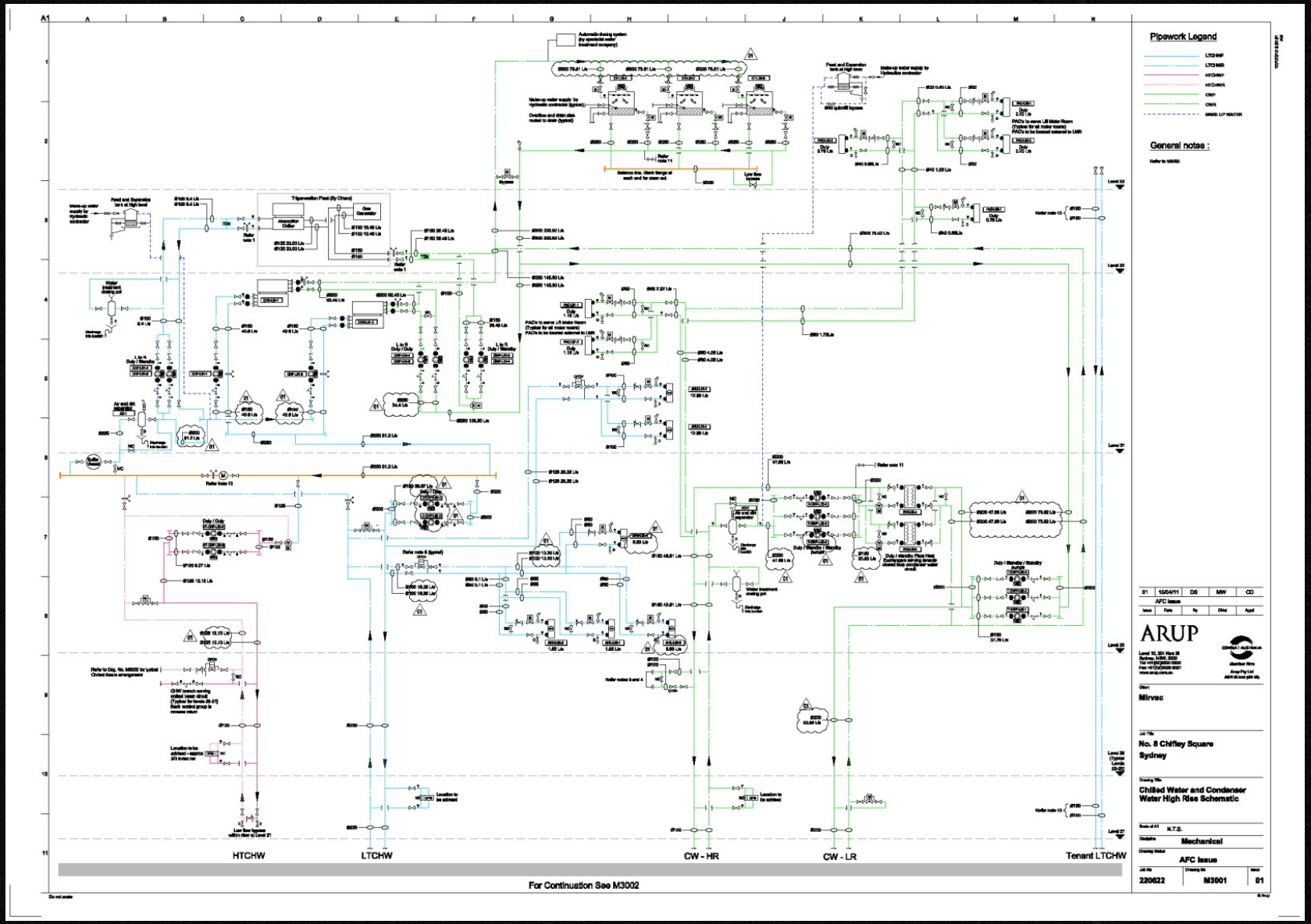
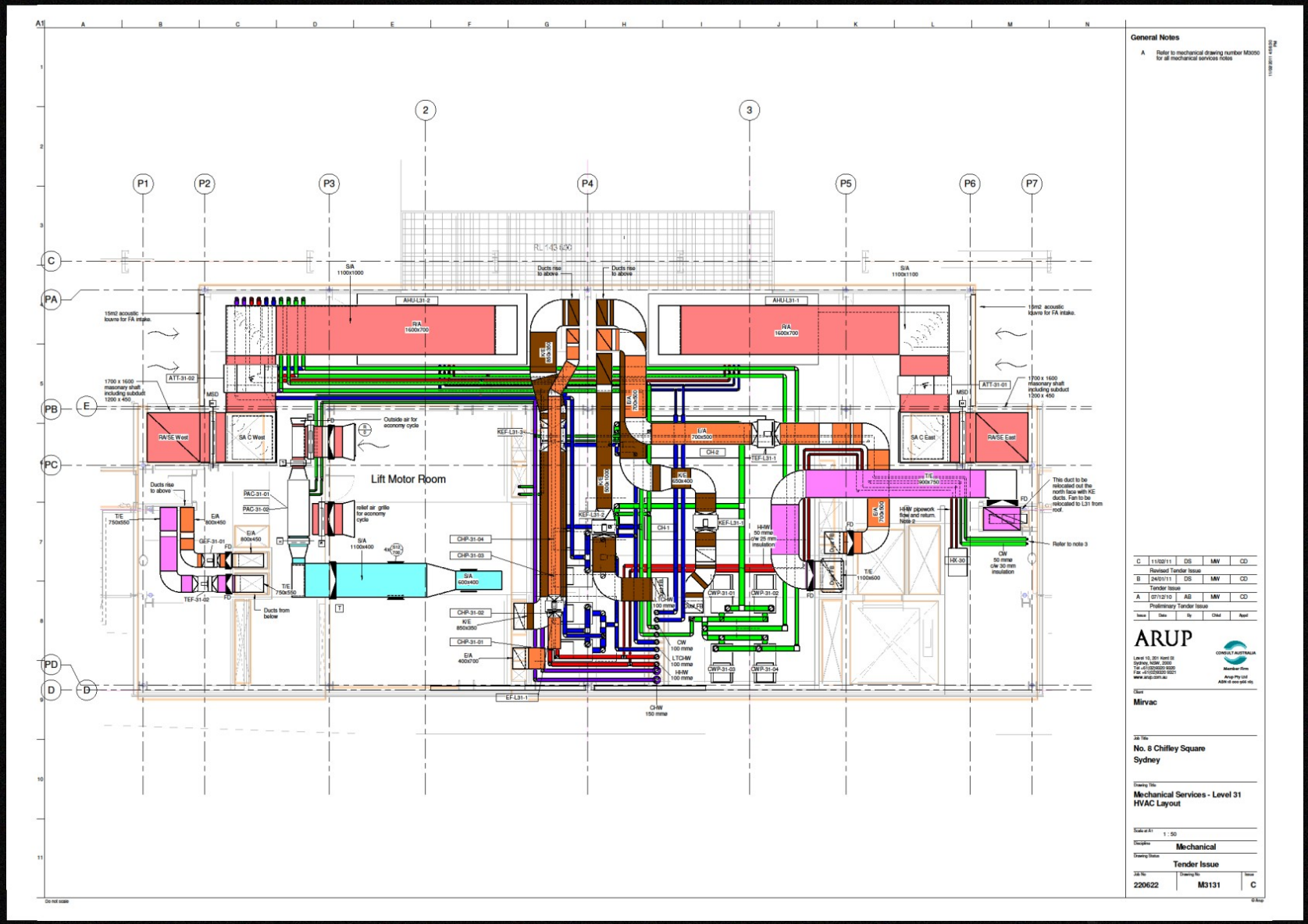
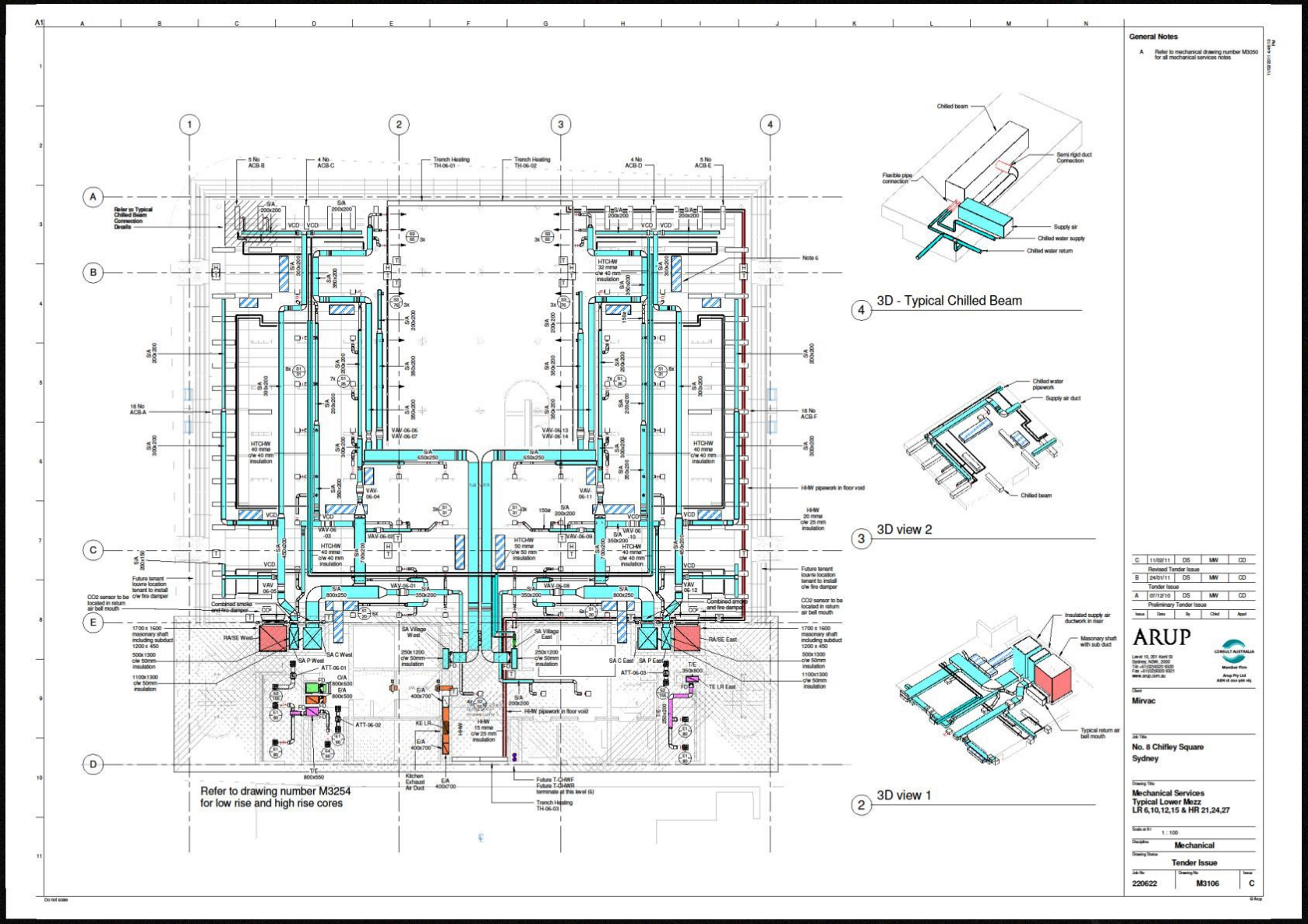
- **Issue Information.**
- **Hand over to contractor – DWG – RVT – PDF – Schedules etc (everything contained within Revit).**
- **Contractor coordinate in Revit**
- **Fabrication.**
- **Installation.**



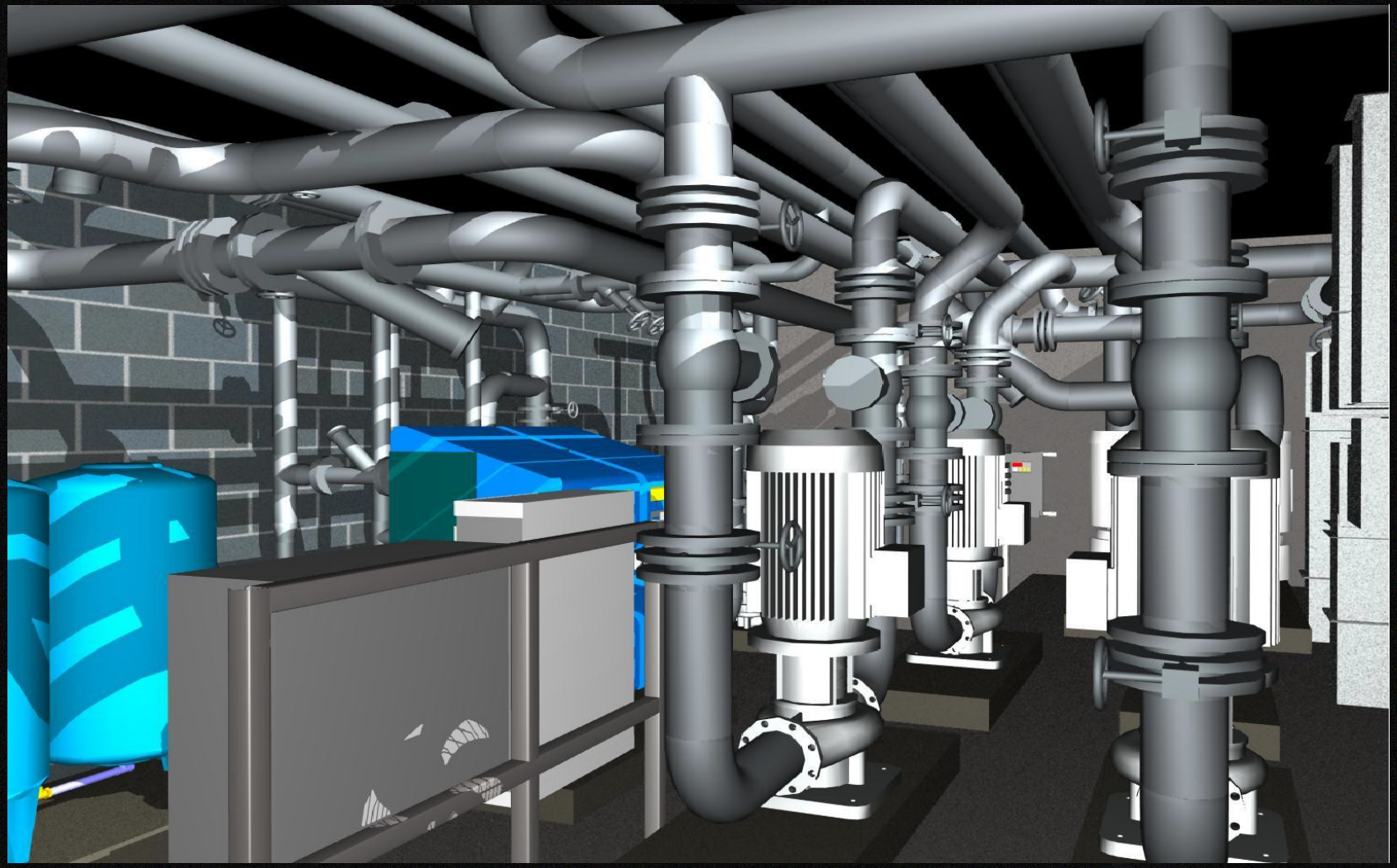
Typical mechanical schematic



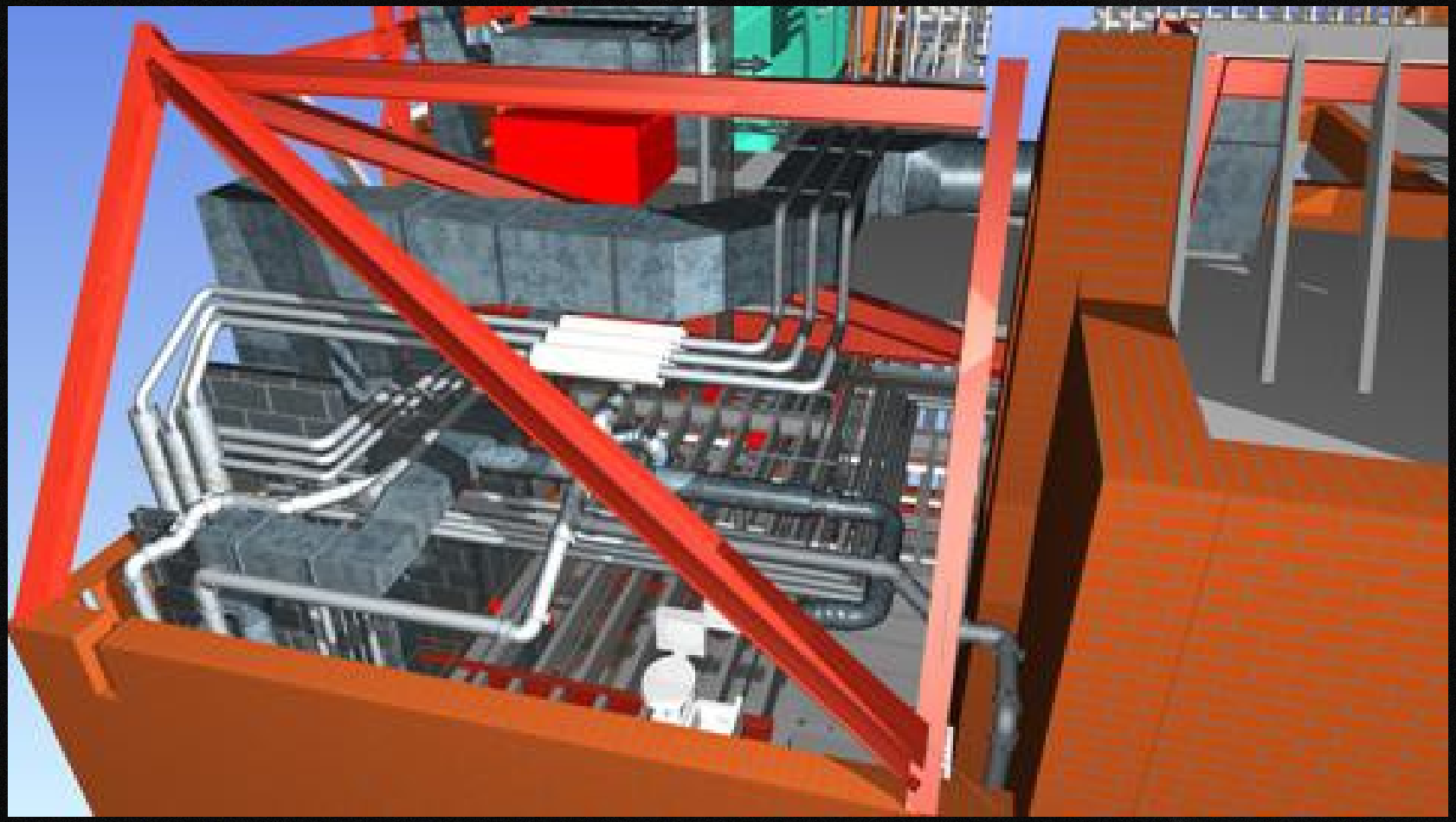
Typical mechanical layout



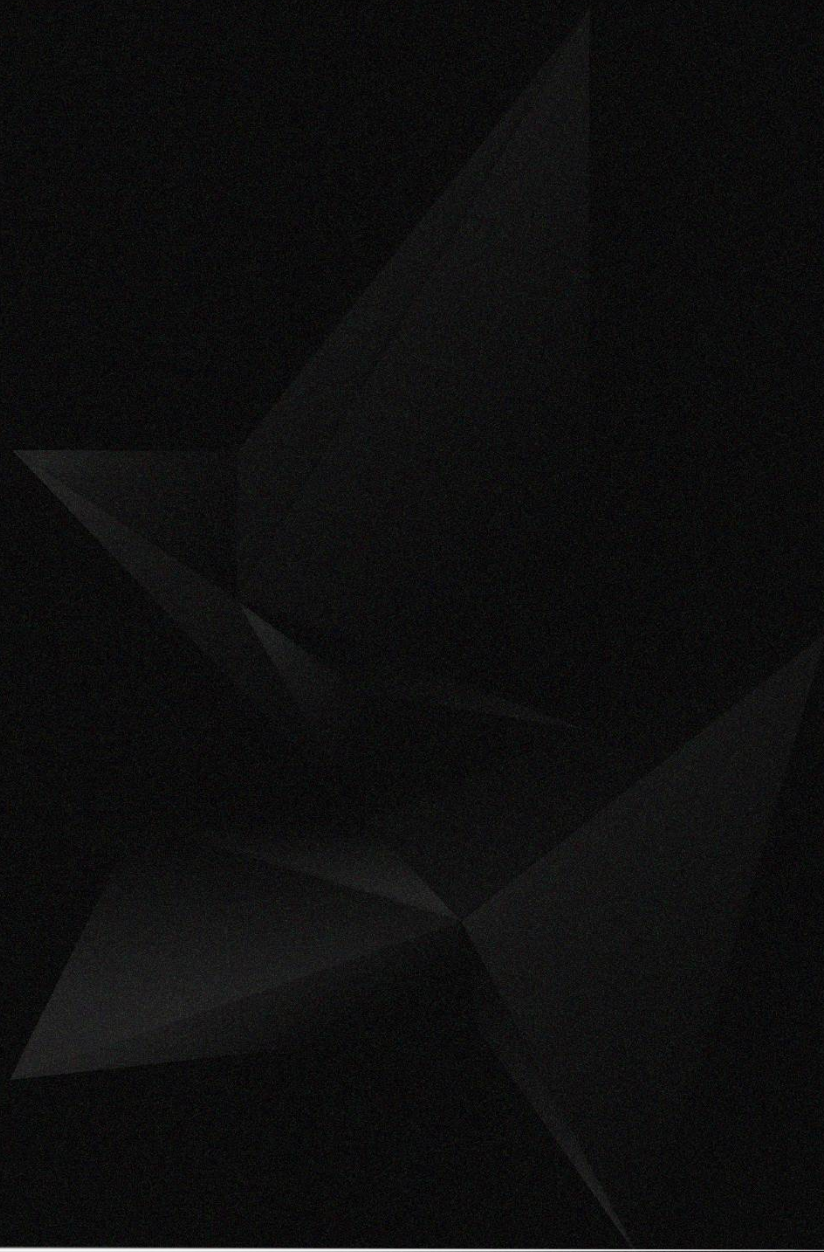
Typical mechanical floor layout

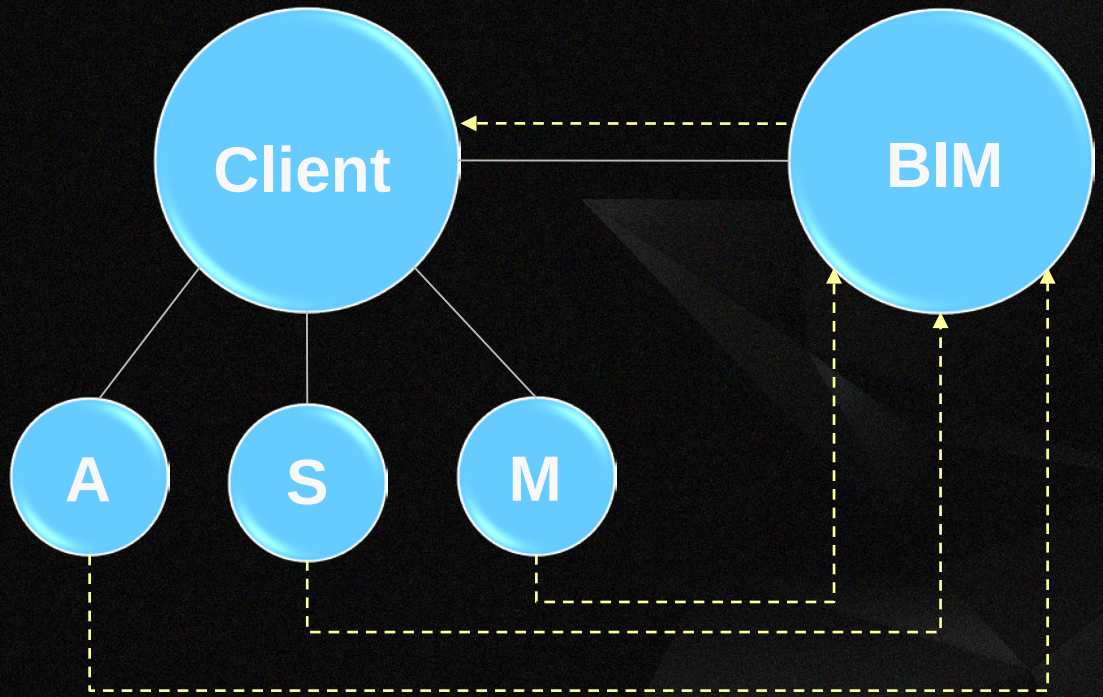


Typical Plant Room model



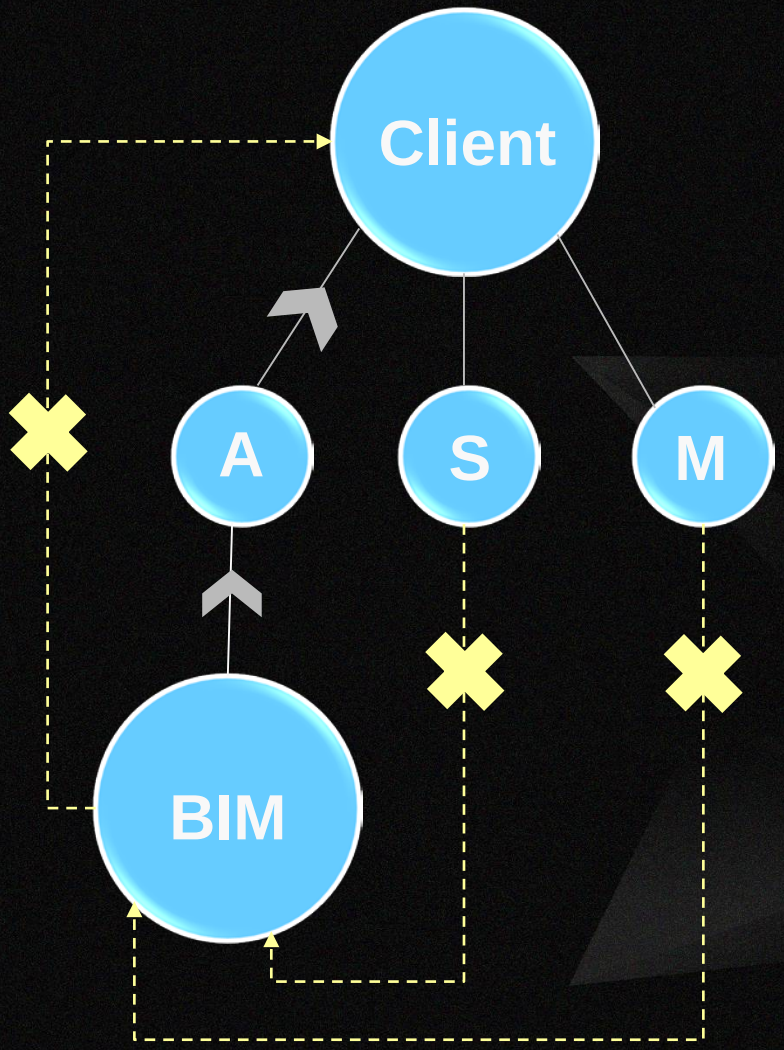
Typical Duct model





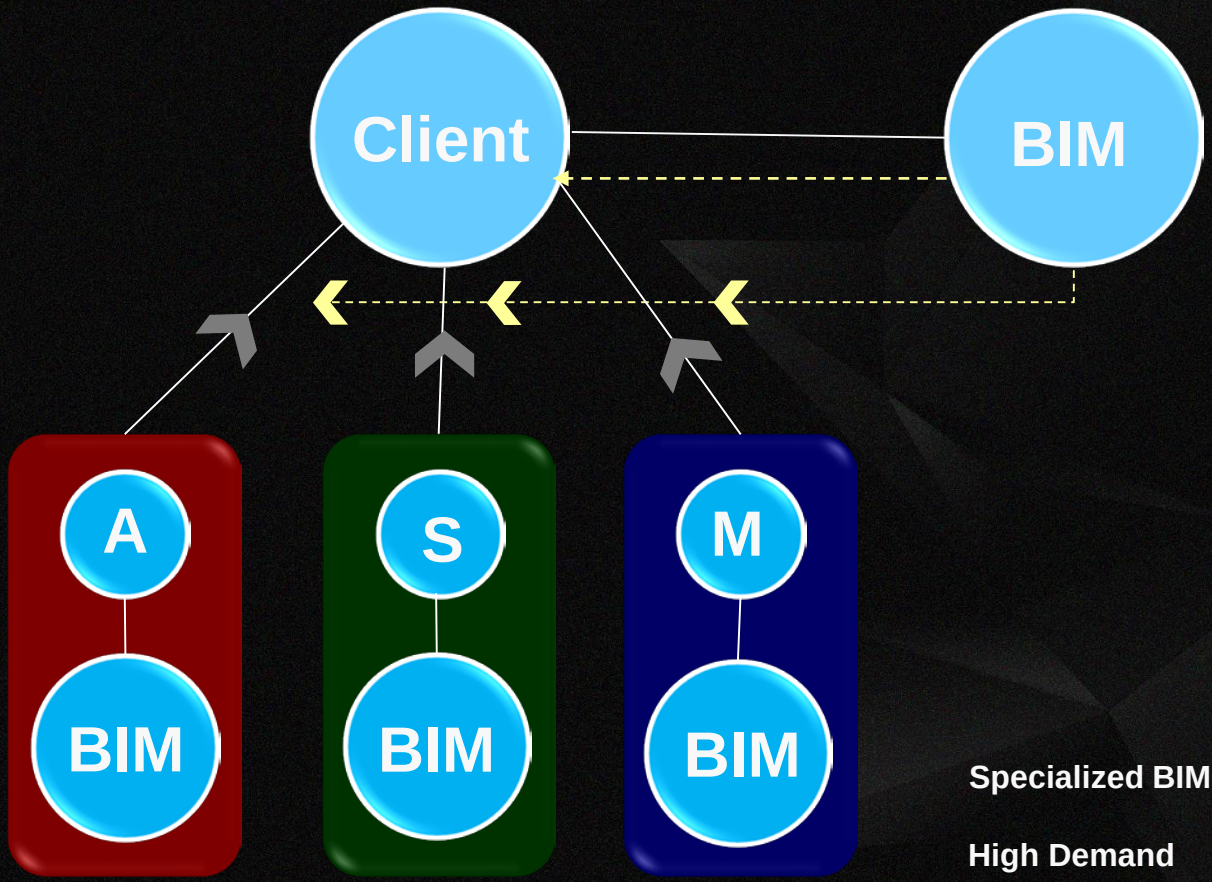
Low Level BIM

Super BIM !



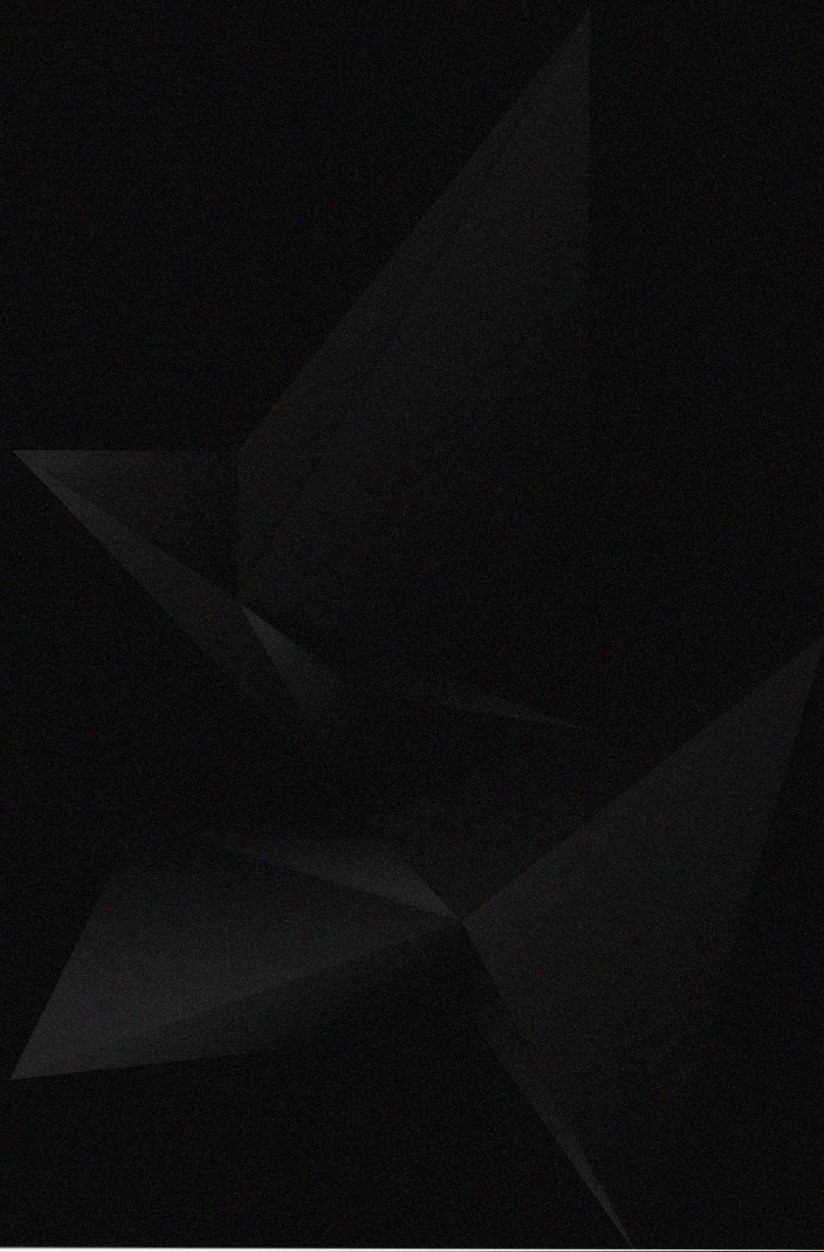
Dishonest reporting

Hard to chase information



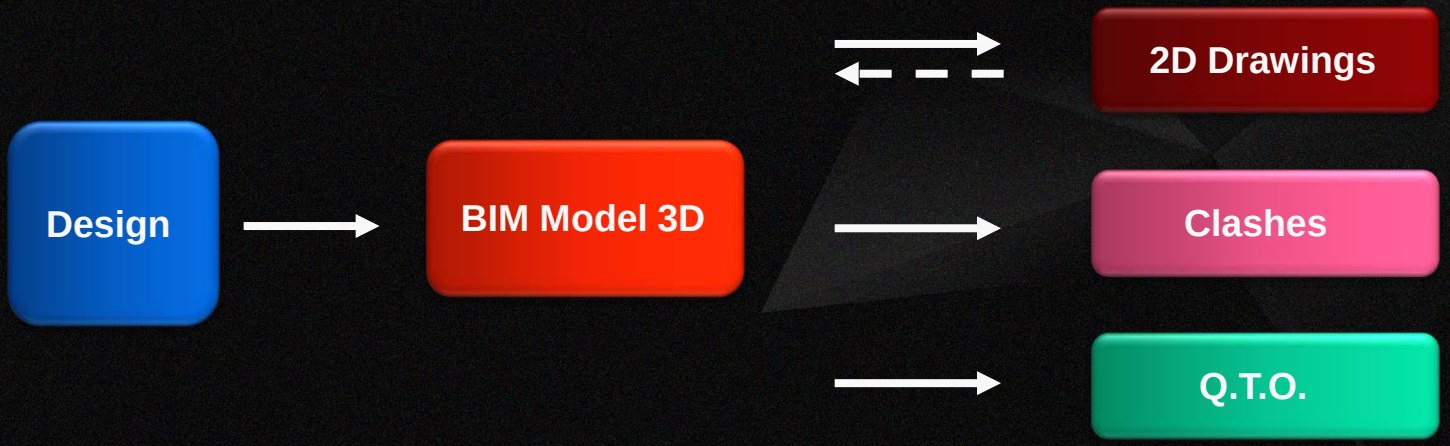
Specialized BIM

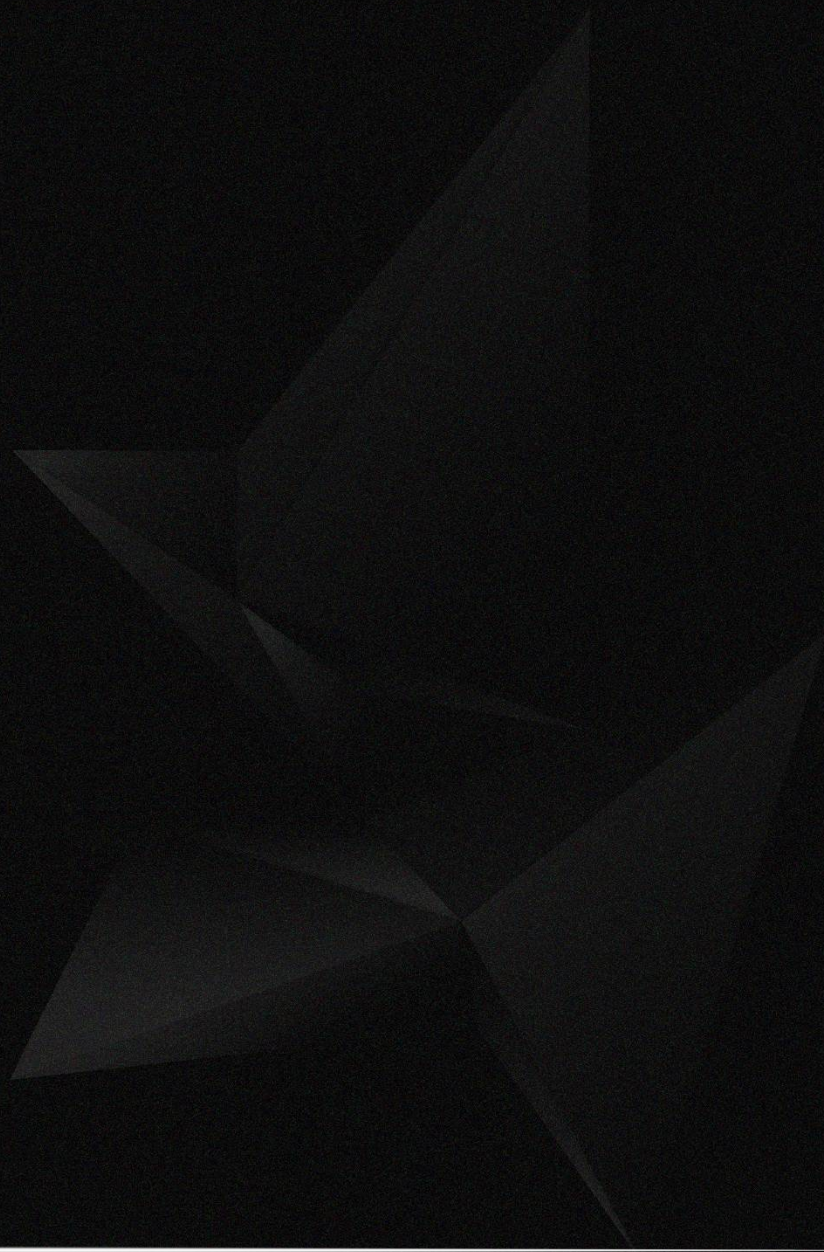
High Demand

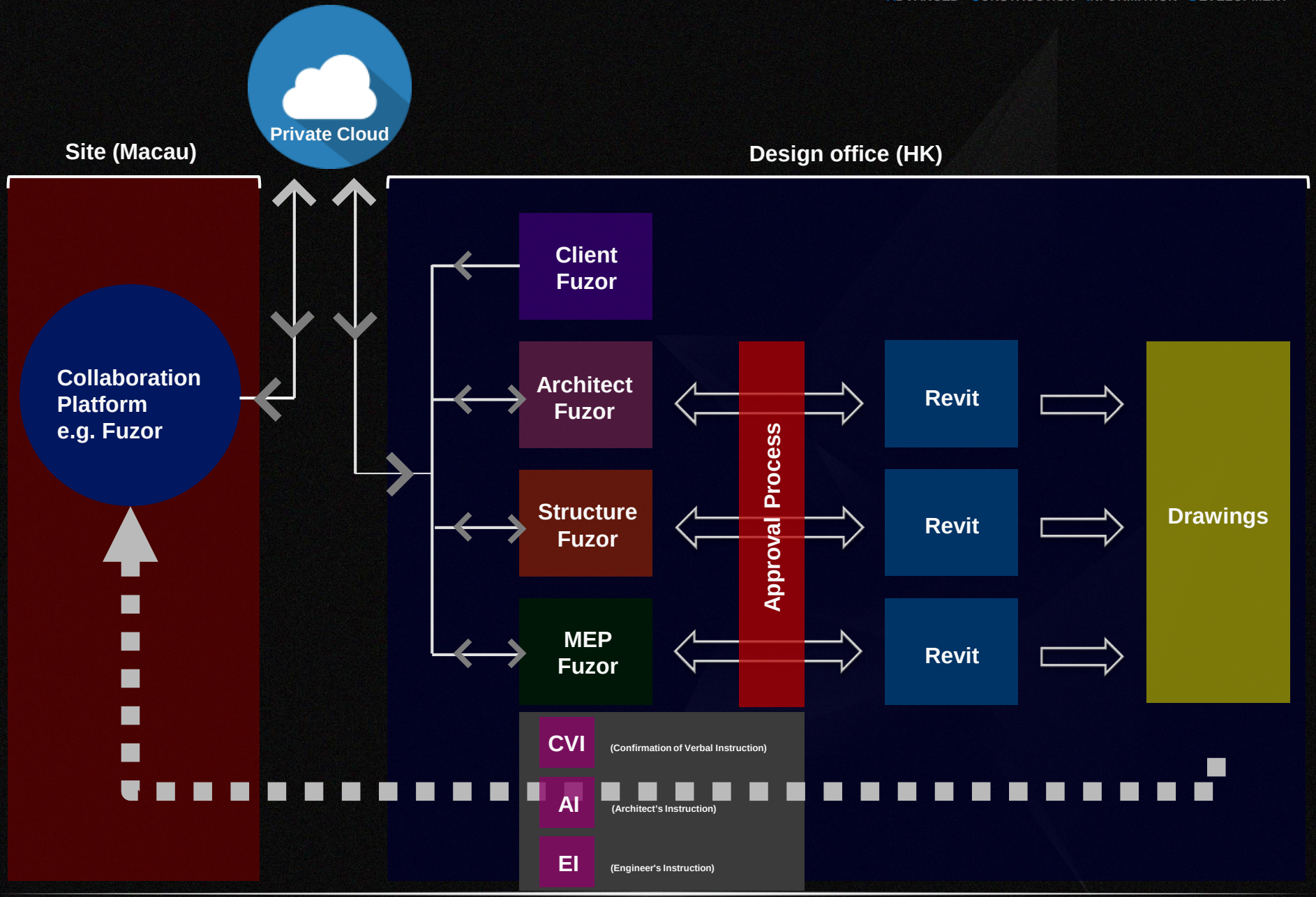


Perceived BIM Workflow

True BIM Workflow :






Private Cloud
Site (Macau)
Design office (HK)
Collaboration Platform e.g. Fuzor
Client Fuzor
Architect Fuzor
Structure Fuzor
MEP Fuzor
Approval Process
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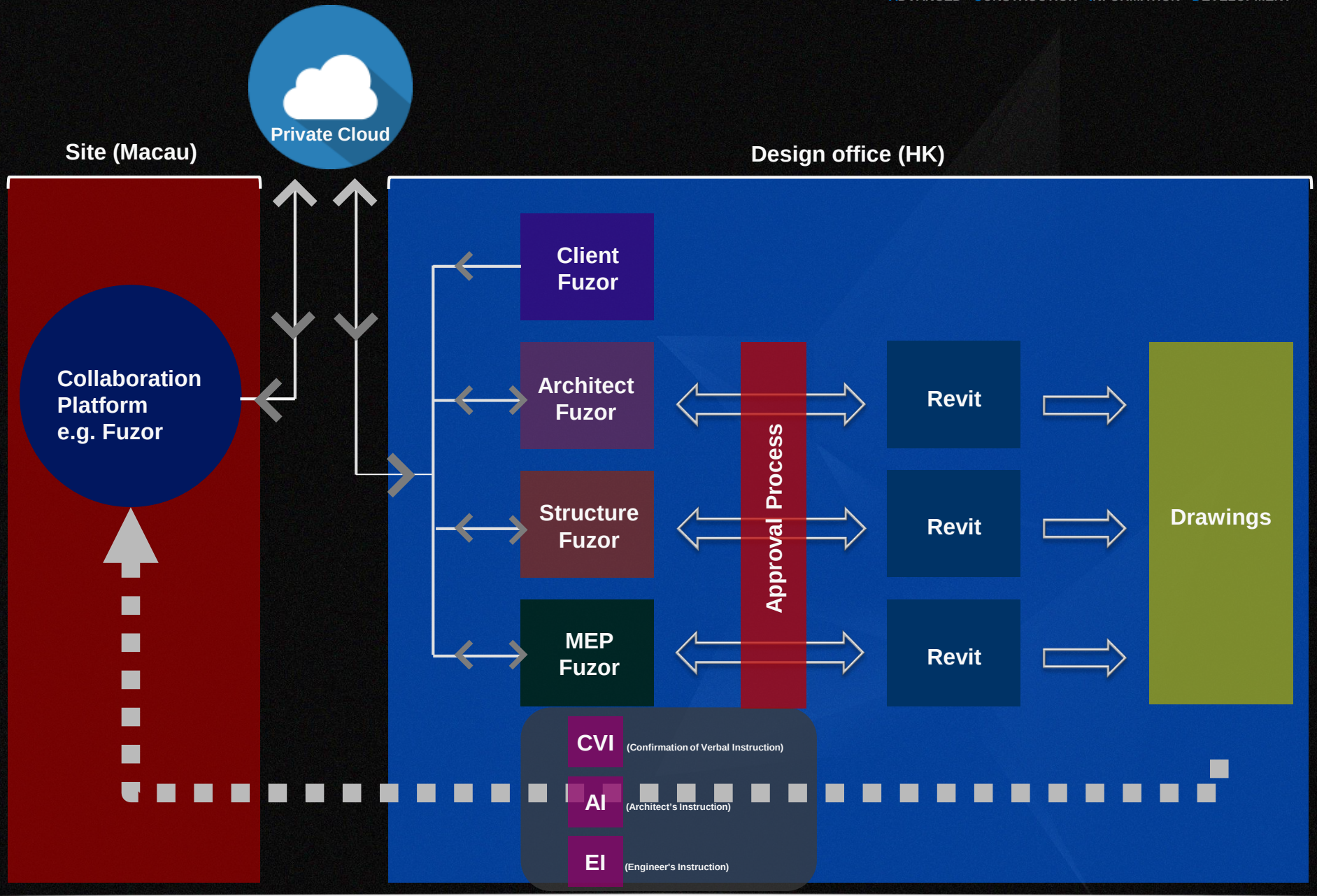
Revit
Drawings
CVI
(Confirmation of Verbal Instruction)
AI
(Architect's Instruction)
EI
(Engineer's Instruction)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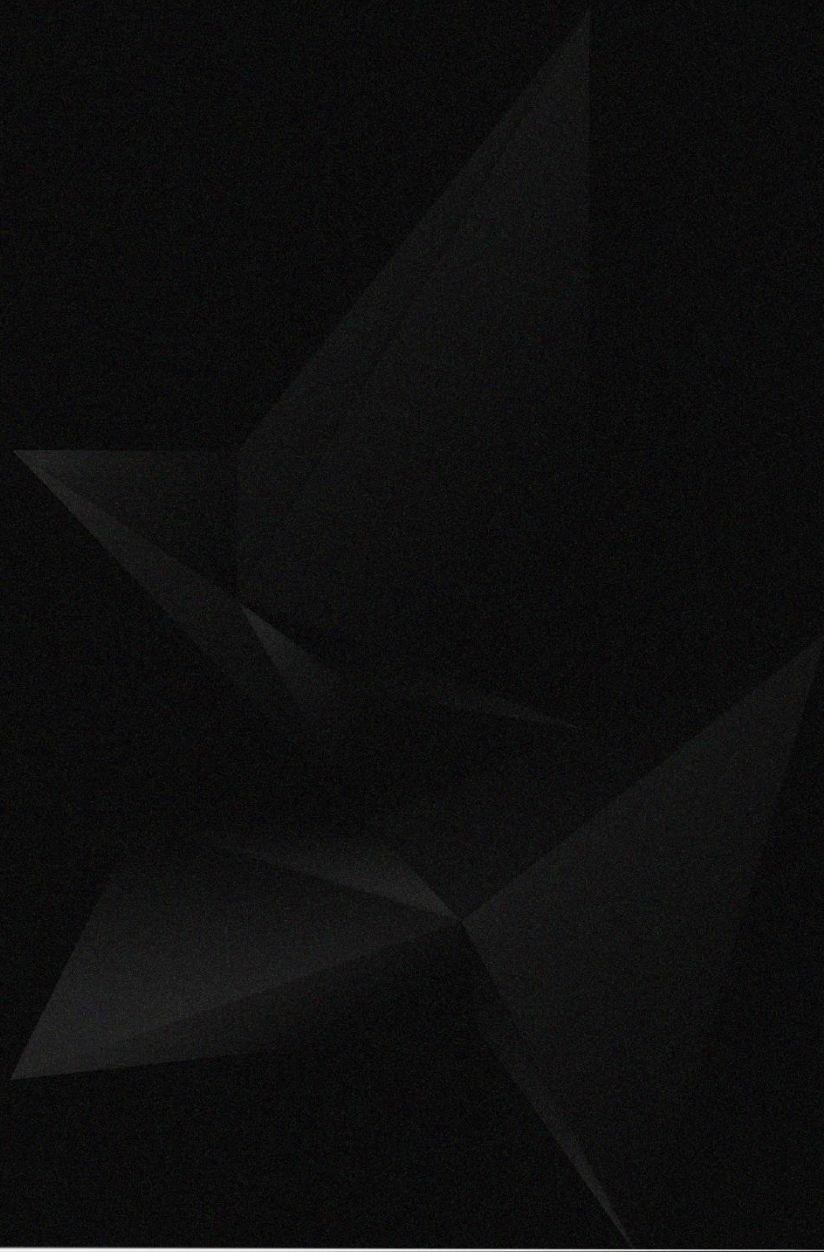
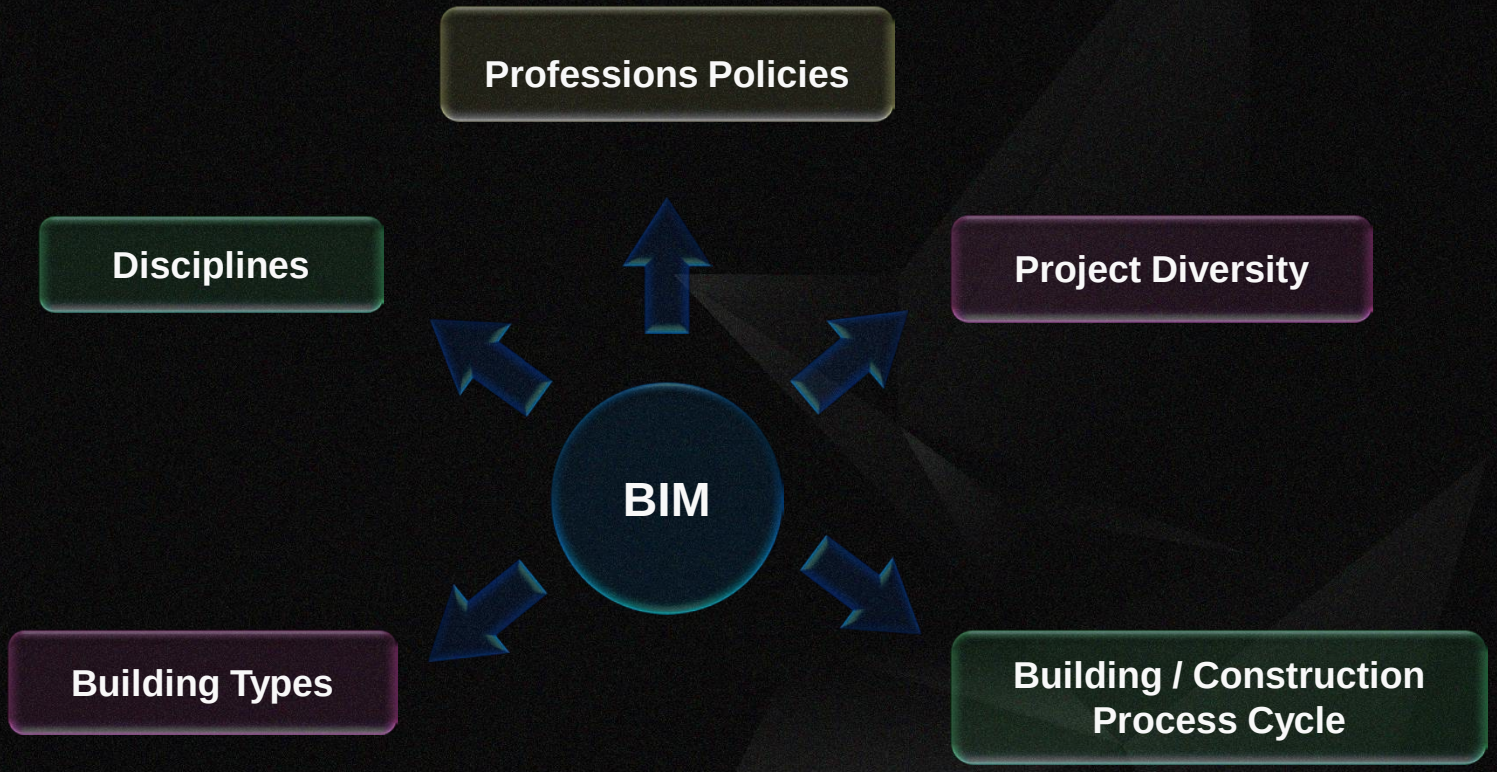
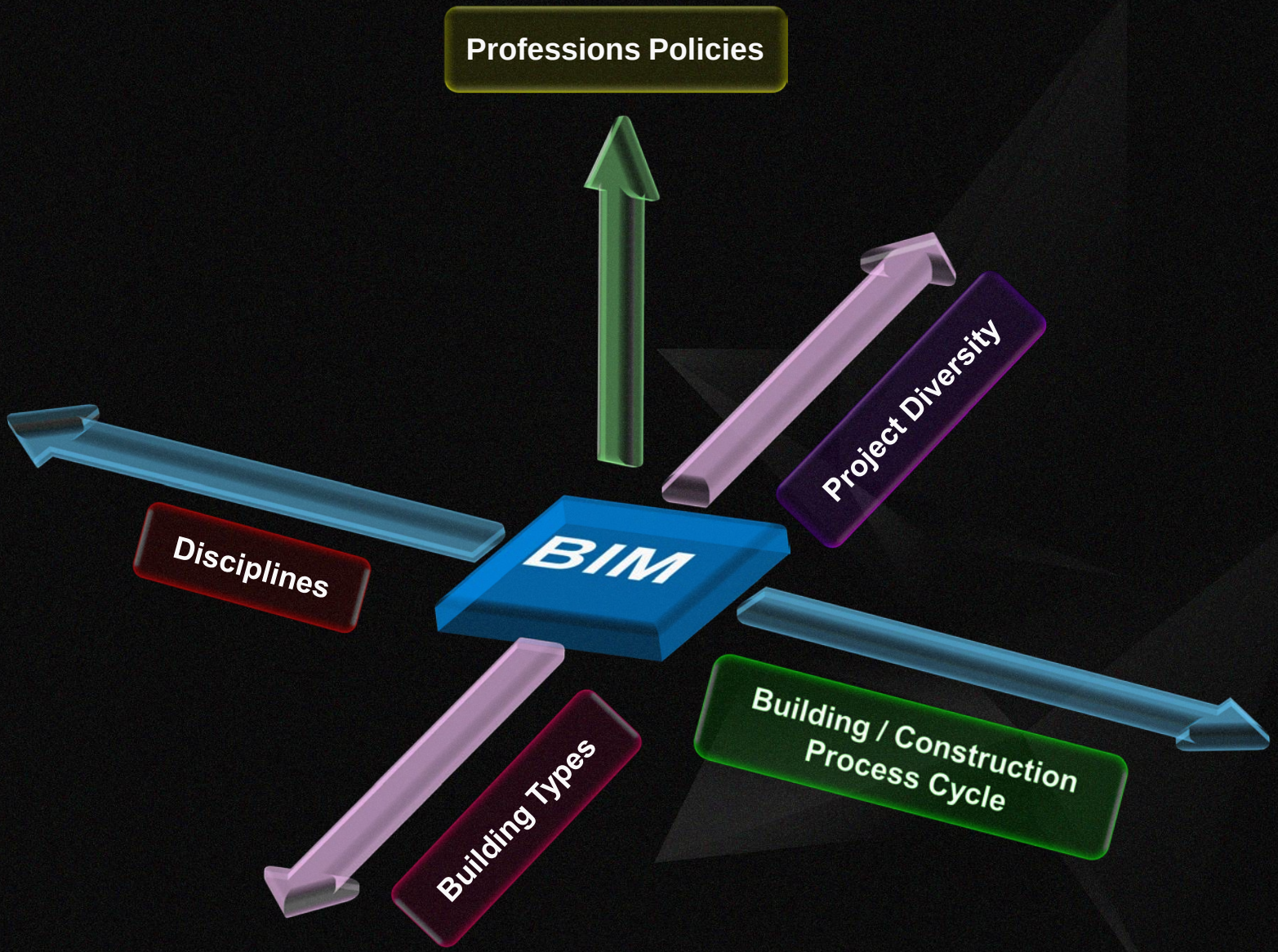



Professions Policies
Disciplines
Project Diversity
BIM
Building Types
Building / Construction Process Cycle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