A DVANCED
C ONSTRUCTION
I NFORMATION
D EVELOPMENT

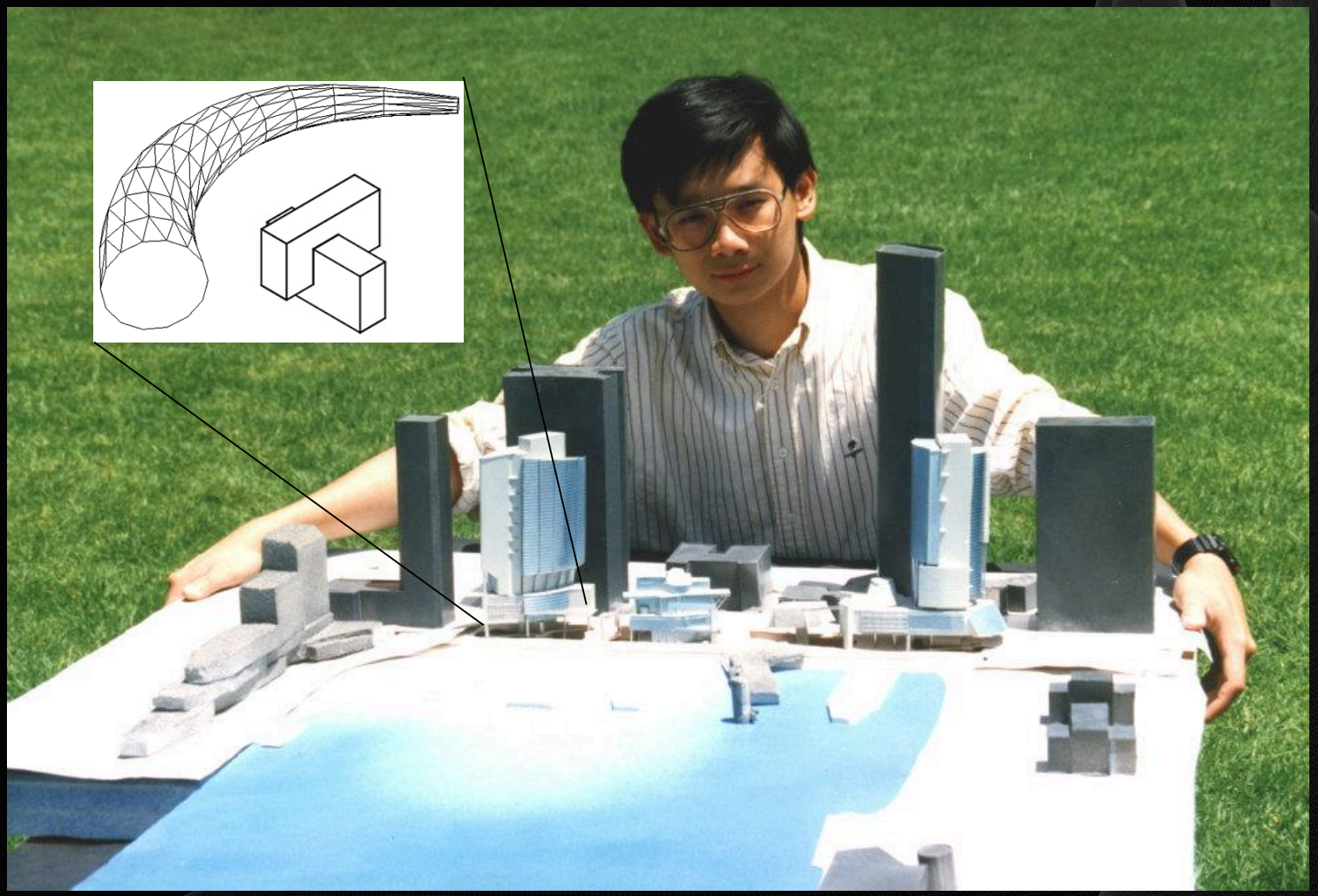
BIM Manager Training

David Fung

HKIA Registered Architect
HKIBIM Board Member BIM specialist
HKUSPACE, CHUHAI COLLEGE,
Department of Architecture, Associate Professor
Managing Director, A.C.I.D.

- Objectives:

- To understand BIM Process - its Limitations and Benefits
- To educate the participants on issues associated with starting BIM project.
- To Manage BIM Process to deliver Value – Production, Collaboration and Checking.
- To equip the participants with necessary technical knowledge and skills in HKHA BIM Practices and BIM Project Execution Plan.

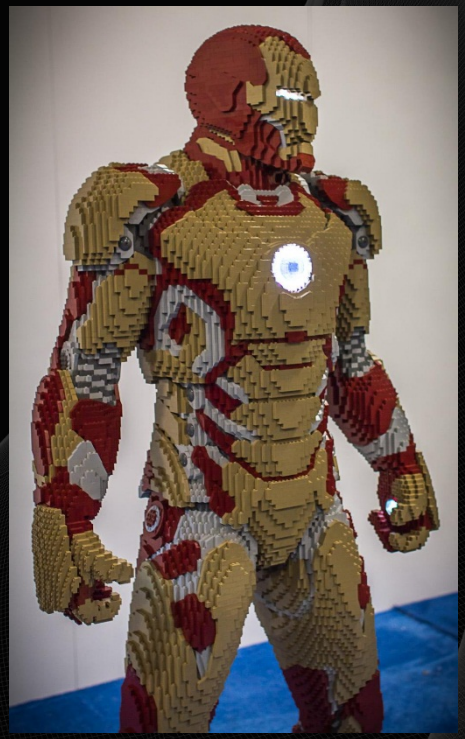


1990 – 3D AutoCAD

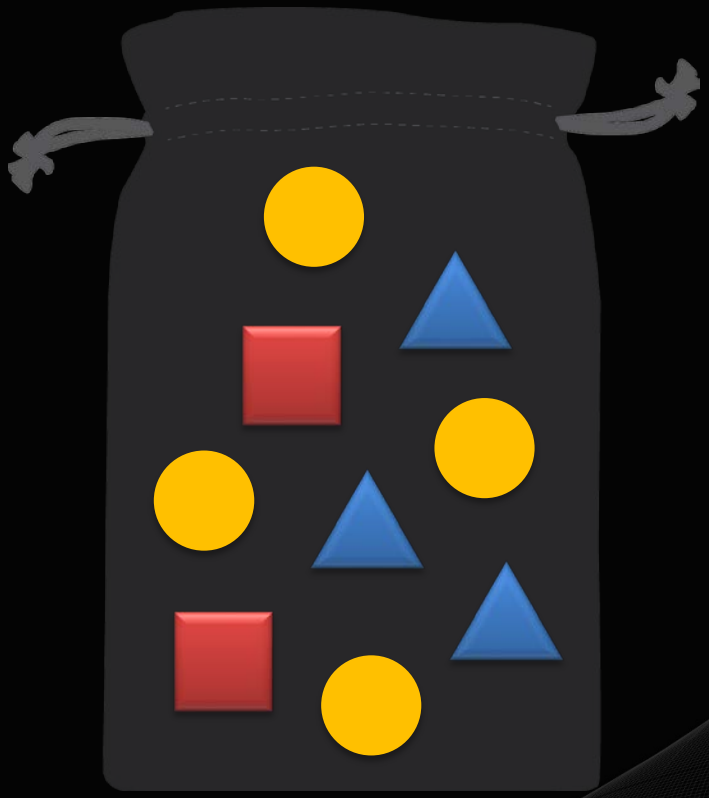
2002 – Revit (BIM)

E-Shopping/ BIM?

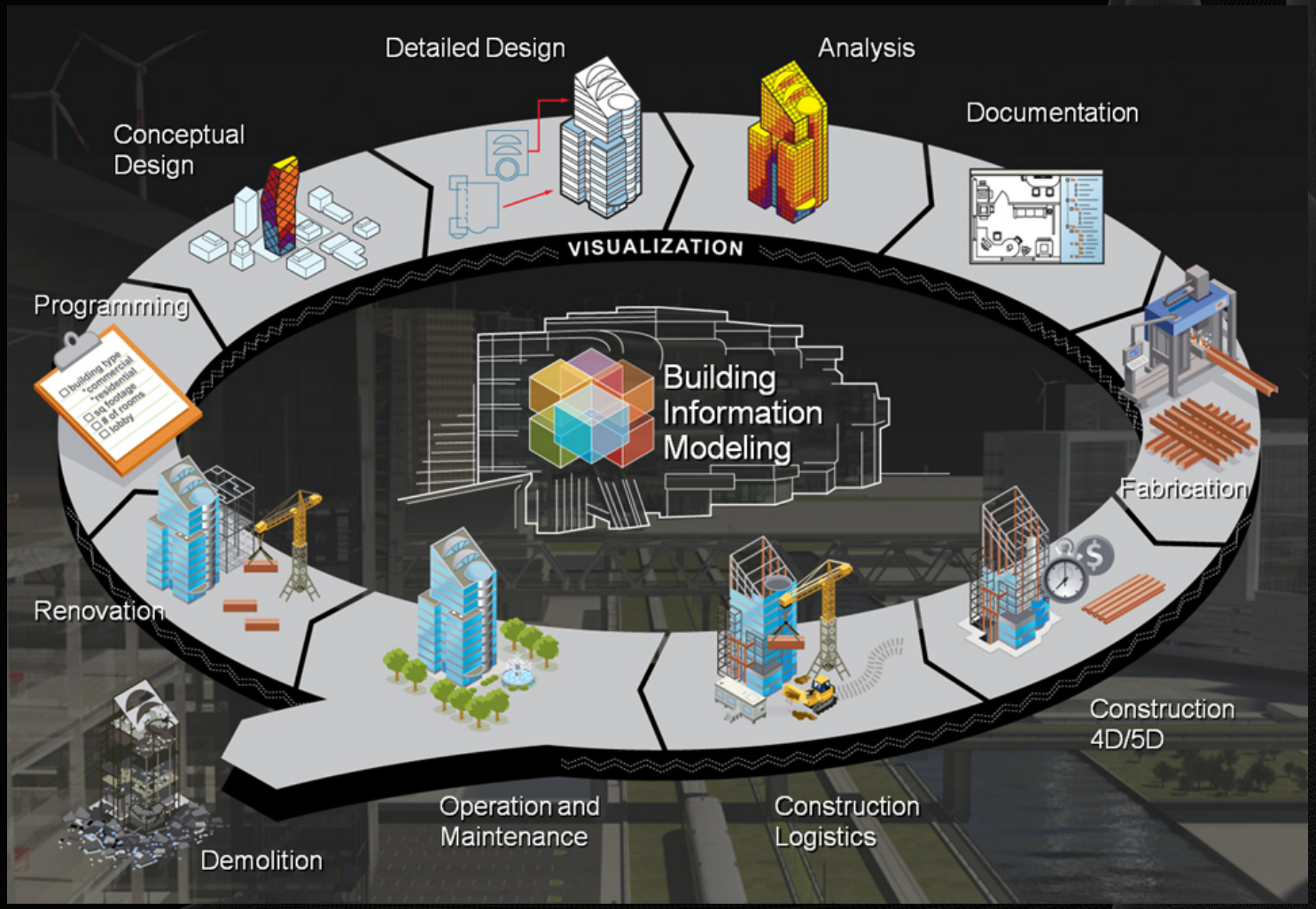
Logo Block

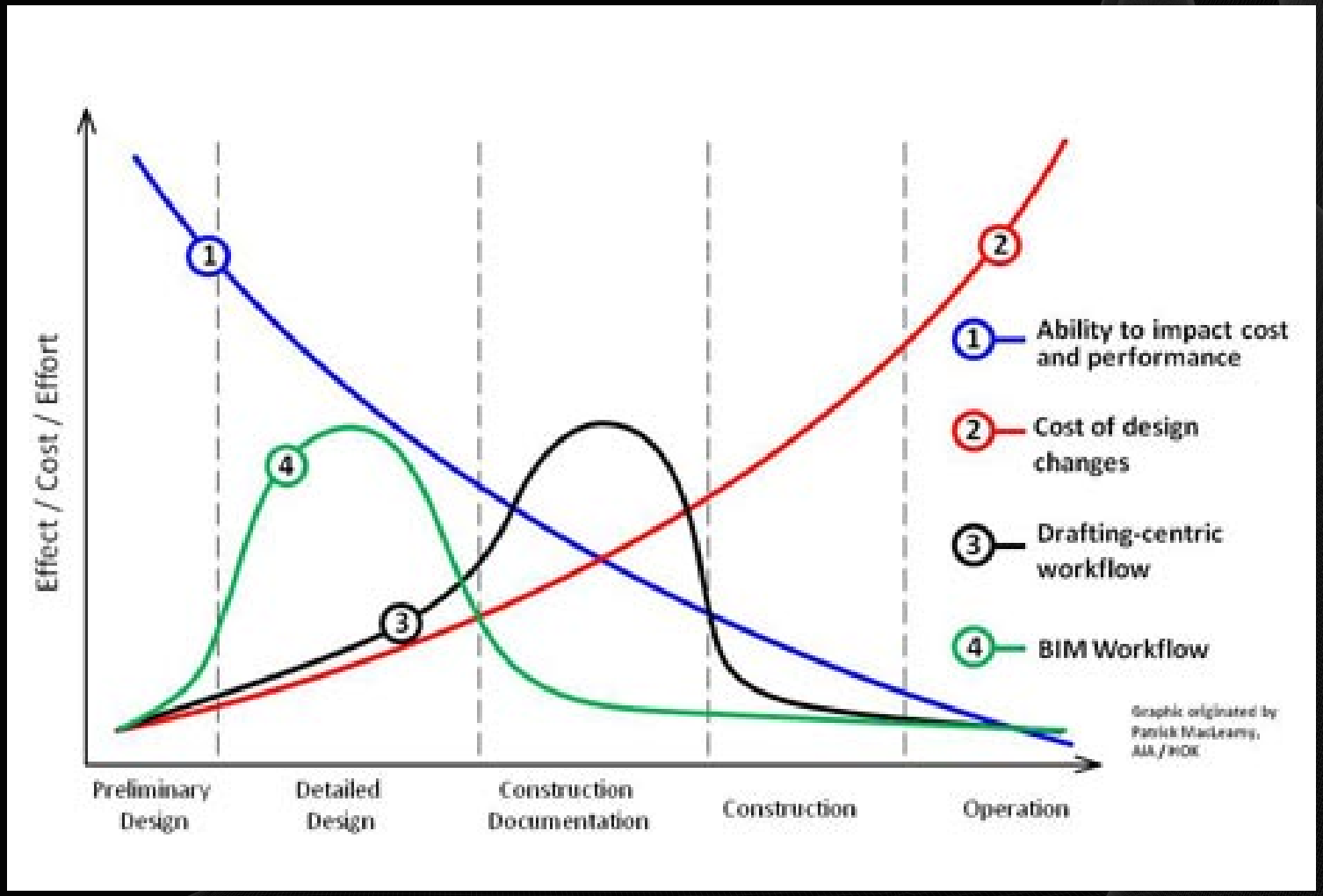


Object

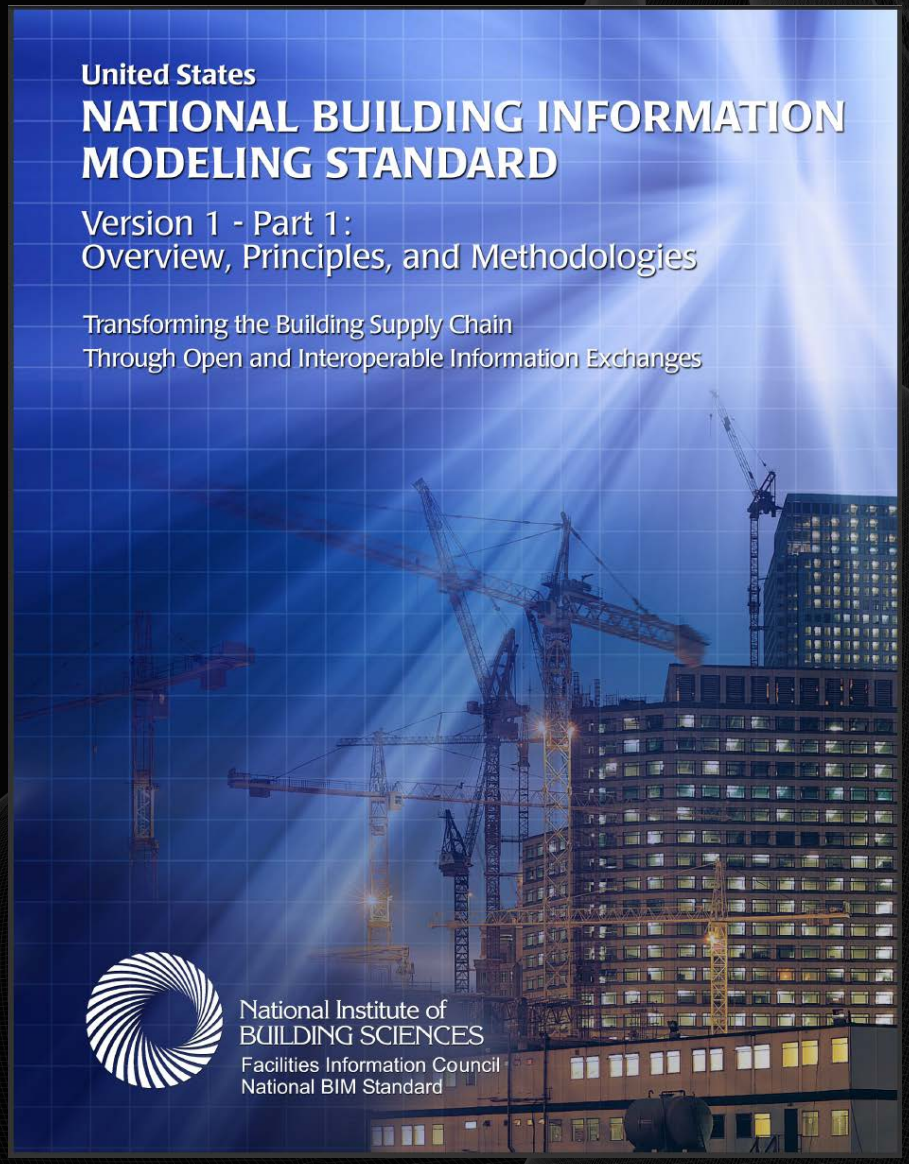


Rules	Result
Red Rectangle	
Blue Triangle	
Yellow Circle	


Detailed Design
Analysis
Conceptual Design
Documentation
VISUALIZATION
Programming
building type
commercial
residential
sq footage
of rooms
lobby
Building Information Modeling
Fabrication
Renovation
Construction 4D/5D
Operation and Maintenance
Construction Logistics
Demolition

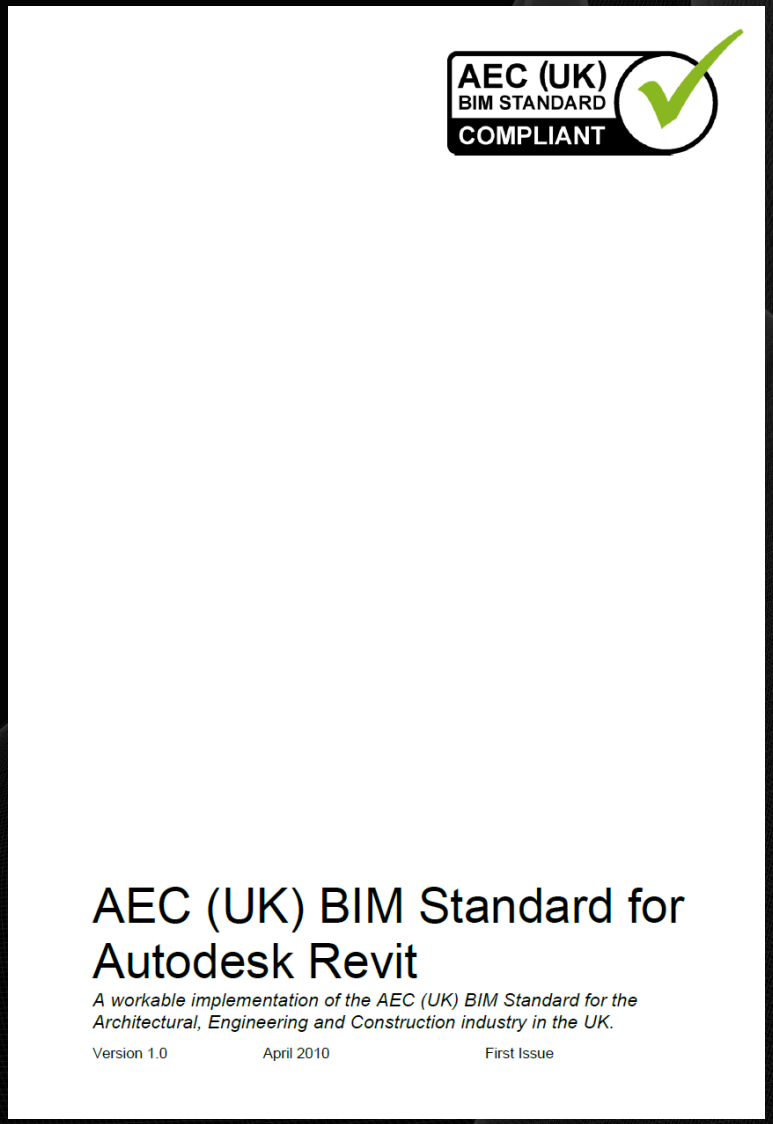


MacLeamy curve and the advantage of making early decision in the design process


United States
NATIONAL BUILDING INFORMATION MODELING STANDARD
Version 1 - Part 1:
Overview, Principles, and Methodologies
Transforming the Building Supply Chain
Through Open and Interoperable Information Exchanges
National Institute of
BUILDING SCIENCES
Facilities Information Council
National BIM Standard


GSA
BIM Guide For Spatial Program Validation
GSA BIM Guide Series 02
www.gsa.gov/bim


AEC (UK) BIM Standard
A practical & pragmatic BIM standard for the Architectural, Engineering and Construction industry in the UK.
Version 1.0 November 2009 First release


AEC (UK) BIM STANDARD COMPLIANT
AEC (UK) BIM Standard for Autodesk Revit
A workable implementation of the AEC (UK) BIM Standard for the Architectural, Engineering and Construction industry in the UK.
Version 1.0 April 2010 First Issue


Hong Kong Institute of
Building Information Modelling

BIM Project Specification

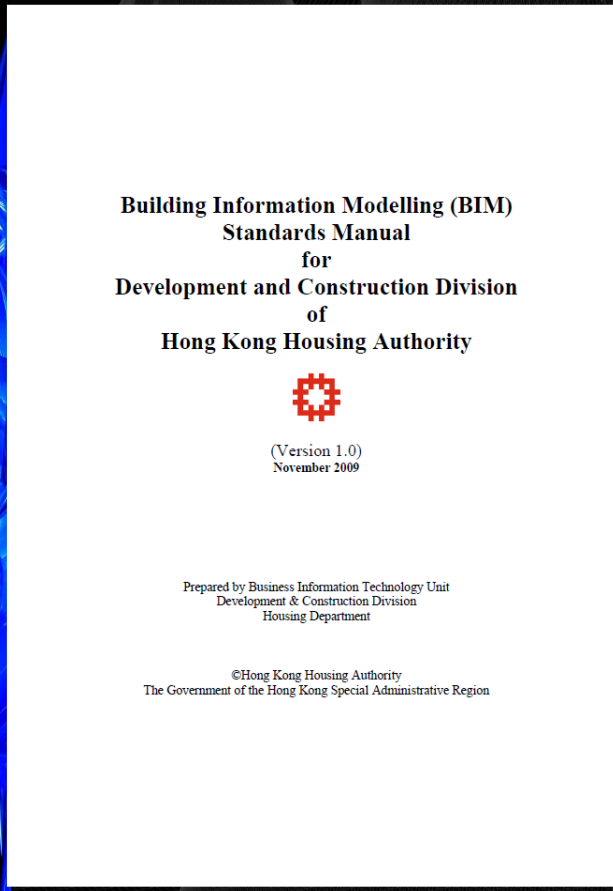
hong kong

HKIBIM Specification (Rev 1.0) Page 1 of 22


MTR
Building Information Modelling
(BIM) Standard

Autodesk Revit

Version 1.0 09/2010


Building Information Modelling (BIM)
Standards Manual
for
Development and Construction Division
of
Hong Kong Housing Authority

(Version 1.0)
November 2009

Prepared by Business Information Technology Unit
Development & Construction Division
Housing Department

http://hkibim.org/ - Windows Internet Explorer

http://www.hkibim.org/

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Favorites http://hkibim.org/ www.aec-uk.org

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Links About Us

Link: www.hkibim.org

The Hong Kong Institute of Building Information Modelling

香港建築信息模擬學會

HKIBIM Launch on 8th Jan 2010

Hong Kong Institute of Building Information Modelling (HKIBIM) was established in Jan 2009. After one year's preparation, it is proud to announce the launch of HKIBIM. On 8 Jan, 2010, the Launch was successfully held at the Hong Kong Club Building.

After opening speech by Ir Francis Leung, the Chairman of HKIBIM, the first fellow member of HKIBIM, Ms Ada Fung, made her speech followed by Architect Mr David Fung, Vice Chairman, sharing the membership application method and further direction of HKIBIM.

The launch ended with cocktail and networking until late night.

Click here to view the event photos.

Search for:

Recent Posts

HKIBIM Launch on 8th Jan 2010

Official Launch of The Hong Kong Institute of Building Information Modelling (HKIBIM)

Useful Links

Membership Application Form:

PDF format

The University of Hong Kong
Knowledge Exchange

HKUSPACE Community College 香港大學附屬學院

香港中文大學
The Chinese University of Hong Kong

IVE

珠海學院
CHU HAI COLLEGE
OF HIGHER EDUCATION

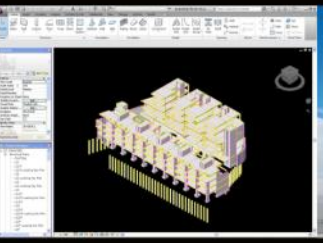
CUSCS
香港中文大學專業進修學院
School of Continuing and Professional Studies
The Chinese University of Hong Kong

THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

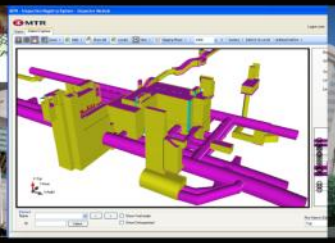
School of Professional Education
and Executive Development
專業進修學院

SPEED

AECOM | HENDERSON LAND DEVELOPMENT COMPANY LIMITED | H+K | Hong Kong Housing Authority | MTR | SHUI ON CONSTRUCTION COMPANY LIMITED








AECOM

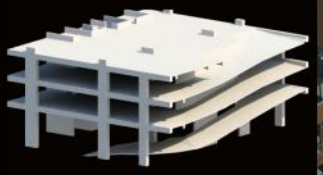
Projects:
- Proposed Commercial Development at No. 135-137, Hoi Bun Road
- Proposed Residential Development at 55-57 Bisney Road, Pokfulam

Location:
- Kwun Tong
- Pokfulam

Types:
- Commercial Development
- Residential Redevelopment

Scheduled Time of Completion:
- Hoi Bun Road – March 2013
- Bisney Road – September 2013

"The concept took around two months to develop, compared to perhaps three to six months with the traditional approach," says Ir. Alan Yuen, Principal Engineer, Building Engineering (Structural), AECOM. "And we completed the structural design in under two months – when we would usually expect this to take three to four months for a building like this."



Henderson Land Development Co Ltd.

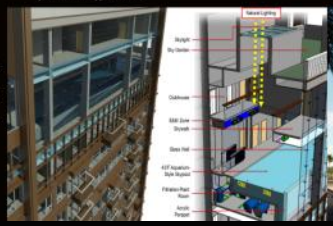
Projects:
- The Gloucester
- A Luxurious Boutique Hotel at 388 Jaffe Road

Location:
- 212 Gloucester Road, Wanchai
- 388 Jaffe Road, Wanchai

Types:
- Residential Development
- Hotel

Scheduled Time of Completion:
- 2012

"BIM is a catalyst for project innovation and a tool for speedier design development," says Kevin Ng, Deputy General Manager, Project Management (2) Department, Henderson Land. "We couldn't effectively and efficiently visualize 2D combined services drawings, for complicated projects, but with BIM we can realistically appraise problems and opportunities."




HOK International (Asia/Pacific) Ltd.

Project: Bengaluru International Airport Terminal 1 Expansion

Location: Bangalore, India

Type: Airport

Scheduled Time of Completion: 2013 & 2015

"The client can get a better understanding of the design via Revit's inherent 3D environment, and therefore become more engaged with the design process," says Mr. Benjamin Thomas, Senior Design Architect, Associate with HOK.

"The BIM model was a massive help in the design process," says Ir. Andrew Mole, Associate Director of Arup. "There is only so much information you can show in 2D drawings, since they must be interpreted to understand the full spatial information. 3D models communicate better. The BIM model allowed creation of multiple views of the airport design, with minimum additional effort."

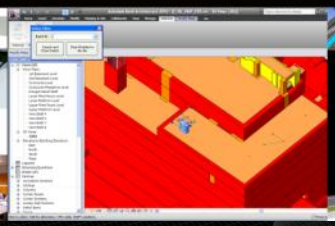
Hong Kong Housing Authority

Projects:
- Tai Pak Tin Street Public Housing Development
- Redevelopment of Lower Ngau Tau Kok Estate
- Redevelopment of So Uk Estate

Location:
- Tai Pak Tin Street
- Lower Ngau Tau Kok Estate
- So Uk Estate

Type:
- Public Housing

Having worked on projects with BIM used in standard ways – such as reducing clashes during construction, Hong Kong Housing Authority has recently progressed to helping accelerate a construction project in Tai Pak Tin Street, and even demolished old buildings using BIM in Lower Ngau Tau Kok and So Uk.



MTR Corporation Limited

Project: Re-Development of Inspection Registry System

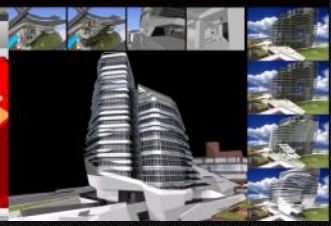
Location: Hong Kong

Type: System Development

Scheduled Time of Completion: 2011

"One BIM model is for all, so inspectors can work efficiently," notes Ms Dorian Leung, Structural Inspection and Investigation Manager, MTR Corporation.

"I think BIM will become more popular in the long term," says Mr. Dickson Luk, System Analyst, MTR Corporation. "Now, it is mainly used by BIM professionals. In future, inspectors, engineers and managers will gain more and more access to BIM models – which will enhance our expertise in managing the Corporation's railway assets."



Shui On Construction Co. Ltd.

Project: The Innovation Tower, The School of Design

Location: The Hong Kong Polytechnic University, Hung Hom

Type: Academic Building

Scheduled Time of Completion: 2012

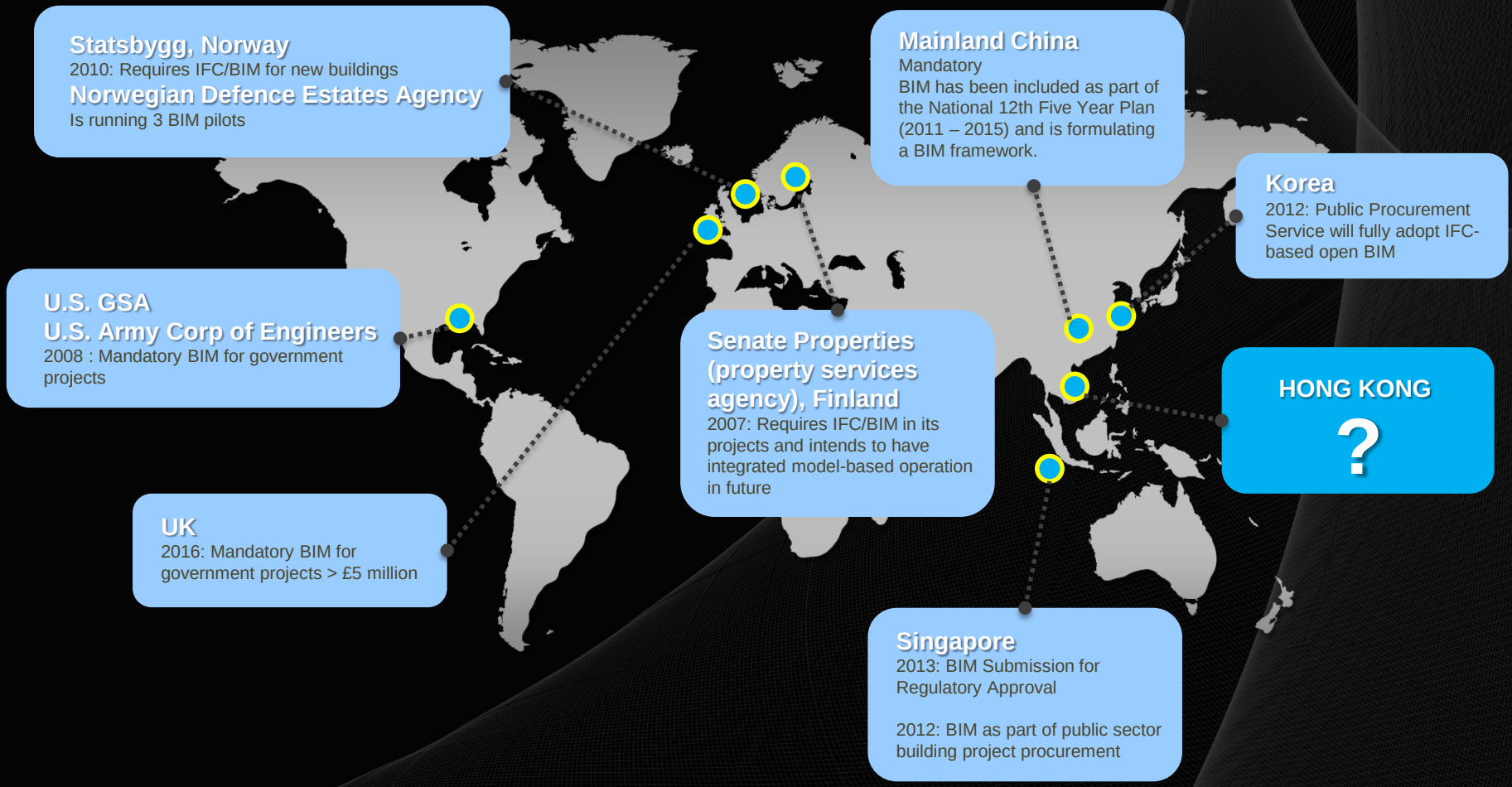
With BIM, correlations between various disciplines would be far clearer than with 2D drawings and sections, and Shui On could construct Innovation Tower as envisaged by the architect.

Mr. Chan Tsang Shing, Senior Engineer of Shui On Construction Co. Ltd. says Shui On is now training staff to use BIM, and they find that Revit helps them easily visualise construction projects in 3D. "Most colleagues find it very useful, and know there's a trend to use BIM," he adds.

Link: www.aiab.org

Link: www.revit.com.hk

Link: www.revitcity.com


Statsbygg, Norway
2010: Requires IFC/BIM for new buildings
Norwegian Defence Estates Agency
Is running 3 BIM pilots
Mainland China
Mandatory
BIM has been included as part of the National 12th Five Year Plan (2011 – 2015) and is formulating a BIM framework.
Korea
2012: Public Procurement Service will fully adopt IFC-based open BIM
U.S. GSA
U.S. Army Corp of Engineers
2008 : Mandatory BIM for government projects
Senate Properties (property services agency), Finland
2007: Requires IFC/BIM in its projects and intends to have integrated model-based operation in future
HONG KONG
?
UK
2016: Mandatory BIM for government projects > £5 million
Singapore
2013: BIM Submission for Regulatory Approval
2012: BIM as part of public sector building project procurement

Singapore BCA visit to HK

TARGET

Singapore Construction Industry to Use BIM Widely by 2015

PHASED MANDATORY BIM E-SUBMISSION

2013	Mandatory Architecture BIM e-Submissions for all new building projects > 20,000 m^2
2014	Mandatory Engineering BIM e-Submissions for all new building projects > 20,000 m^2
2015	Mandatory Architecture & Engineering BIM e-Submissions for all new building projects > 5,000 m^2

** will be calibrated in a gradual manner by taking into consideration the readiness of the industry practitioners and technology

（一）总体目标

“十二五”期间，基本实现建筑企业信息系统的普及应用，加快建筑信息模型（BIM）、基于网络的协同工作等新技术在工程中的应用，推动信息化标准建设，促进具有自主知识产权软件的产业化，形成一批信息技术应用达到国际先进水平的建筑企业。

住房和城乡建设部 10/5/2011

http://www.c-bm.com/news/2011/5-19/B16543600.shtml

广东省住房和城乡建设厅关于开展建筑信息模型BIM技术推广应用工作的通知

粤建科函〔2014〕1652号

二、推广应用工作的目标

我省开展BIM技术推广应用的目标是：到2014年底，启动10项以上BIM技术推广项目建设；到2015年底，基本建立我省BIM技术推广应用的标准体系及技术共享平台；到2016年底，政府投资的2万平方米以上的大型公共建筑，以及申报绿色建筑项目的设计、施工应当采用BIM技术，省优良样板工程、省新技术示范工程、省优秀勘察设计项目在设计、施工、运营管理等环节普遍应用BIM技术；到2020年底，全省建筑面积2万平方米及以上的建筑工程项目普遍应用BIM技术。

Guangdong Province

北京市地方标准--《民用建筑信息模型设计标准(DB11/1063-2014)》将于今年9月1日正式实施。而大家可以通过它的征求意见稿来先读为快，最终内容以正式发布版为准

北京市地方标准

《民用建筑信息模型(BIM)设计基础标准》

Beijing

令人期待的BIM国家标准

发布时间：2013-11-21　　文章来源：中国建设报·中国住房　　责任编辑：xiejg

共迎BIM标准 之三

中国建筑标准设计研究院

随着住房和城乡建设部《2012年工程建设标准规范制定修订计划》中规定的4本BIM标准制定计划的发布，BIM标准正式进入了国家科学的标准体系，这将促进中国BIM技术、标准、软件协调配套合理发展。一年后的今天，由中国建筑标准设计研究院主编的两本核心国家BIM标准《建筑工程设计信息模型交付标准》、《建筑工程设计信息模型分类和编码标准》的编写工作已接近尾声。整个建筑行业也在关注BIM标准的走向，中国BIM标准的出台给建筑行业带来的改变和冲击，已成为整个行业关注的重点。面对这种形势，我们又该如何迎接BIM国家标准的到来呢？

China BIM Standard

上海市人民政府办公厅文件

沪府办发〔2014〕58号

上海市人民政府办公厅转发市建设管理委关于在本市推进建筑信息模型技术应用指导意见的通知

各区、县人民政府，市政府各委、办、局：

市建设管理委《关于在本市推进建筑信息模型技术应用的指导意见》已经市政府同意，现转发给你们，请认真按照执行。

上海市人民政府办公厅

2014年10月29日

本指导意见自2014年12月1日起施行，有效期至2017年11月30日。

上海市城乡建设和管理委员会

2014年10月24日

Shanghai

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CHINA GRAPHICS SOCIETY

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- 培训大纲
- 信息发布
- 培训资料
- 证书查询

关于申报“全国BIM技能等级考试报名点”的通知

返回

来源：中国图学学会 日期：2014-8-21

为进一步推动全国BIM技能等级考试的实施，规范提升高技能人才培训、考评工作质量，营造人才加速成长的良好环境。经研究，在原有培训点的基础上根据工作情况，择优增设“全国BIM技能等级考试报名点”（以下简称：报名点）。

一、工作要求

1. 开展BIM培训和考评工作，始终应以质量第一，国家需求第一，社会效益第一为宗旨，以完善公平公正，运行规范，管理科学的高技能人才评价体系为目标。高度重视诚信和信用体系建设，为社会树立培训、考评工作的良好形象。

2. 要不断探索和创新高技能人才教育模式，按照中央精神，做好产教融合，校企合作，工学结合，知行合一，行业指导，政府参与。努力创建高技能人才教育新模式。

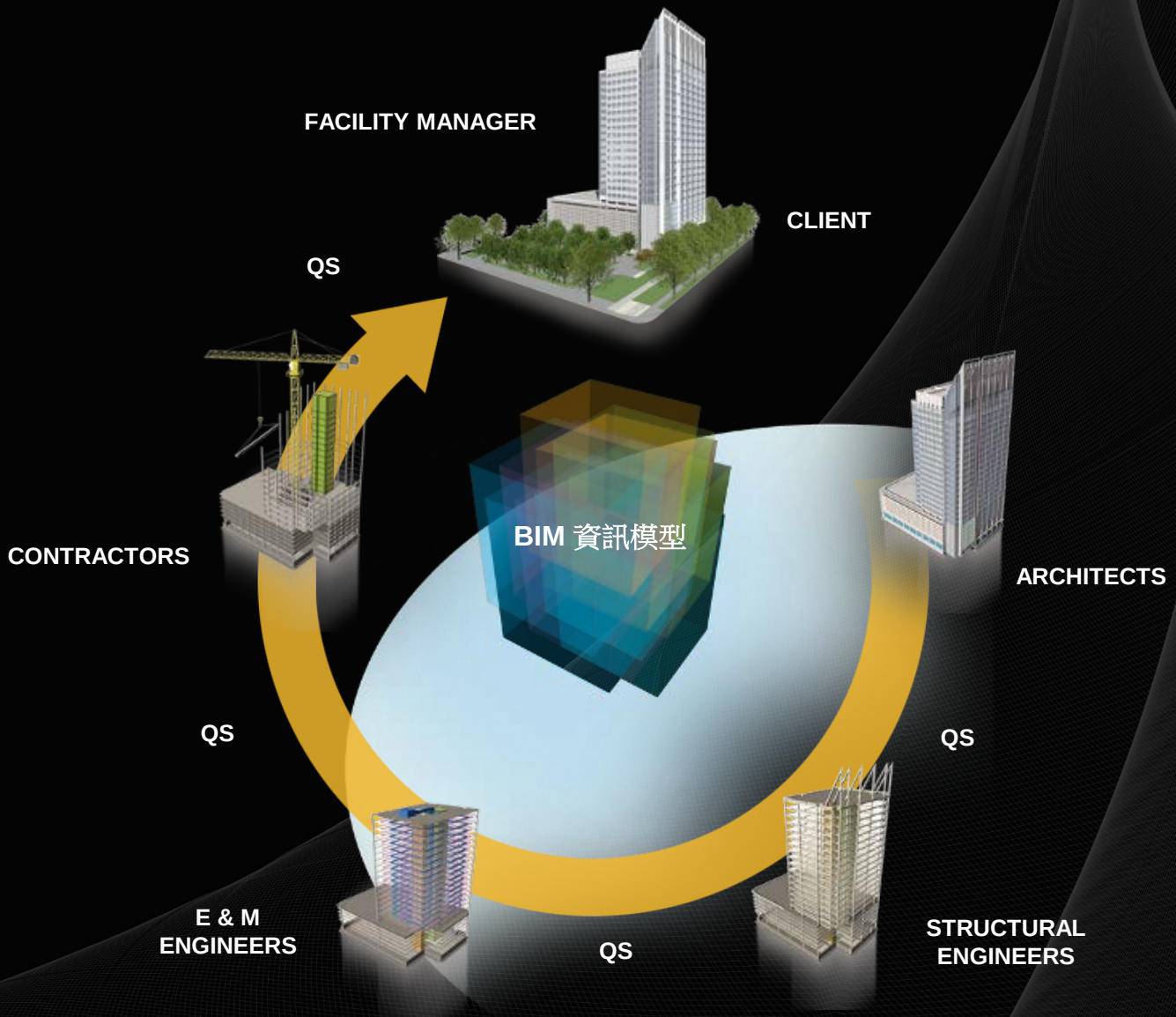
二、申请条件

1. 报名点是中国图学学会开展“全国BIM技能等级考试”工作的二级组织，它承担指导委员会委托的部分职能，包括组织本地区其他培训点协同搞好培训、考评工作；

Standard = Collaboration

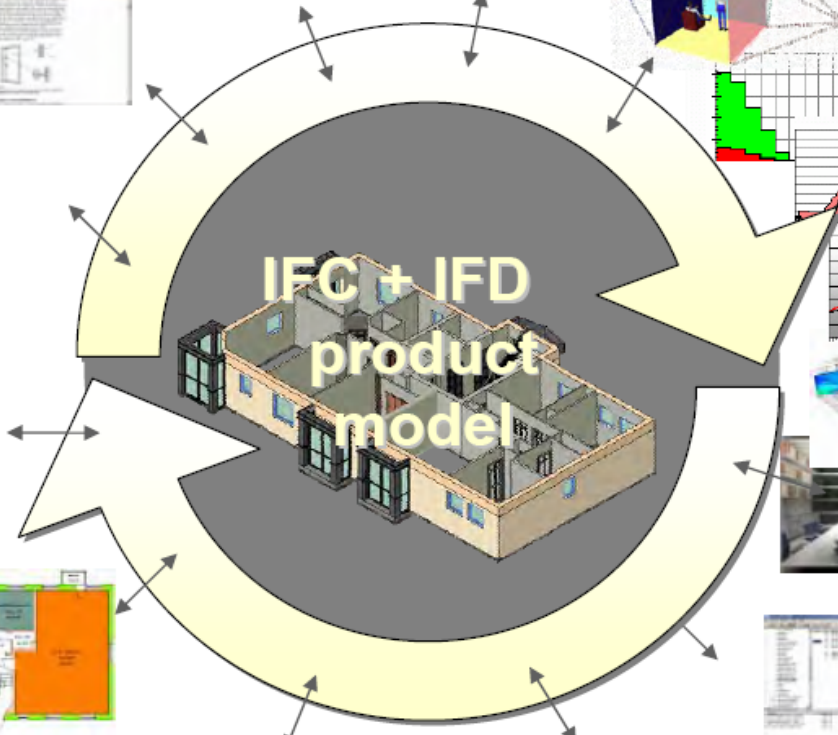
•If there is only one party, there is no need for standard

- 單一專業
- 不同專業
- 第三方 (審批方)
- 不同項目
- 資料的再用性


FACILITY MANAGER
CLIENT
QS
CONTRACTORS
BIM 資訊模型
ARCHITECTS
QS
QS
E & M
ENGINEERS
QS
STRUCTURAL
ENGINEERS

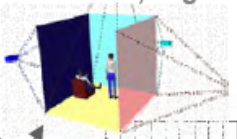
National Institute of Building Sciences
Facilities Information Council
National BIM Standard Committee

Tier 3 – Derived Lifecycle View



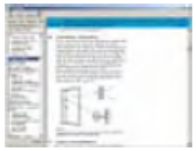
Laws and regulations
-Building regulations
-Building specifications

CAD software
-Drawings, calculations
-Architect, engineer,…



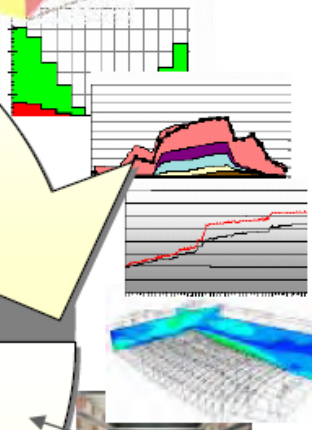
VRML
-Visualisation, 3D models

Knowledge databases
-Best practise knowledge
-Own practice



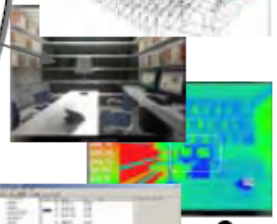
Briefing
-Functional req.
-Estimates
-Conditions
-Requirements

Simulations
-Comfort
-Ventilation, heating
-Life cycle cost
-Light, sound
-Insulation
-Fire, usage
-Environment
-Life time predictions

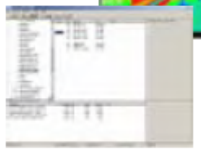


Demolition, refurbishment
-Rebuild
-Demolition
-Restoration

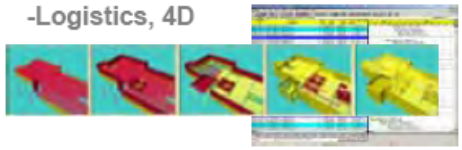
Facility management
-Letting, sale, operations
-Maintenance
-Guaranties



Specifications
-Specification sheets
-Classification standards
-Estimates, accounting



Construction management
-Scheduling
-Logistics, 4D



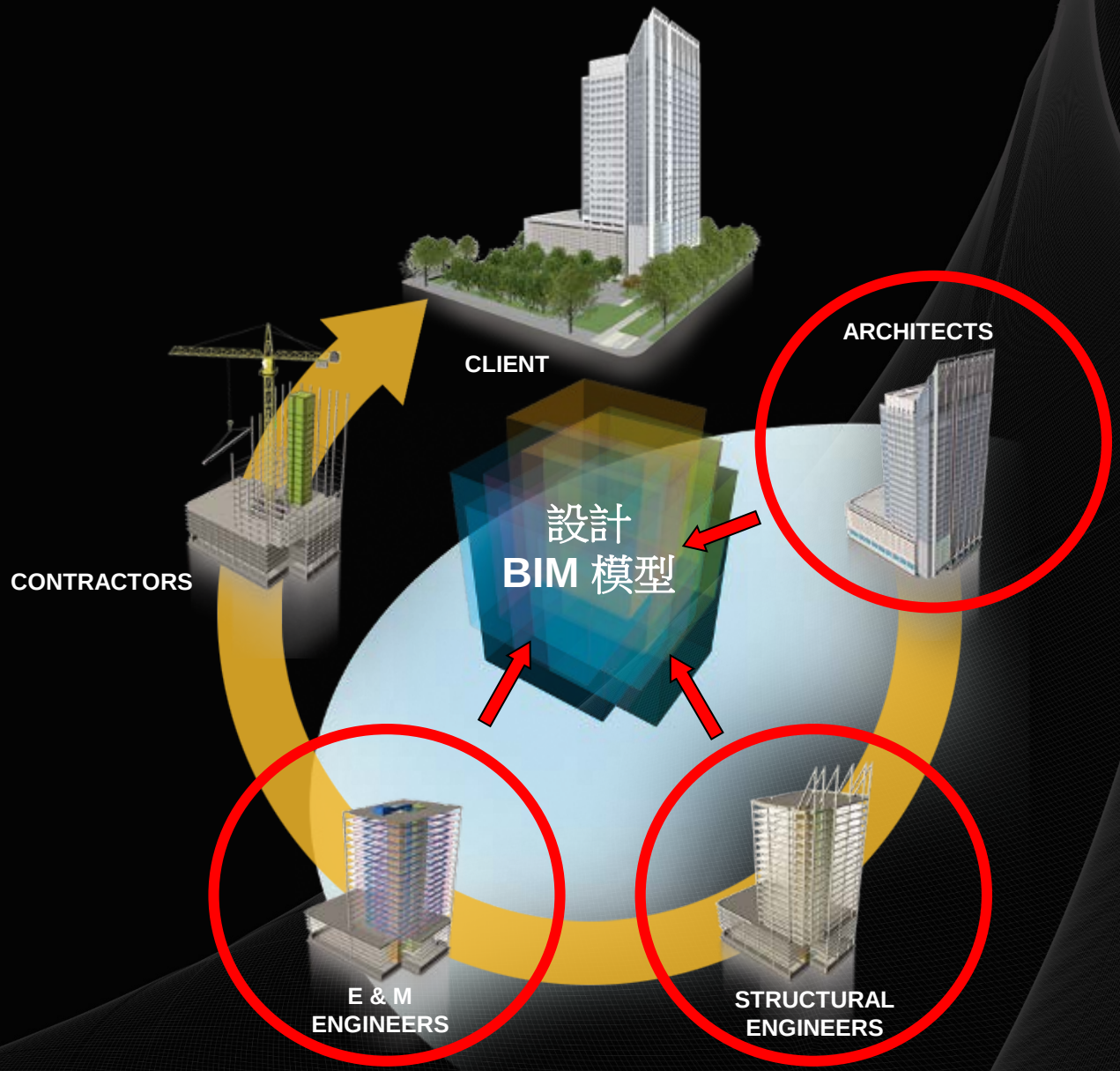
Procurement
-Product databases
-Price databases

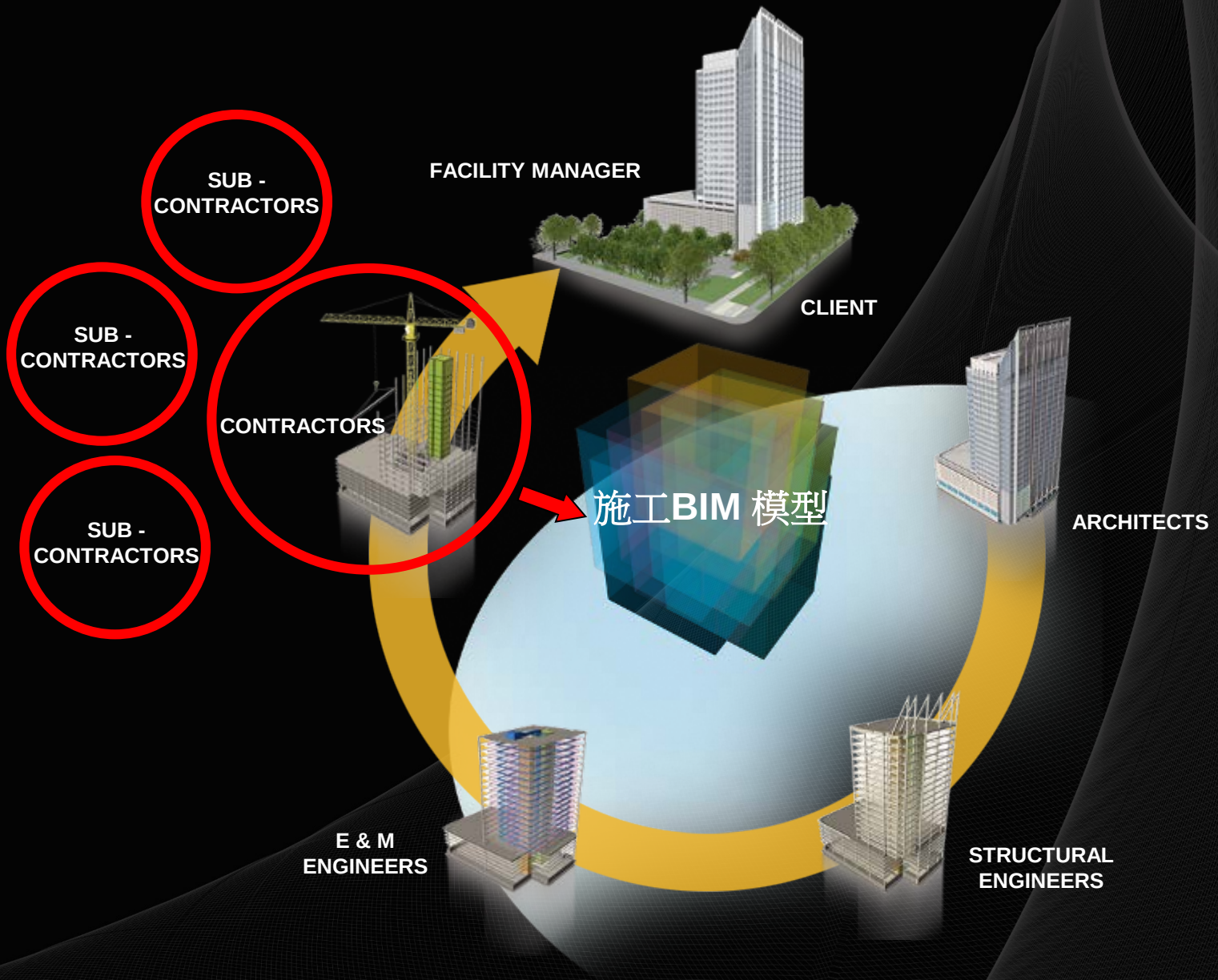
2.0 BIM Project Objective

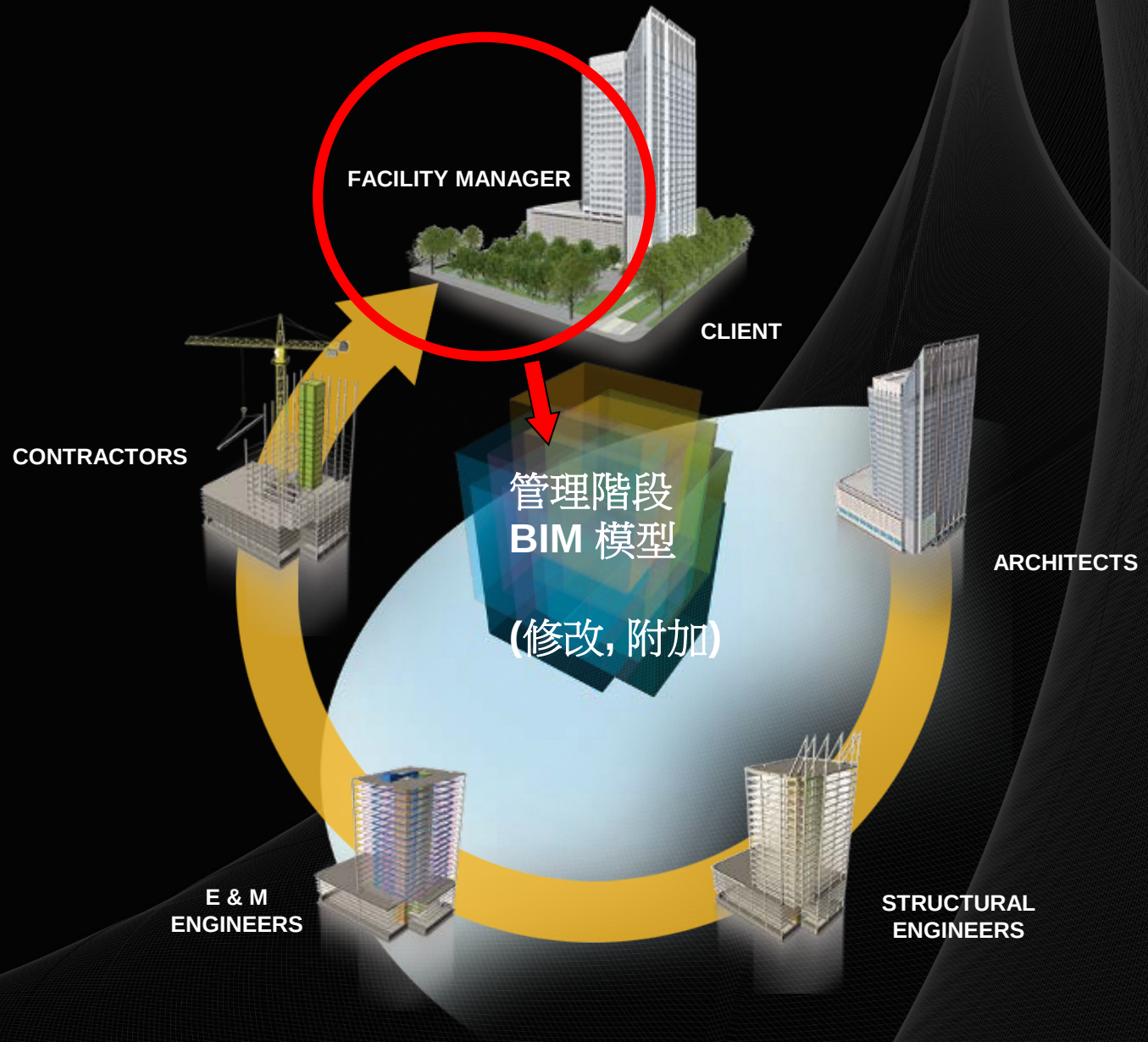
The client, architect and BIM Project Manager should define and agree the purpose of the BIM process at the beginning of a project. It will be difficult to implement additional functionality in the BIM models at a later date.

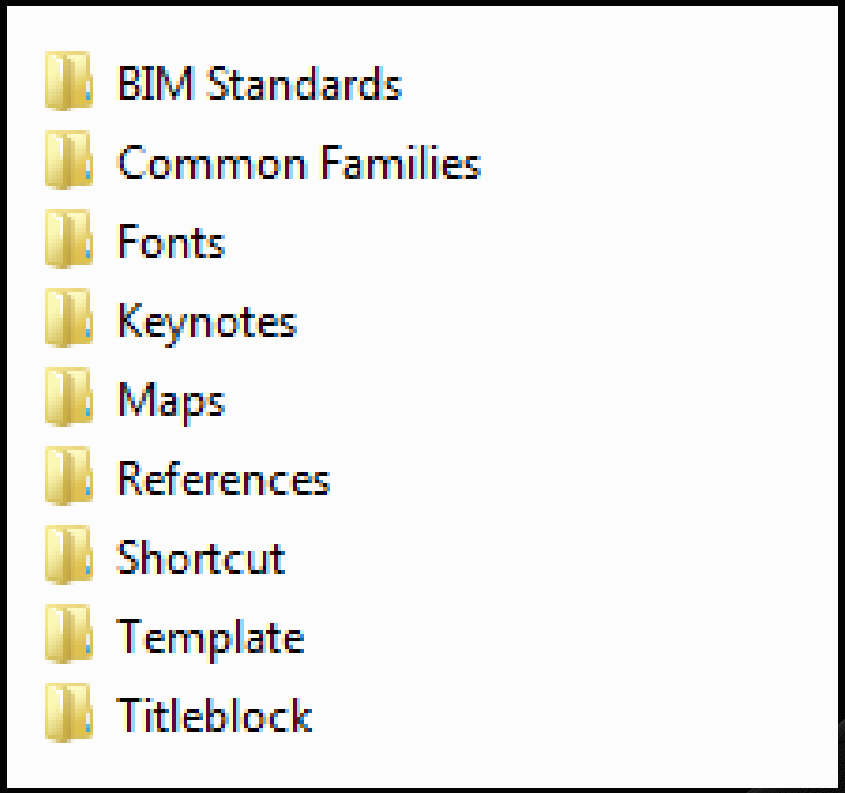
The purpose for the BIM on a project can be selected from the requirements and objectives listed in Table 1. For each objective, an individual organisation should be appointed to manage the task. This role may change at different stages of the project life-cycle and should be reviewed at key milestones.

BIM Project Objective		REQ	Arc	Str	MEP	Con	FM	BIM
1	Use BIM Models for Master plan site study at Feasibility analysis stage							
2	Create architectural BIM.							
3	Maintain and update architectural BIM.							
4	Create structural BIM.							
5	Maintain and update structural BIM.							
6	Create MEP building services BIM.							
7	Maintain and up date MEP building services BIM.							
8	Create and maintain parametric models							
9	Produce design drawings and documentation including plans, elevations and sections directly from the BIM applications.							
10	Produce drawings for statutory submissions							
11	Produce a Bill of Quantities in accordance with the standard method of measurement							
12	Digitally link the BIM to the project specifications							
13	Include spatial validation checks for headroom and working spaces for building operations and maintenance activities.							
14	Produce visualisation walk-through, animations and rendered images.							
15	Implement clash analysis systems to detect and identify conflicts and interferences between different model elements.							
16	Link the BIM models to environmental analysis software for solar, heating and cooling and life-cycle analysis to support building design accreditation and building performance assessment.							
17	Produce schedules of materials, areas and quantities from the BIM databases.							
18	Link the BIM models to the construction programme to produce 4D Virtual Construction simulations							
19	Produce shop drawings, fabrication drawings, combined services drawings (CSD's), individual services drawings (ISD's) from the BIM applications							
20	Produce Purchase Orders as part of contractor procurement systems							
21	Incorporate as-built equipment information in the BIM model elements for provision to the building facility							

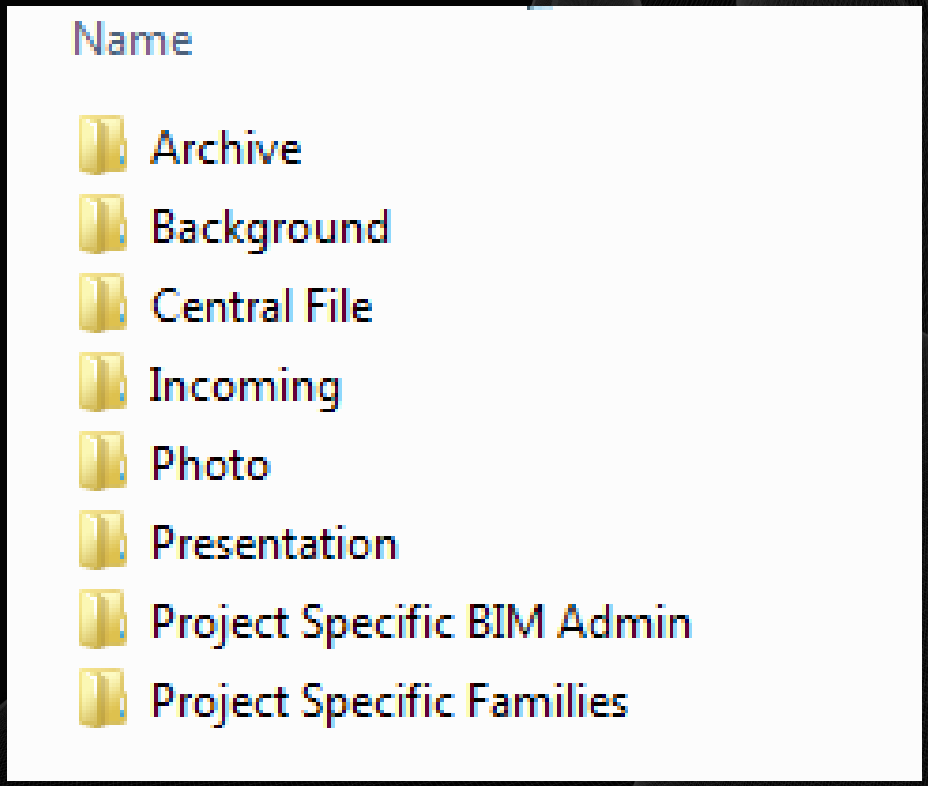

CLIENT
ARCHITECTS
CONTRACTORS
設計
BIM 模型
E & M
ENGINEERS
STRUCTURAL
ENGINEERS


SUB - CONTRACTORS
SUB - CONTRACTORS
SUB - CONTRACTORS
CONTRACTORS
FACILITY MANAGER
CLIENT
施工BIM 模型
ARCHITECTS
E & M ENGINEERS
STRUCTURAL ENGINEERS


FACILITY MANAGER
CLIENT
CONTRACTORS
管理階段
BIM 模型
(修改, 附加)
ARCHITECTS
E & M
ENGINEERS
STRUCTURAL
ENGINEERS

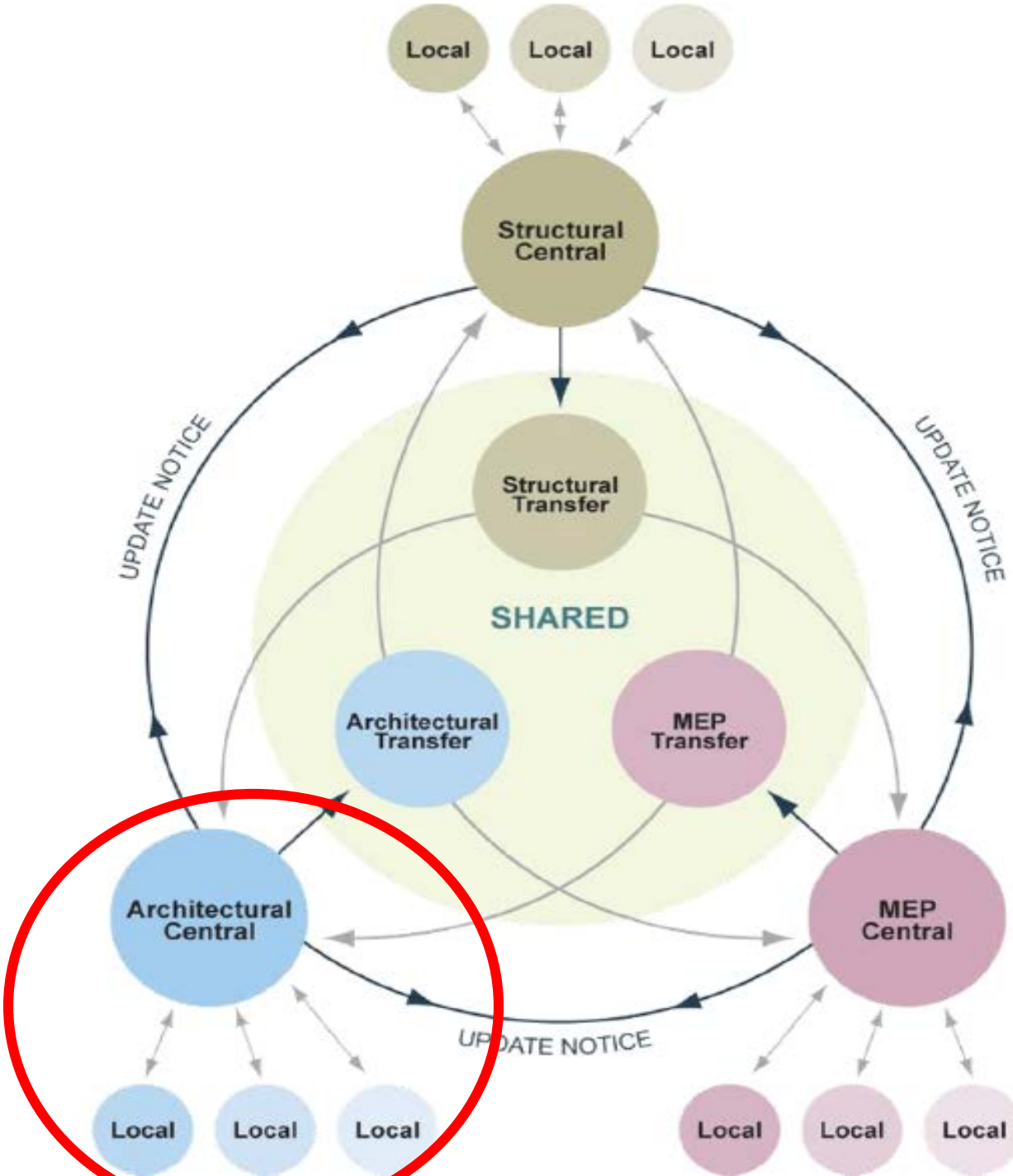


BIM 設定工作夾定義



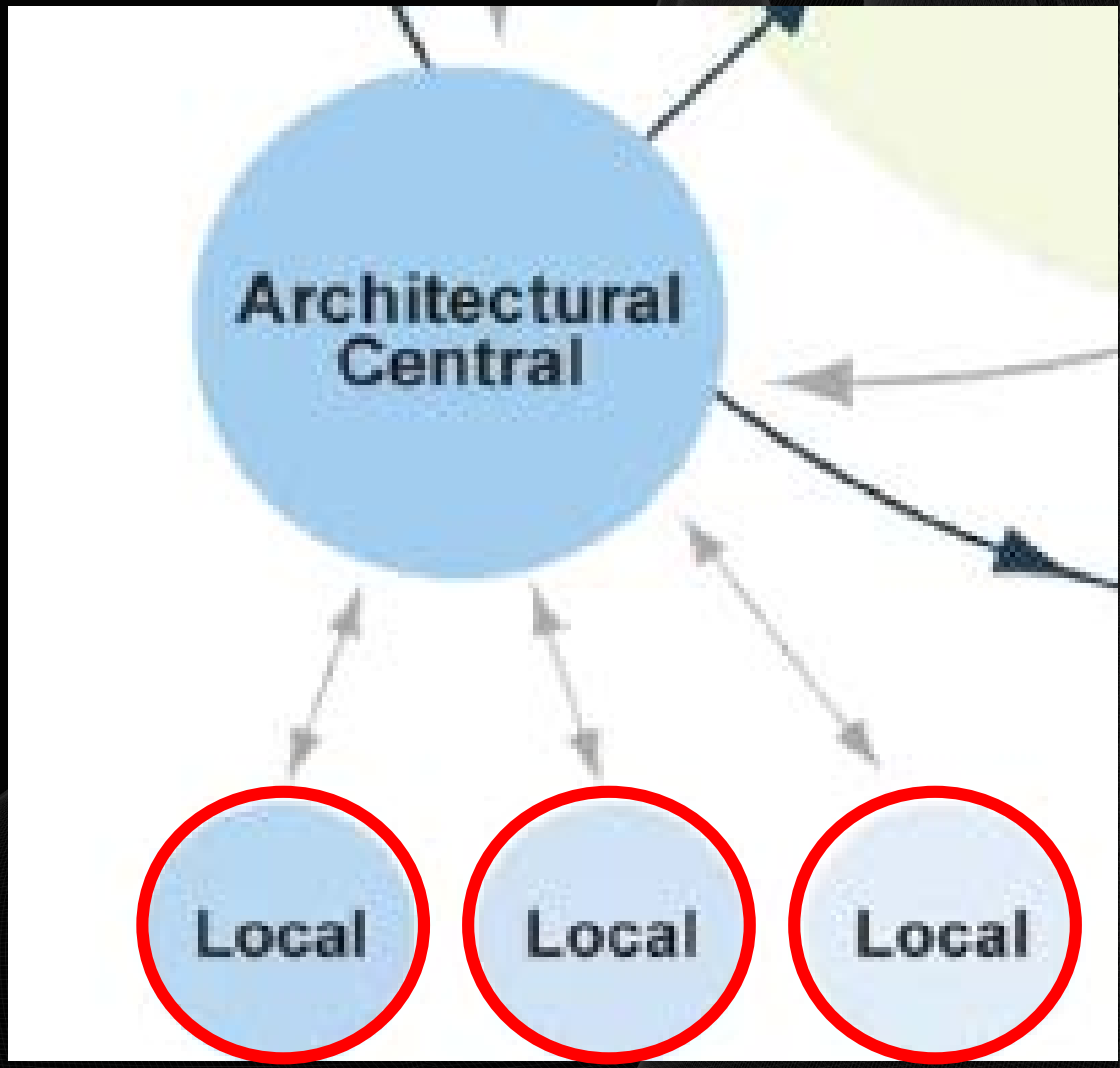
BIM 項目工作夾定義

單一專業協同

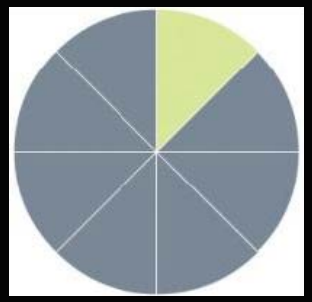

Local
Local
Local
Structural Central
UPDATE NOTICE
UPDATE NOTICE
Structural Transfer
SHARED
Architectural Transfer
MEP Transfer
Architectural Central
MEP Central
UPDATE NOTICE
Local
Local
Local
Local
Local
Local

父

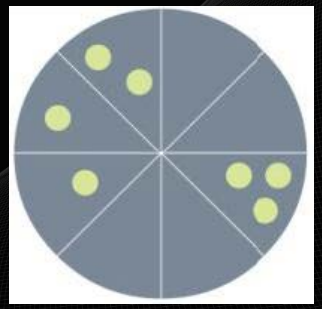
子



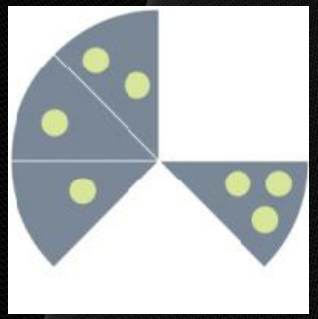
Take OWNERSHIP of an entire workset



BORROW elements from workset as required



NB/ Users only need to open required worksets



	Workset	Note
Architectural	Shared Levels and Grids	Default Levels and Gridlines
	Area & Room	Room, Area object, Colour pathes

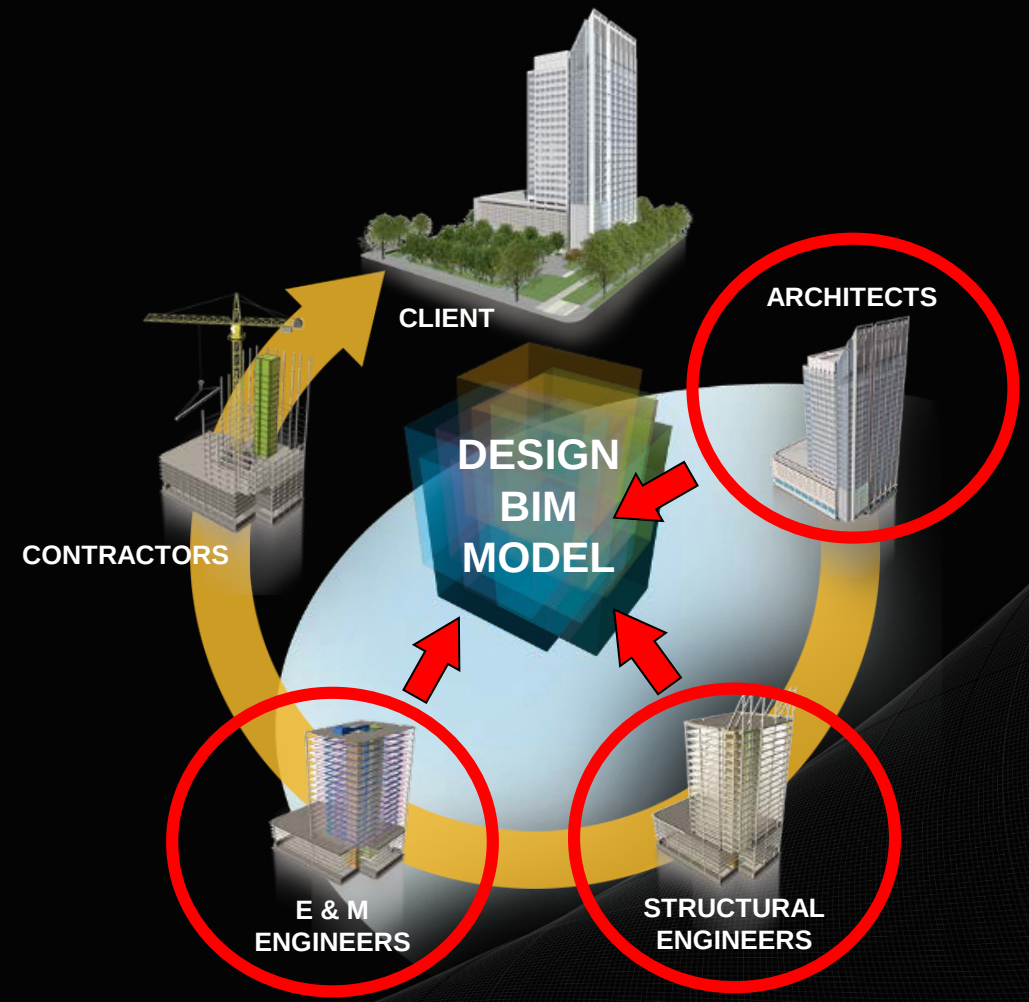
Structure		
	Shared Levels and Grid	
	Site	Site reference files, typography, Building blocks, s, roads etc
	Text an	
	CAD Re	awings, in AutoCAD or
	FDN - F	
	DWL -	
	STA - S	
	WAT -	
	STS - S	
	PST - P	
	Level 01	
	Level 02	

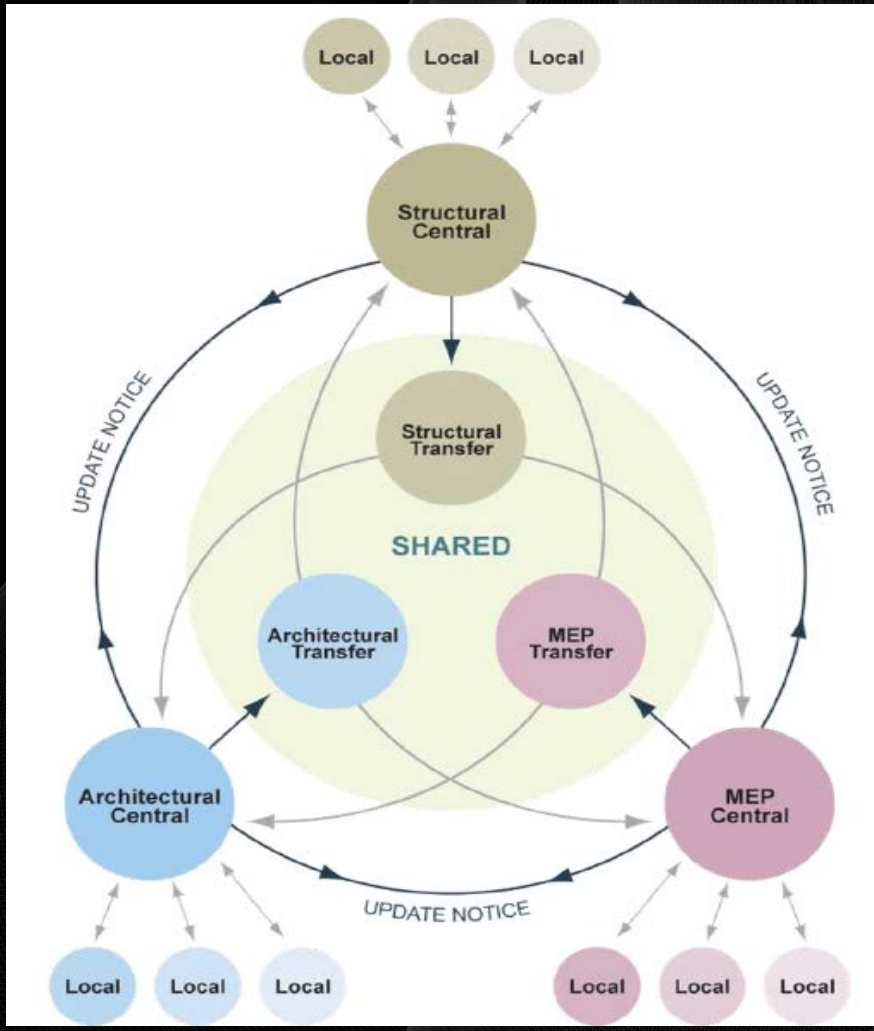
Mechanical Elements	EAD - Exhaust air ducts
	FAD - Fresh air ducts

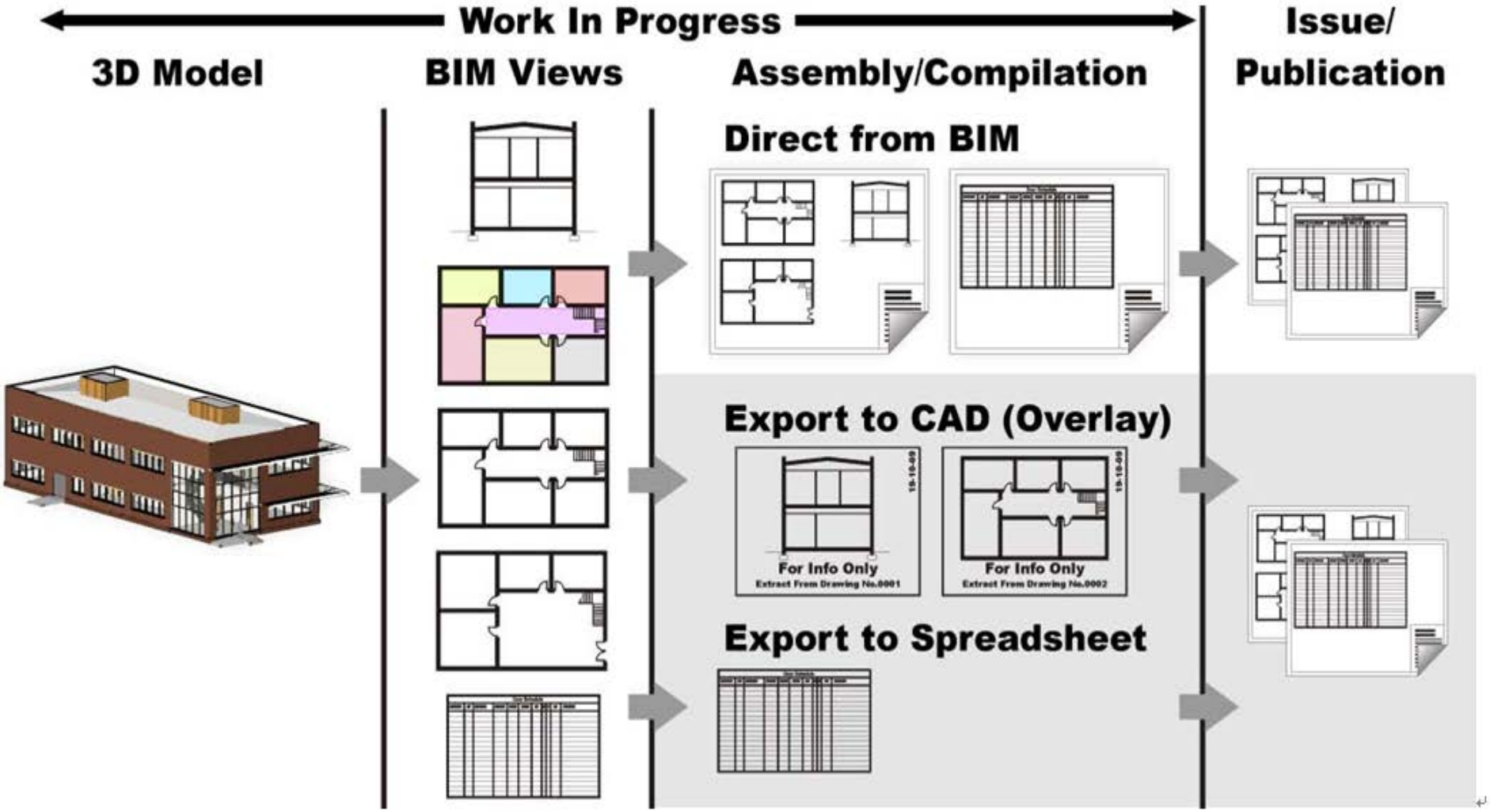
Electrical Elements	CAB - Cable tray, trunking, cable containment, Electrical risers, conduit, Busduct, power feeds
	BRD - HV & LV switch boards, switchgear,

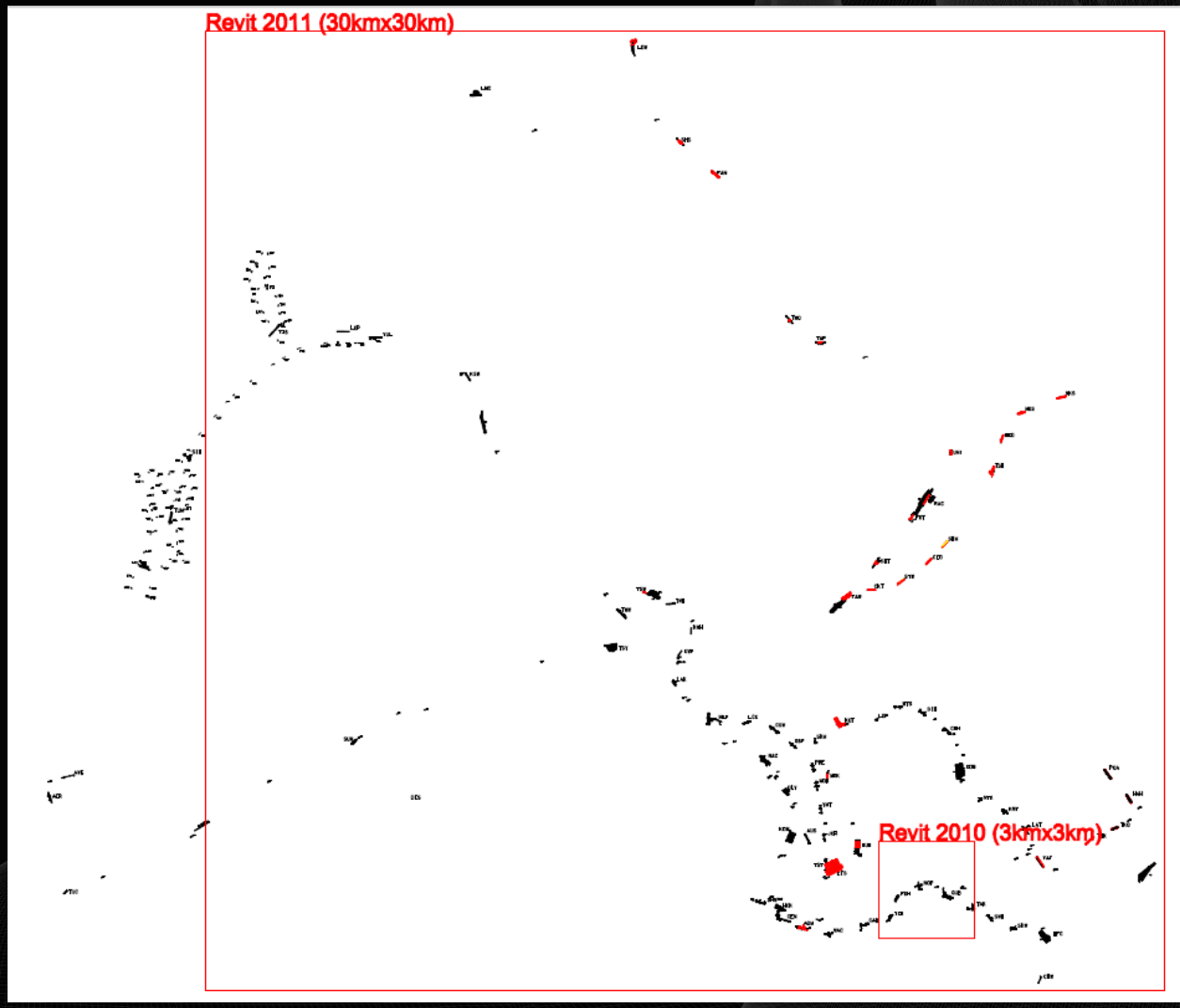
Plumbing & Drainage Elements	FWP - Fresh water piping
	RWP
	SWP
	TRP -
	PMP
	PIT -
	TNK - vesse
	UGR drain
	WSD

Fire Protection Elements	SPR - System piping, droppers, fittings
	PMP - fire sprinkler pumps
	TNK - Sprinkler tanks
	HYD - Hydrants and hose reels
	GAS - Gas piping for suppression systems
	PAN - Heat or smoke detectors
	EXT - Fire extinguishers
	SHT - Fire shutters & hoods above
	BG - Fire alarm gongs & break glass
	AFA - AFA control & monitoring


CLIENT
ARCHITECTS
CONTRACTORS
DESIGN
BIM
MODEL
E & M
ENGINEERS
STRUCTURAL
ENGINEERS


Local
Local
Local
Structural
Central
Structural
Transfer
SHARED
UPDATE NOTICE
UPDATE NOTICE
Architectural
Transfer
MEP
Transfer
Architectural
Central
MEP
Central
UPDATE NOTICE
Local
Local
Local
Local
Local
Local

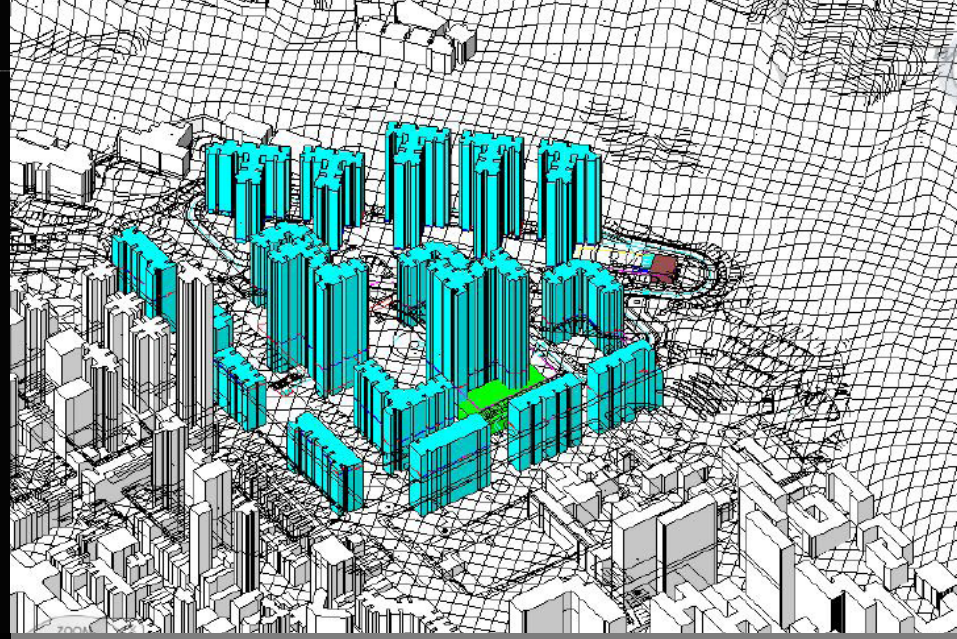

Work In Progress
3D Model
BIM Views
Assembly/Compilation
Issue/
Publication
Direct from BIM
Export to CAD (Overlay)
For Info Only
Extract From Drawing No.0001
For Info Only
Extract From Drawing No.0002
Export to Spreadsheet

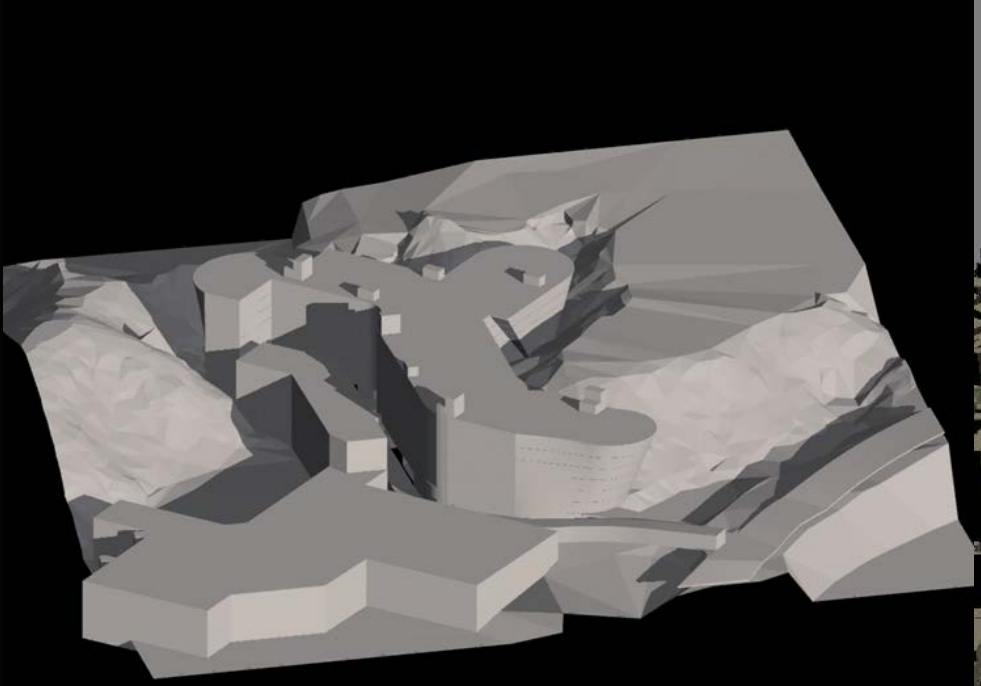


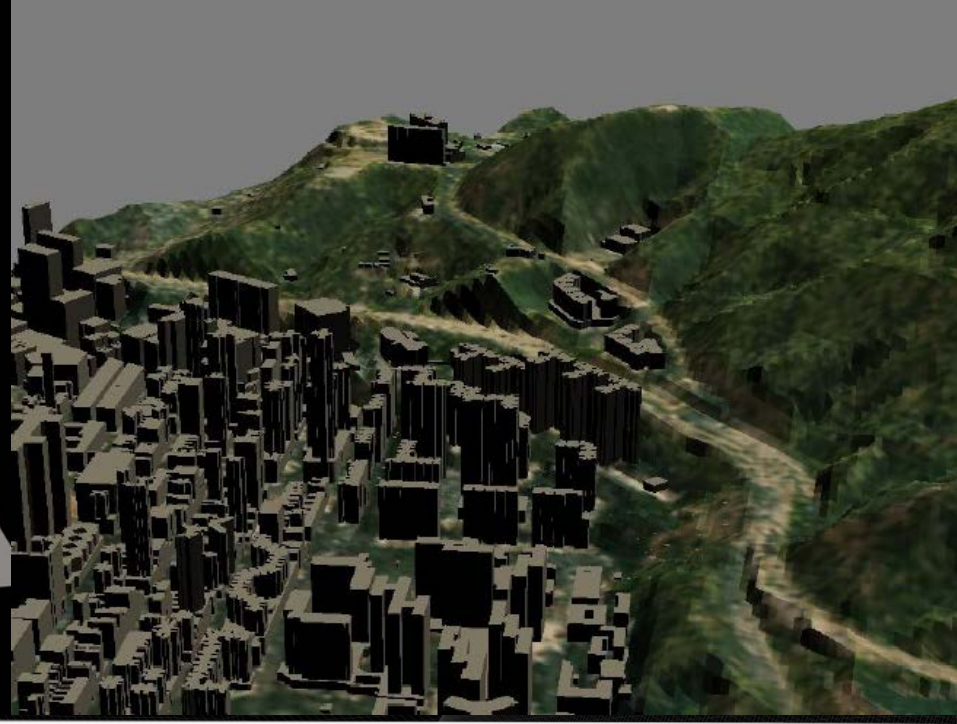
地理位置定位

同一座標 (X, Y)
同一高度 (mPD) (Z)

- *日照運算*
- ***GIS** 定位*
- *跟別專業協同*

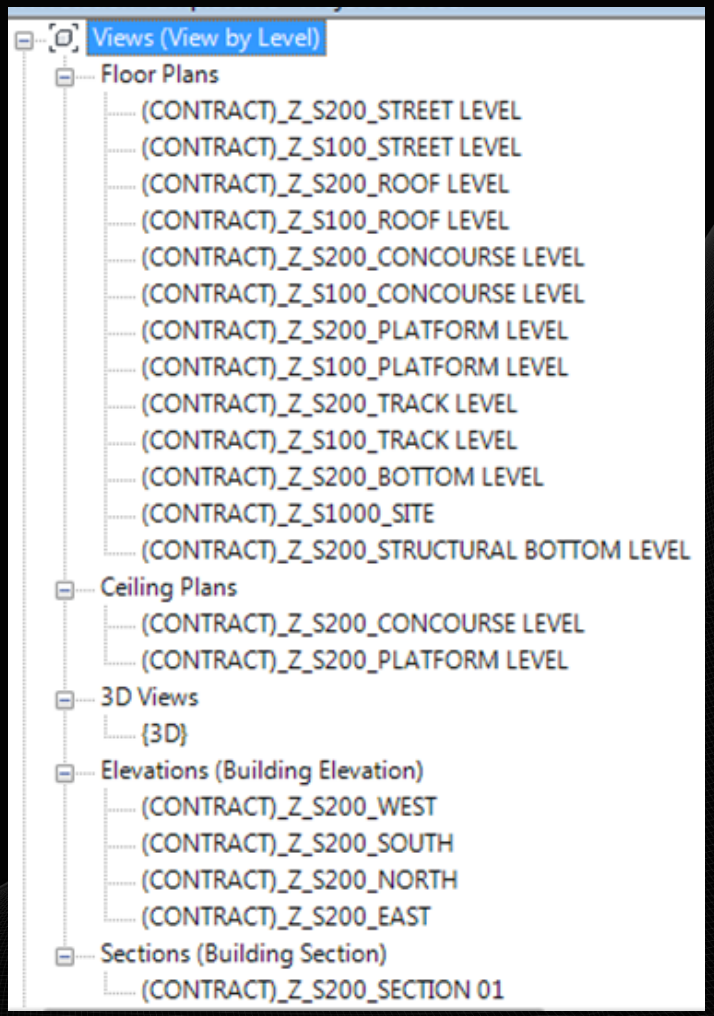






Authority Submission	Drainage Services Department	YES	NO	NO	NO	YES	NO	NO	DSD Colour Code	
	Water Authority	YES	NO	NO	NO	YES	NO	NO	B&W	
	STIC	YES	NO	NO	NO	NO	NO	NO	STIC Colour Code	Location, Area
	SSCC1	YES	NO	NO	NO	NO	NO	NO	SSCC Colour Code	Fire Safety, Area
	SSCC2	YES	NO	YES	YES	NO	NO	NO	SSCC Colour Code	Fire Services Provision
	SSCC3	YES	NO	YES	YES	NO	NO	NO	SSCC Colour Code	Smoke Extraction
	CLP/ HKE/ Gas/ Telcommunication	NO	NO	NO	NO	NO	YES	YES	B&W	
Tender		YES	YES	YES	YES	YES	YES	YES	B&W	Quantity, Specifications, Cost
Construction		YES	YES	YES	YES	YES	YES	YES	B&W	Dimension and Material
CSD		YES	YES	YES	YES	YES	YES	YES	CSD Colour	Clashes
Shop Drawing		YES	NO	YES	YES	YES	YES	YES	B&W	Construction Details
As-Built Drawings		YES	YES	YES	YES	YES	YES	YES	B&W	
Demolition		YES	YES	YES	YES	YES	NO	NO	Dotted lines	Area of demolition

Stages	View TemplateType (Architecture)						
	3D Views, Walkthroughs		Ceiling Plans	Elevations, Sections, Detail Views			Floor, Structural Area Plans
	Isometric	Perspectives		Sections	Elevations	Details	
Preliminary	PD_Iso_01	PD_Pers_01		PD_500_Section	PD_500_Elevation		PD_500_Plan
			PD_200_Ceiling	PD_200_Section	PD_200_Elevation		PD_200_Plan
			PD_100_Ceiling	PD_100_Section	PD_100_Elevation		PD_100_Plan
Detailed	DD_Iso_01	DD_Pers_01		DD_500_Section	DD_500_Elevation	DD_50_Detail	DD_500_Plan
			DD_200_Ceiling	DD_200_Section	DD_200_Elevation	DD_20_Detail	DD_200_Plan
			DD_100_Ceiling	DD_100_Section	DD_100_Elevation		DD_100_Plan
BD				BD_100_Section	BD_100_Elevation		BD_100_Plan
FSD				FSD_100_Section	FSD_100_Elevation		FSD_100_Plan
STIC							STIC_1000_Site Plan
				STIC_500_Section			STIC_500_Plan
				STIC_200_Section	STIC_200_Elevation		STIC_200_Plan
							SSCC1_1000_Site Plan


Views (View by Level)
Floor Plans
(CONTRACT)_Z_S200_STREET LEVEL
(CONTRACT)_Z_S100_STREET LEVEL
(CONTRACT)_Z_S200_ROOF LEVEL
(CONTRACT)_Z_S100_ROOF LEVEL
(CONTRACT)_Z_S200_CONCOURSE LEVEL
(CONTRACT)_Z_S100_CONCOURSE LEVEL
(CONTRACT)_Z_S200_PLATFORM LEVEL
(CONTRACT)_Z_S100_PLATFORM LEVEL
(CONTRACT)_Z_S200_TRACK LEVEL
(CONTRACT)_Z_S100_TRACK LEVEL
(CONTRACT)_Z_S200_BOTTOM LEVEL
(CONTRACT)_Z_S1000_SITE
(CONTRACT)_Z_S200_STRUCTURAL BOTTOM LEVEL
Ceiling Plans
(CONTRACT)_Z_S200_CONCOURSE LEVEL
(CONTRACT)_Z_S200_PLATFORM LEVEL
3D Views
{3D}
Elevations (Building Elevation)
(CONTRACT)_Z_S200_WEST
(CONTRACT)_Z_S200_SOUTH
(CONTRACT)_Z_S200_NORTH
(CONTRACT)_Z_S200_EAST
Sections (Building Section)
(CONTRACT)_Z_S200_SECTION 01

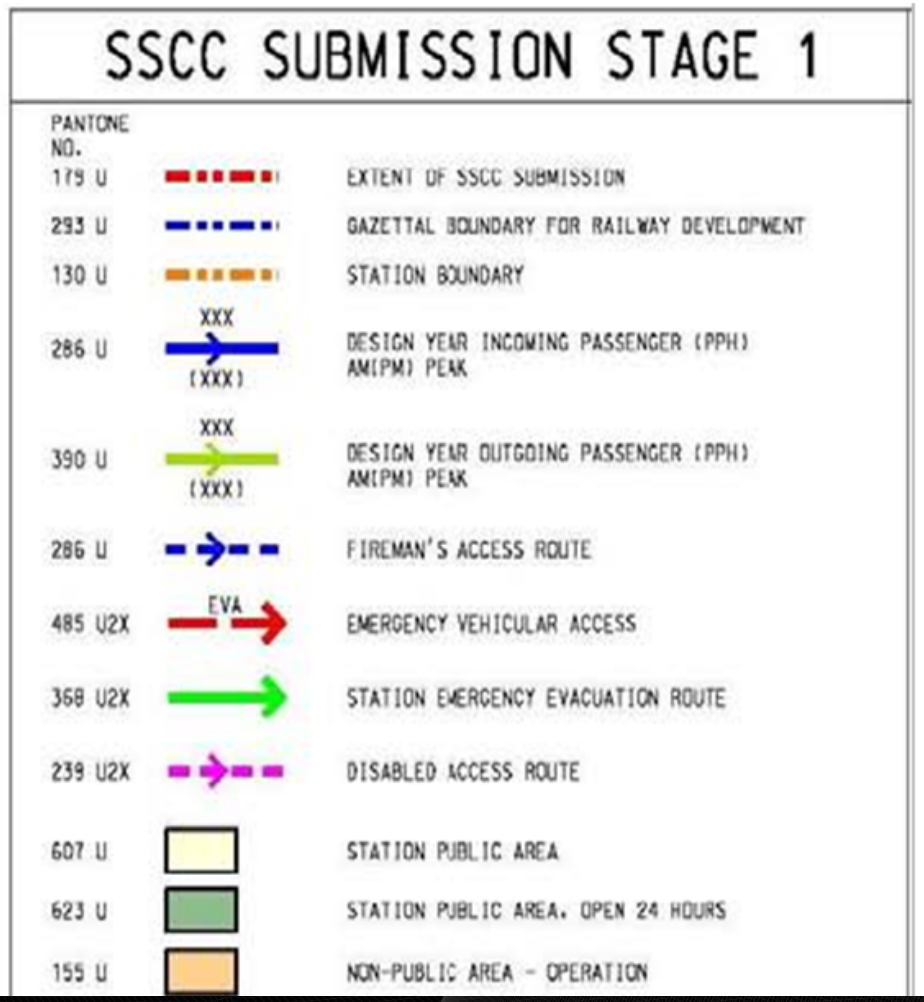
Units and Measurement
Folder Structure
Model Naming Convention
Sheet Naming Convention
Parameter Naming Convention
View Naming
Project Browser Organization

Presentation Styles
Templates
Annotation
Text Assignment
Line Weight
Line Pattern
Line Style
Hatching & Fill Regions
View Templates and Filters
Dimensioning
Title block
Symbology

Family

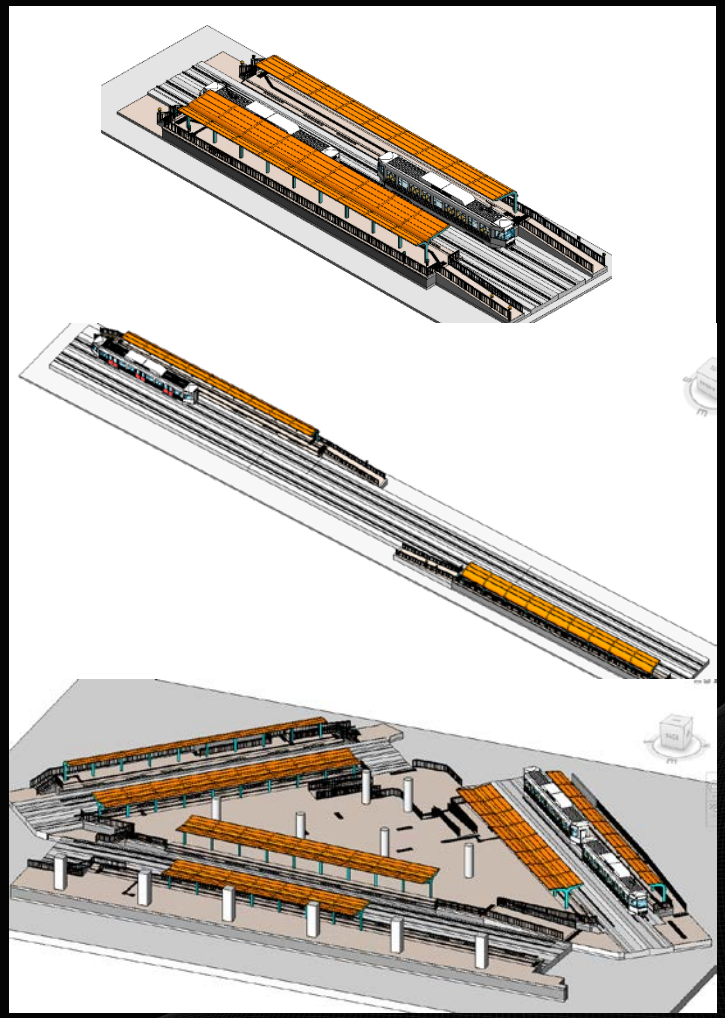
SSCC Submission Stage 1

	Pantone No.	R	G	B	Colour
Extent of SSCC Submission	179 U	226	61	40	
Gazettal Boundary for Railw ay Development	293 U	0	81	186	
Station Boundary	130 U	234	175	15	
Design Year Incoming Passenger (PPH)AM (PM) Peak	286 U	0	56	168	
Design Year Outcoming Passenger (PPH)AM (PM) Peak	390 U	186	196	5	
Fireman's Access Route	286 U	0	56	168	
Emergency Vehicular Access	485 U2X	216	30	5	
Station Emergency Evacuation Route	368 U2X	91	191	33	
Disabled Access Route	239 U2X	224	33	158	
Station Public Area	607 U	242	234	188	
Station Public area, Open 24 Hours	623 U	165	191	170	
Non-Public Area, Operation	155 U	244	219	170	
Non-Public Area, E&M	453 U	214	204	175	



12.23 Drawing Colour Coding

Material	Design	SSCC Submission	BD Submission (Practice Notes AGM)					
			Preferred Colour	BS5252 Identification Code	Colour	R	G	B
Earth (unexcavated)			Fawn	06 C 33		245	217	144
Hardcord or dry fill			Brown	06 C 39		65	44	13
Brick			Red	04 E 55		230	36	11
Concrete (plain or reinforced)			Green	14 E 53		0	134	67
Solid Concrete Blocks			Blue	20 E 56		1	52	135
Hollow Concrete Blokcs			Mauve	24 E 53		110	67	113
Lightweight Partition (e.g. Plasterboard)			Orange	06 E 55		255	66	10
Plaster or Cement Rendering			Magnolia	08 E 49		255	251	201
Mosaic or other non-absorbent floor tiles			Pink	02 C 33		255	217	218
Mosaic or other non-absorbent wall tiles			Lemon	10 E 50		254	253	67



同族 SAME FAMILIES

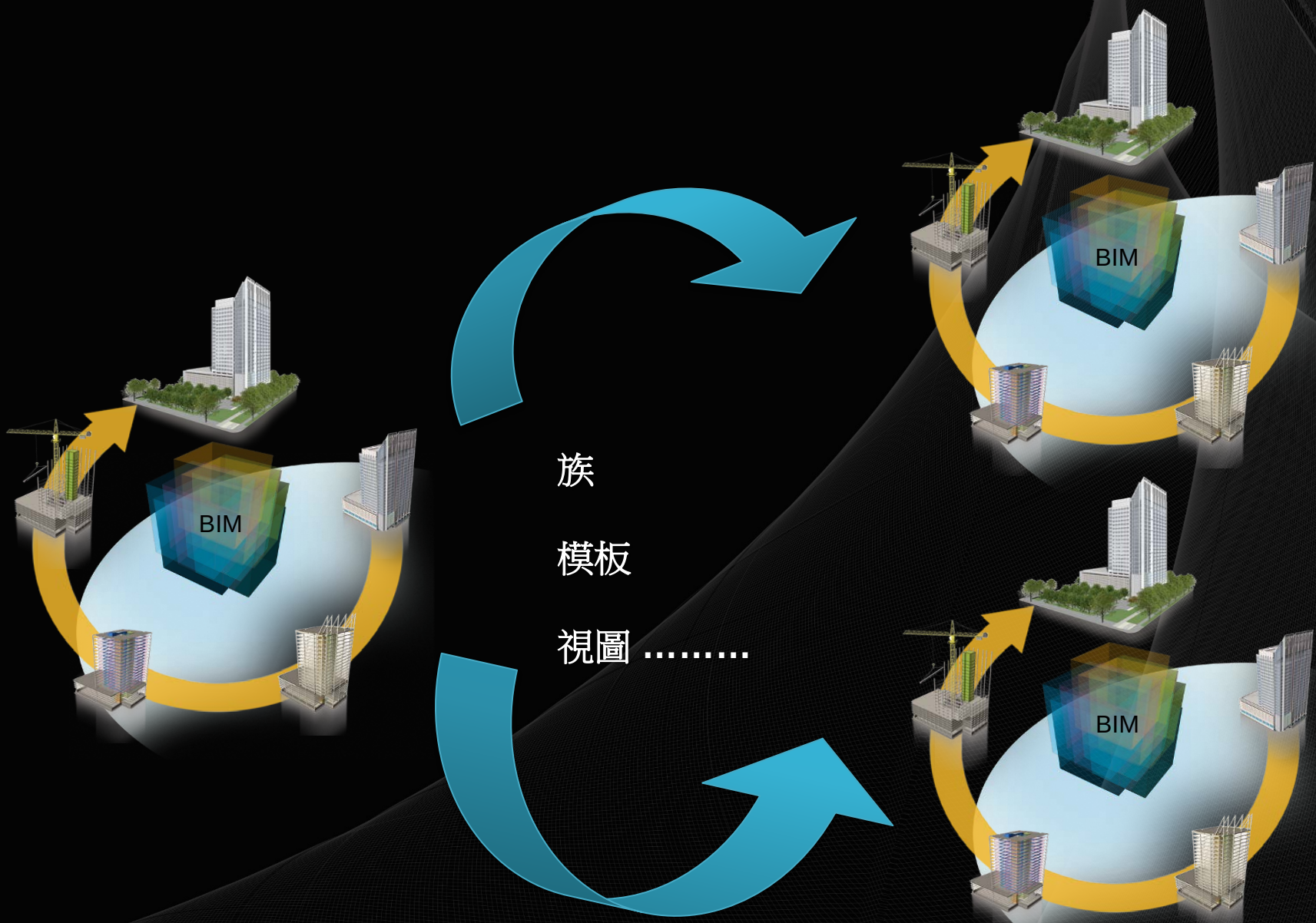
同模版SAME TEMPLATES

生產明細表
GENERATE SCHEDULES

比較, 分析
COMPARABLE ANALYSIS

物業管理
FACILITY MANAGEMENTS

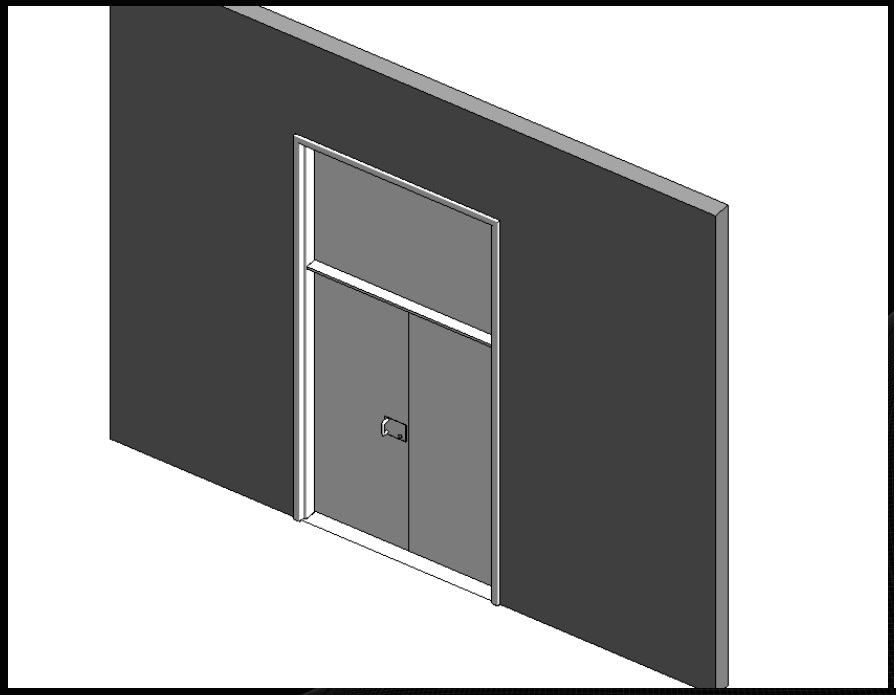
不同項目，同一標準


BIM
族
模板
視圖 .....
BIM
BIM

類型 _ 副類型 _ 創作單位 _ 描述1 _ 描述2

Category	Code	Category	Code
Air Terminals	AIR	Mass	MAS
Annotations	ANN	Mechanical Equipment	MEC
Ceilings	CLG	Nurse Call Devices	NRS
Columns	COL	People	PEP
Communication Devices	COM	Pipe Fittings	PIF
Casework	CSW	Plumbing Fixtures	PLM
CUC	CUC	Planting	PLN
Curtain Wall Mullions	CTM	Profile	PRF
Curtain Panels	CTP	Pipe Accessories	PPA
Curtain Systems	CTS	Pipe Fittings	PPF
Data Devices	DAT	Pipes	PPS
Duct Accessories	DCA	Parking	PRK
Duct Fittings	DCF	PSB	PSB
Duct Insulations	DCI	PSD	PSD
Duct Linings	DCL	Roads	RDS
Ducts	DCT	Roof and Ceiling	RFC
Detail Items	DET	Railings	RLG
Doors	DOR	Ramps	RMP
- Door	DOR	Roofs	ROF

- ADP_(Advertising Panel)
- ANN_(Annotations)
- CLG_(Ceilings)
- COL_(Column)
- CSW_(Casework)
- CTP_(Curtain_Panels)
- CUC_(CUC)
- DOR_(Door)
- ECS_(Environmental_Control_System)
- ELF_(Electrical_Fixture)
- ESC_(Escalator)
- FIF_(Fire_Fixture)
- FLR_(Floor)
- FRN (Furniture)
- FRS_(Furniture_Systems)
- KOK_(Kiosks)
- LFT_(Lift)
- LGF_(Lighting_Fixtures)
- LOU_(Louvre)
- PEP_(People)
- PIF_(Pipe_Fittings)
- PLM_(Plumbing_Fixtures)
- PLN_(Planting)



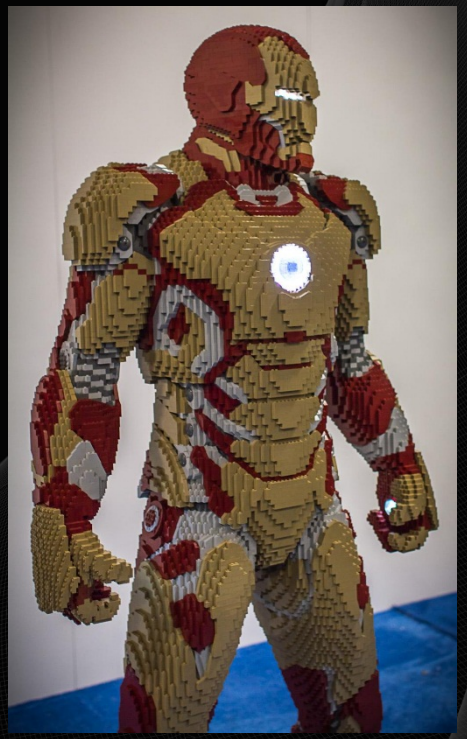
- DOR-DBL-HK-Curtain Wall.rfa
- DOR-DBL-HK-Metal.rfa
- DOR-DBL-HK-Metal-full swing.rfa
- DOR-DBL-HK-Metal-self closing.rfa
- DOR-DBL-HK-Metal-Transformer Room.0001.rfa
- DOR-DBL-HK-Metal-Transformer Room.rfa
- DOR-DBL-HK-Metal-vision panel self closing.rfa
- DOR-DBL-HK-Timber-self closing.rfa
- DOR-DBL-HK-Timber-vision panel self closing(unsy...
- DOR-DBL-HK-Timber-vision panel self closing.rfa
- DOR-DBL-HK-Timber-vision panel.rfa
- DOR-DBL-HK-Timber-vision panel-self closing.rfa
- DOR-DBL-HR-Metal-Tx Leaf & Lock.rfa
- DOR-DBL-MTR- Hinge & Handle.rfa
- DOR-DBL-MTR-C101 & P029.rfa
- DOR-DBL-MTR-Cabinet-MTR-for Water Meters.rfa
- DOR-DBL-MTR-Curtain Wall Type T.rfa
- DOR-DBL-MTR-Fixed Panel & Handle.rfa
- DOR-DBL-MTR-Frame and Panel-MTR-With Handle....

標準 = 協同

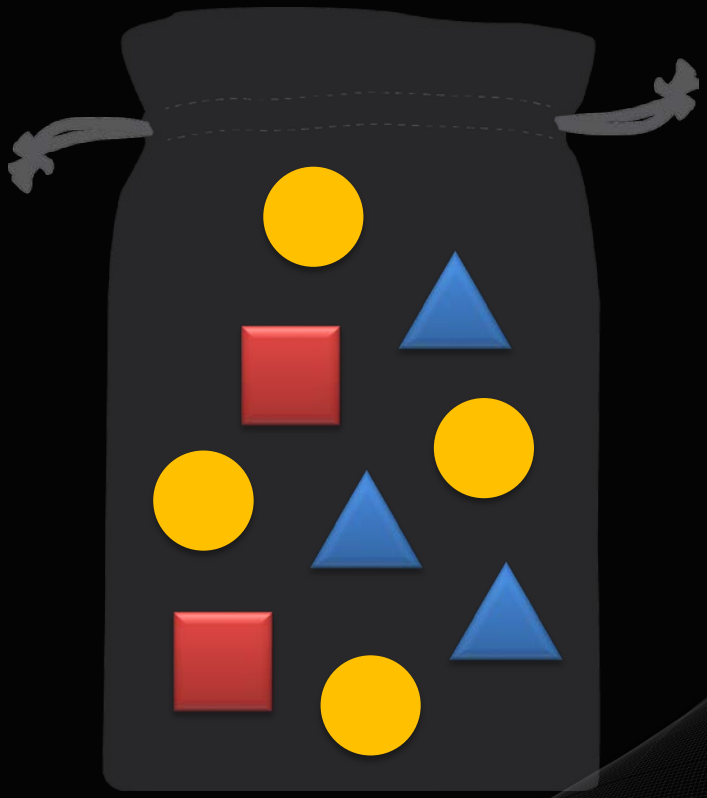
- 單一專業
- 不同專業
- 第三方 (審批方)
- 不同項目
- 資料的再用性


SHARE ON FACEBOOK
REMOVE OUTFIT
DRESSES
PANTS
TOPS
SHOES
BAGS
AUGMENTED BY
TOTAL IMMERSION

Logo Block



Object



Rules	Result
Red Rectangle	
Blue Triangle	
Yellow Circle	

B	= Building	建築
I	= Information	資訊
M	= Modelling	模型/ 模擬

- Fake BIM

• M + ?

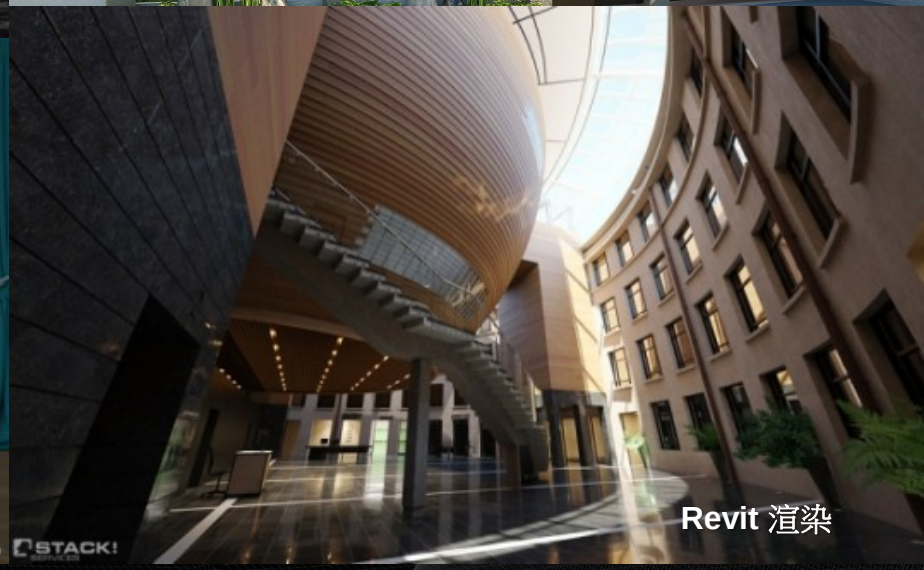
- JUST 3D MODEL – NOT BIM




AutoCAD 渲染


3D Max 渲染


SketchUp 渲染


Revit 渲染

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

Use BIM tools not necessarily means BIM!

Movie 互動展示

- HALF-BIM

- I <> M

- 3D MODEL >> QTO , CLASH ANALYSIS

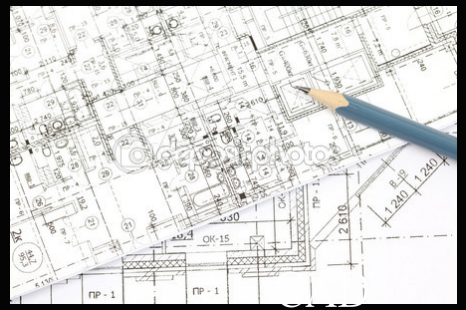
HALF BIM

DESIGN

CAD

CAD

REVIT / NAVISWORKS



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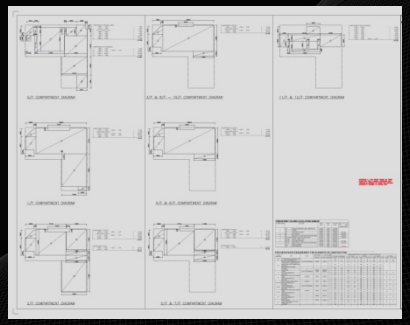

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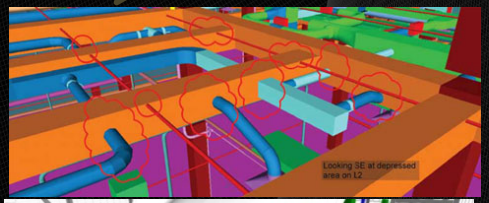
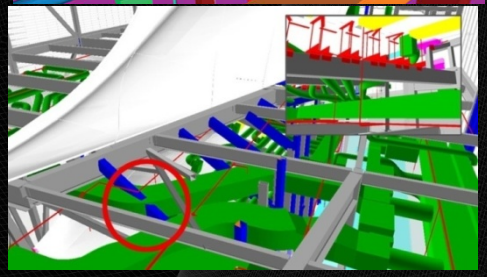


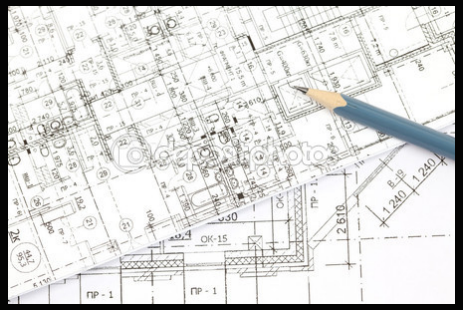


CONSTRUCTION INFORMATOIN

STATUTORY SUBMISSION

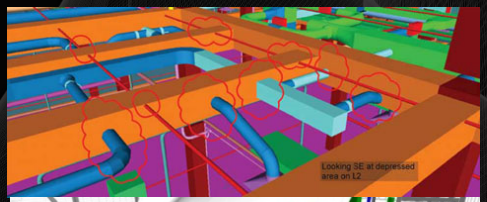
CLASH DETECTION

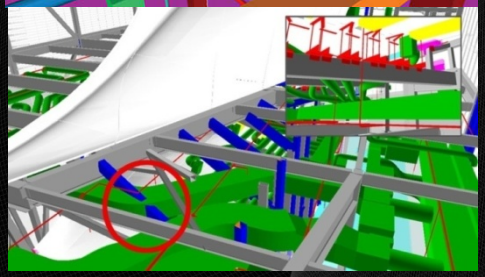
REAL BIM



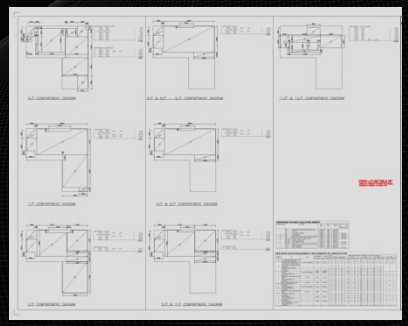
CONSTRUCTION
INFORMATOIN

DESIGN
in
BIM
Single Source Database





CLASH
DETECTION



STATUTORY
SUBMISSION

REAL BIM

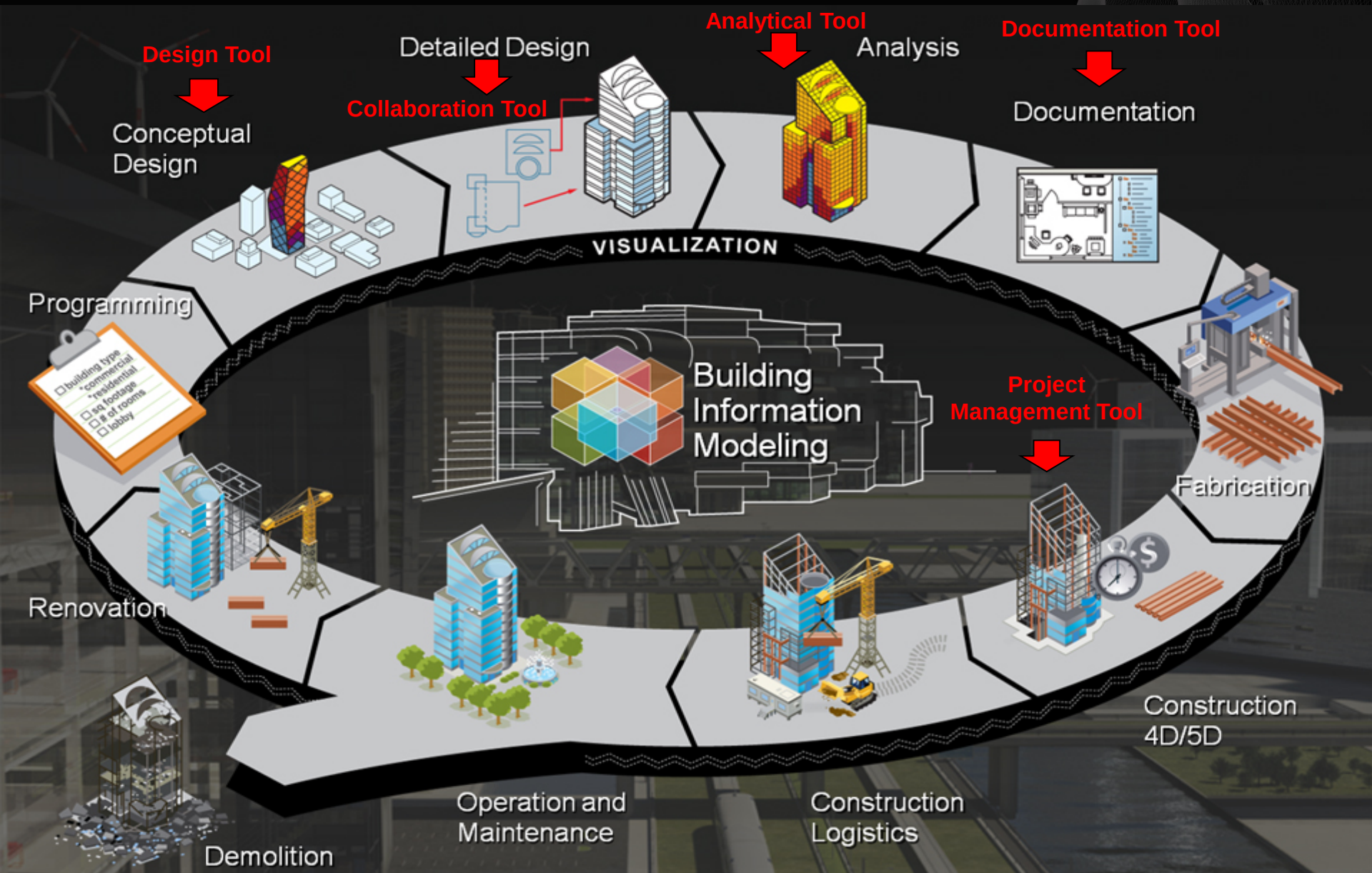
- INFORMATION FROM MODEL
- INFORMATION MORE IMPORTANT

$$I = M$$

$$I > M$$

Modelling Information Business

- BIM is a process, Business is the objective



8. Supply Chain Integration with manufacturing and production

1

Design visualization

2

Drawing Productions

3

Services Co-ordination and Clash detection with other disciplines

4

Quantity taking and preparation of Tender Document

5

Automated Statutory Submission

6

Scientific analysis of different environmental aspects

7

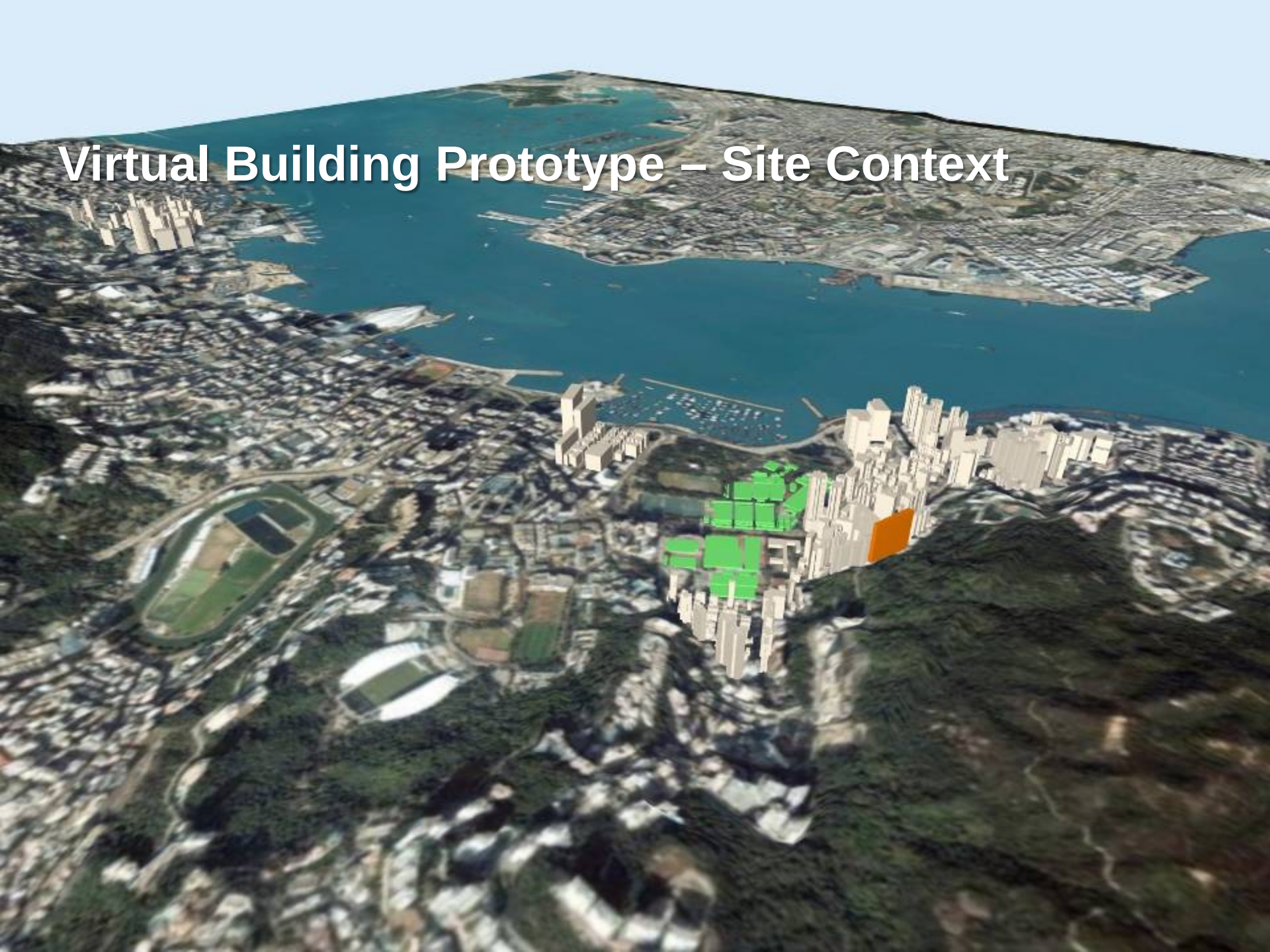
Supply Chain Integration with manufacturing and production

8

Complex Geometry

1 Design visualization	2 Drawing Productions	3 Services Co-ordination and Clash detection with other disciplines	4 Quantity taking and preparation of Tender Document
5 Automated Statutory Submission	6 Scientific analysis of different environmental aspects	7 Supply Chain Integration with manufacturing and production	8 Complex Geometry

Virtual Building Prototype – Site Context



Views from: 140m

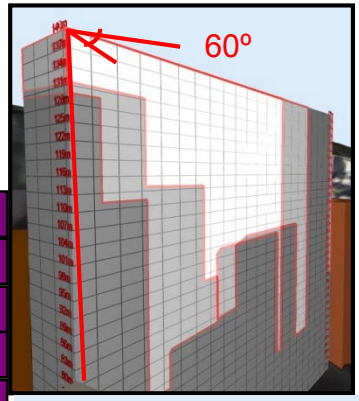
Tin Hau Temple Road No.1

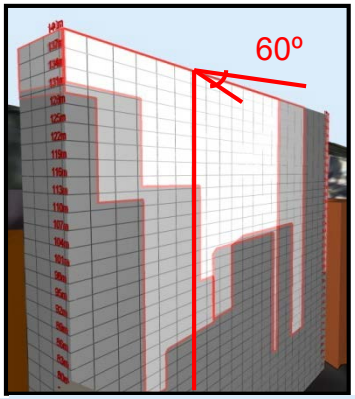
Tin Hau Temple Road No.1

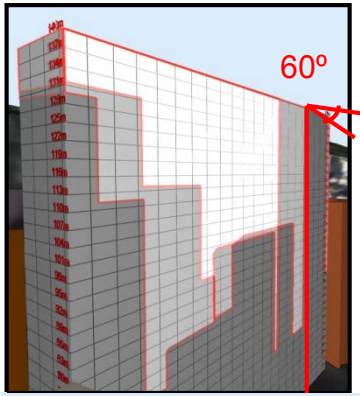
Tin Hau Temple Road No.1

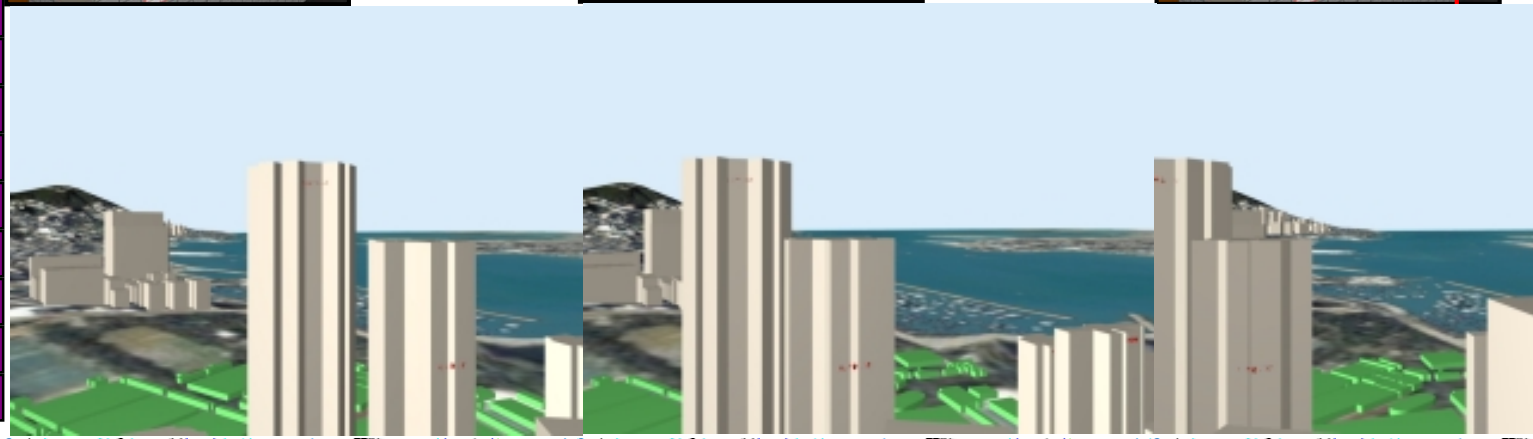
140m

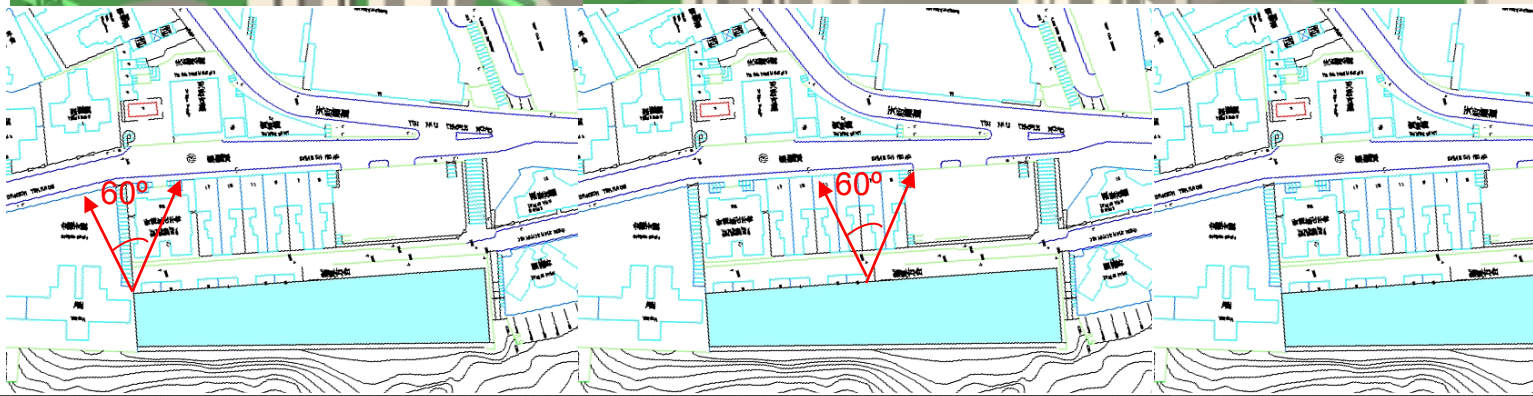
- 140m
- 135m
- 130m
- 125m
- 120m
- 115m
- 110m
- 105m
- 100m
- 95m
- 90m
- 85m
- 80m











Views from: 135m

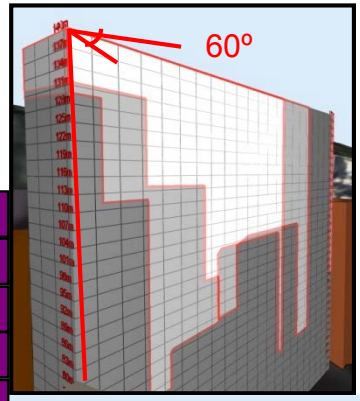
Tin Hau Temple Road No.1

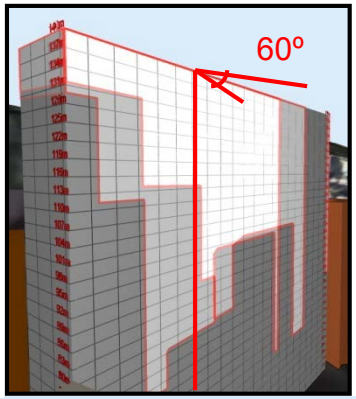
Tin Hau Temple Road No.1

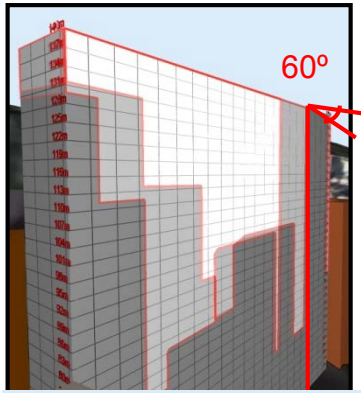
Tin Hau Temple Road No.1

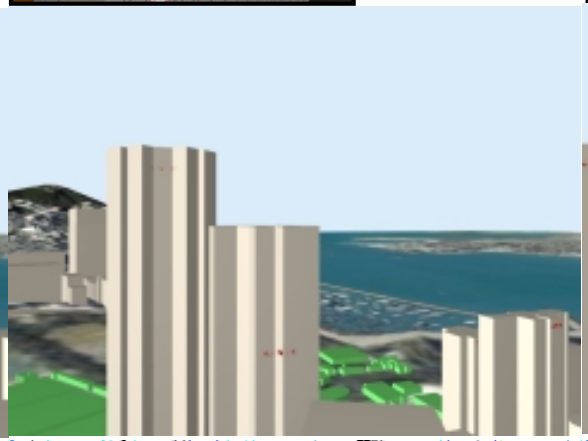
135m

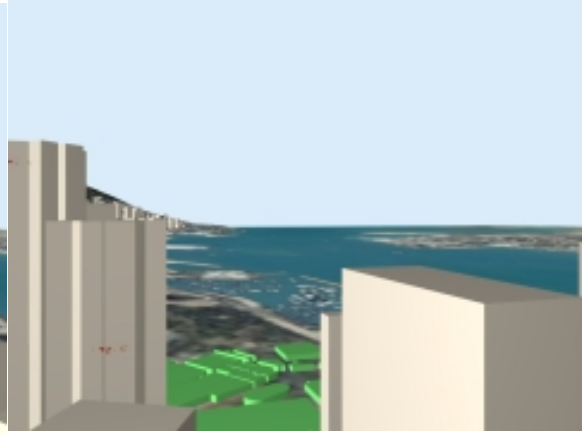
140m
135m
130m
125m
120m
115m
110m
105m
100m
95m
90m
85m
80m

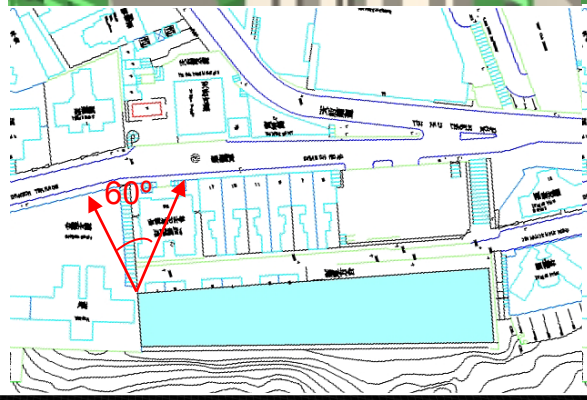


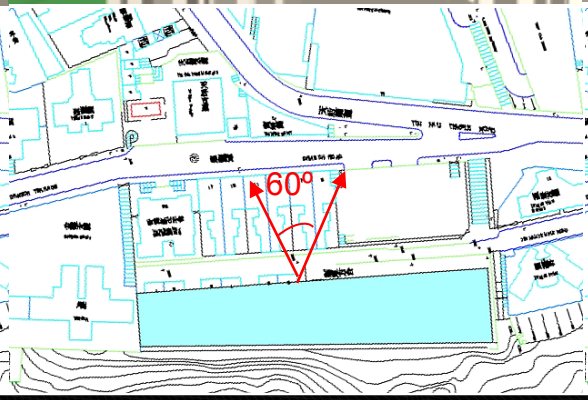


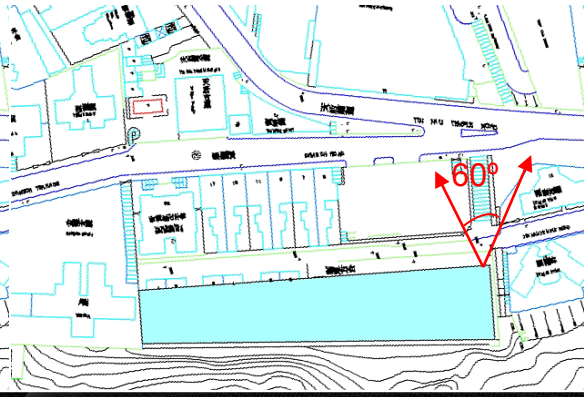












Views from: 130m

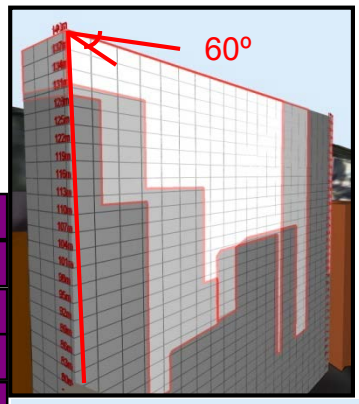
Tin Hau Temple Road No.1

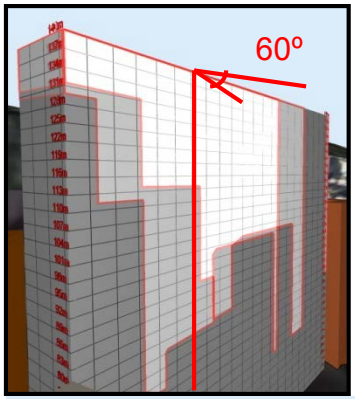
Tin Hau Temple Road No.1

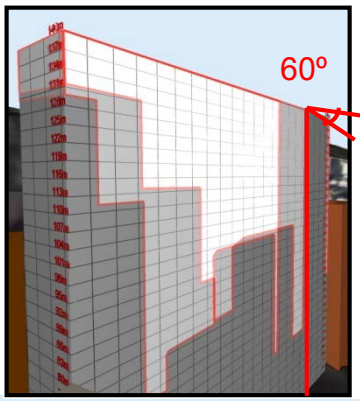
Tin Hau Temple Road No.1

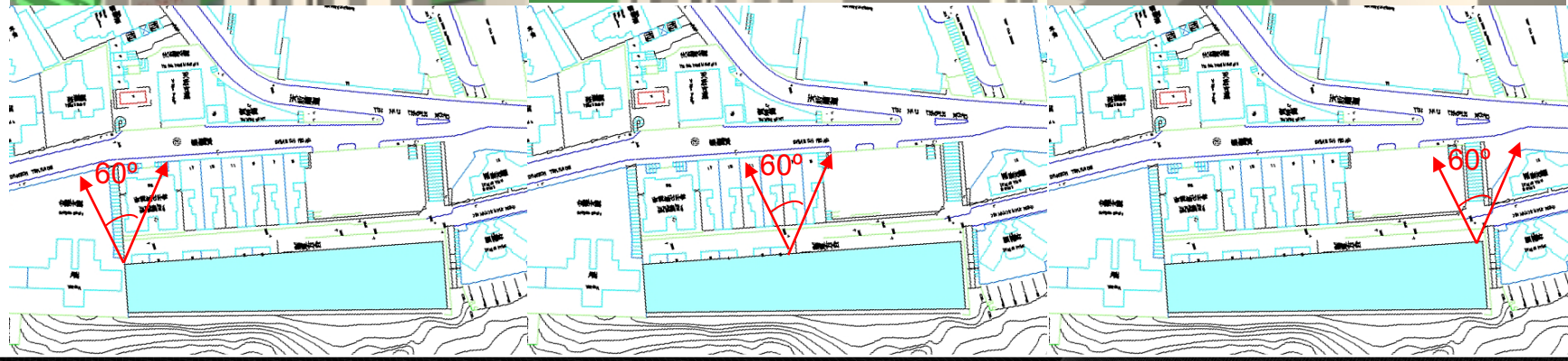
130m

140m
135m
130m
125m
120m
115m
110m
105m
100m
95m
90m
85m
80m









Views from: 125m

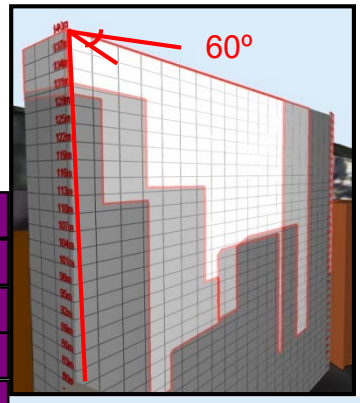
Tin Hau Temple Road No.1

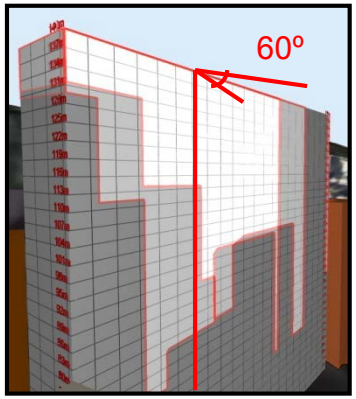
Tin Hau Temple Road No.1

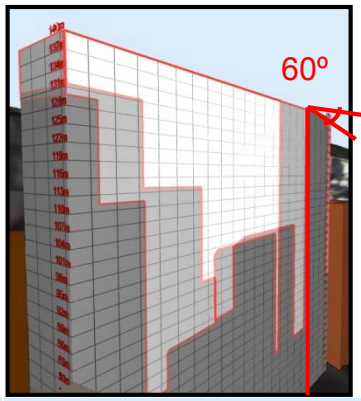
Tin Hau Temple Road No.1

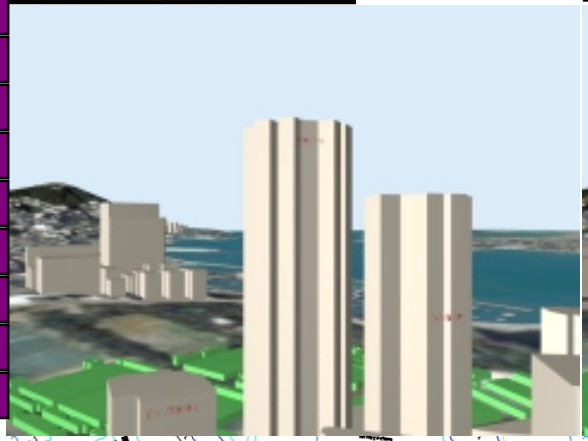
125m

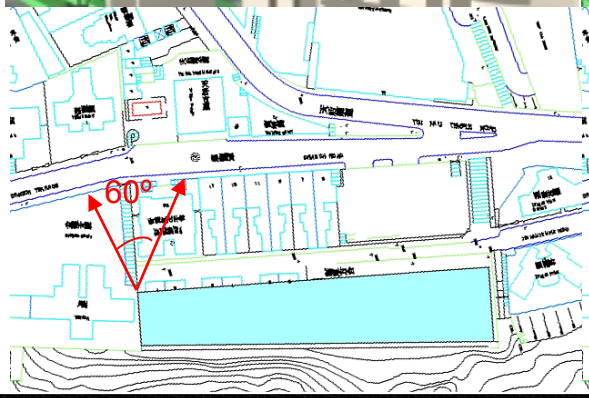
140m
135m
130m
125m
120m
115m
110m
105m
100m
95m
90m
85m
80m

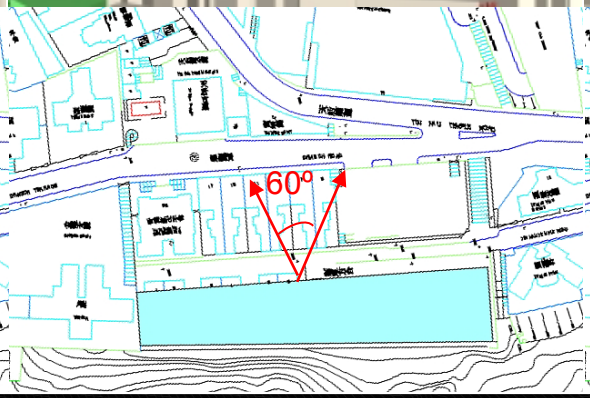


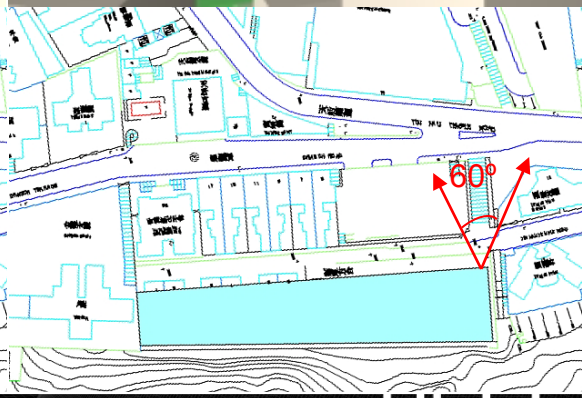












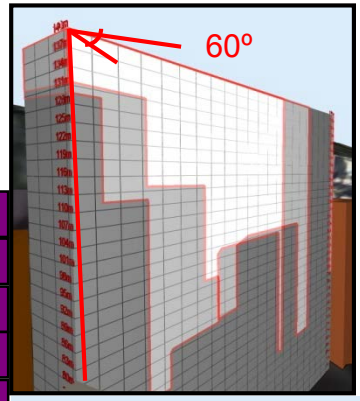
Views from: 120m

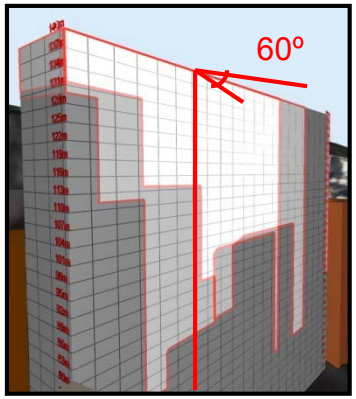
Tin Hau Temple Road No.1

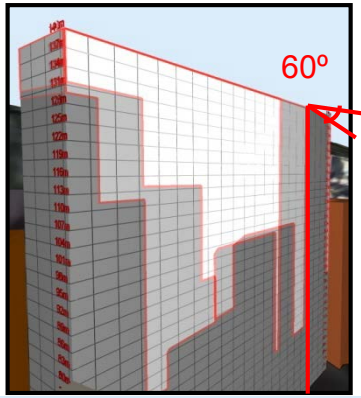
Tin Hau Temple Road No.1

Tin Hau Temple Road No.1

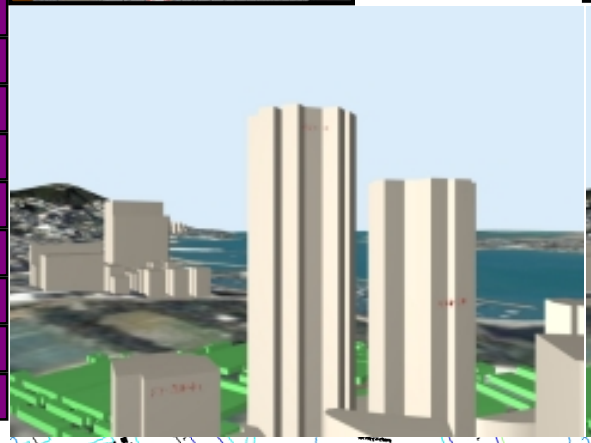
120m

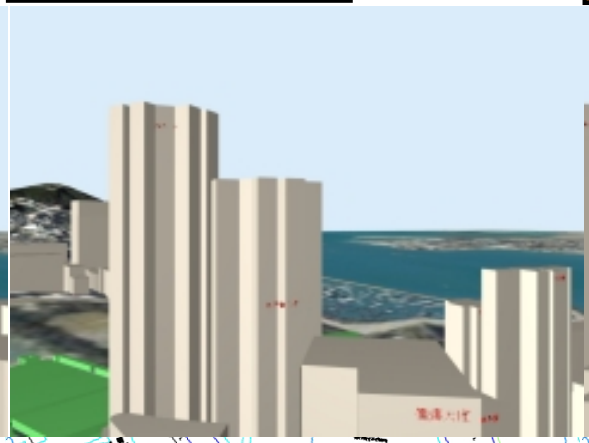


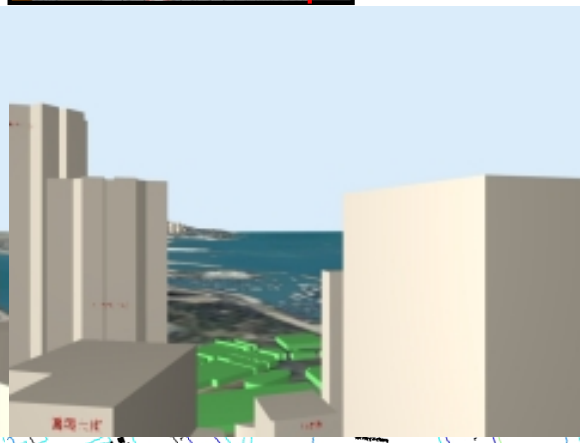


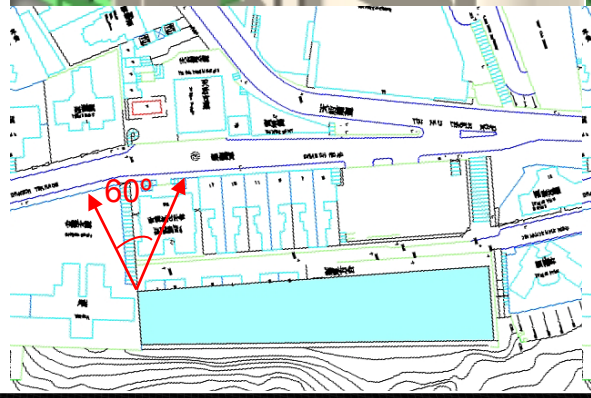


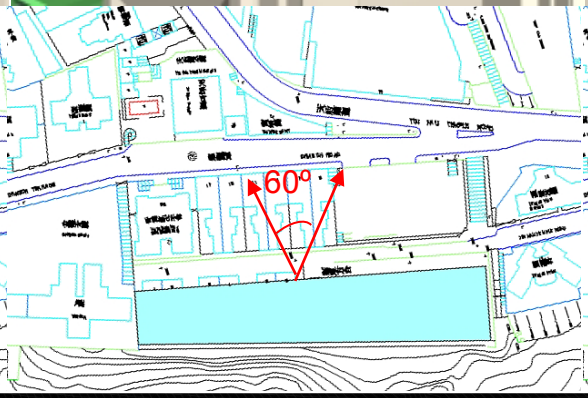
140m
135m
130m
125m
120m
115m
110m
105m
100m
95m
90m
85m
80m

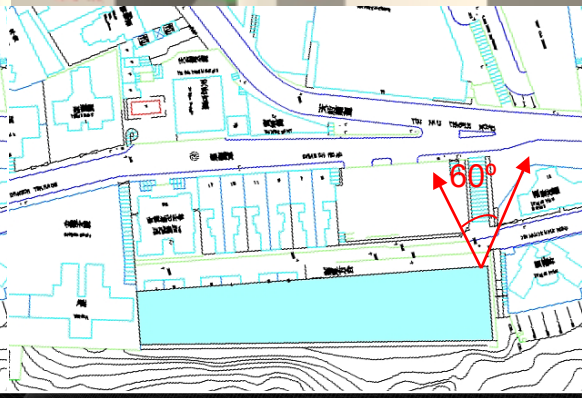












Views from: 115m

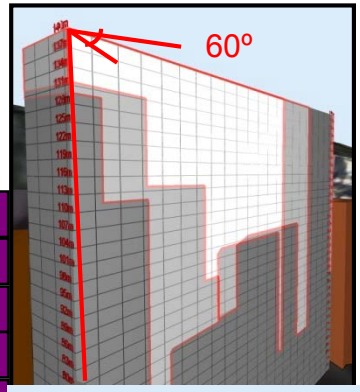
Tin Hau Temple Road No.1

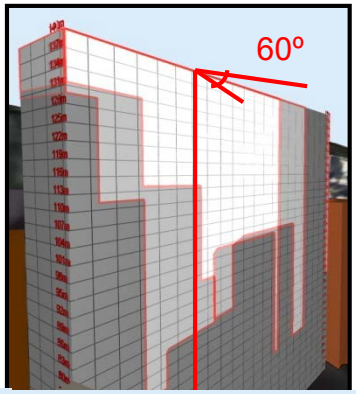
Tin Hau Temple Road No.1

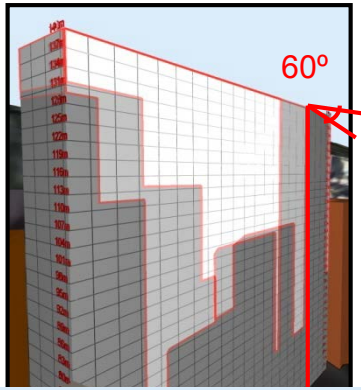
Tin Hau Temple Road No.1

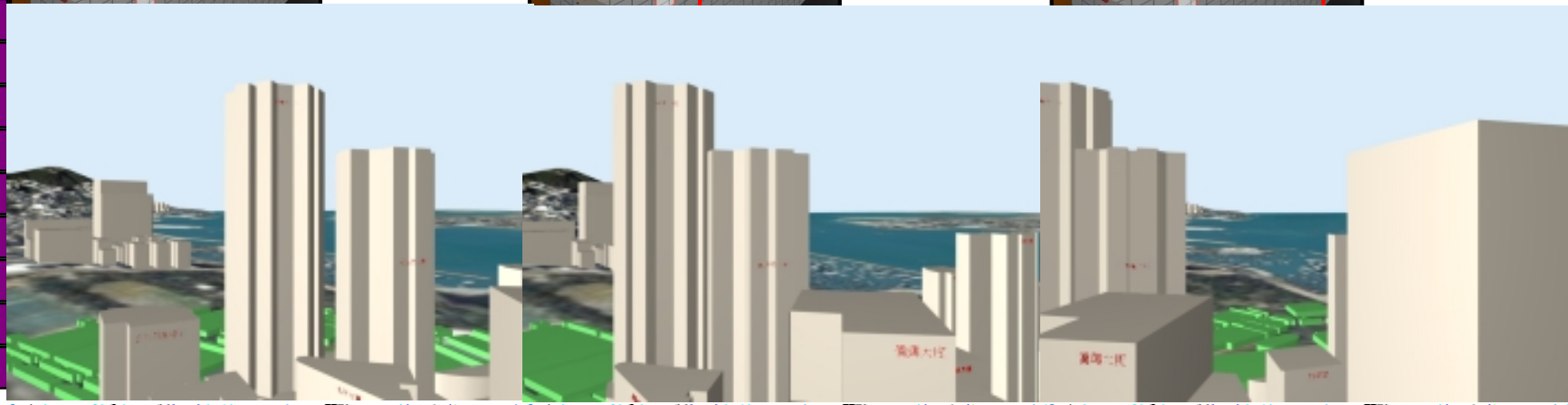
115m

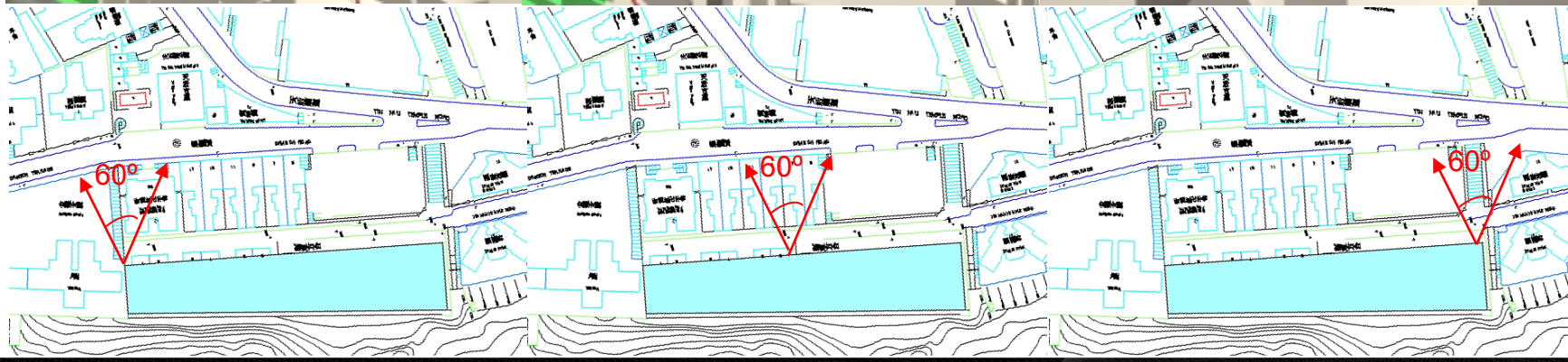
140m
135m
130m
125m
120m
115m
110m
105m
100m
95m
90m
85m
80m











Views from: 110m

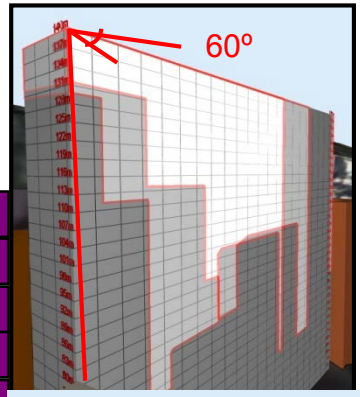
Tin Hau Temple Road No.1

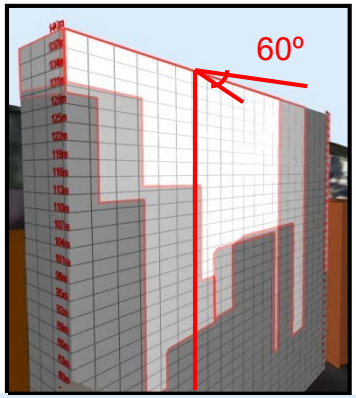
Tin Hau Temple Road No.1

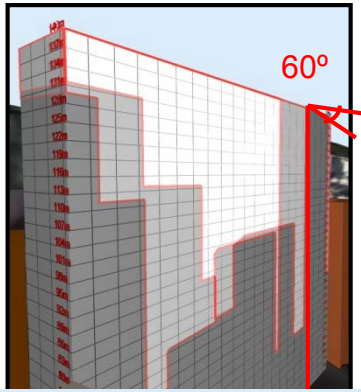
Tin Hau Temple Road No.1

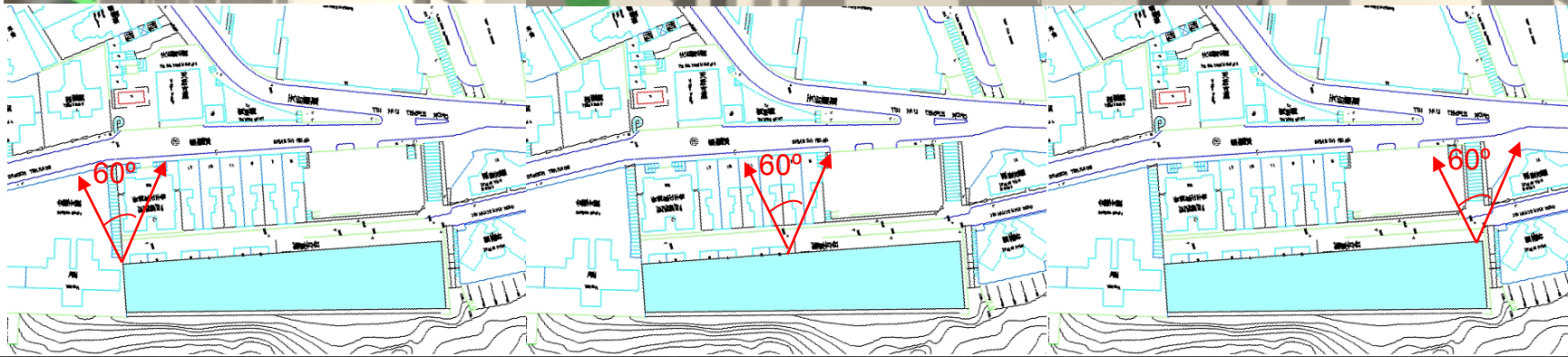
110m

140m
135m
130m
125m
120m
115m
110m
105m
100m
95m
90m
85m
80m









Views from: 105m

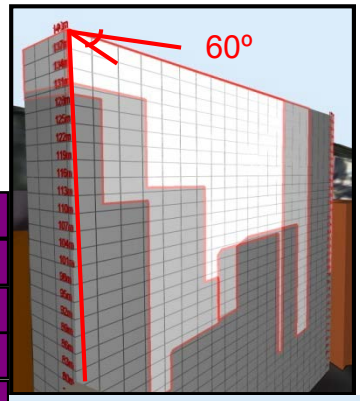
Tin Hau Temple Road No.1

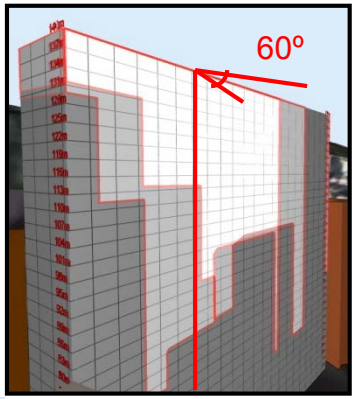
Tin Hau Temple Road No.1

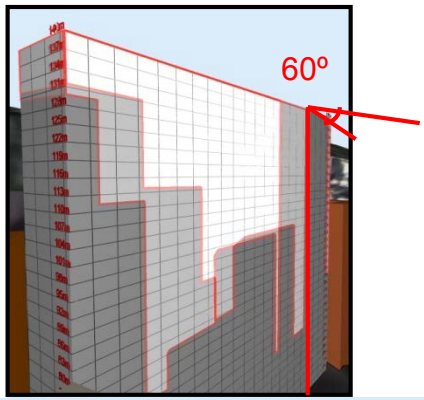
Tin Hau Temple Road No.1

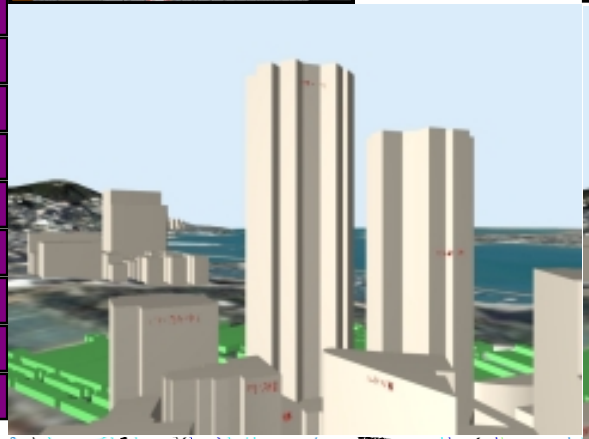
105m

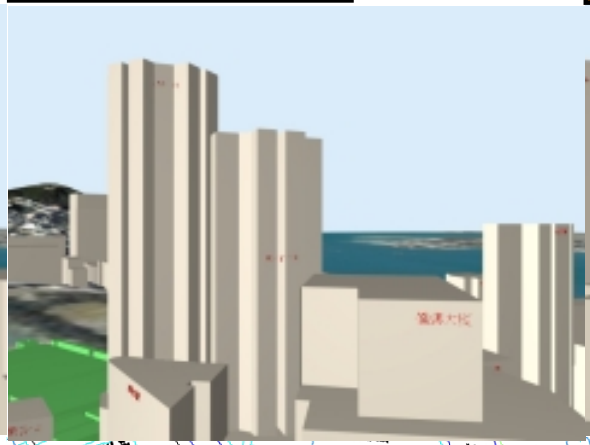
140m
135m
130m
125m
120m
115m
110m
105m
100m
95m
90m
85m
80m

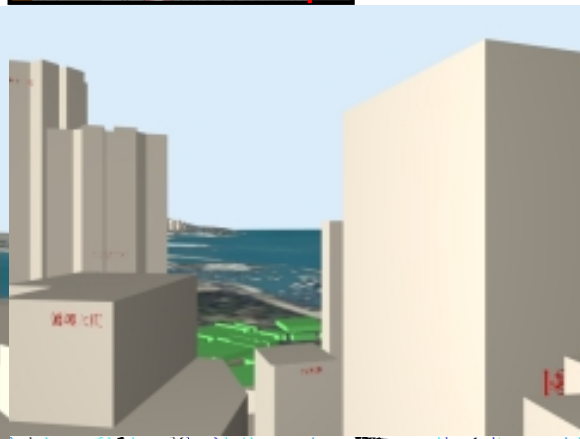


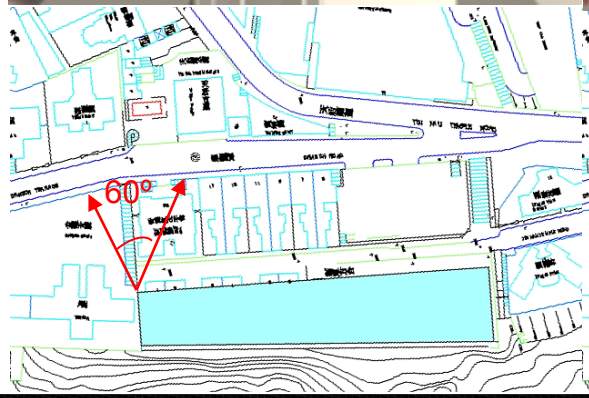


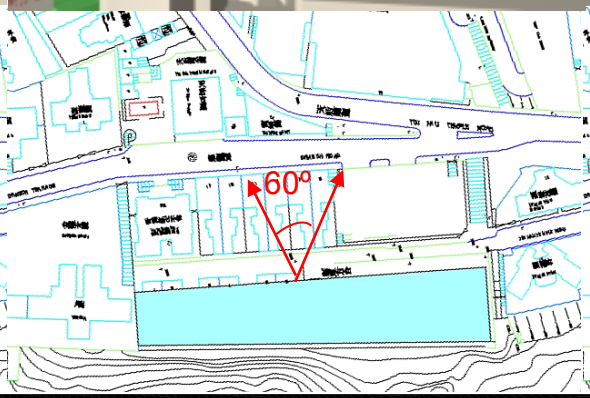


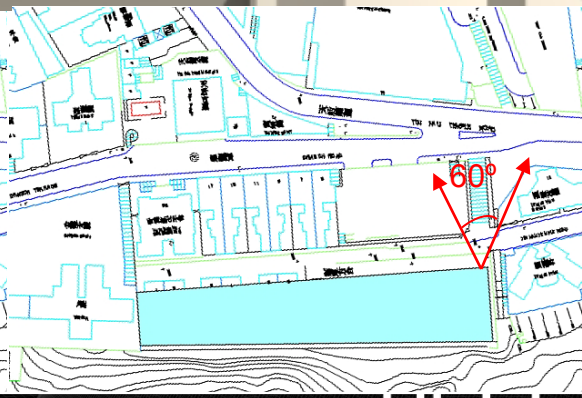












Views from: 100m

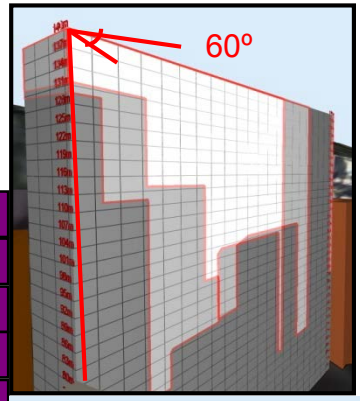
Tin Hau Temple Road No.1

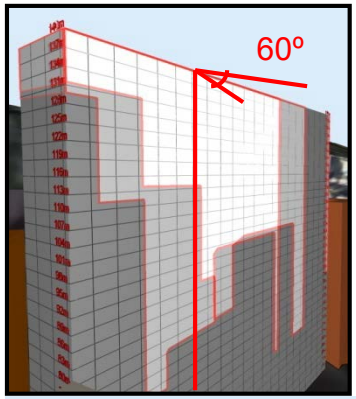
Tin Hau Temple Road No.1

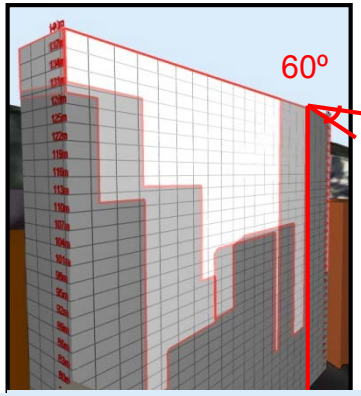
Tin Hau Temple Road No.1

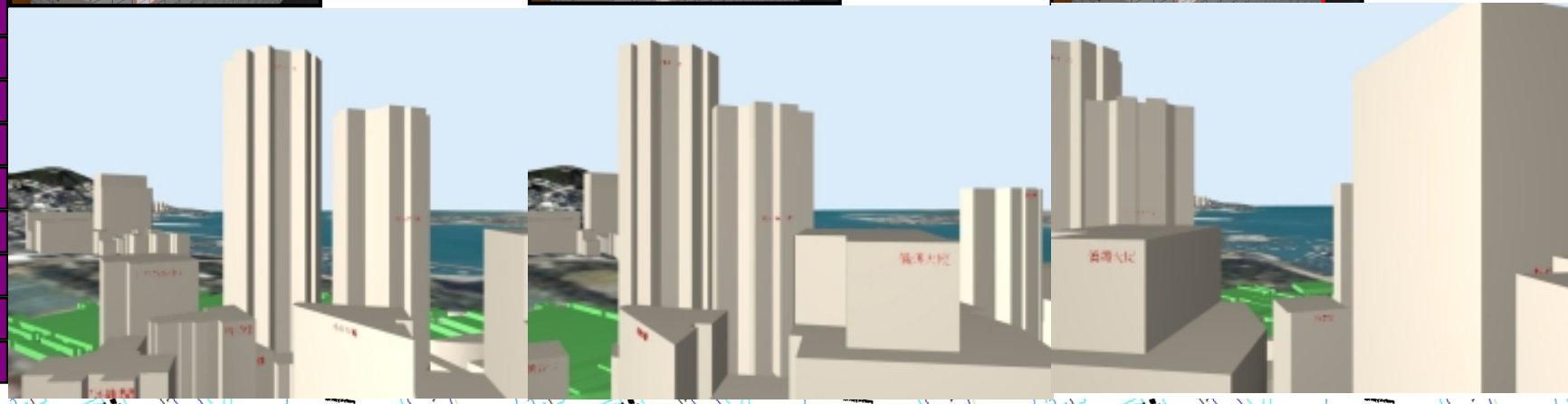
100m

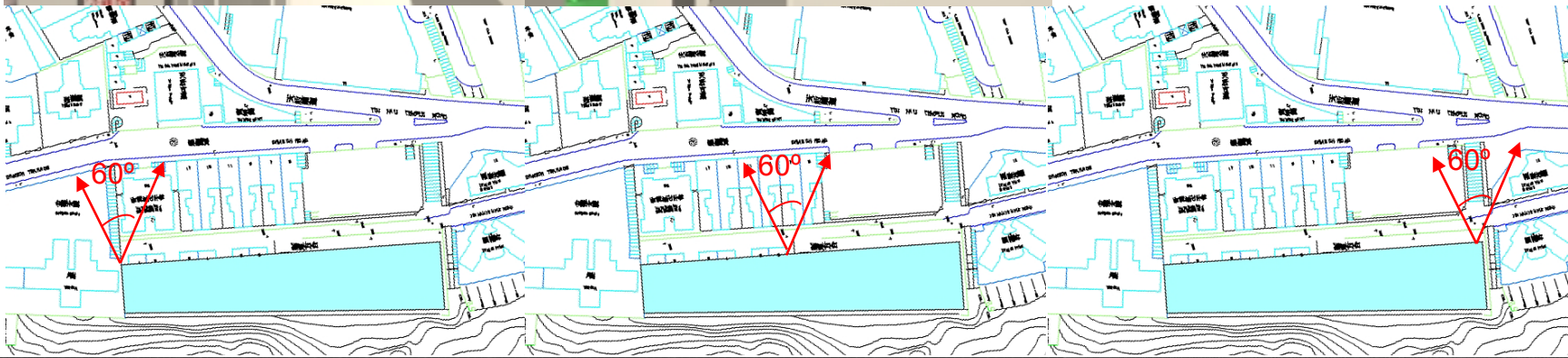
140m
135m
130m
125m
120m
115m
110m
105m
100m
95m
90m
85m
80m











Views from: 95m

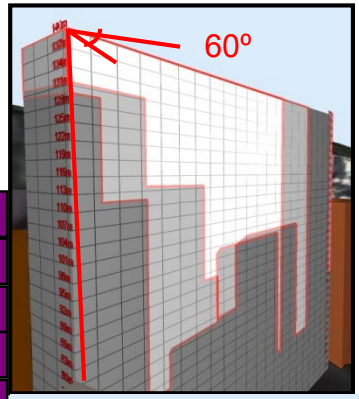
Tin Hau Temple Road No.1

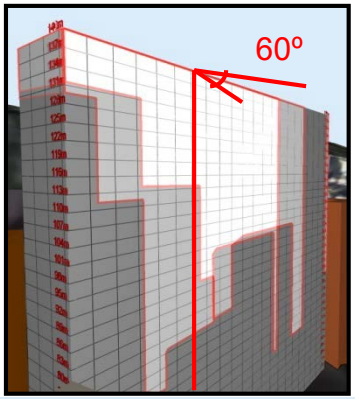
Tin Hau Temple Road No.1

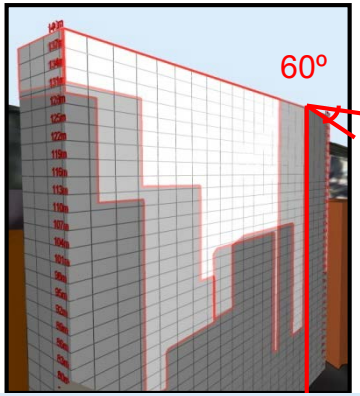
Tin Hau Temple Road No.1

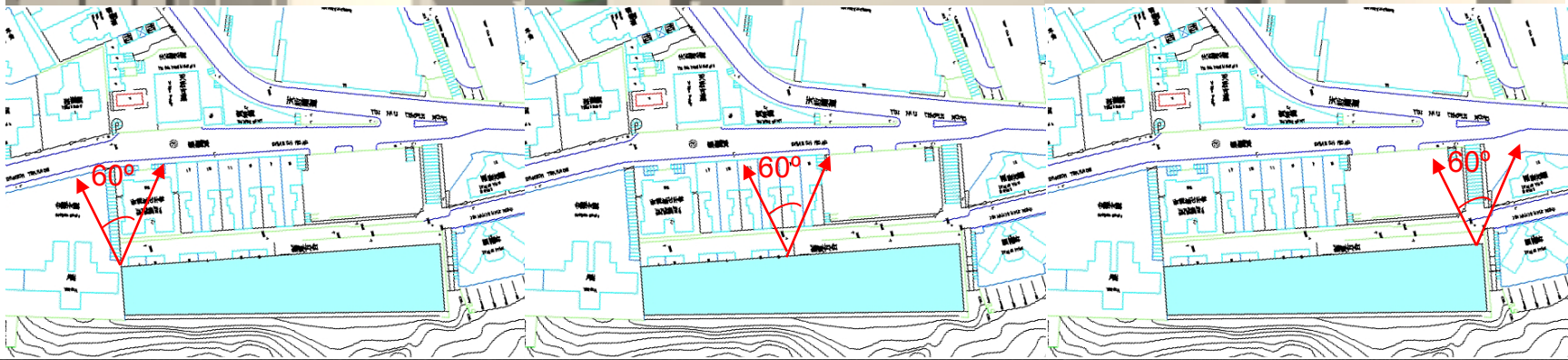
95m

140m
135m
130m
125m
120m
115m
110m
105m
100m
95m
90m
85m
80m









Views from: 90m

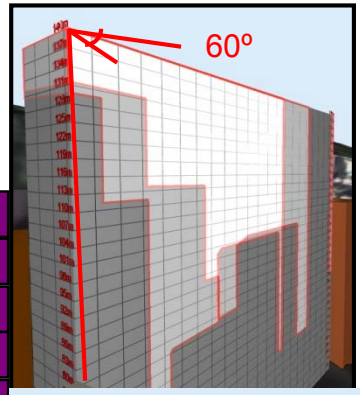
Tin Hau Temple Road No.1

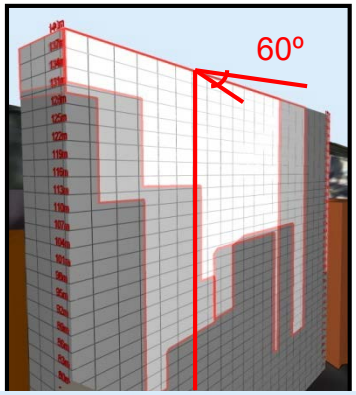
Tin Hau Temple Road No.1

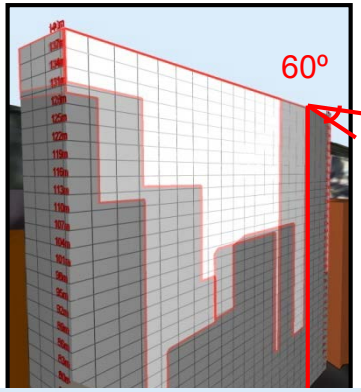
Tin Hau Temple Road No.1

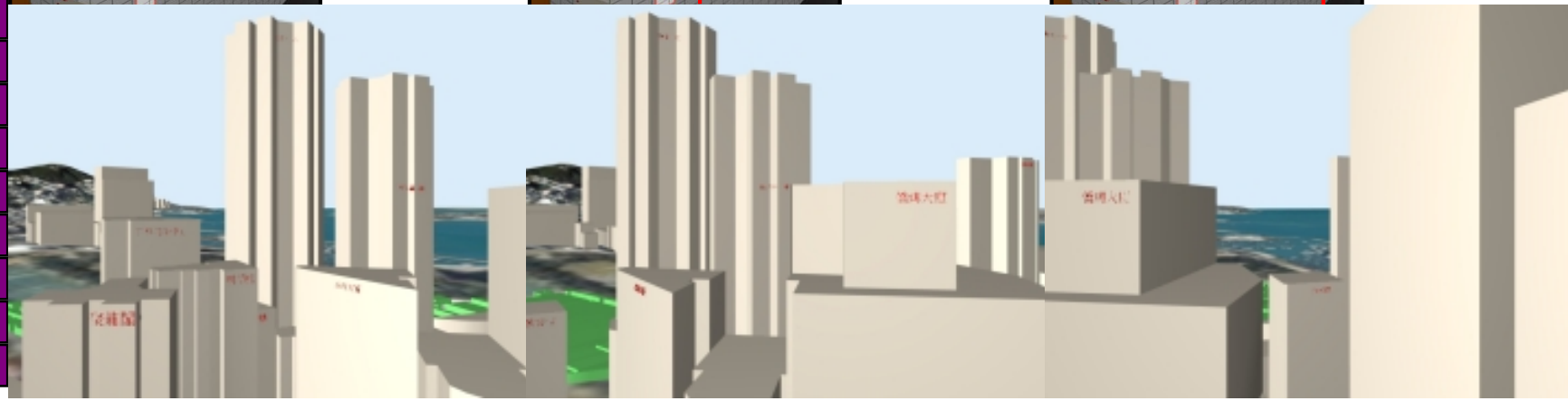
90m

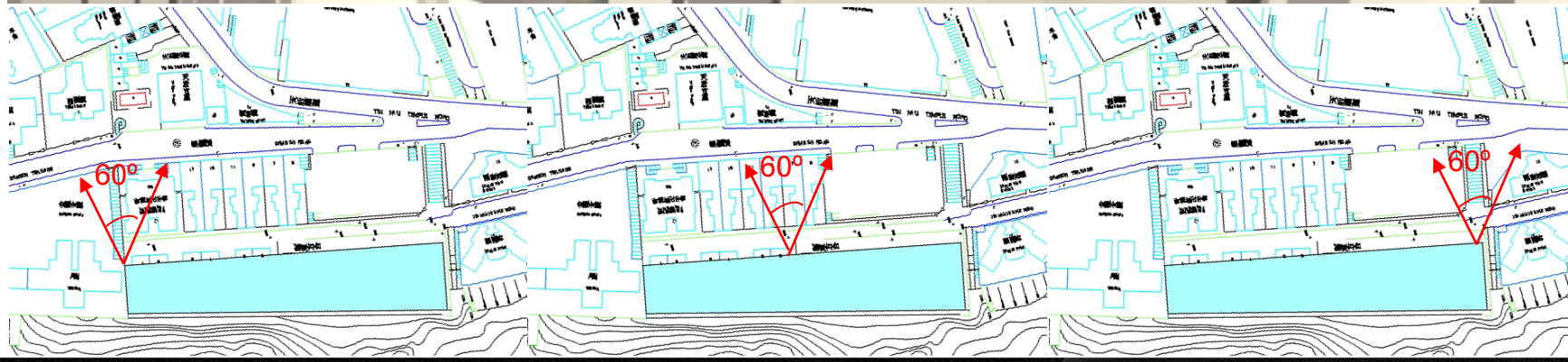
140m
135m
130m
125m
120m
115m
110m
105m
100m
95m
90m
85m
80m











Views from: 85m

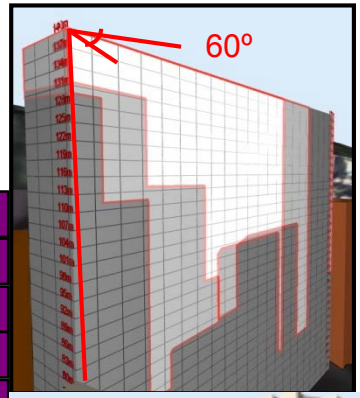
Tin Hau Temple Road No.1

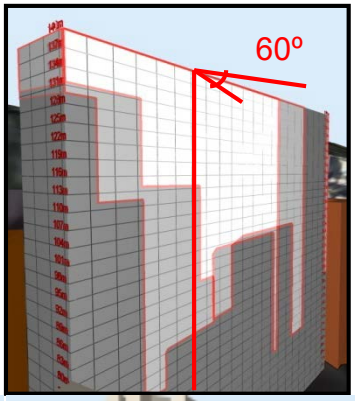
Tin Hau Temple Road No.1

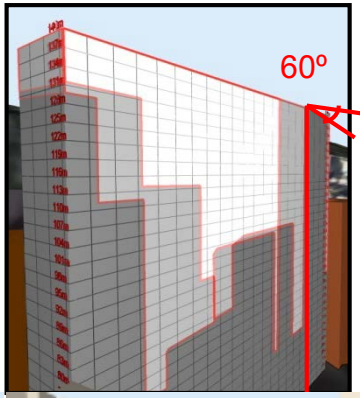
Tin Hau Temple Road No.1

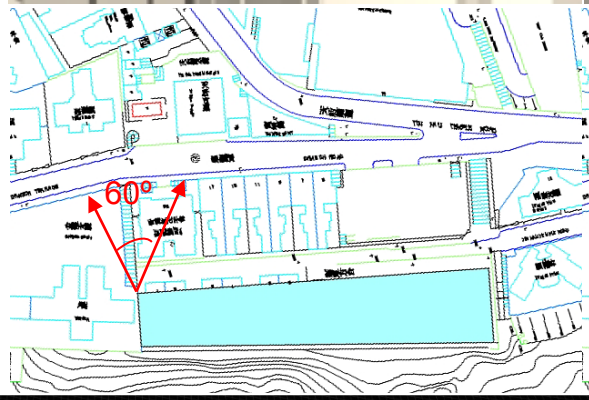
85m

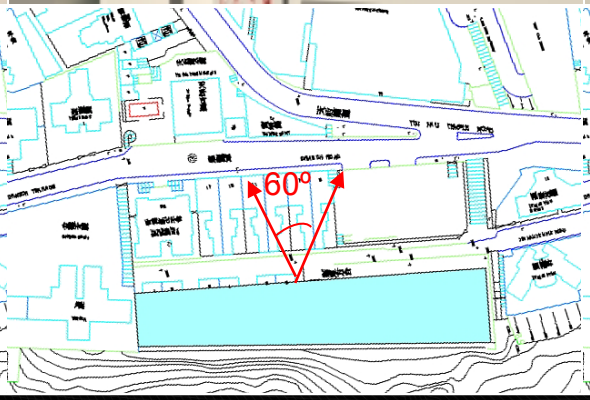
140m
135m
130m
125m
120m
115m
110m
105m
100m
95m
90m
85m
80m

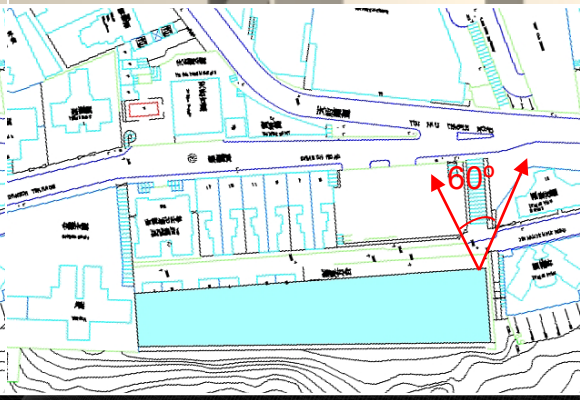












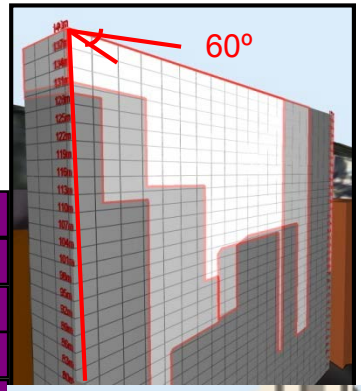
Views from: 80m

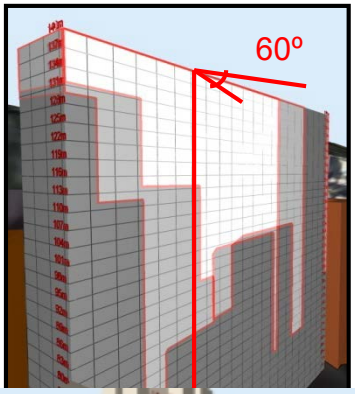
Tin Hau Temple Road No.1

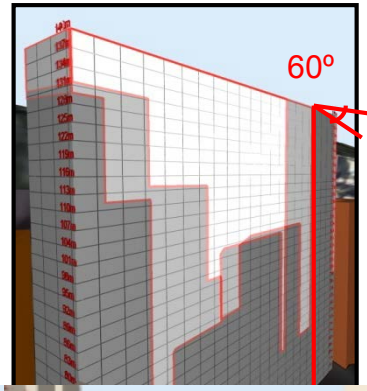
Tin Hau Temple Road No.1

Tin Hau Temple Road No.1

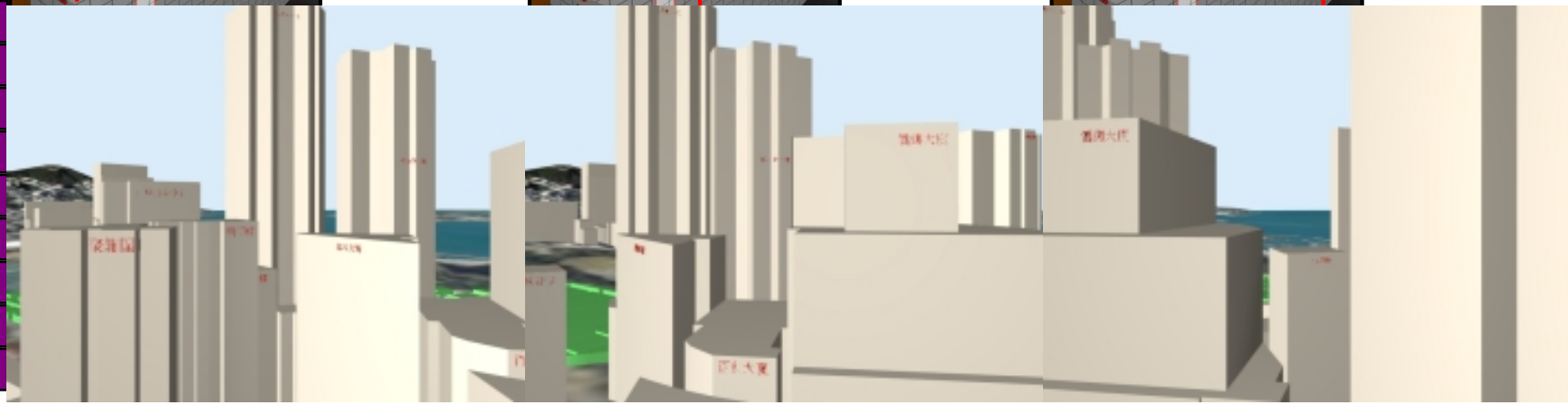
80m

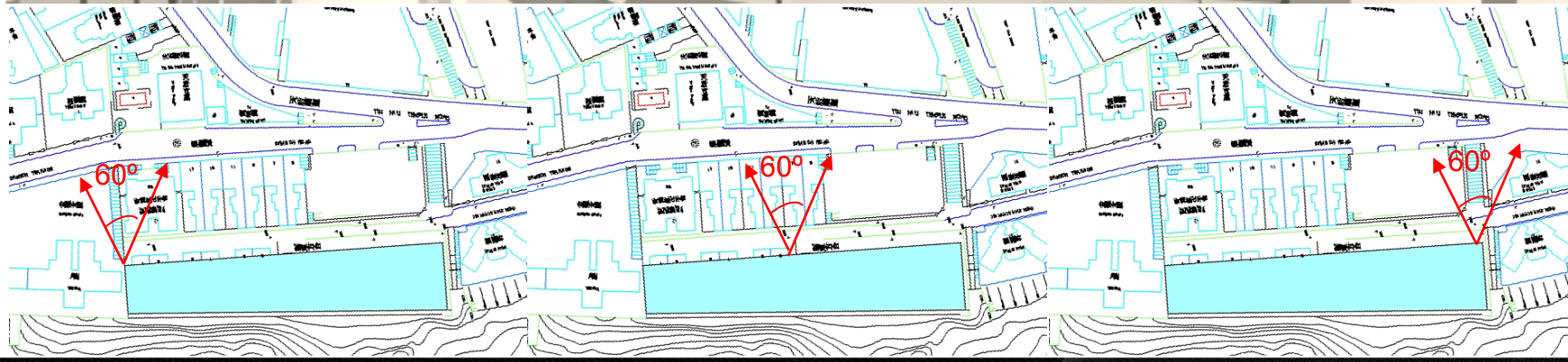






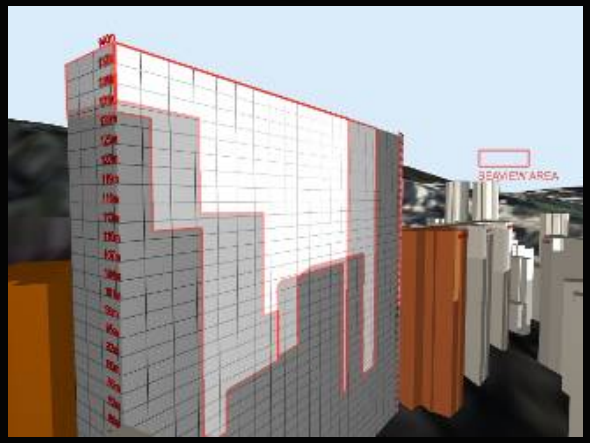
140m
135m
130m
125m
120m
115m
110m
105m
100m
95m
90m
85m
80m





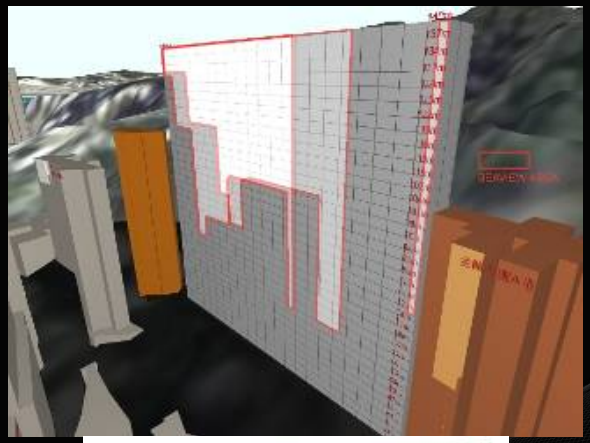
Form A

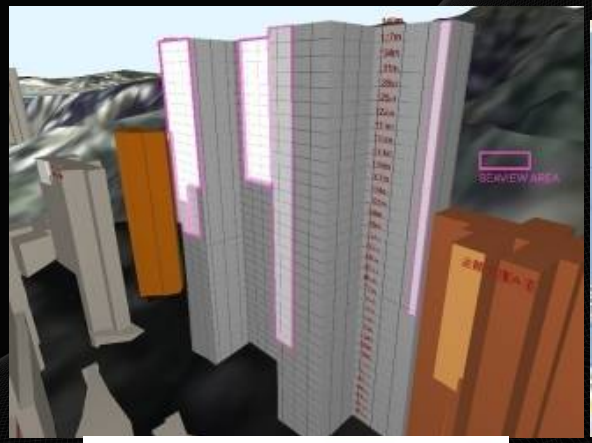
Form B

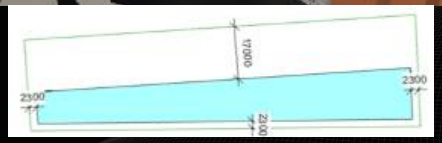


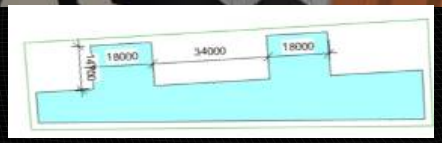
Form A Sea View Area

Form B Sea View Area

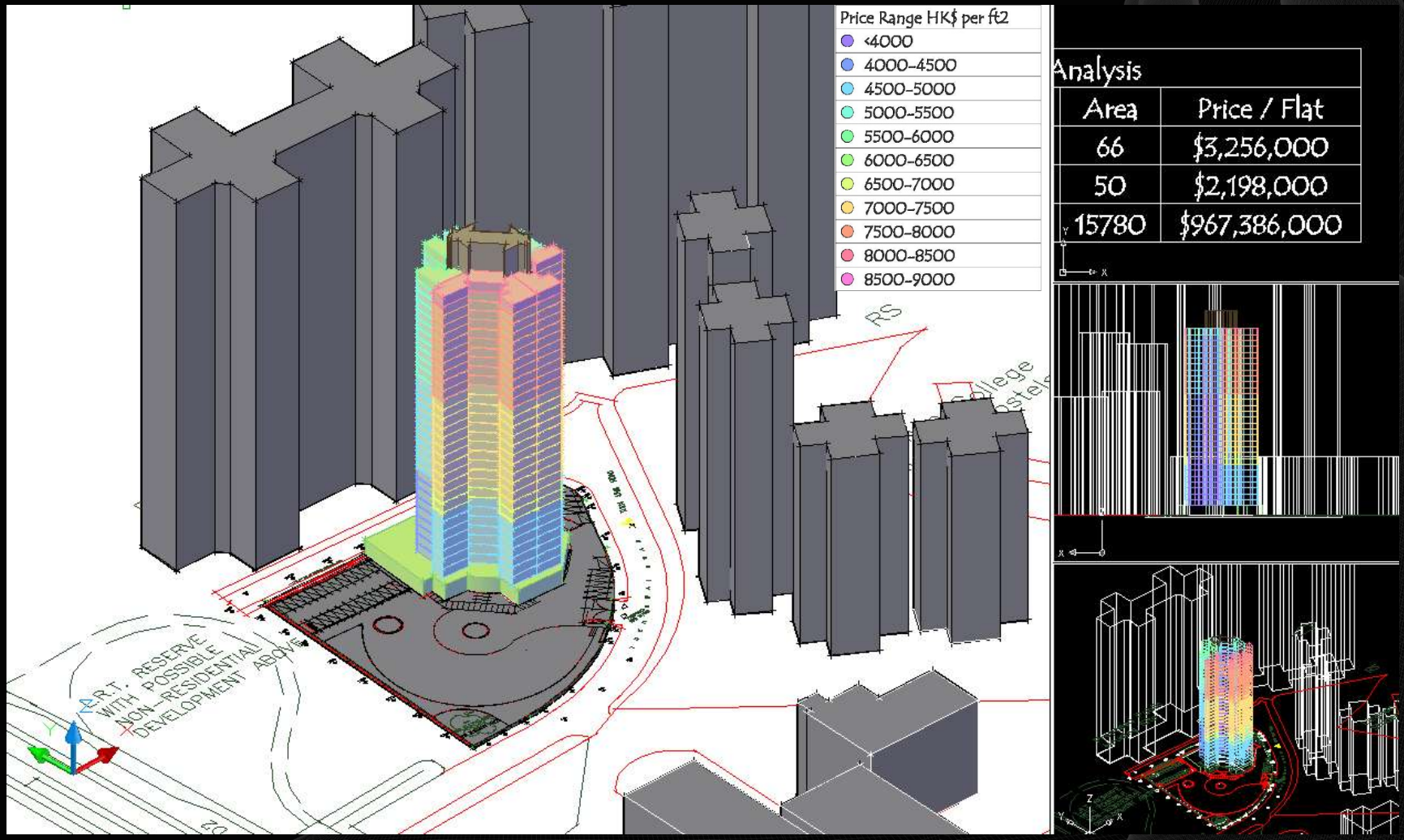








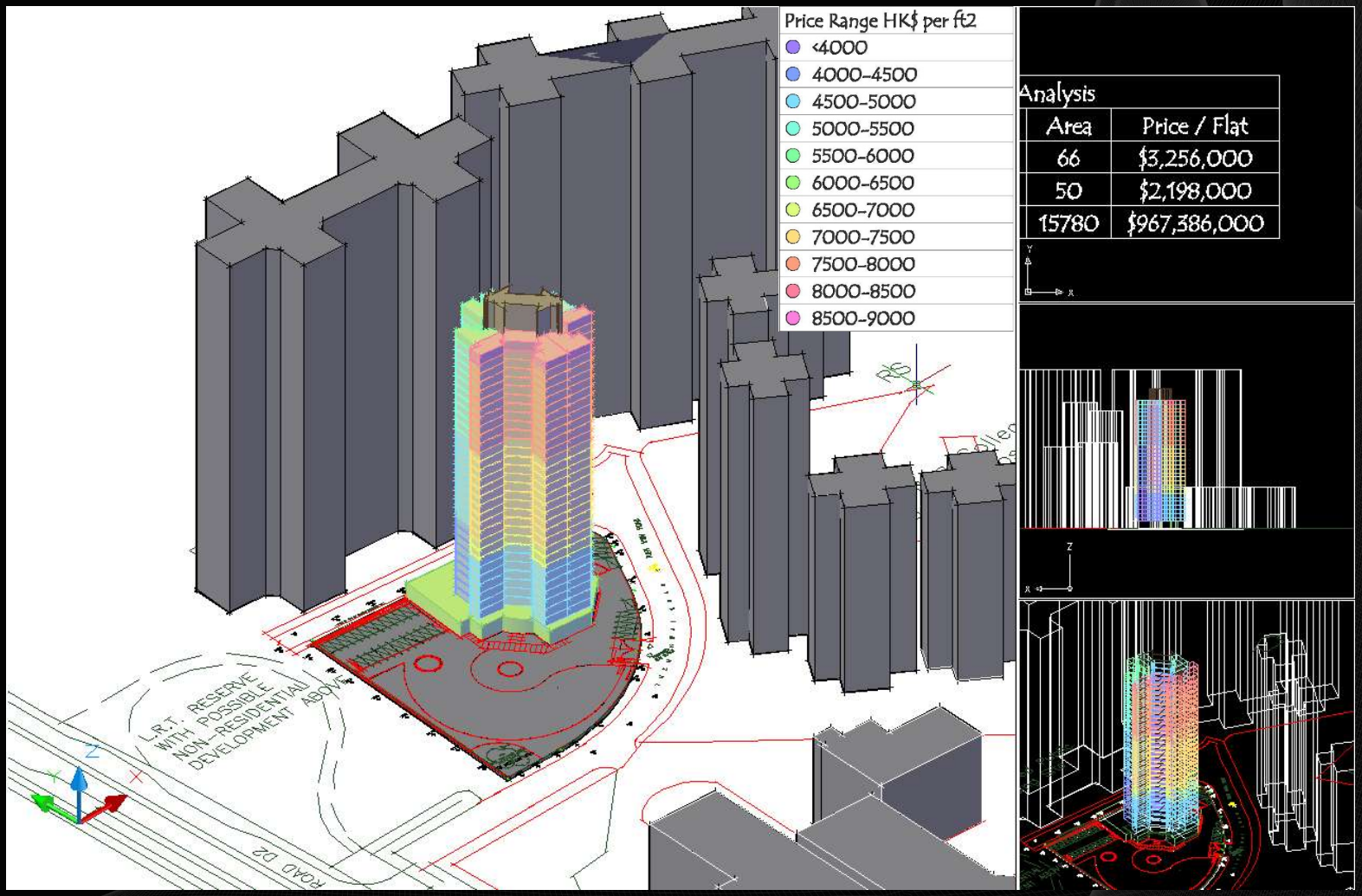
Sea View Area of Star Ferry Pier & Tsim Sha Tsui East



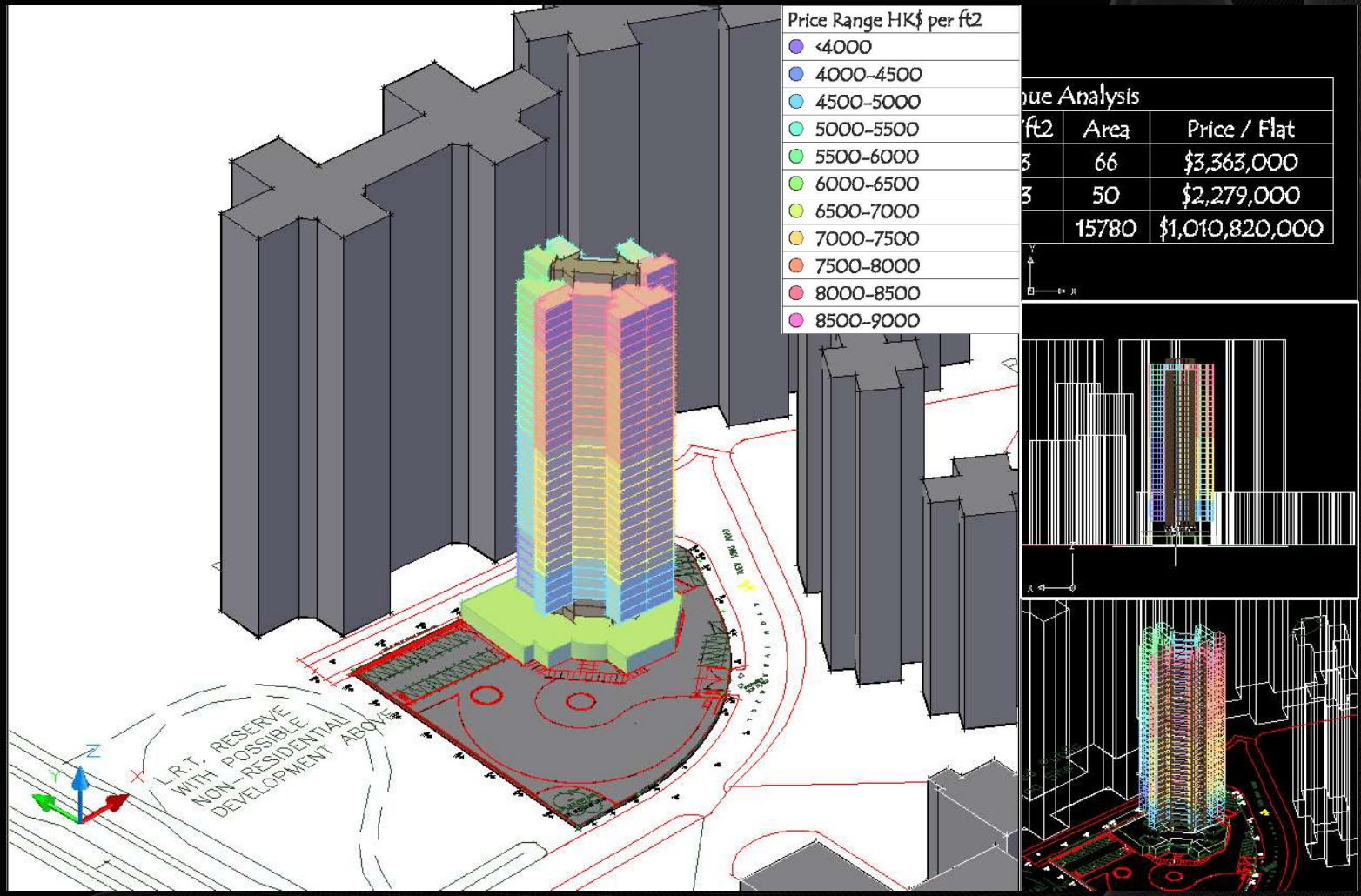
可研通設計平台

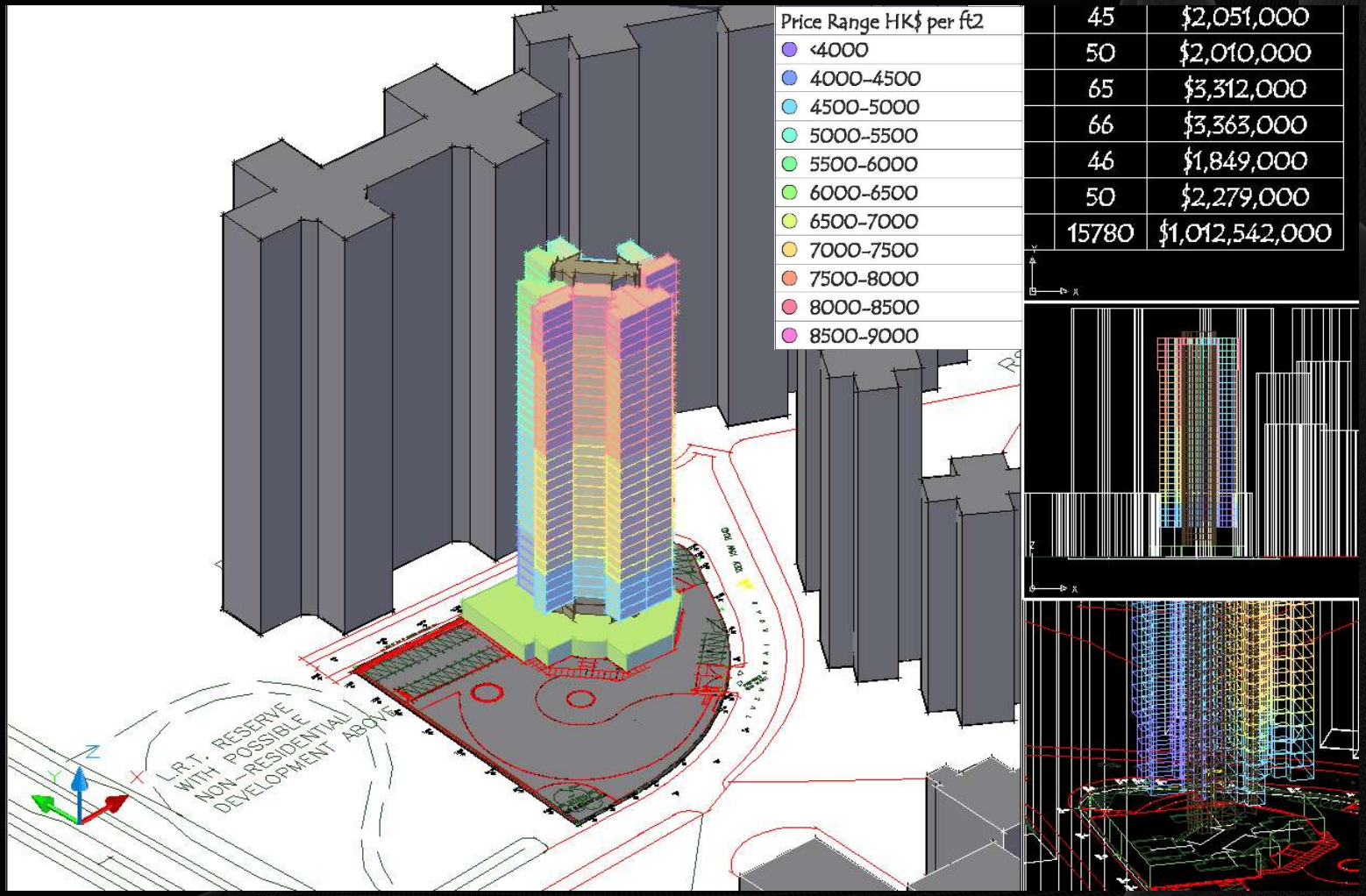
網上整合佈置,收益,景觀,成本,等等數據

Price Range HK$ per ft2
<4000
4000-4500
4500-5000
5000-5500
5500-6000
6000-6500
6500-7000
7000-7500
7500-8000
8000-8500
8500-9000

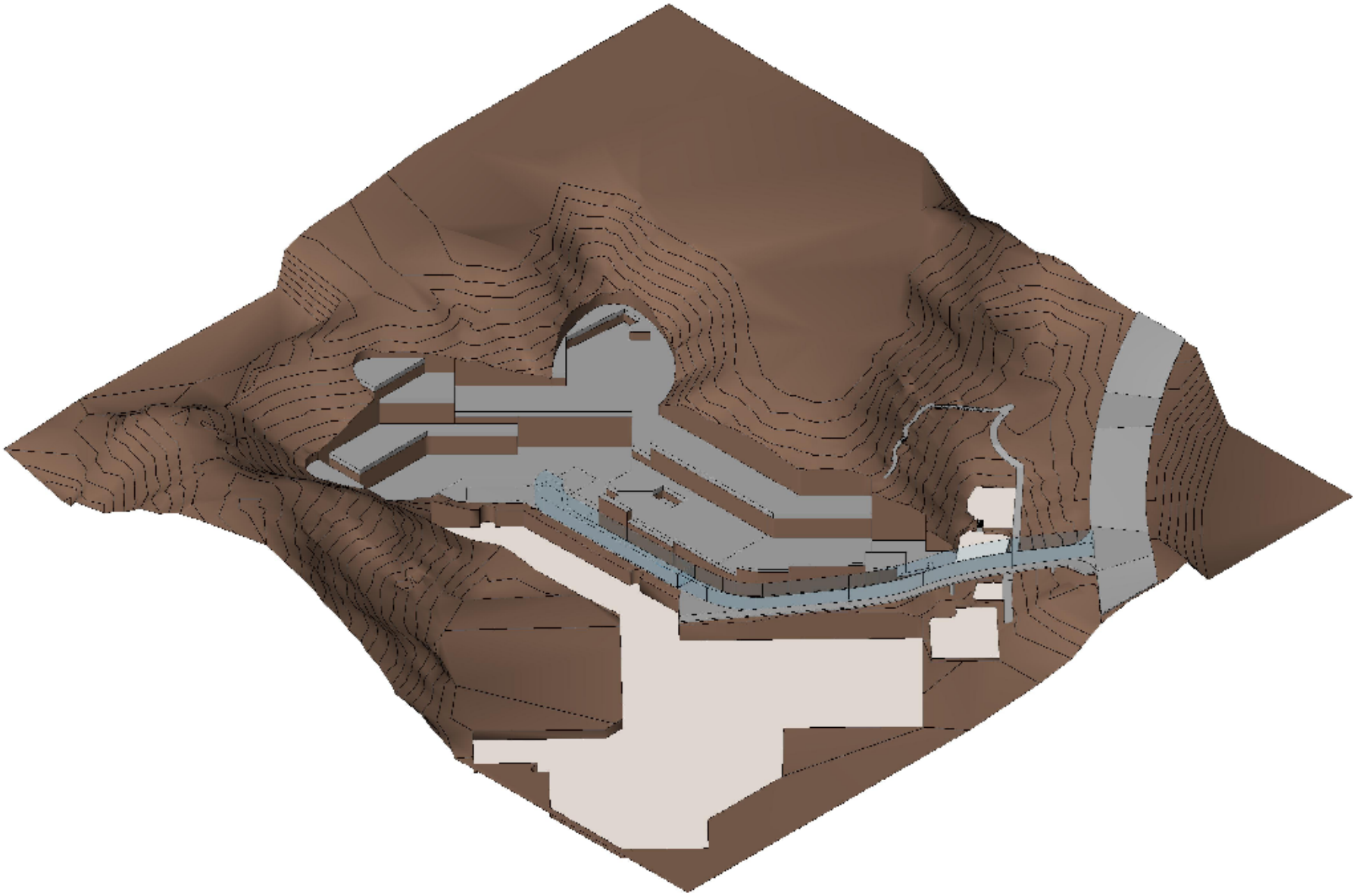


可研通設計平台
網上整合佈置,收益,景觀,成本,等等數據

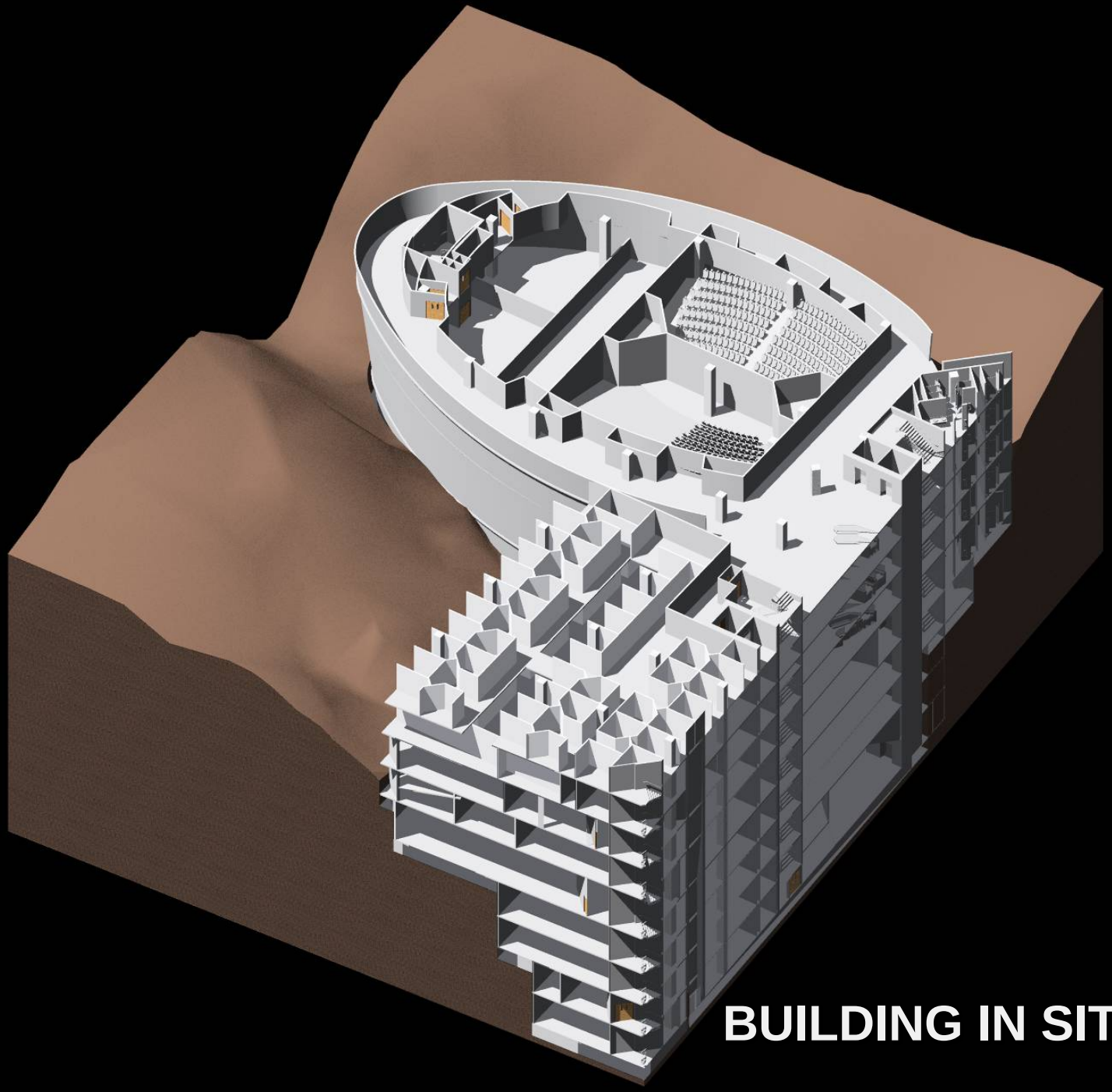

Price Range HK$ per ft2
<4000
4000-4500
4500-5000
5000-5500
5500-6000
6000-6500
6500-7000
7000-7500
7500-8000
8000-8500
8500-9000
ue Analysis
ft2 | Area | Price / Flat
3 | 66 | $3,363,000
3 | 50 | $2,279,000
15780 | $1,010,820,000
L.R.T. RESERVE WITH POSSIBLE NON-RESIDENTIAL DEVELOPMENT ABOVE



可研通設計平台
網上整合佈置,收益,景觀,成本,等等數據



TOPOGRAPHY HANDLING



BUILDING IN SITE CONTEXT

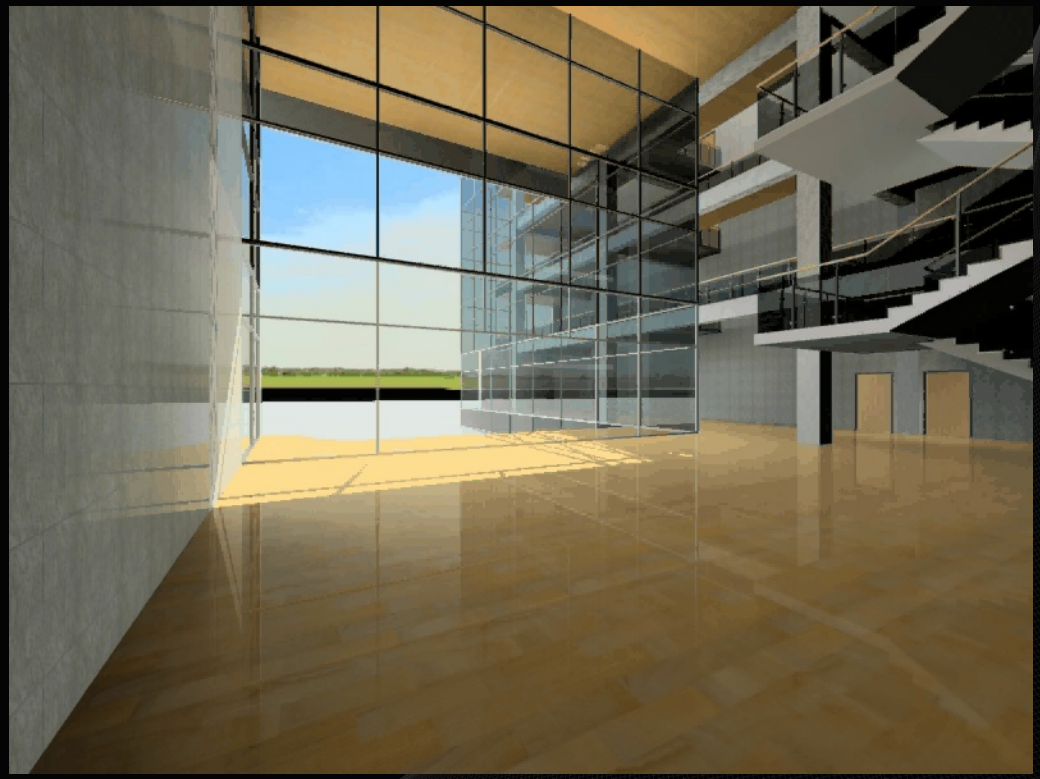
VISUALIZATION & DRAWING PRODUCTION

PERSPECTIVE

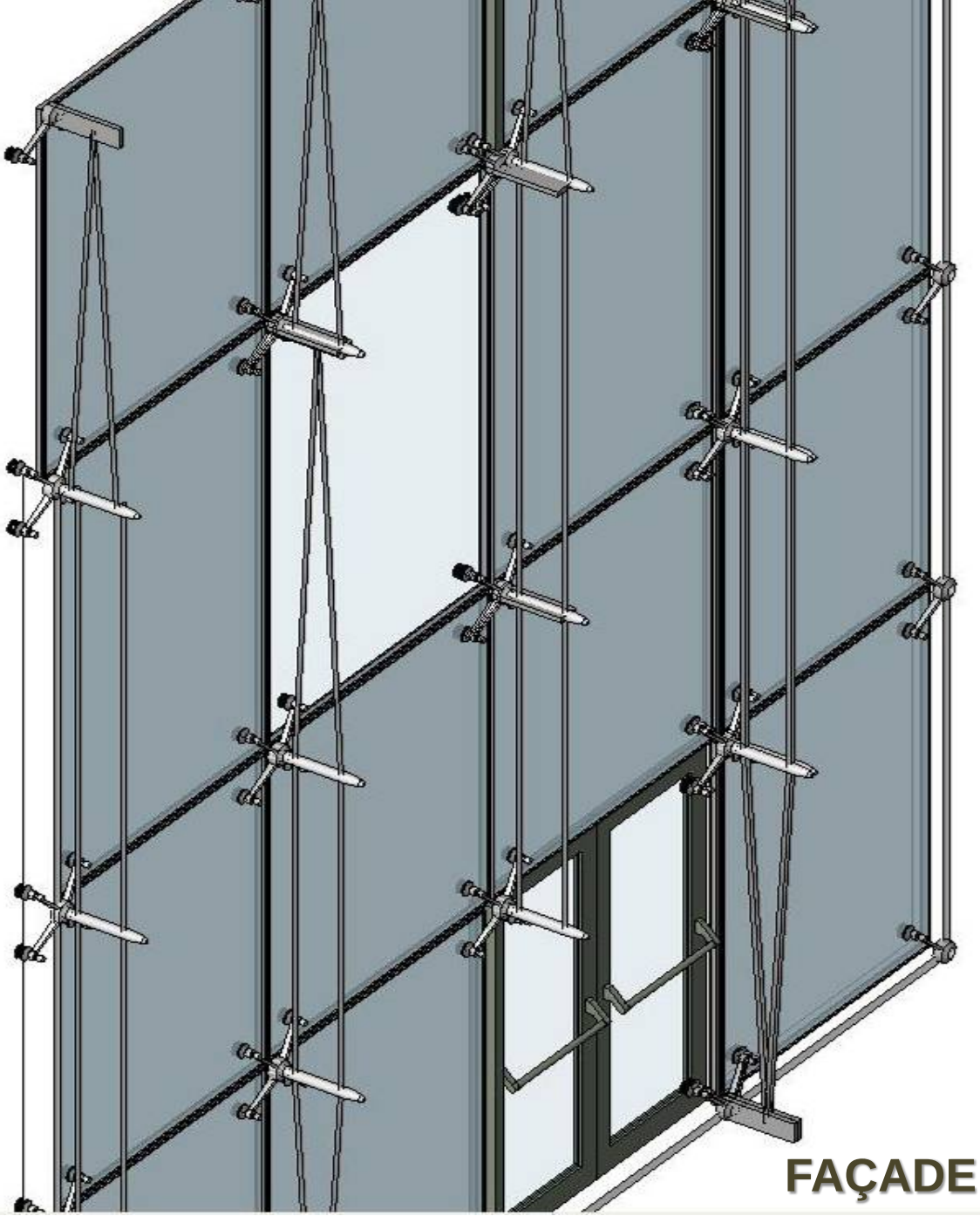
VISUALIZATION & PRODUCTION

VISUALIZATION & PRODUCTION

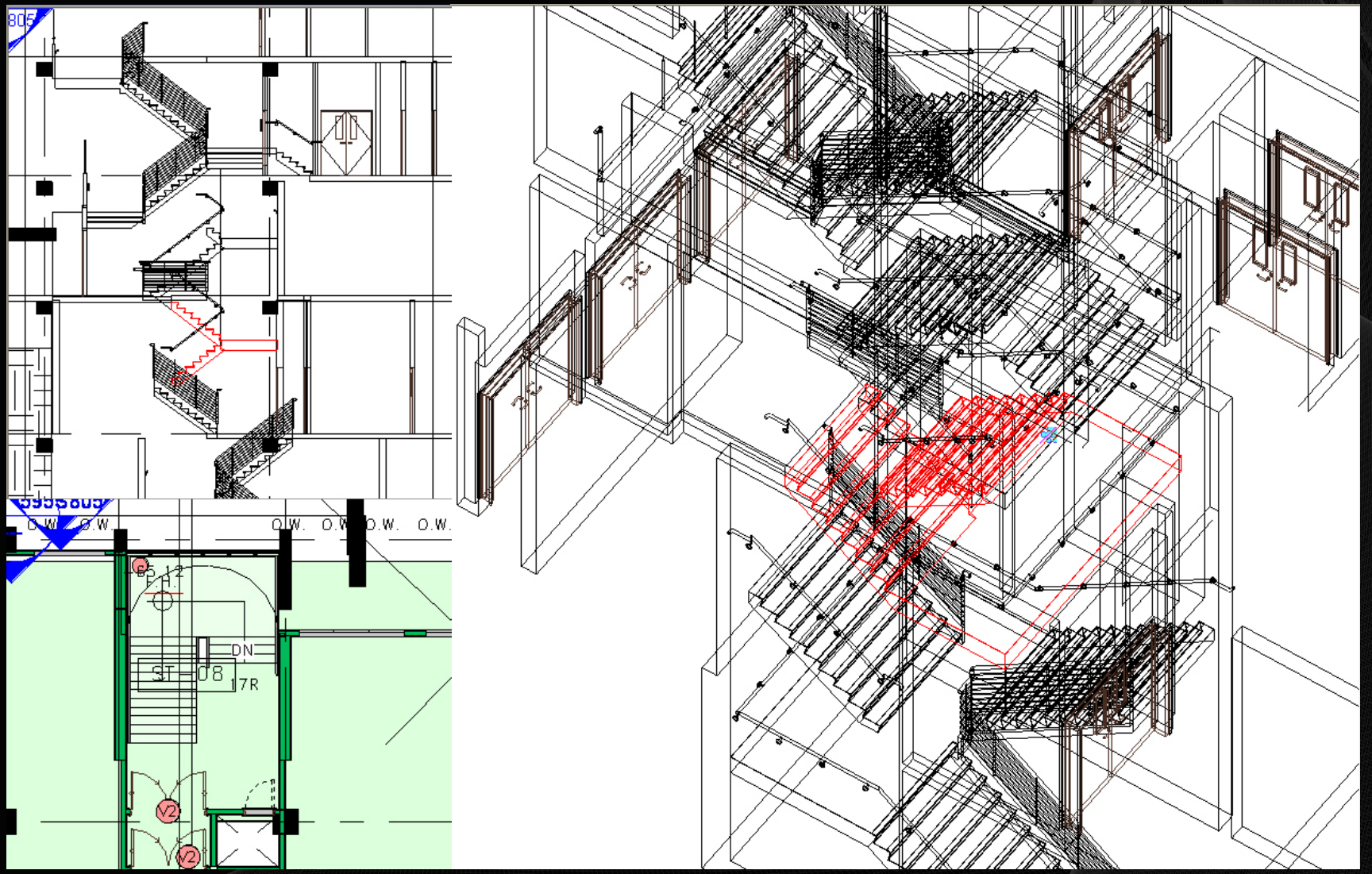
VISUALIZATION & PRODUCTION



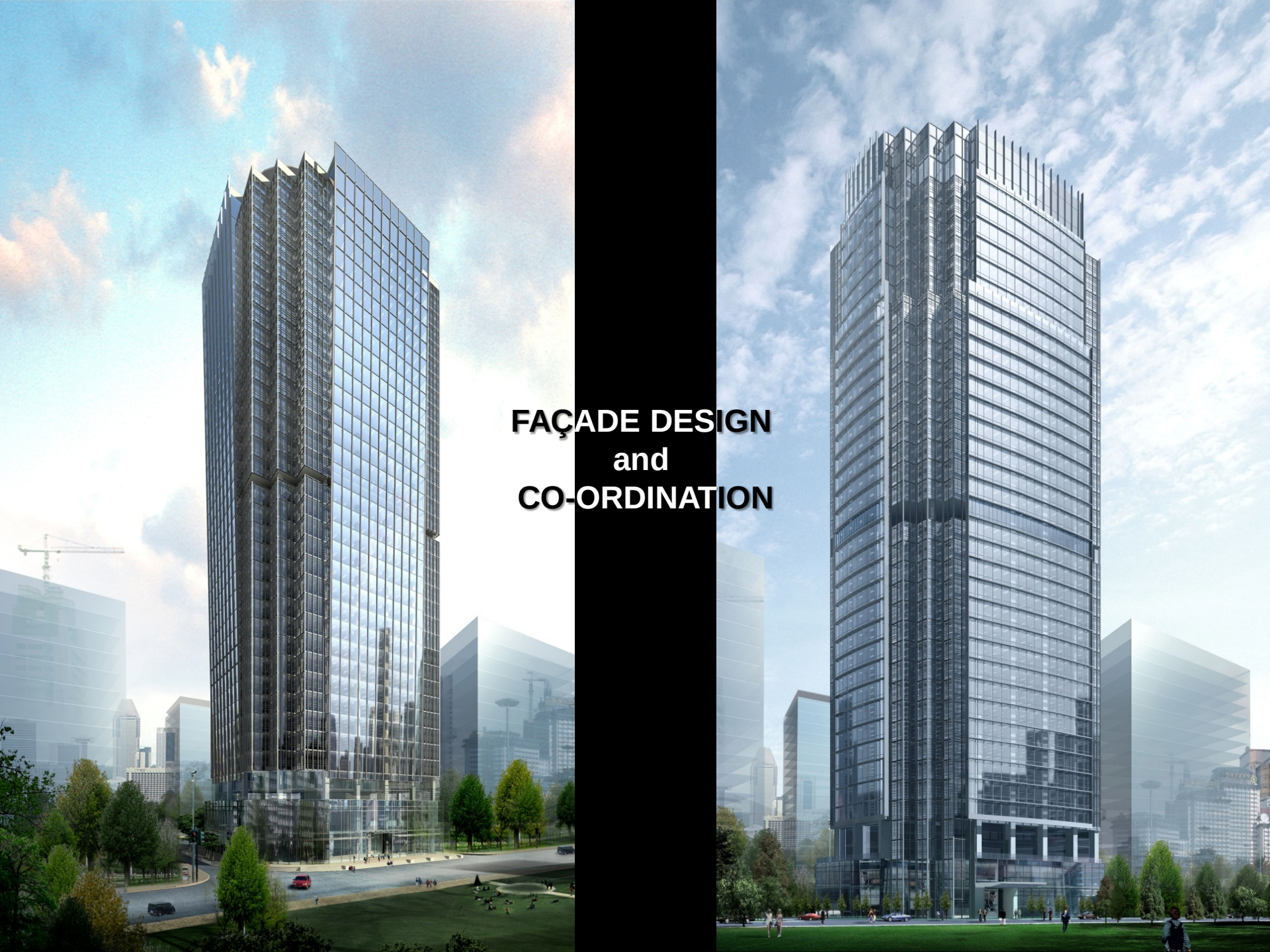
VISUALIZATION



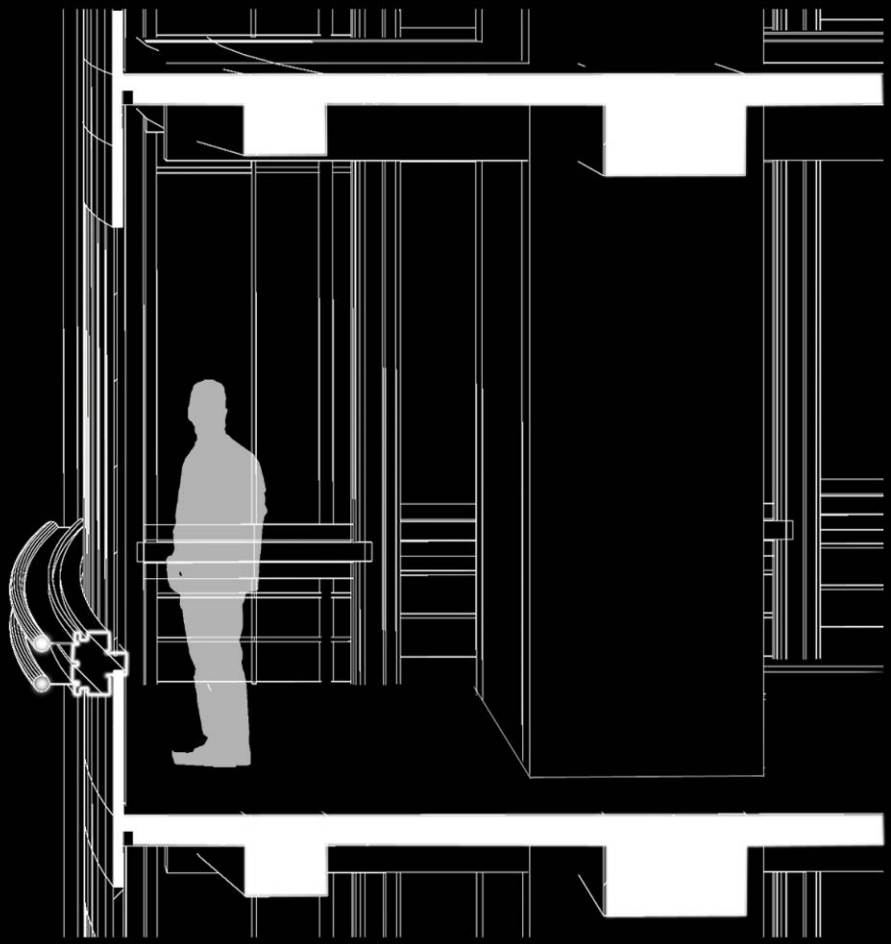
FAÇADE PANEL DESIGN



VERTICAL CO-ORDINATION

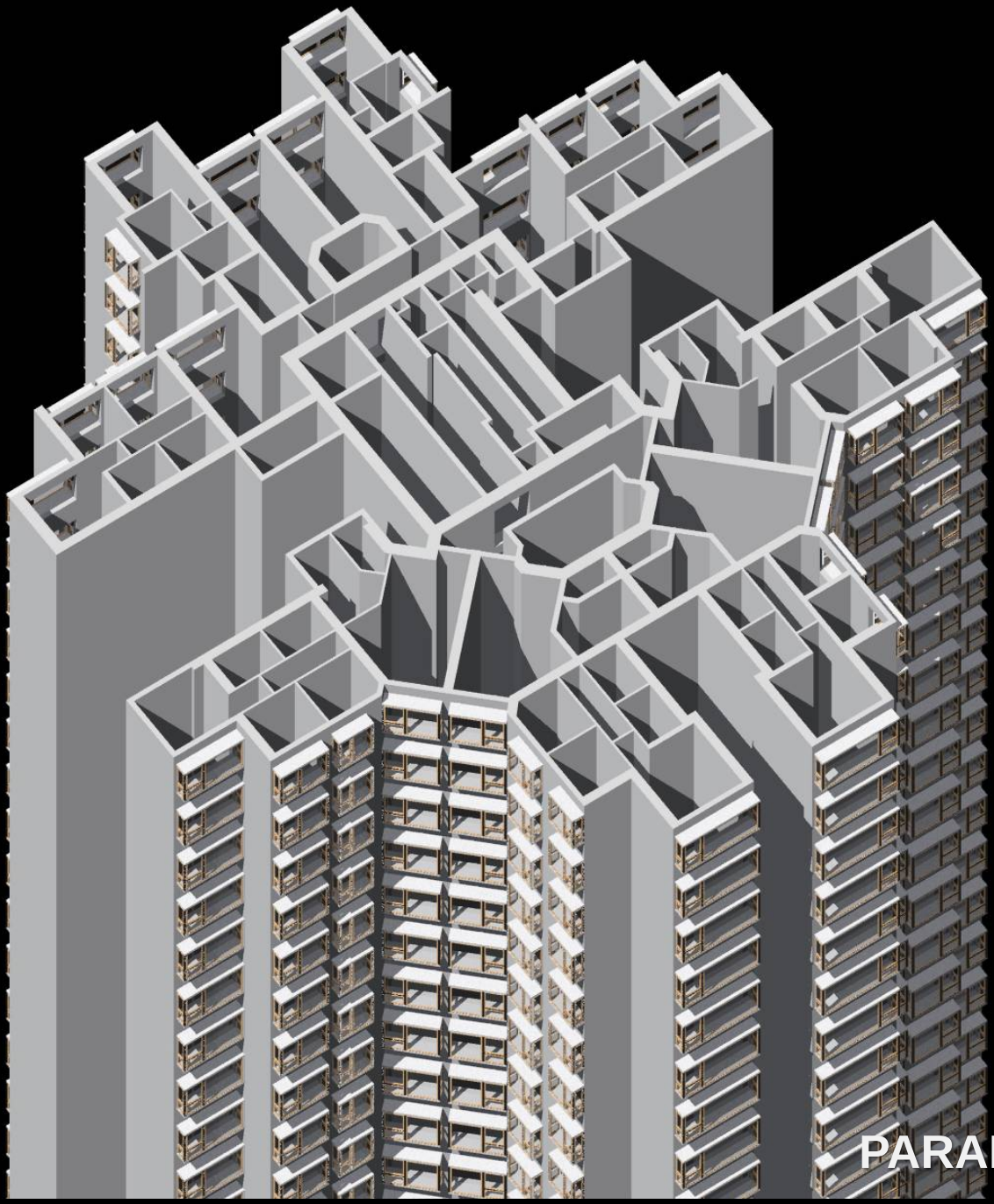


FAÇADE DESIGN
and
CO-ORDINATION



FAÇADE DESIGN and CO-ORDINATION

REPETITIONS vs VARIATIONS



PARAMETRIC MODELLING

File Edit View Modeling Drafting Site Tools Settings Window Help

Move Copy Rotate Array Mirror Group

Plane Demolish Align Split Trim Offset

Family

Modify
Family Typ
Dimension
Model Lines
Symbolic Lir
Opening...
Ref Plane
Reference L
Control
Text
Model Text
Section
Component
Symbol
Detail Comp
Solid Form
Void Form
Load into Pr

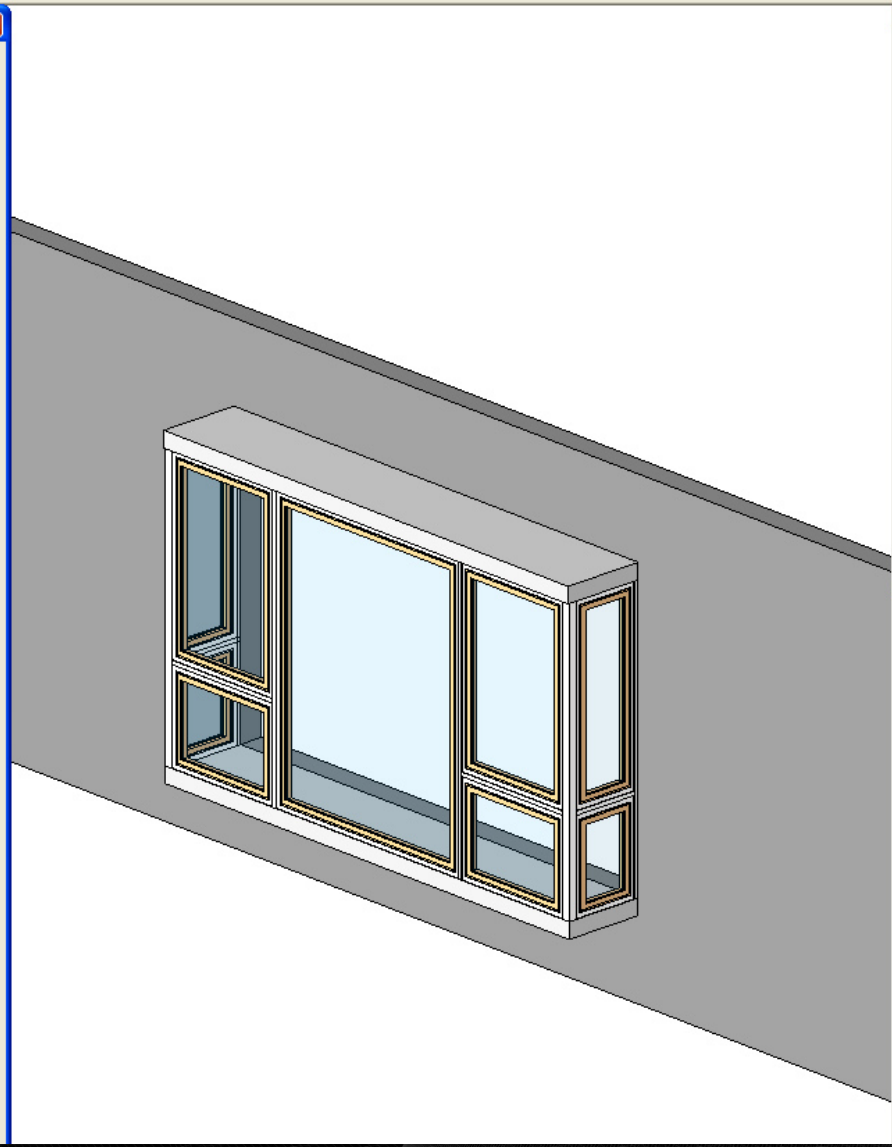
Family Types

Name: AED-Bay Window

Parameter	Value	Formula
Lslab Overhang_Right	0.0	=
Lslab Overhang_Left	0.0	=
Lslab Overhang_Dept	0.0	=
Left Window Width	800.0	=
Height	1800.0	=Wall Height - (Openning Offset *
Width	3000.0	=
Bay Depth	500.0	=
Rough Width		=
Rough Height		=
Identity Data		
IFC Parameters		
Operation		=
Other		
Vmullion Edge	12.5	=Middle Vmullion Thickness / 2
Uslab_Top	2500.0	=Uslab_Bottom + Slab Thickness
Uslab_Bottom	2400.0	=Wall Height - Openning Offset
Sash Offset	70.0	=
Right Window	☑	=Right Window Width > 0 mm
Openning Offset	600.0	=Window Offset + Slab Thickness
Open Window Middle	593.8	=(Uslab_Bottom - Hmullion_Top) /
Lslab_Top	600.0	=Openning Offset
Lslab_Bottom	500.0	=Lslab_Top - Slab Thickness
Left Window	☑	=Left Window Width > 0 mm
Hmullion_Top	1212.5	=Middle Mullion Height + Openning
Hmullion_Bottom	1187.5	=Middle Mullion Height + Openning
Hmullion Edge	12.5	=Middle Hmullion Thickness / 2
Glass Offset	65.0	=65 mm
Glass Height_Top	2335.0	=Uslab_Bottom - Glass Offset
Glass Height_Mtop	1122.5	=Hmullion_Bottom - Glass Offset
Glass Height_MBotto	1277.5	=Hmullion_Top + Glass Offset
Glass Height_Bottom	665.0	=Lslab_Top + Glass Offset

Family Types
New...
Rename...
Delete

Parameters
Add...
Modify...
Remove



File Edit View Modelling Drafting Site Tools Settings Window Help

Move Copy Rotate Array Mirror Group

Plane Demolish Align Split Trim Offset

Zoom

Family
Modify
Family Typ
Dimension
Model Lines
Symbolic Lir
Opening...
Ref Plane
Reference L
Control
Text
Model Text
Section
Component
Symbol
Detail Comp
Solid Form
Void Form
Load into Pr

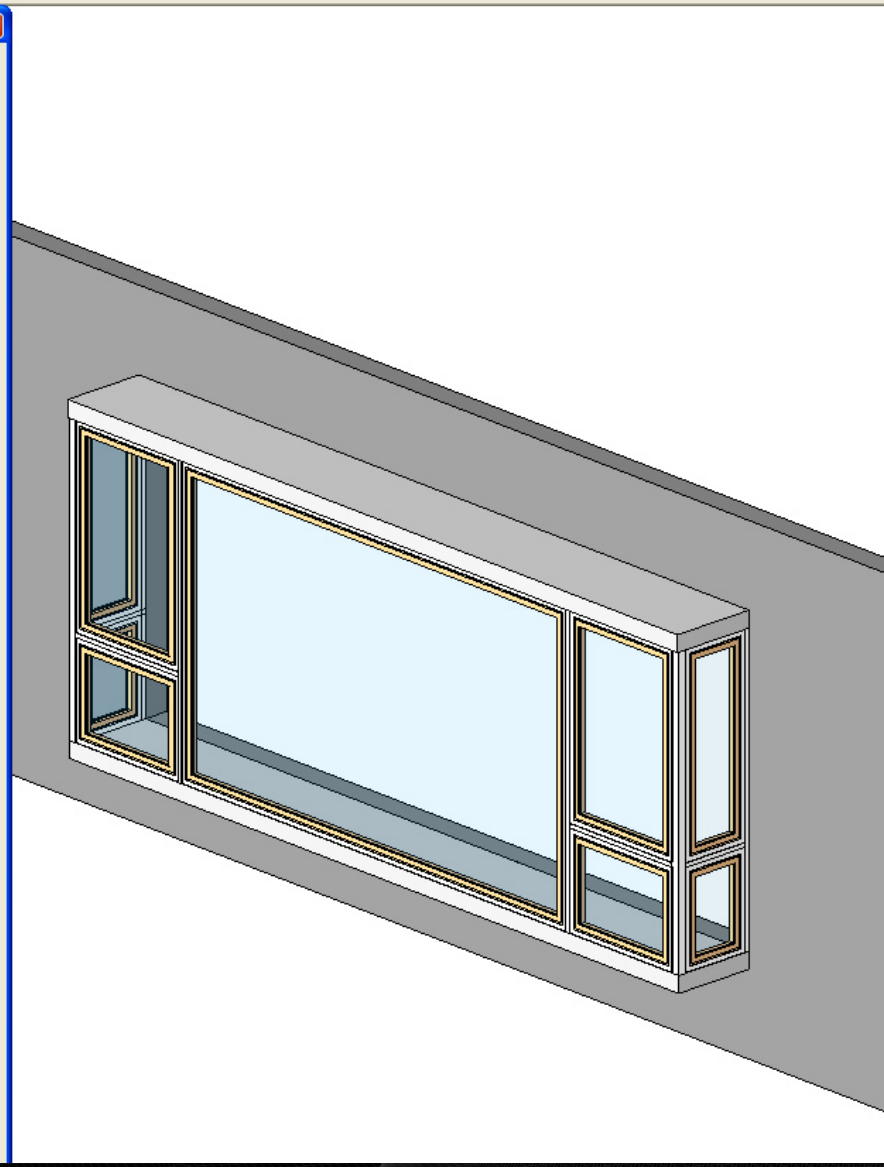
Family Types

Name: AED-Bay Window

Parameter	Value	Formula
Lslab Overhang_Right	0.0	=
Lslab Overhang_Left	0.0	=
Lslab Overhang_Dept	0.0	=
Left Window Width	800.0	=
Height	1800.0	=Wall Height - (Openning Offset *
Width	4500.0	=
Bay Depth	500.0	=
Rough Width		=
Rough Height		=
Identity Data		
IFC Parameters		
Operation		=
Other		
Vmullion Edge	12.5	=Middle Vmullion Thickness / 2
Uslab_Top	2500.0	=Uslab_Bottom + Slab Thickness
Uslab_Bottom	2400.0	=Wall Height - Openning Offset
Sash Offset	70.0	=
Right Window	☑	=Right Window Width > 0 mm
Openning Offset	600.0	=Window Offset + Slab Thickness
Open Window Middle	593.8	=(Uslab_Bottom - Hmullion_Top) /
Lslab_Top	600.0	=Openning Offset
Lslab_Bottom	500.0	=Lslab_Top - Slab Thickness
Left Window	☑	=Left Window Width > 0 mm
Hmullion_Top	1212.5	=Middle Mullion Height + Openning
Hmullion_Bottom	1187.5	=Middle Mullion Height + Openning
Hmullion Edge	12.5	=Middle Hmullion Thickness / 2
Glass Offset	65.0	=65 mm
Glass Height_Top	2335.0	=Uslab_Bottom - Glass Offset
Glass Height_Mtop	1122.5	=Hmullion_Bottom - Glass Offset
Glass Height_MBotto	1277.5	=Hmullion_Top + Glass Offset
Glass Height_Bottom	665.0	=Lslab_Top + Glass Offset

Family Types
New...
Rename...
Delete

Parameters
Add...
Modify...
Remove



1

Design visualization

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Quantity taking and preparation of Tender Document

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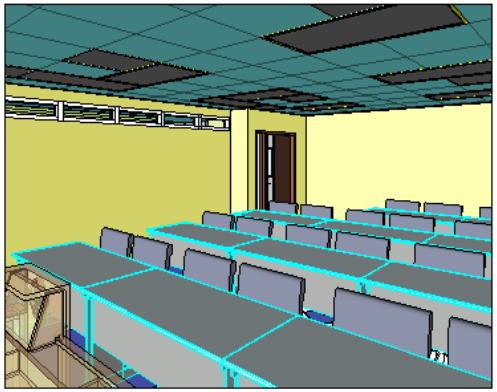
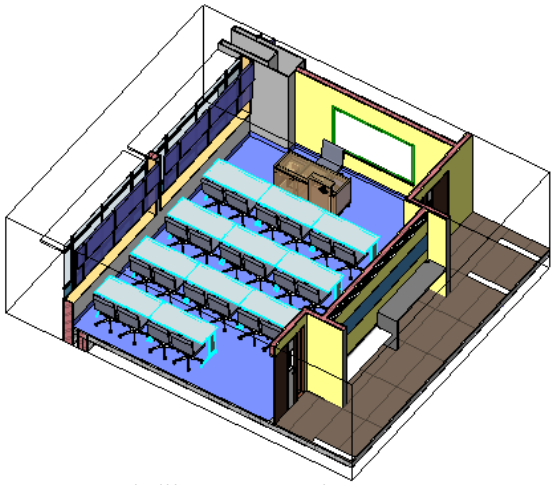
8

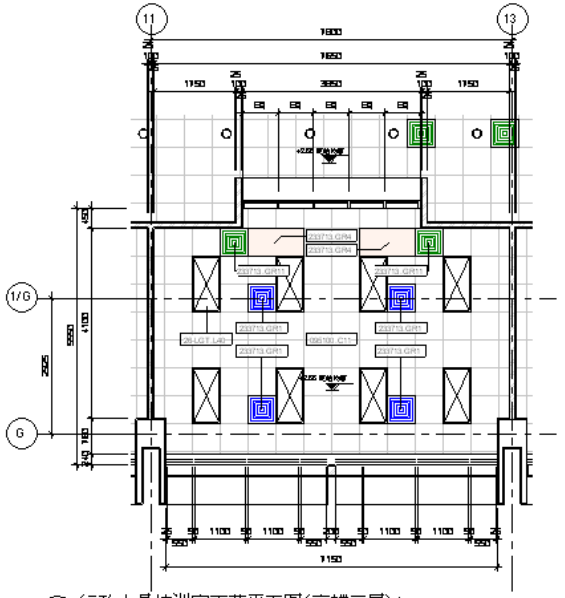
Complex Geometry



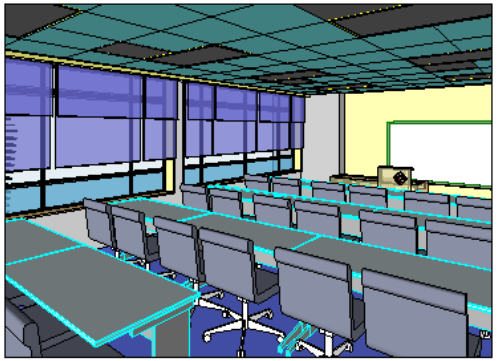
6 行政人员培訓室立体示意图2



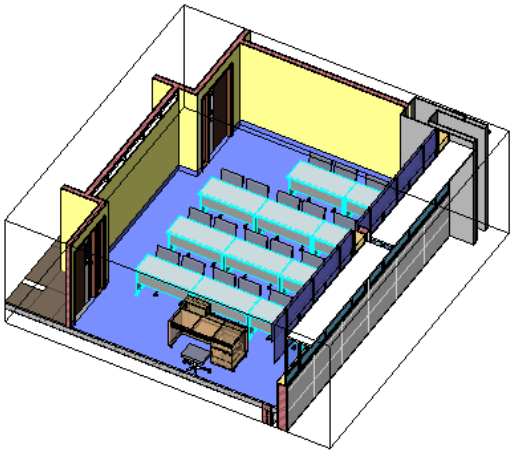
4 行政人员培训室立体剖面示意图2



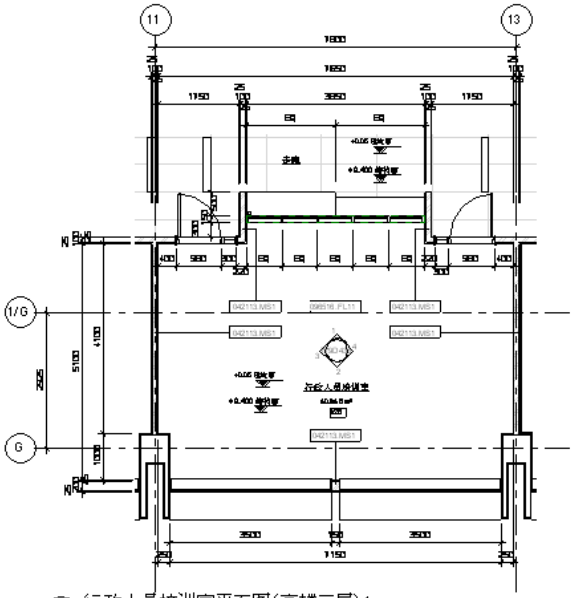
2 行政人员培训室天花平面图(高楼三层)1
1 : 50



5 行政人员培訓室立体示意图1

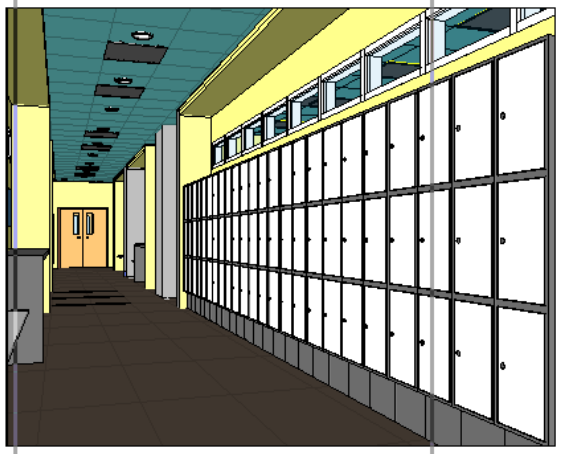


3 行政人员培训室立体剖面示意图1

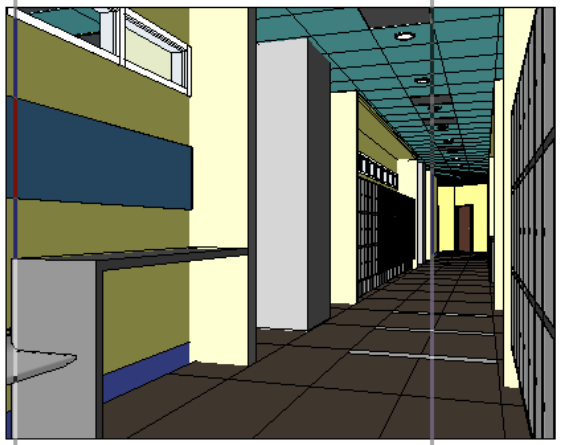


1 行政人员培训室平面图(高楼三层)1
1 : 50

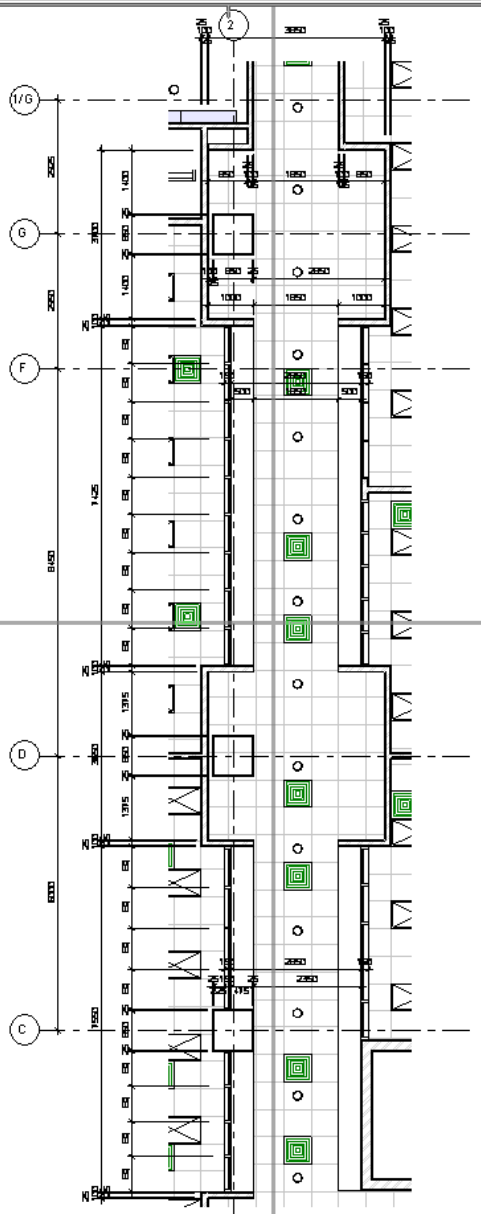
Drawing Type: S.D. SUBMISSION
B.D. Reference No.: GOVERNMENT_REFERENCE_NO.
F.S.D. Reference No.: GOVERNMENT_REFERENCE_NO.
Authorized By
AUTHORIZE PERSON
EXECUTIVE AREA
Notes
Rev. | Description | Issue Date | Initial
Originated by | Date | Drawn | Check | App.
Structural Engineer
BEAM
E & M
J.ROGER PRESTON
Q.S.
利比 RLB | Rider Levett Bucknall
Aedas
Aedas Ltd.
T +852 2881 1728
F +852 2520 6419
Client
THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學
Project
Drawing
行政人员培训室平面图(高楼三层)1
Project Number
Scale
1 : 50
Drawing Number
Rev.
REV.
Issue Status



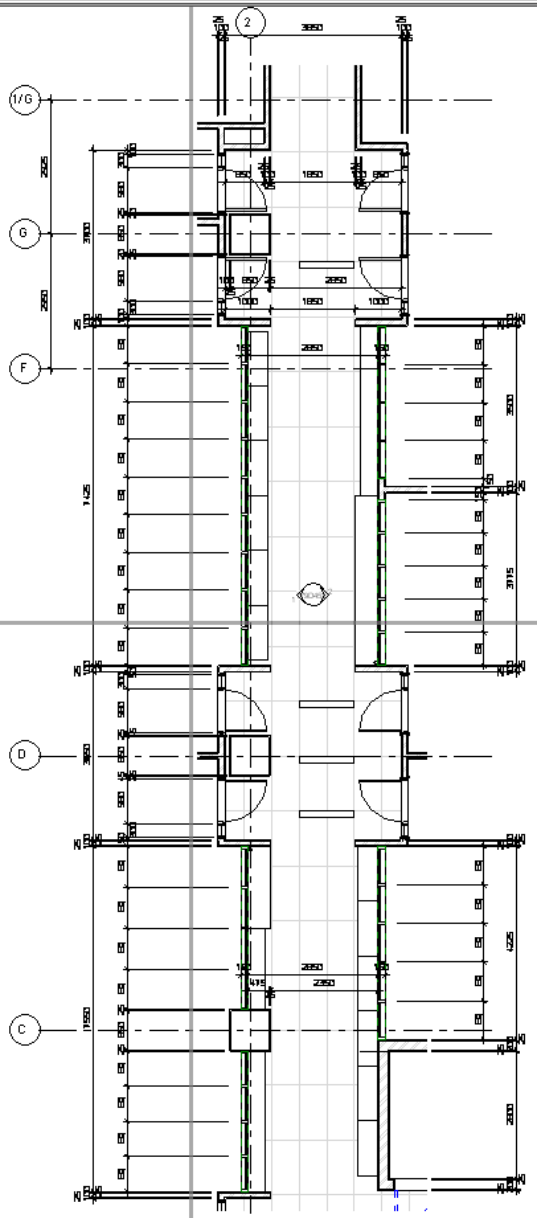
4 走廊立体示意图(低楼三至四层)2



3 走廊立体示意图(低楼三至四层)1



2 走廊天花平面图(低楼三至四层)
1 : 50



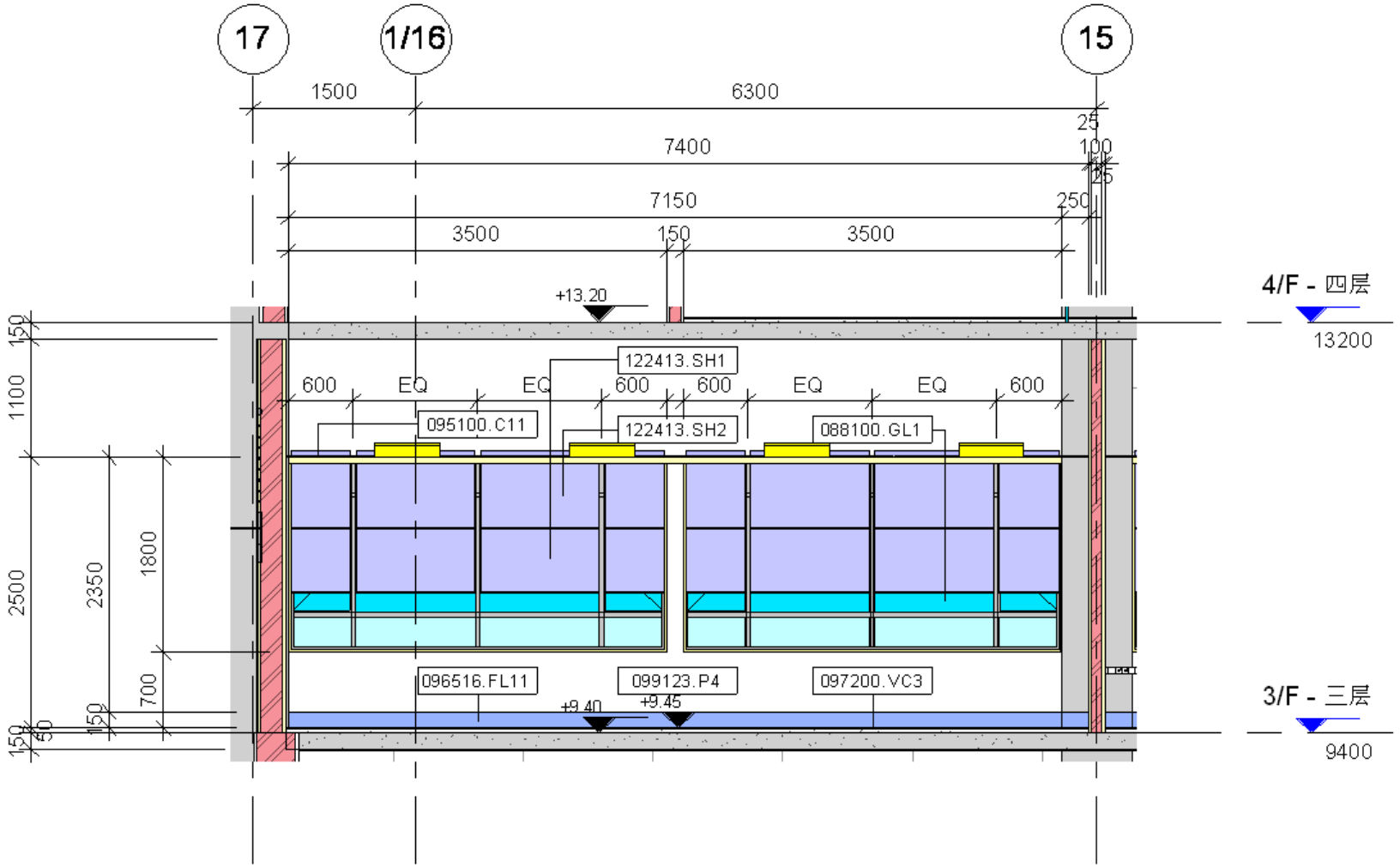
1 走廊平面图(低楼三至四层)
1 : 50

benaim

利比 RLB Rider Levett Bucknall

Aedas

THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學



2 行政人员培训室立面图(高楼三层)6

1 : 50

1

Design visualization

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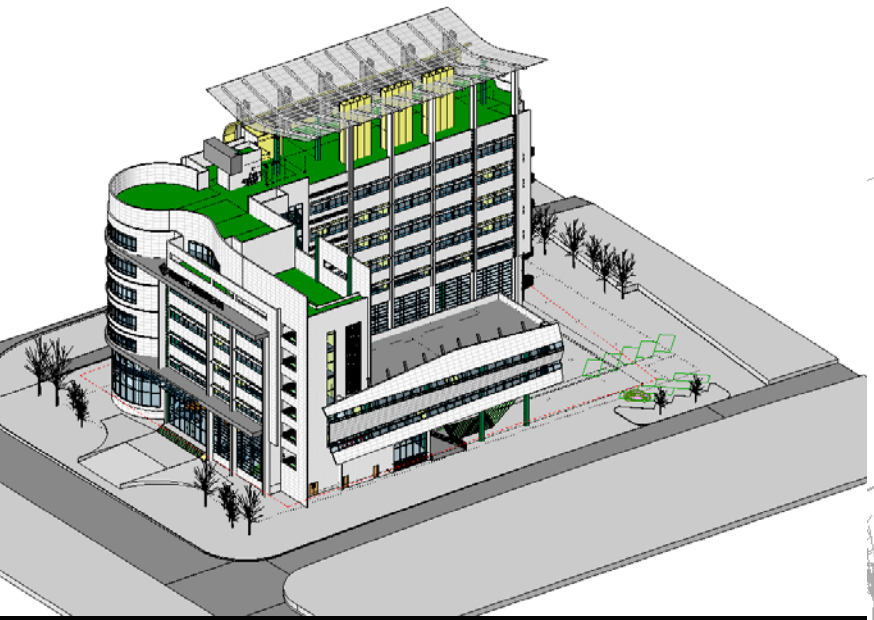
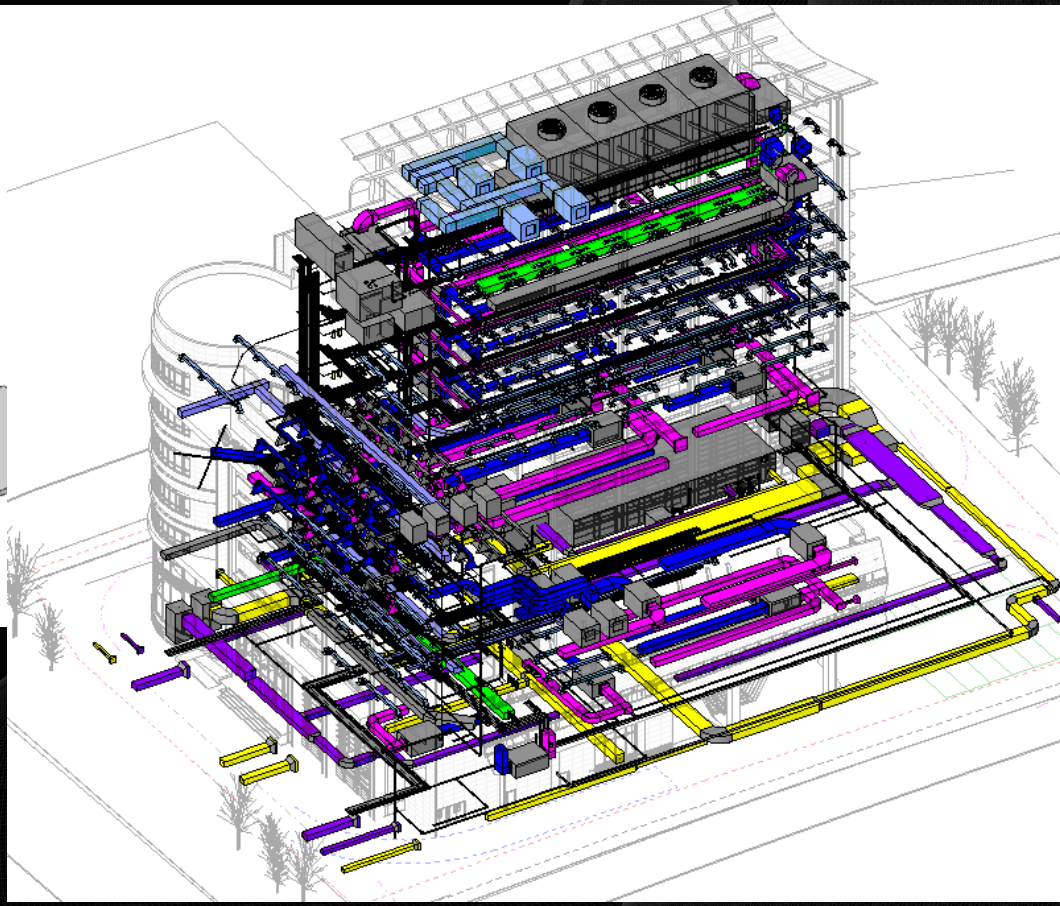
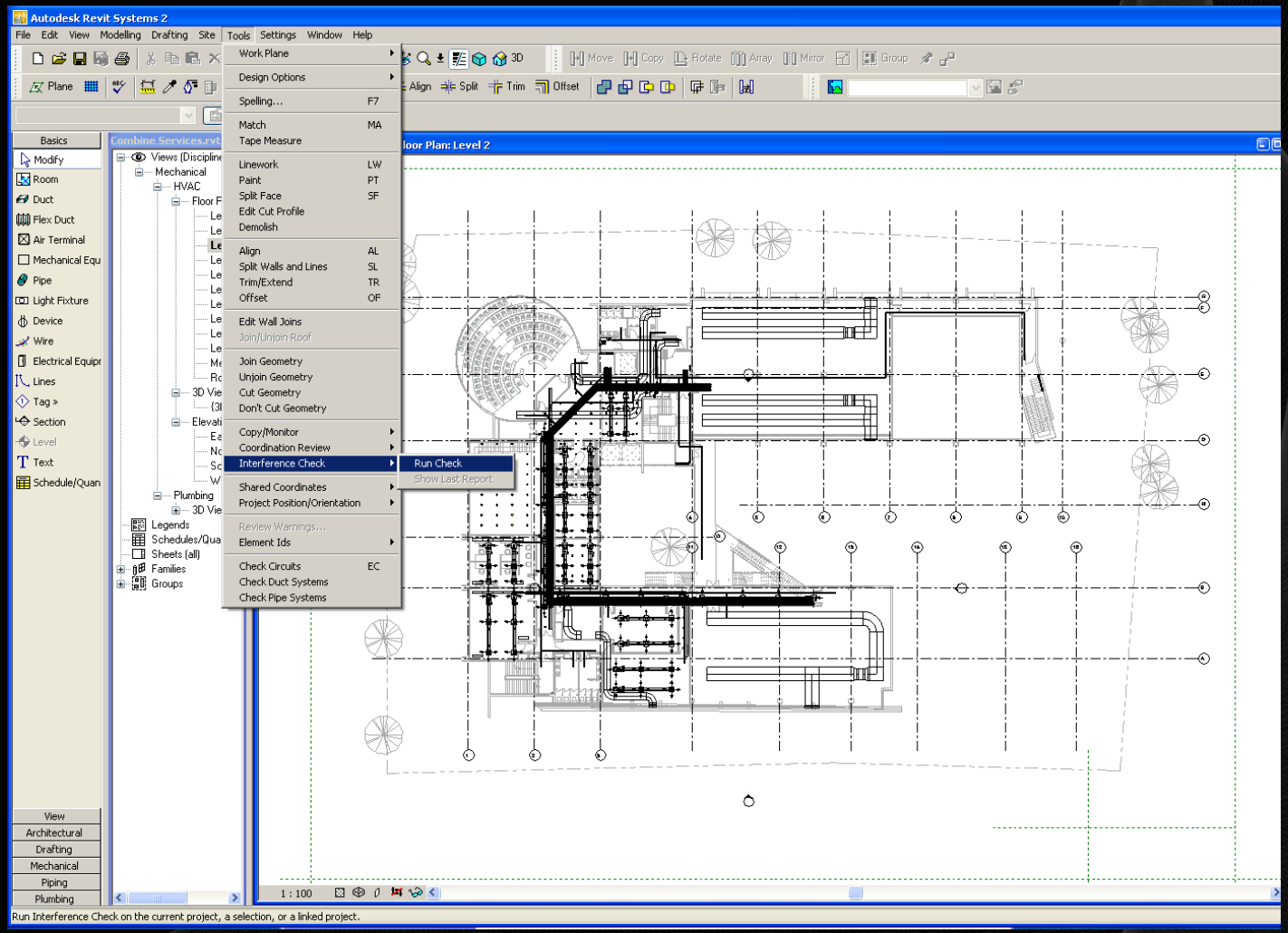


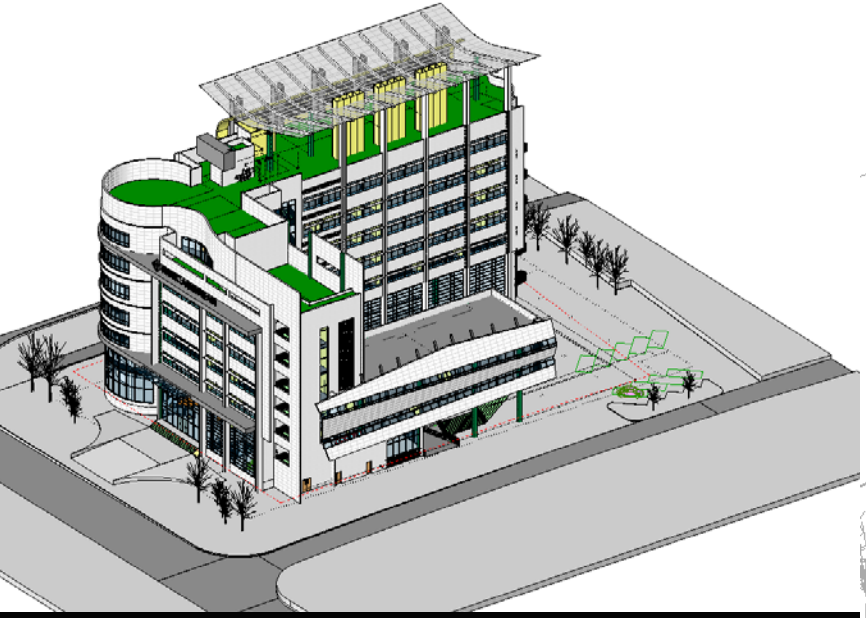


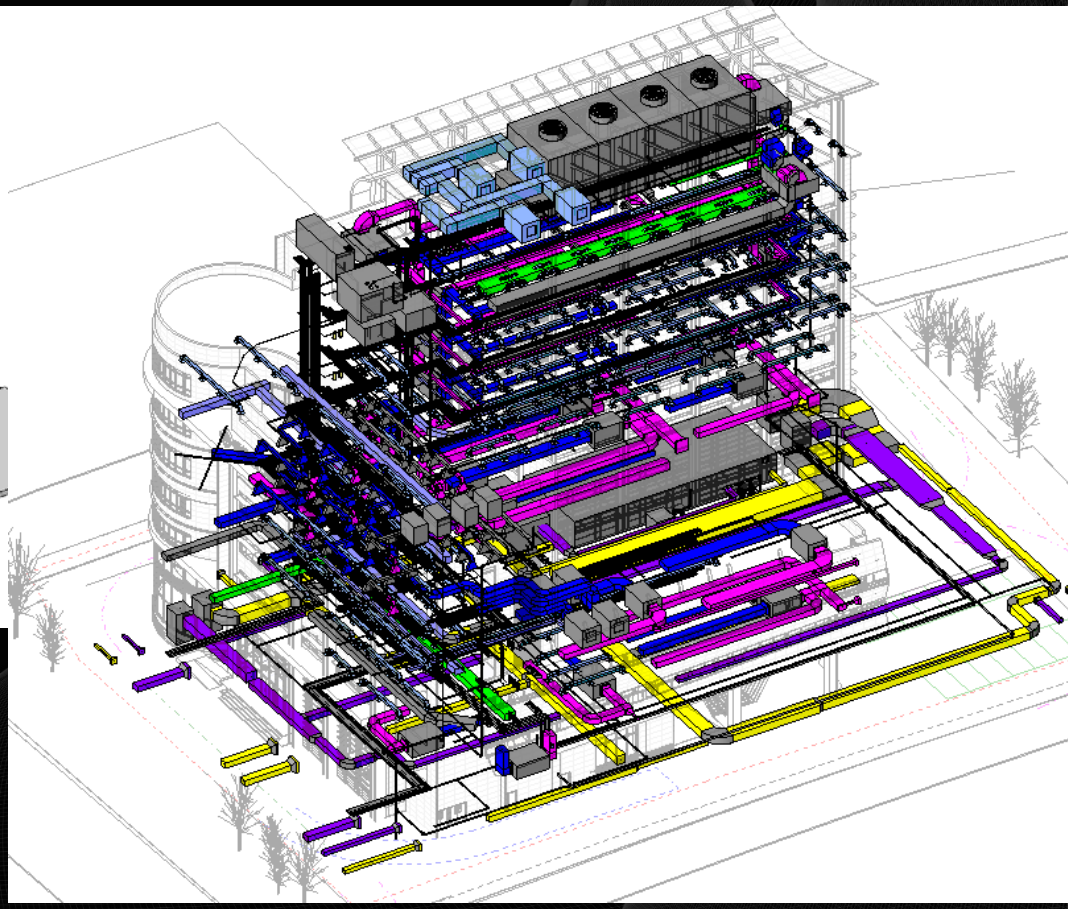
CO-ORDINATION / COLLABORATION

Work Flow – Establish BIM Models



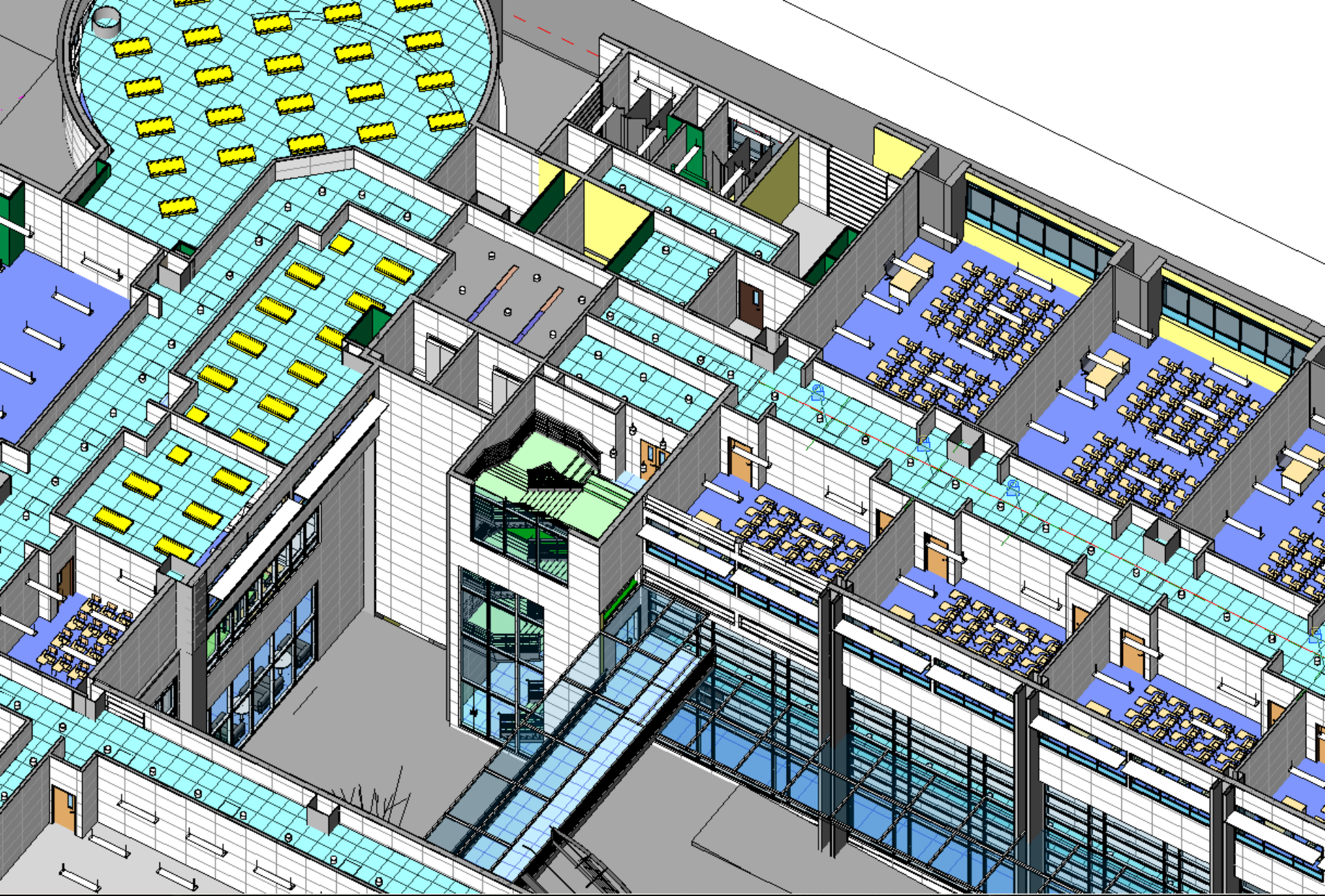
Work Flow – Clashes Report

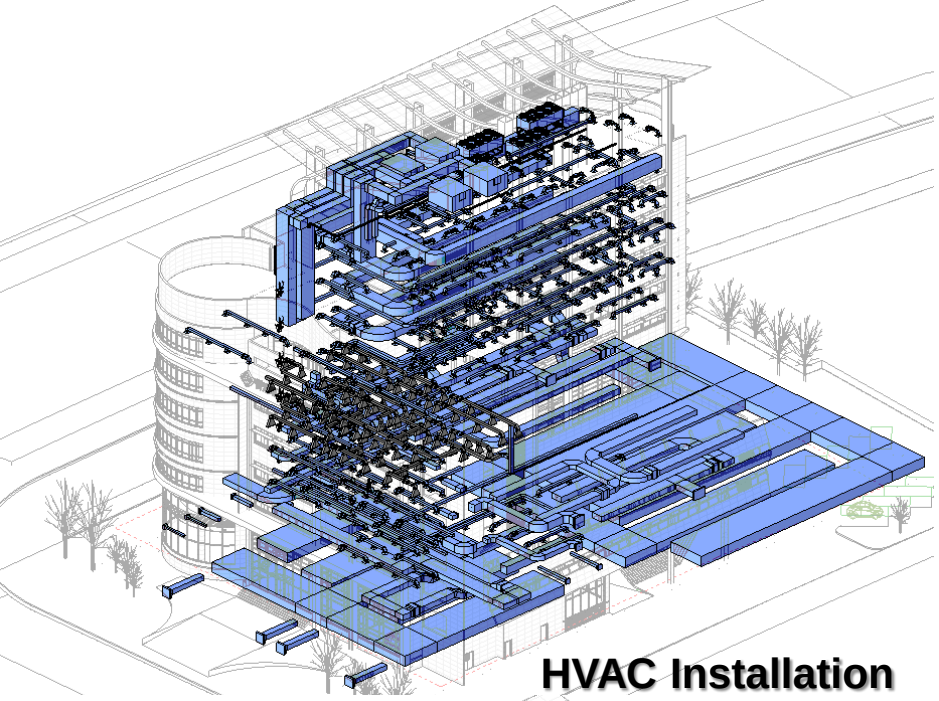




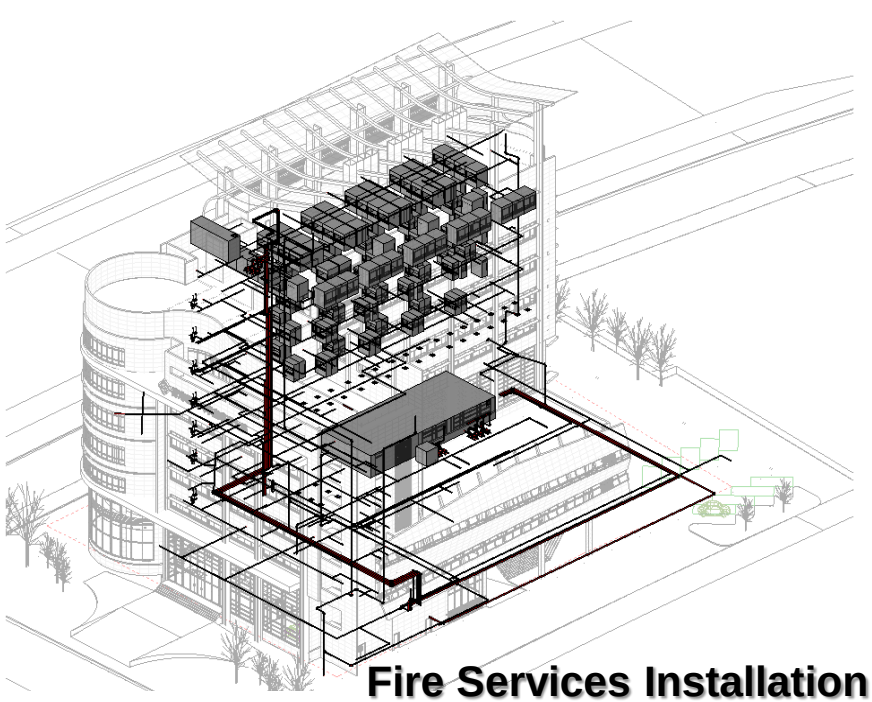
CO-ORDINATION / COLLABORATION

Work Flow – Establish BIM Models

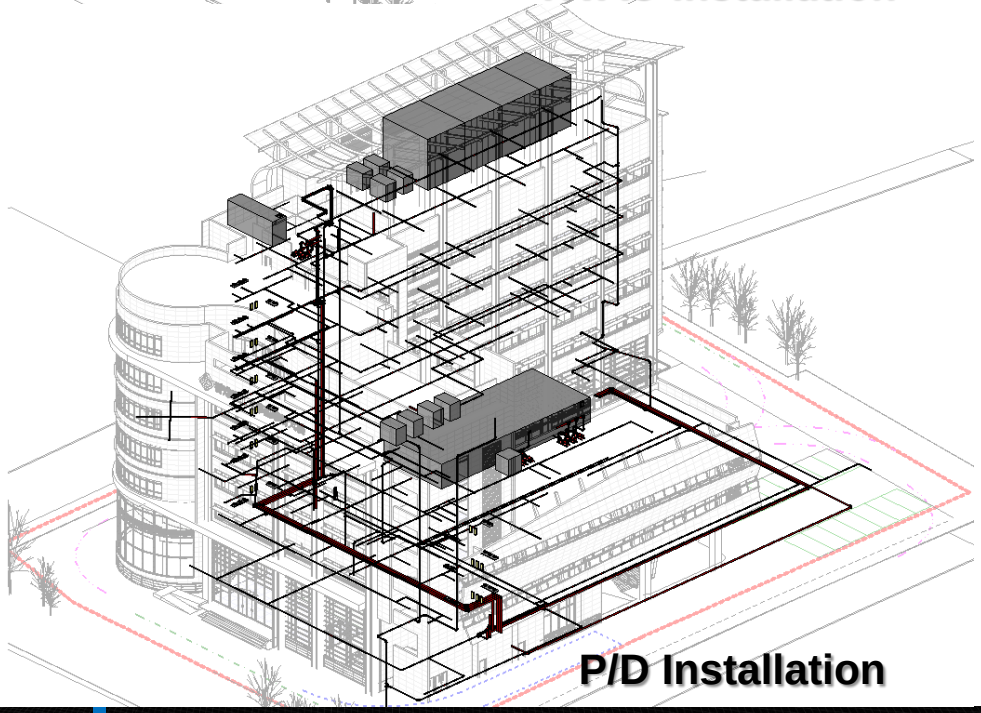




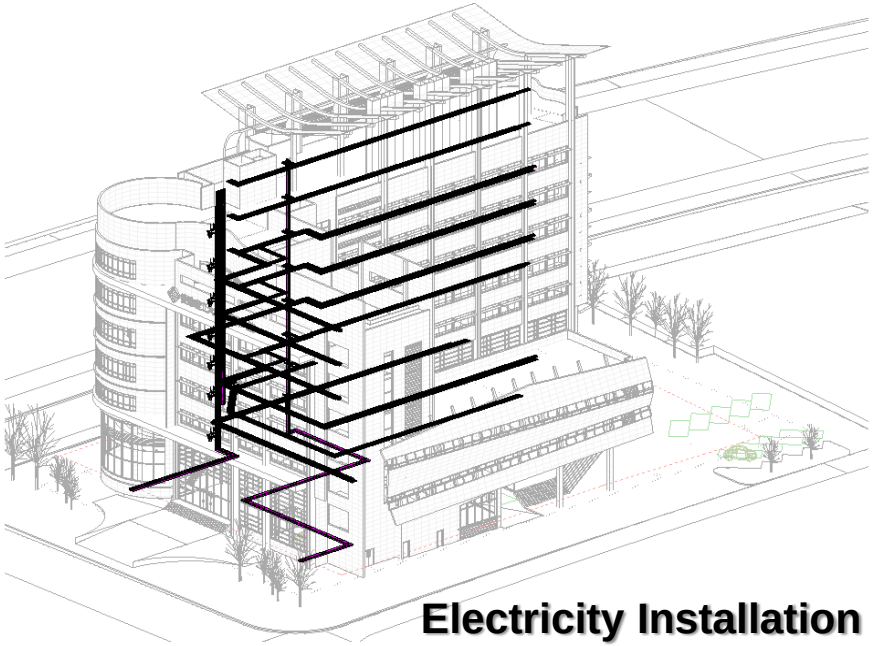
HVAC Installation



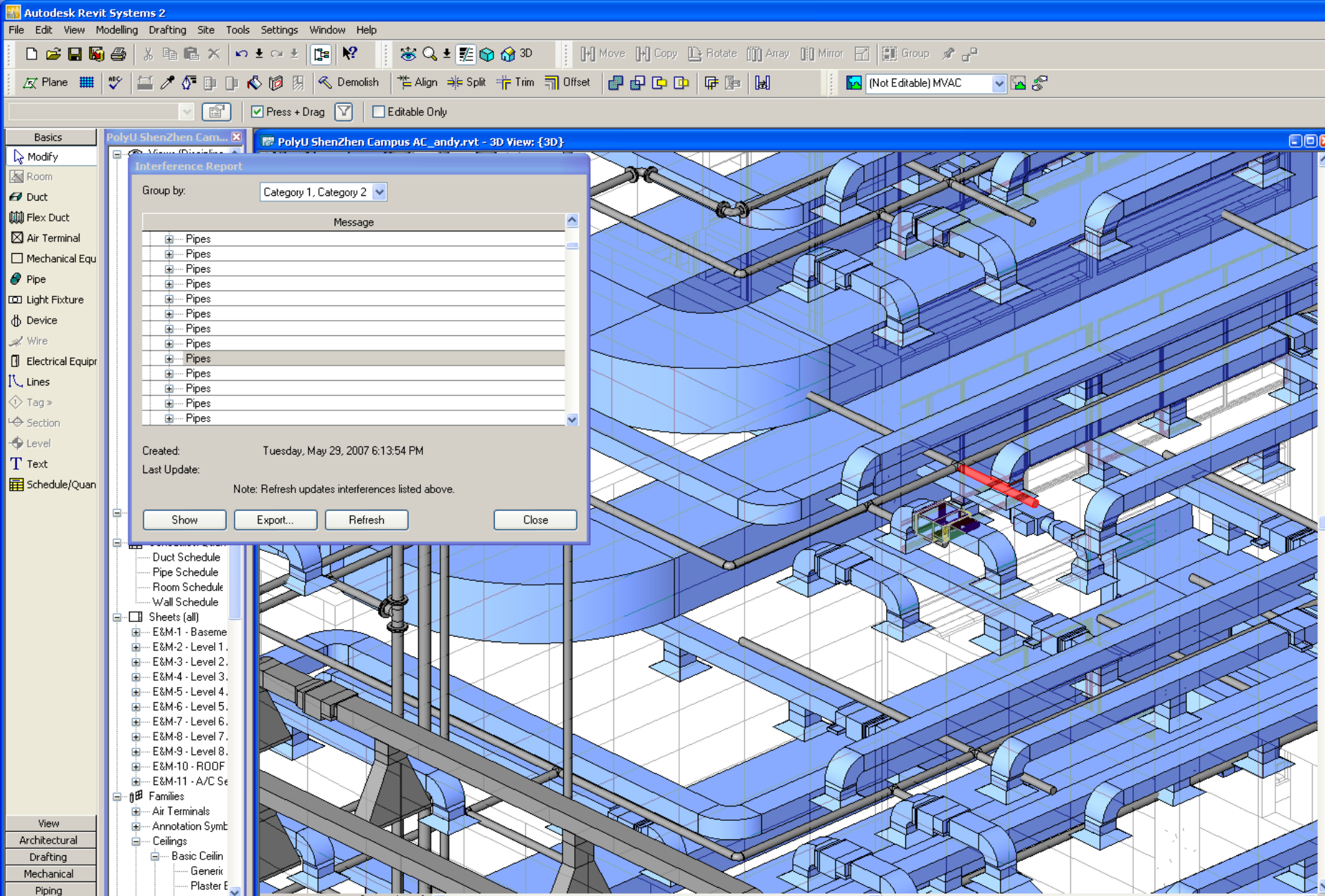
Fire Services Installation



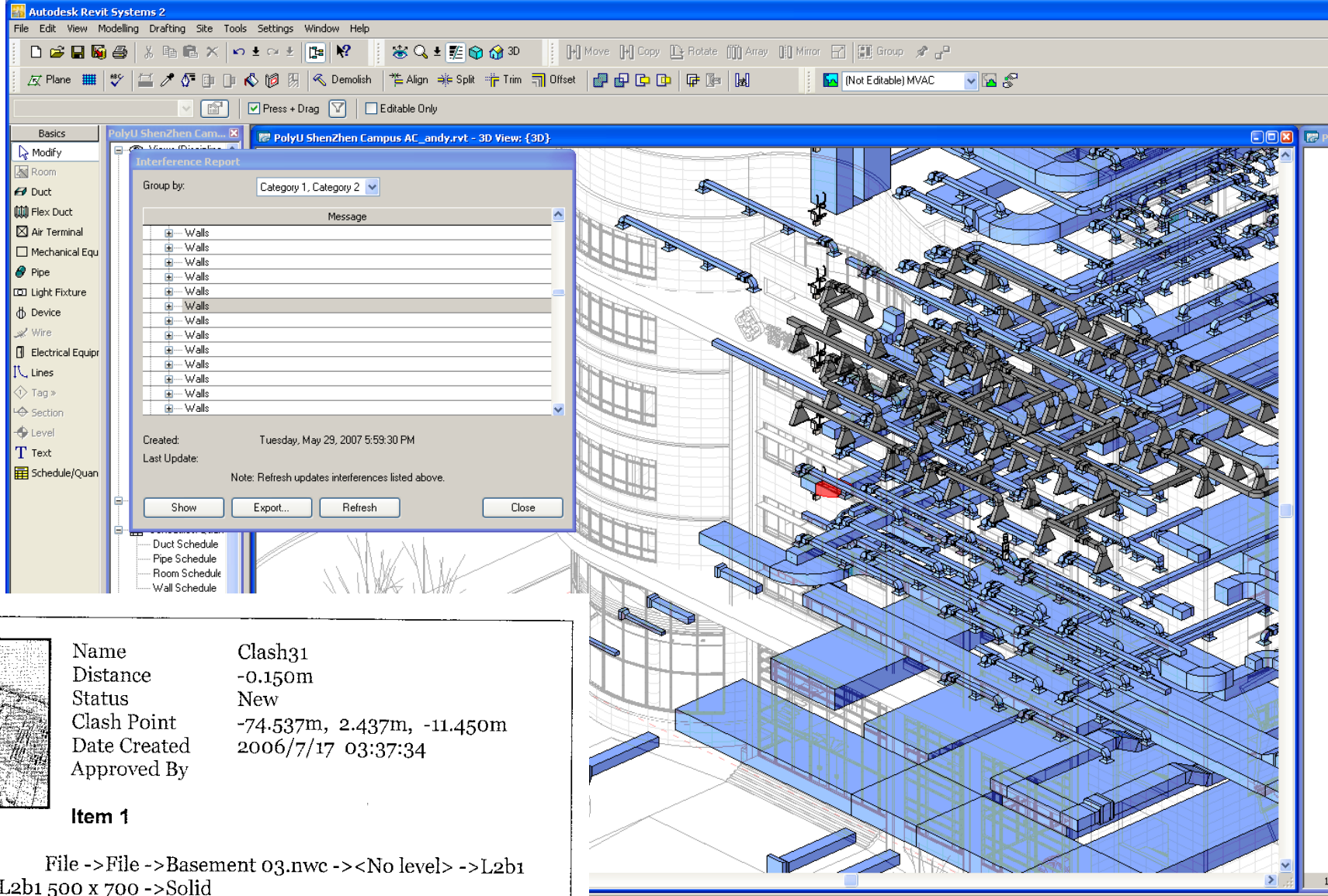
P/D Installation

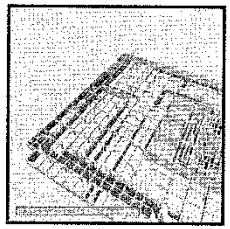


Electricity Installation



Work Flow – Clashes Report





Name	Clash31
Distance	-0.150m
Status	New
Clash Point	-74.537m, 2.437m, -11.450m
Date Created	2006/7/17 03:37:34
Approved By	

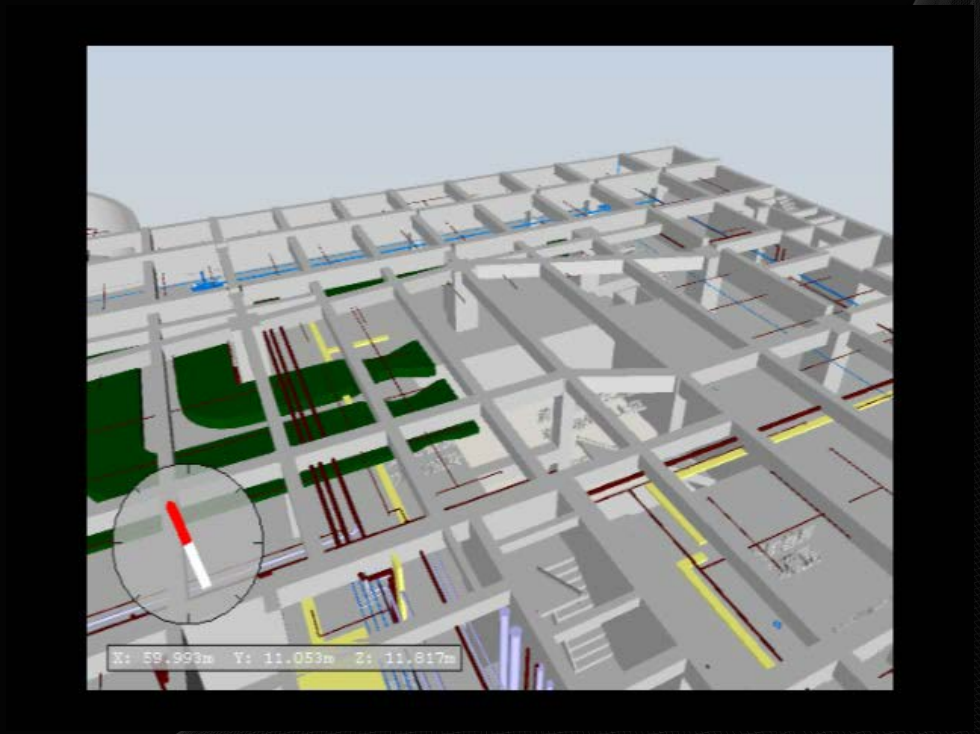
Item 1

Path File ->File ->Basement 03.nwc -><No level> ->L2b1 500 x 700 ->L2b1 500 x 700 ->Solid

Item 2

Entity Handle	2AD6
Path	File ->File ->B3HVAC_Duct.nwd ->H-Ductwork-G ->Duct

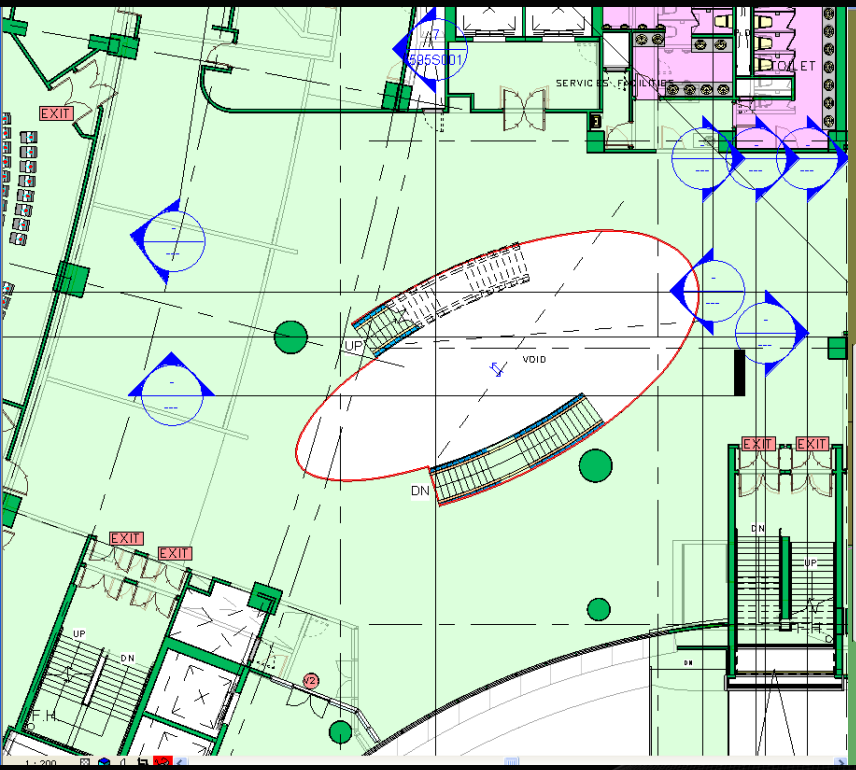
Work Flow – Clashes Report

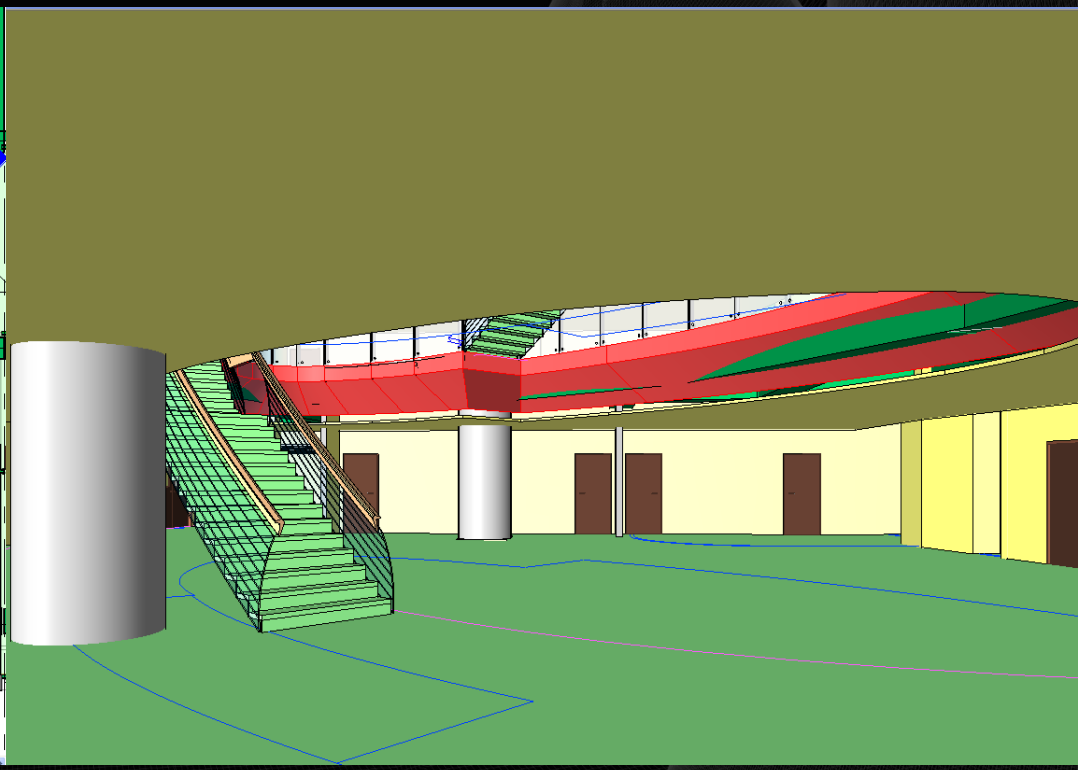


Work Flow - Clashes Identification Processes

		HVAC Ductwork	Chiller Water Pipe	Fire Services	P&D	Electrical	Total
B1		0	0	0	0	0	0
	B1	277	3	1172	-	3	1455
B1M		0	0	0	0	0	0
	B1M	106	10	687	-	3	806
B2		0	0	0	0	0	0
	B2	68	13	1973	-	81	2135
B3		0	0	0	0	0	0
	B3	120	1	1291	-	3	1415
Total		0	0	0	0	0	0
	Total	571	27	5123	-	90	5811

Results – No of Clashes
結果 – 碰撞數目


EXIT
SERVICE FACILITIES
TOILET
UP
VOID
DN
EXIT
EXIT
EXIT
EXIT
UP
DN
UP
DN



1

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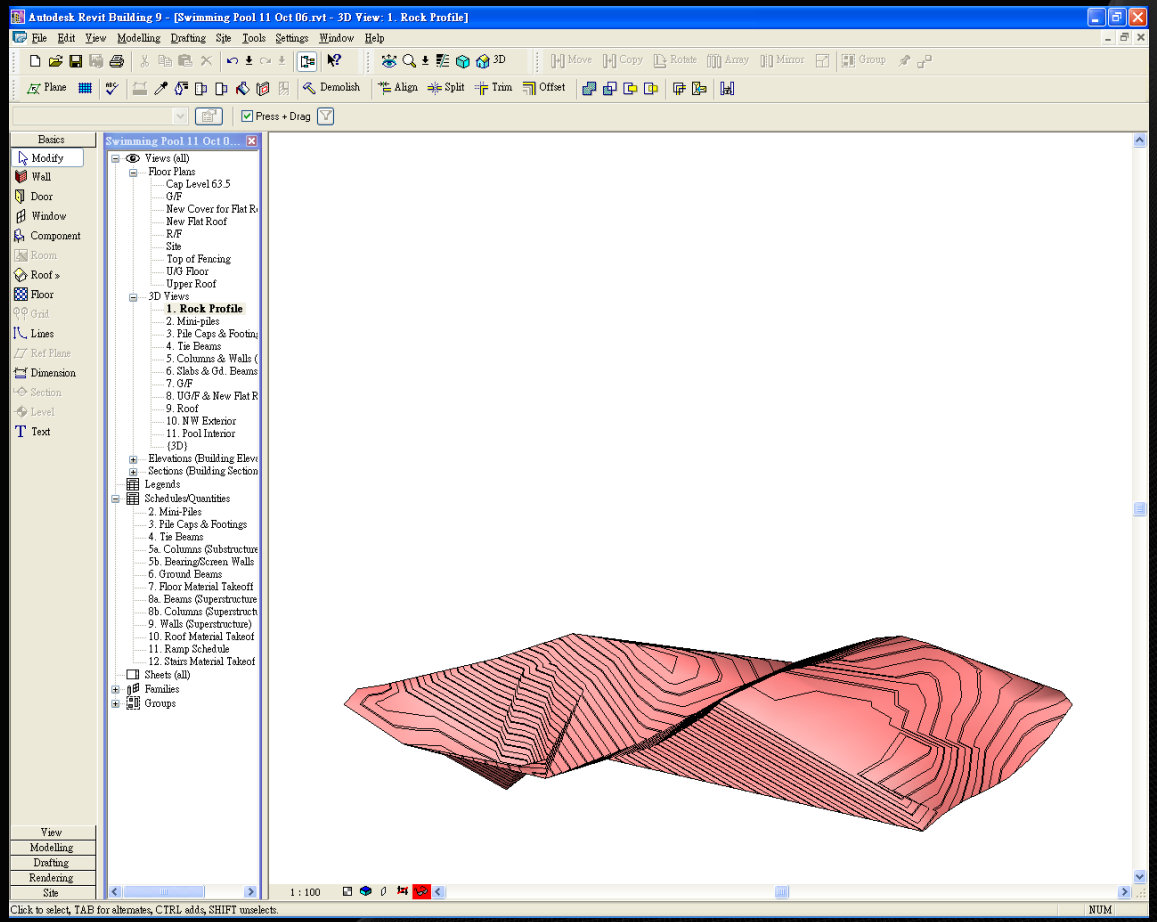
Autodesk Revit Building 9 - [Swimming Pool 11 Oct 06.rvt - 3D View: 1. Rock Profile]
File Edit View Modelling Drafting Site Tools Settings Window Help
Plane Demolish Align Split Trim Offset
Press + Drag
Basics
Modify
Wall
Door
Window
Component
Room
Roof
Floor
Grid
Lines
Ref Plane
Dimension
Section
Level
Text
Swimming Pool 11 Oct 0...
Views (all)
Floor Plans
Cap Level 63.5
G/F
New Cover for Flat R
New Flat Roof
R/F
Site
Top of Fencing
UG Floor
Upper Roof
3D Views
1. Rock Profile
2. Mini-piles
3. Pile Caps & Footing
4. Tie Beams
5. Columns & Walls (
6. Slabs & Gd. Beams
7. G/F
8. UG/F & New Flat R
9. Roof
10. NW Exterior
11. Pool Interior
{3D}
Elevations (Building Elev
Sections (Building Section
Legends
Schedules/Quantities
2. Mini-Piles
3. Pile Caps & Footings
4. Tie Beams
5a. Columns (Substructure
5b. Bearing/Screen Walls
6. Ground Beams
7. Floor Material Takeoff
8a. Beams (Superstructure
8b. Columns (Superstructi
9. Walls (Superstructure)
10. Roof Material Takeof
11. Ramp Schedule
12. Stairs Material Takeof
Sheets (all)
Families
Groups
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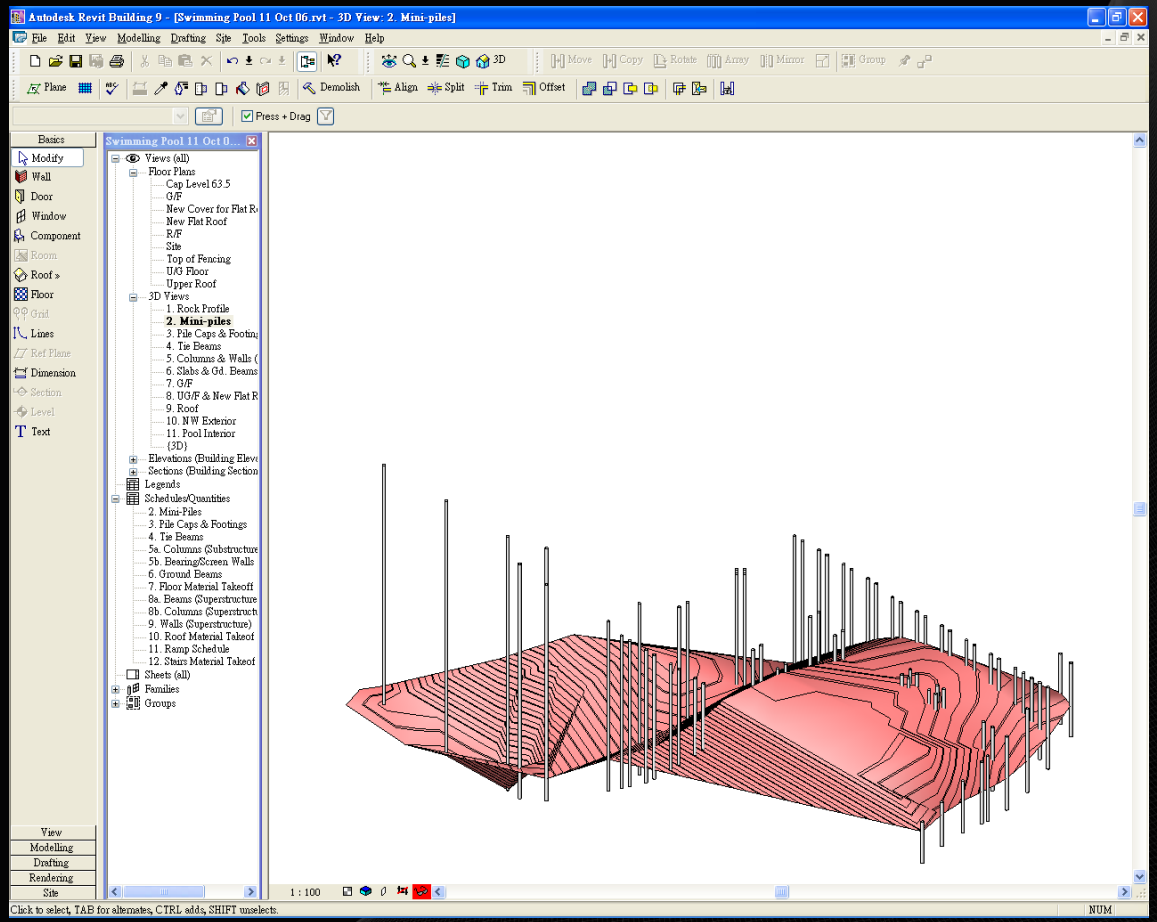
Drafting
Rendering
Site
1 : 100
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.
NUM

石层


Autodesk Revit Building 9 - [Swimming Pool 11 Oct 06.rvt - 3D View: 2. Mini-piles]
File Edit View Modelling Drafting Site Tools Settings Window Help
Basics
Modify
Wall
Door
Window
Component
Room
Roof
Floor
Grid
Lines
Ref Plane
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Section
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Swimming Pool 11 Oct 0...
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6. Slabs & Gd. Beams
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8. UG/F & New Flat R
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{3D}
Elevations (Building Elev
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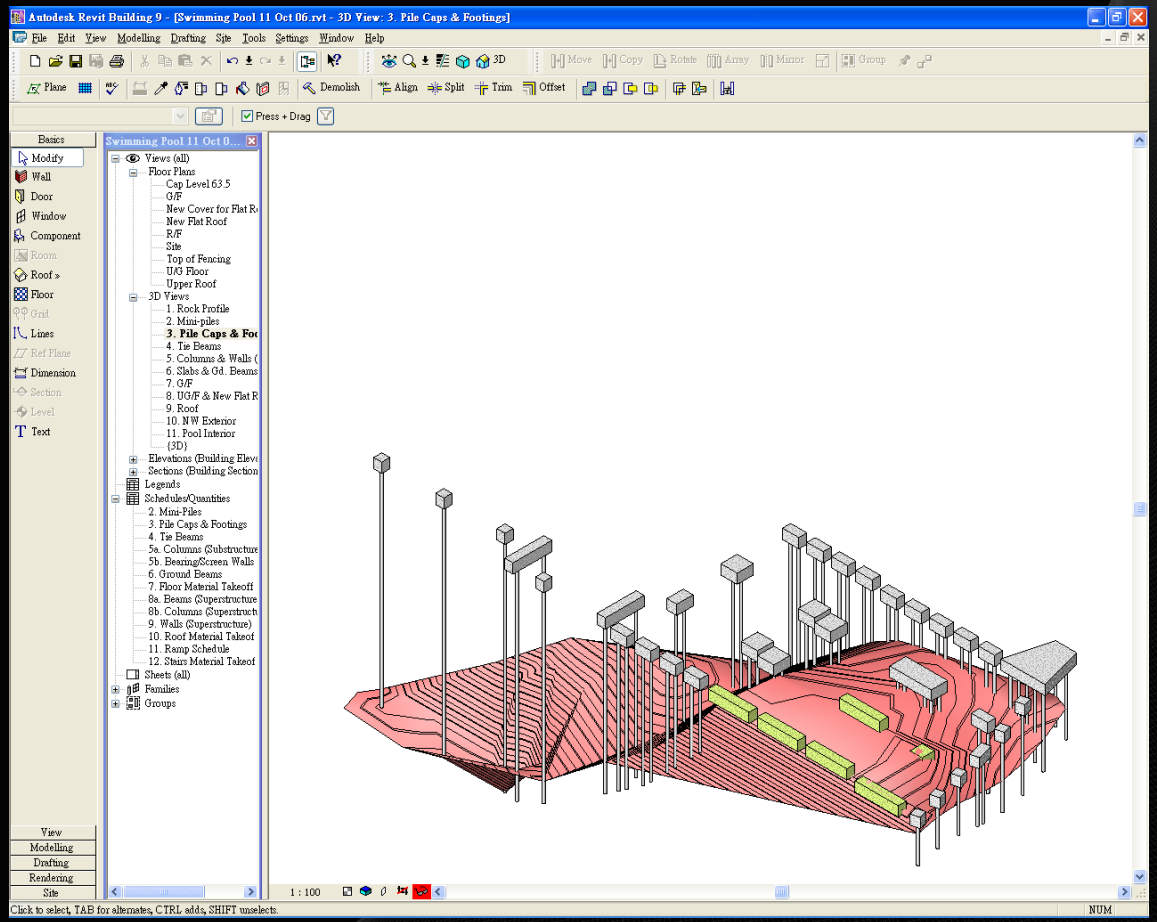
8b. Columns (Superstructi
9. Walls (Superstructure)
10. Roof Material Takeof
11. Ramp Schedule
12. Stairs Material Takeof
Sheets (all)
Families
Groups
View
Modelling
Drafting
Rendering
Site
1 : 100
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.
NUM

细直径钻椿


Autodesk Revit Building 9 - [Swimming Pool 11 Oct 06.rvt - 3D View: 3. Pile Caps & Footings]
File Edit View Modelling Drafting Site Tools Settings Window Help
Basics
Modify
Wall
Door
Window
Component
Room
Roof
Floor
Grid
Lines
Ref Plane
Dimension
Section
Level
Text
Swimming Pool 11 Oct 0...
Views (all)
Floor Plans
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3D Views
1. Rock Profile
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4. Tie Beams
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6. Slabs & Gd. Beams
7. G/F
8. UG/F & New Flat R
9. Roof
10. NW Exterior
11. Pool Interior
{3D}
Elevations (Building Elev
Sections (Building Section
Legends
Schedules/Quantities
2. Mini-Piles
3. Pile Caps & Footings
4. Tie Beams
5a. Columns (Substructure
5b. Bearing/Screen Walls
6. Ground Beams
7. Floor Material Takeoff
8a. Beams (Superstructure
8b. Columns (Superstructi
9. Walls (Superstructure)
10. Roof Material Takeof
11. Ramp Schedule
12. Stairs Material Takeof
Sheets (all)
Families
Groups
View
Modelling
Drafting
Rendering
Site
1 : 100
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.
NUM

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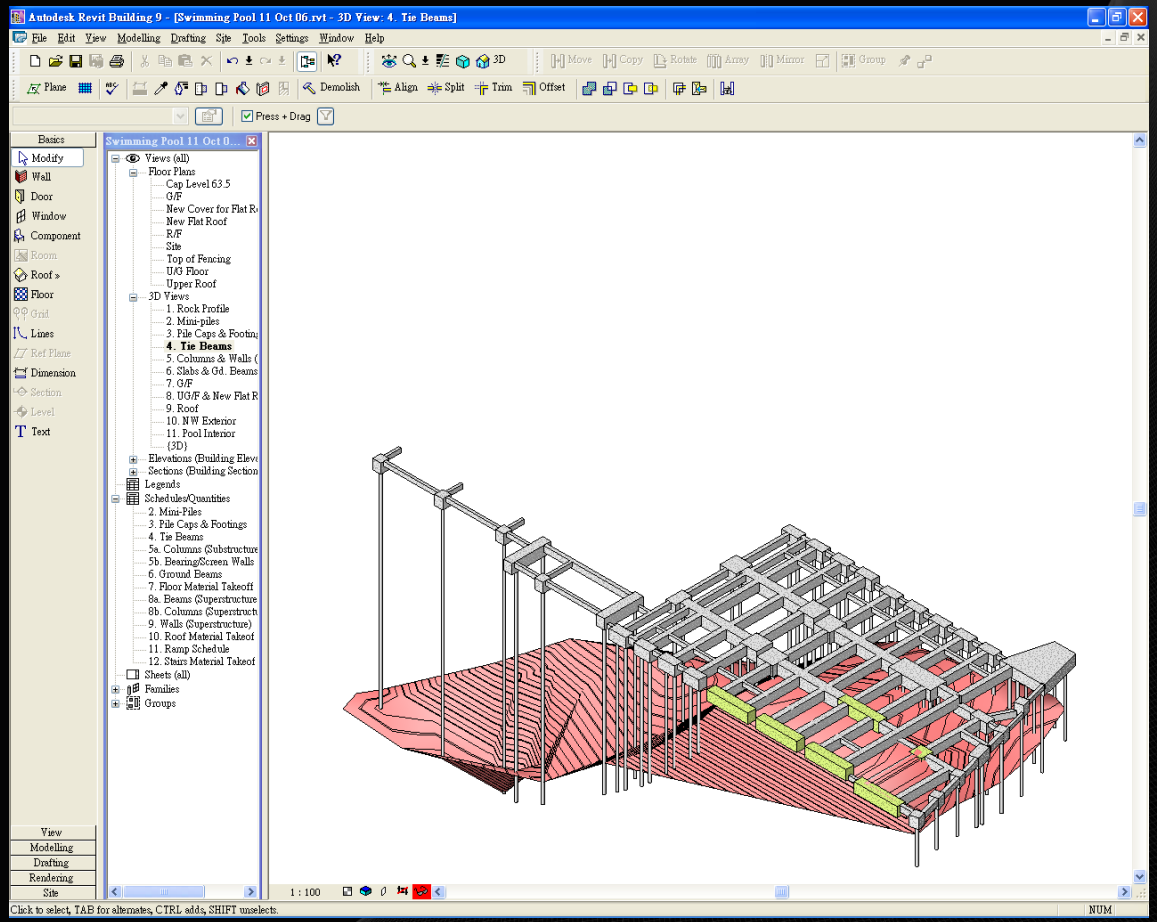
Autodesk Revit Building 9 - [Swimming Pool 11 Oct 06.rvt - 3D View: 4. Tie Beams]
File Edit View Modelling Drafting Site Tools Settings Window Help
Basics
Modify
Wall
Door
Window
Component
Room
Roof
Floor
Grid
Lines
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Section
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New Cover for Flat R
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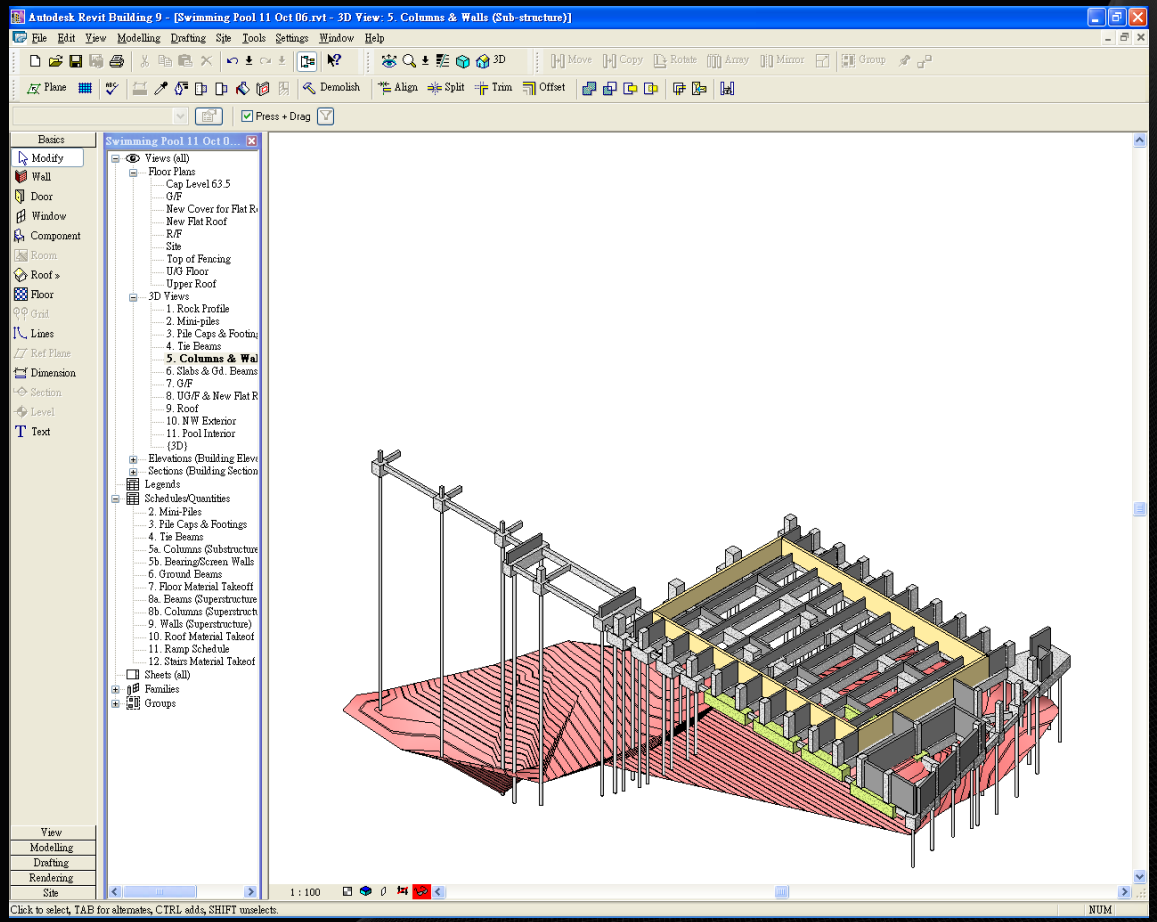
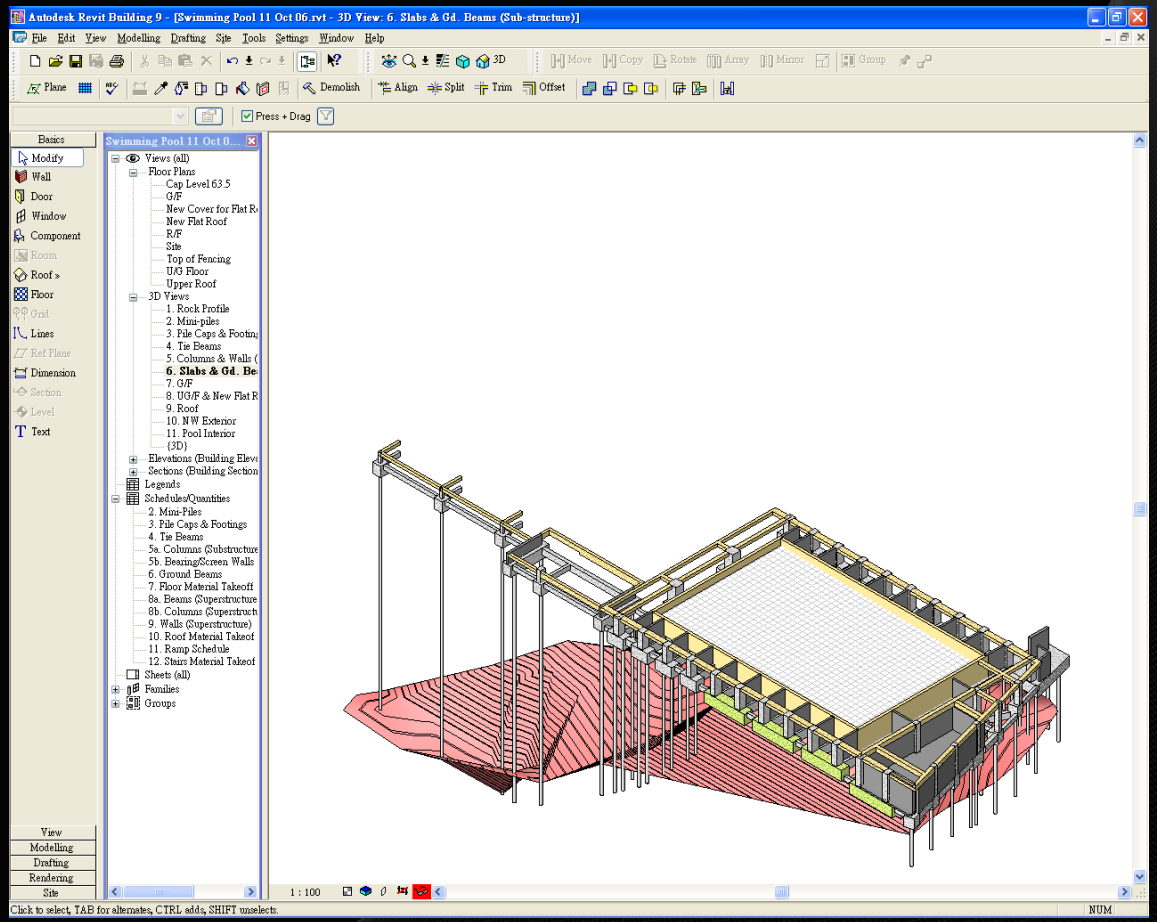
4. Tie Beams
5. Columns & Walls (
6. Slabs & Gd. Beams
7. G/F
8. UG/F & New Flat R
9. Roof
10. NW Exterior
11. Pool Interior
{3D}
Elevations (Building Elev
Sections (Building Section
Legends
Schedules/Quantities
2. Mini-Piles
3. Pile Caps & Footings
4. Tie Beams
5a. Columns (Substructure
5b. Bearing/Screen Walls
6. Ground Beams
7. Floor Material Takeoff
8a. Beams (Superstructure
8b. Columns (Superstructi
9. Walls (Superstructure)
10. Roof Material Takeof
11. Ramp Schedule
12. Stairs Material Takeof
Sheets (all)
Families
Groups
View
Modelling
Drafting
Rendering
Site
1 : 100
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.
NUM

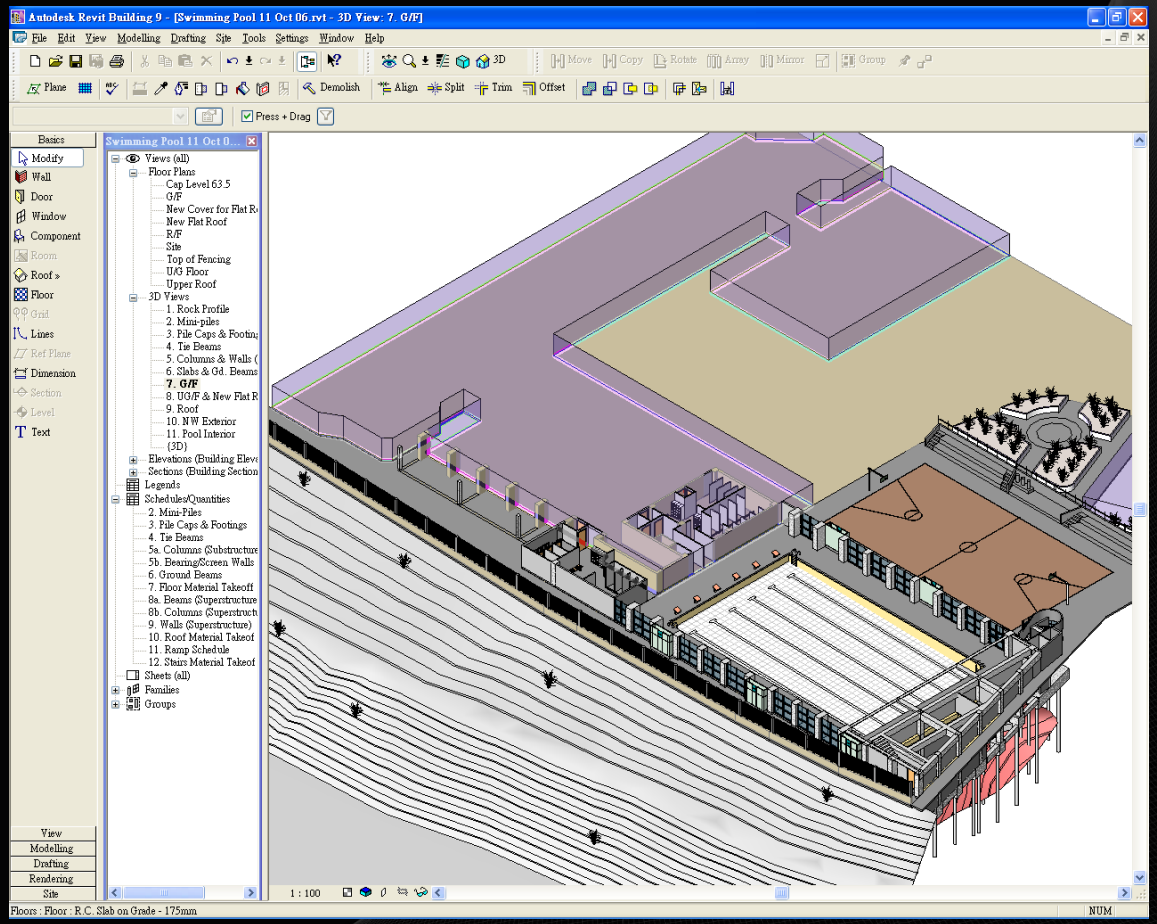
连梁


Autodesk Revit Building 9 - [Swimming Pool 11 Oct 06.rvt - 3D View: 5. Columns & Walls (Sub-structure)]
File Edit View Modelling Drafting Site Tools Settings Window Help
Basics
Modify
Wall
Door
Window
Component
Roof
Floor
Grid
Lines
Ref Plane
Dimension
Section
Level
Text
Views (all)
Floor Plans
Cap Level 63.5
G/F
New Cover for Flat R
New Flat Roof
R/F
Site
Top of Fencing
UG Floor
Upper Roof
3D Views
1. Rock Profile
2. Mini-piles
3. Pile Caps & Footing
4. Tie Beams
5. Columns & Wal
6. Slabs & Gd. Beams
7. G/F
8. UG/F & New Flat R
9. Roof
10. NW Exterior
11. Pool Interior
{3D}
Elevations (Building Elev
Sections (Building Section
Legends
Schedules/Quantities
2. Mini-Piles
3. Pile Caps & Footings
4. Tie Beams
5a. Columns (Substructure
5b. Bearing/Screen Walls
6. Ground Beams
7. Floor Material Takeoff
8a. Beams (Superstructure
8b. Columns (Superstructu
9. Walls (Superstructure)
10. Roof Material Takeof
11. Ramp Schedule
12. Stairs Material Takeof
Sheets (all)
Families
Groups
View
Modelling
Drafting
Rendering
Site
1 : 100
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.
NUM

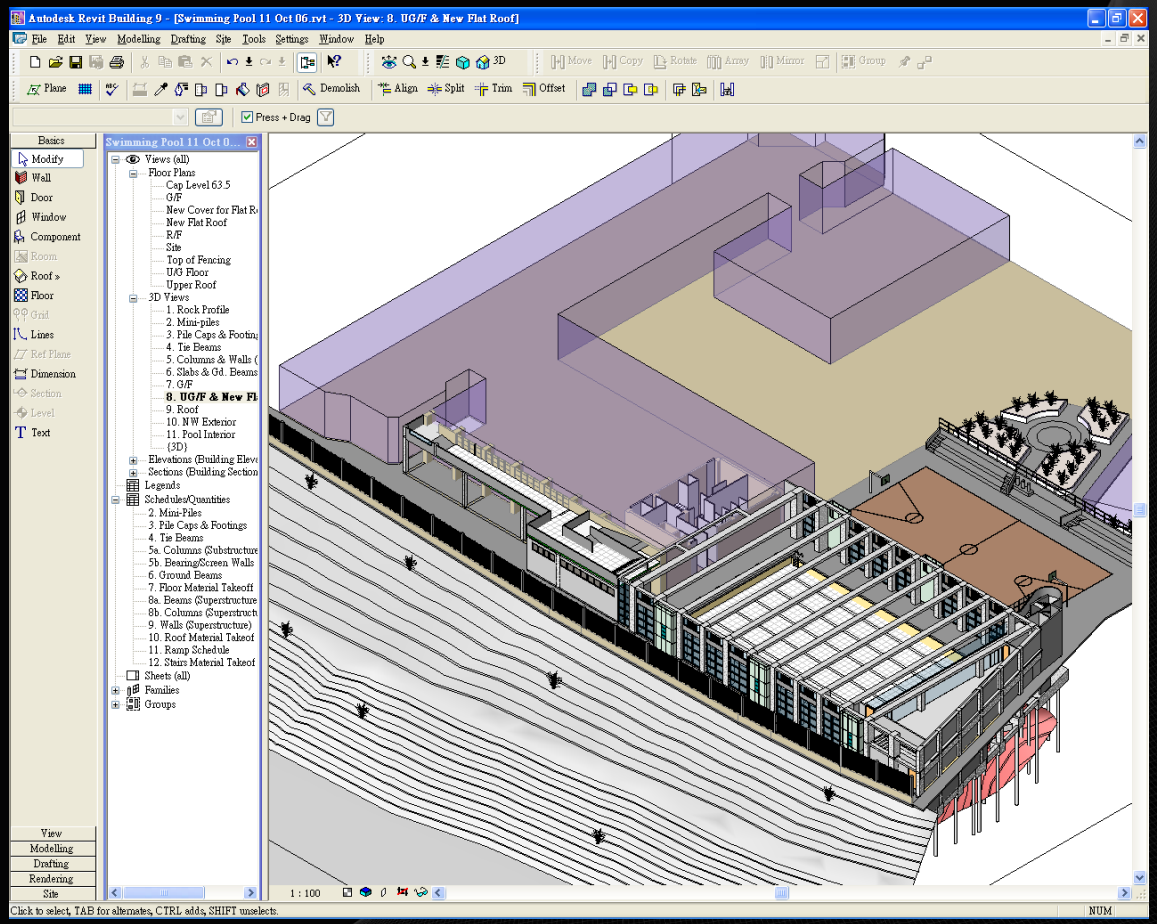
柱和墙 (地下结构)


Autodesk Revit Building 9 - [Swimming Pool 11 Oct 06.rvt - 3D View: 6. Slabs & Gd. Beams (Sub-structure)]
File Edit View Modelling Drafting Site Tools Settings Window Help
Plane Demolish Align Split Trim Offset
Press + Drag
Basics
Modify
Wall
Door
Window
Component
Room
Roof
Floor
Grid
Lines
Ref Plane
Dimension
Section
Level
Text
Swimming Pool 11 Oct 0...
Views (all)
Floor Plans
Cap Level 63.5
G/F
New Cover for Flat R
New Flat Roof
R/F
Site
Top of Fencing
UG Floor
Upper Roof
3D Views
1. Rock Profile
2. Mini-piles
3. Pile Caps & Footing
4. Tie Beams
5. Columns & Walls (
6. Slabs & Gd. Be
7. G/F
8. UG/F & New Flat R
9. Roof
10. NW Exterior
11. Pool Interior
{3D}
Elevations (Building Elev
Sections (Building Section
Legends
Schedules/Quantities
2. Mini-Piles
3. Pile Caps & Footings
4. Tie Beams
5a. Columns (Substructure
5b. Bearing/Screen Walls
6. Ground Beams
7. Floor Material Takeoff
8a. Beams (Superstructure
8b. Columns (Superstructu
9. Walls (Superstructure)
10. Roof Material Takeof
11. Ramp Schedule
12. Stairs Material Takeof
Sheets (all)
Families
Groups
View
Modelling
Drafting
Rendering
Site
1 : 100
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.
NUM

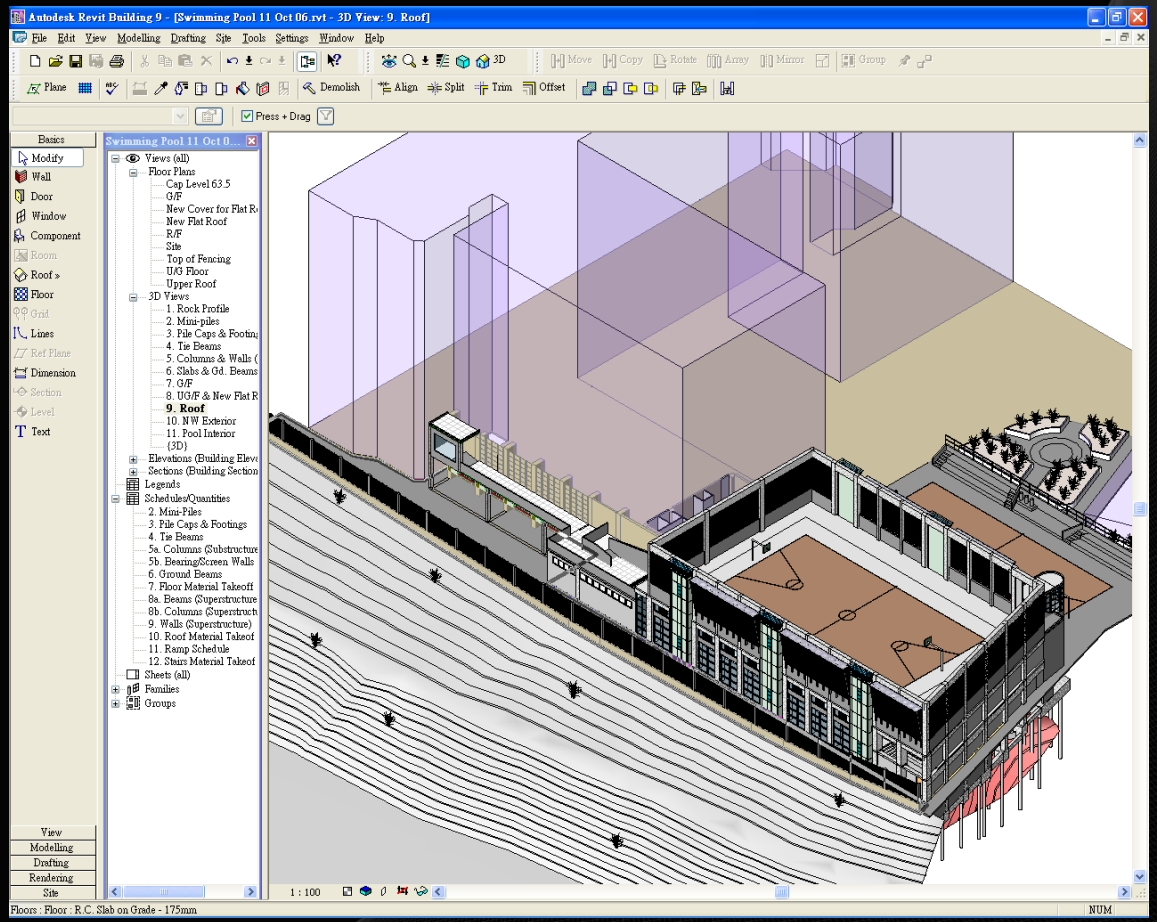
地梁和泳池结构



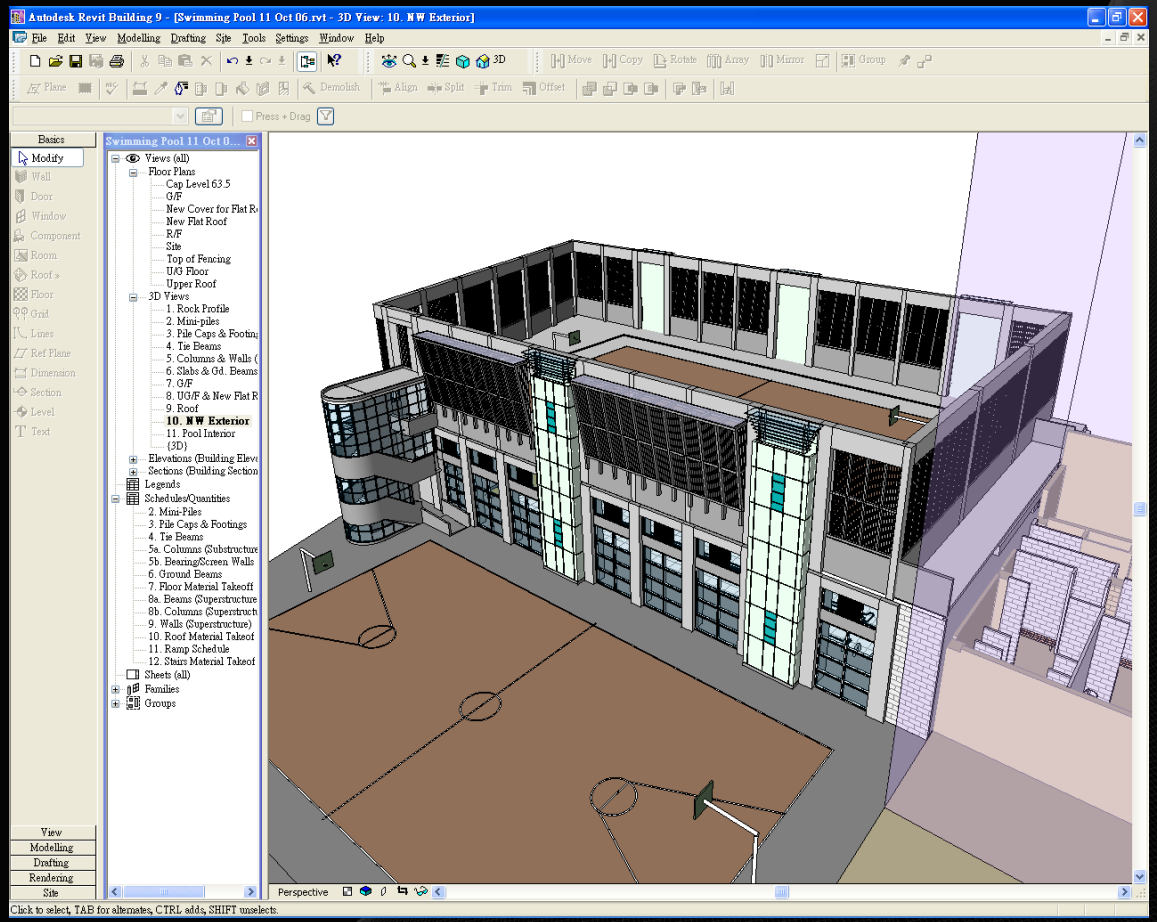
地面新工程与现有的中学校舍



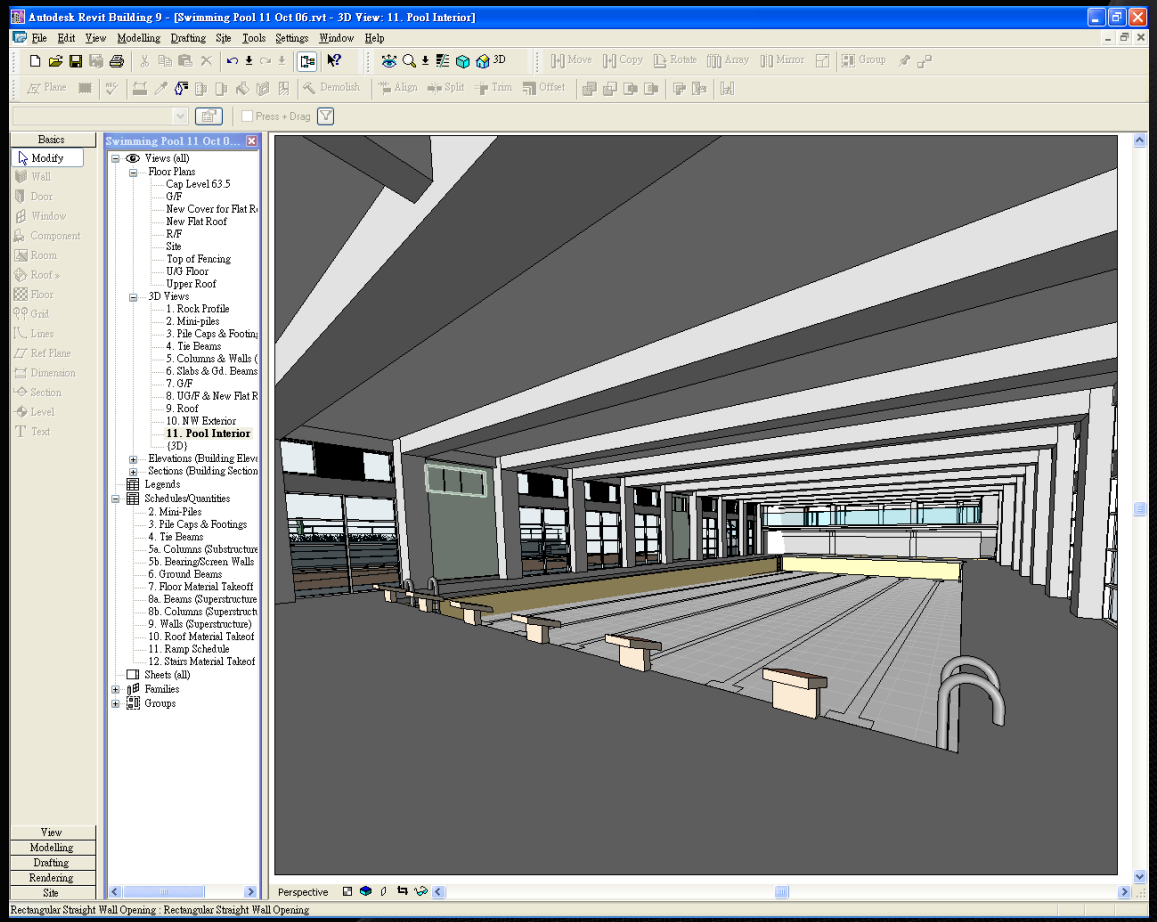
U/G层, 顶层梁结构与新连接通道


Autodesk Revit Building 9 - [Swimming Pool 11 Oct 06.rvt - 3D View: 9. Roof]
File Edit View Modelling Drafting Site Tools Settings Window Help
Basics
Modify
Wall
Door
Window
Component
Room
Roof
Floor
Grid
Lines
Ref Plane
Dimension
Section
Level
Text
Swimming Pool 11 Oct 0...
Views (all)
Floor Plans
Cap Level 63.5
G/F
New Cover for Flat R
New Flat Roof
R/F
Site
Top of Fencing
UG Floor
Upper Roof
3D Views
1. Rock Profile
2. Mini-piles
3. Pile Caps & Footing
4. Tie Beams
5. Columns & Walls
6. Slabs & Gd. Beams
7. G/F
8. UG/F & New Flat R
9. Roof
10. NW Exterior
11. Pool Interior
{3D}
Elevations (Building Elev
Sections (Building Section
Legends
Schedules/Quantities
2. Mini-Piles
3. Pile Caps & Footings
4. Tie Beams
5a. Columns (Substructure
5b. Bearing/Screen Walls
6. Ground Beams
7. Floor Material Takeoff
8a. Beams (Superstructure
8b. Columns (Superstructu
9. Walls (Superstructure)
10. Roof Material Takeof
11. Ramp Schedule
12. Stairs Material Takeof
Sheets (all)
Families
Groups
View
Modelling
Drafting
Rendering
Site
1 : 100
Floors : Floor : R.C. Slab on Grade - 175mm
NUM

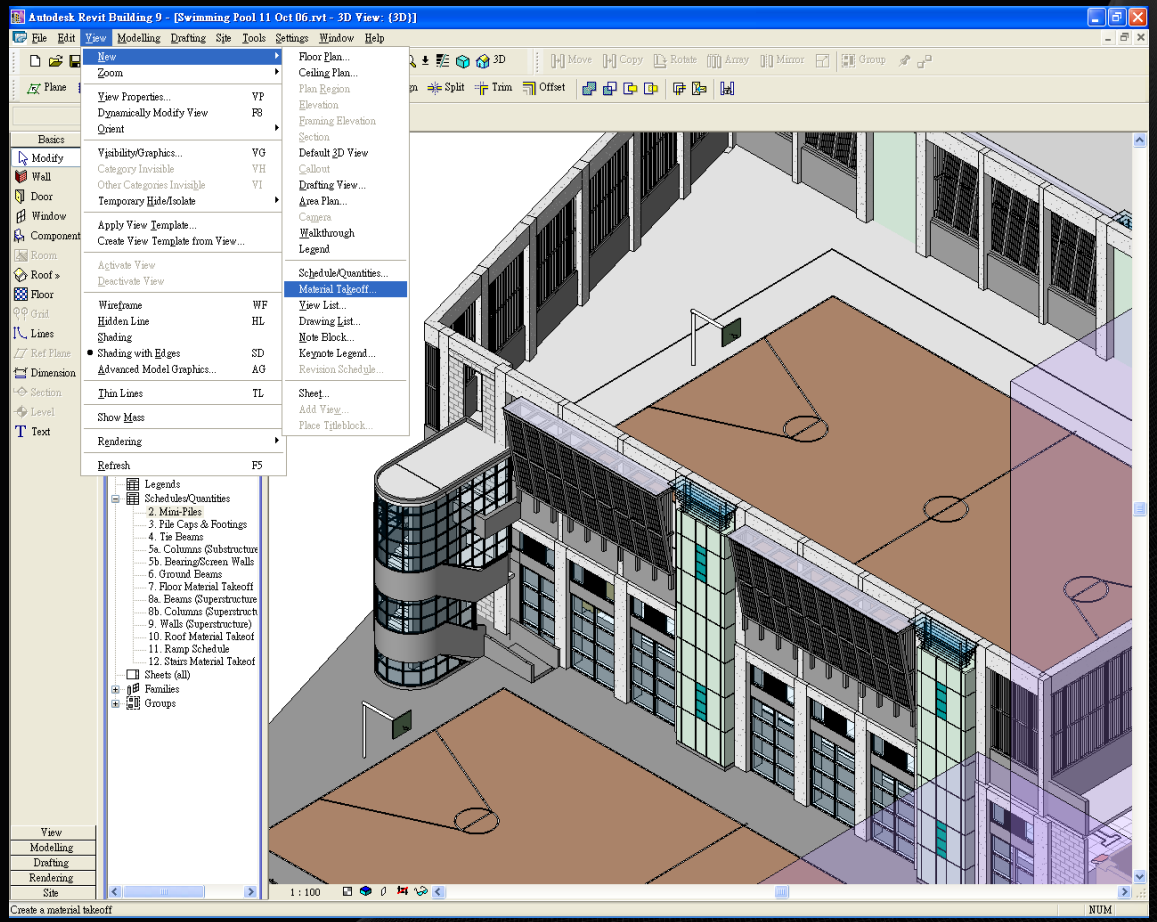
顶层篮球场

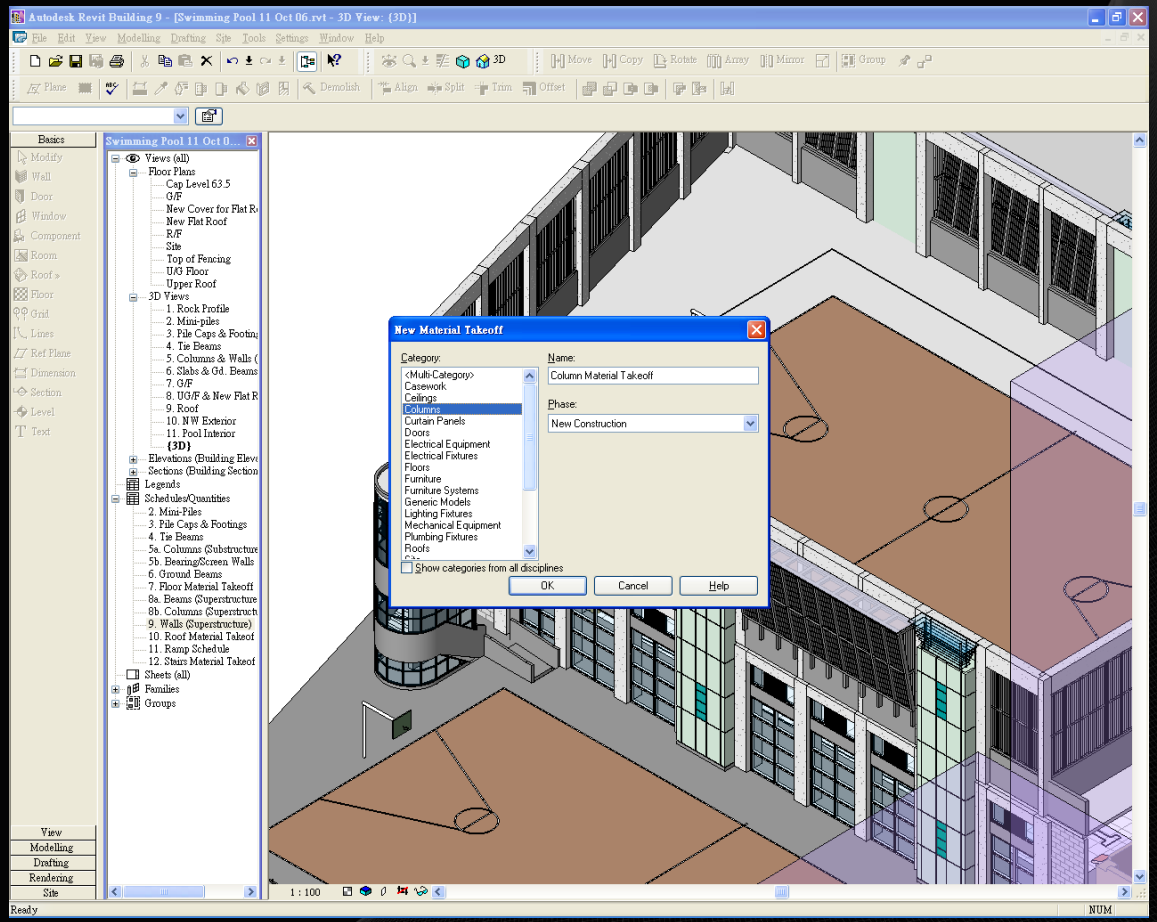

Autodesk Revit Building 9 - [Swimming Pool 11 Oct 06.rvt - 3D View: 10. NW Exterior]
File Edit View Modelling Drafting Site Tools Settings Window Help
Basics
Modify
Wall
Door
Window
Component
Room
Roof
Floor
Grid
Lines
Ref Plane
Dimension
Section
Level
Text
Swimming Pool 11 Oct 0...
Views (all)
Floor Plans
Cap Level 63.5
G/F
New Cover for Flat R
New Flat Roof
R/F
Site
Top of Fencing
UG Floor
Upper Roof
3D Views
1. Rock Profile
2. Mini-piles
3. Pile Caps & Footing
4. Tie Beams
5. Columns & Walls (
6. Slabs & Gd. Beams
7. G/F
8. UG/F & New Flat R
9. Roof
10. NW Exterior
11. Pool Interior
{3D}
Elevations (Building Elev
Sections (Building Section
Legends
Schedules/Quantities
2. Mini-Piles
3. Pile Caps & Footings
4. Tie Beams
5a. Columns (Substructure
5b. Bearing/Screen Walls
6. Ground Beams
7. Floor Material Takeoff
8a. Beams (Superstructure
8b. Columns (Superstructu
9. Walls (Superstructure)
10. Roof Material Takeof
11. Ramp Schedule
12. Stairs Material Takeof
Sheets (all)
Families
Groups
View
Modelling
Drafting
Rendering
Site
Perspective
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.

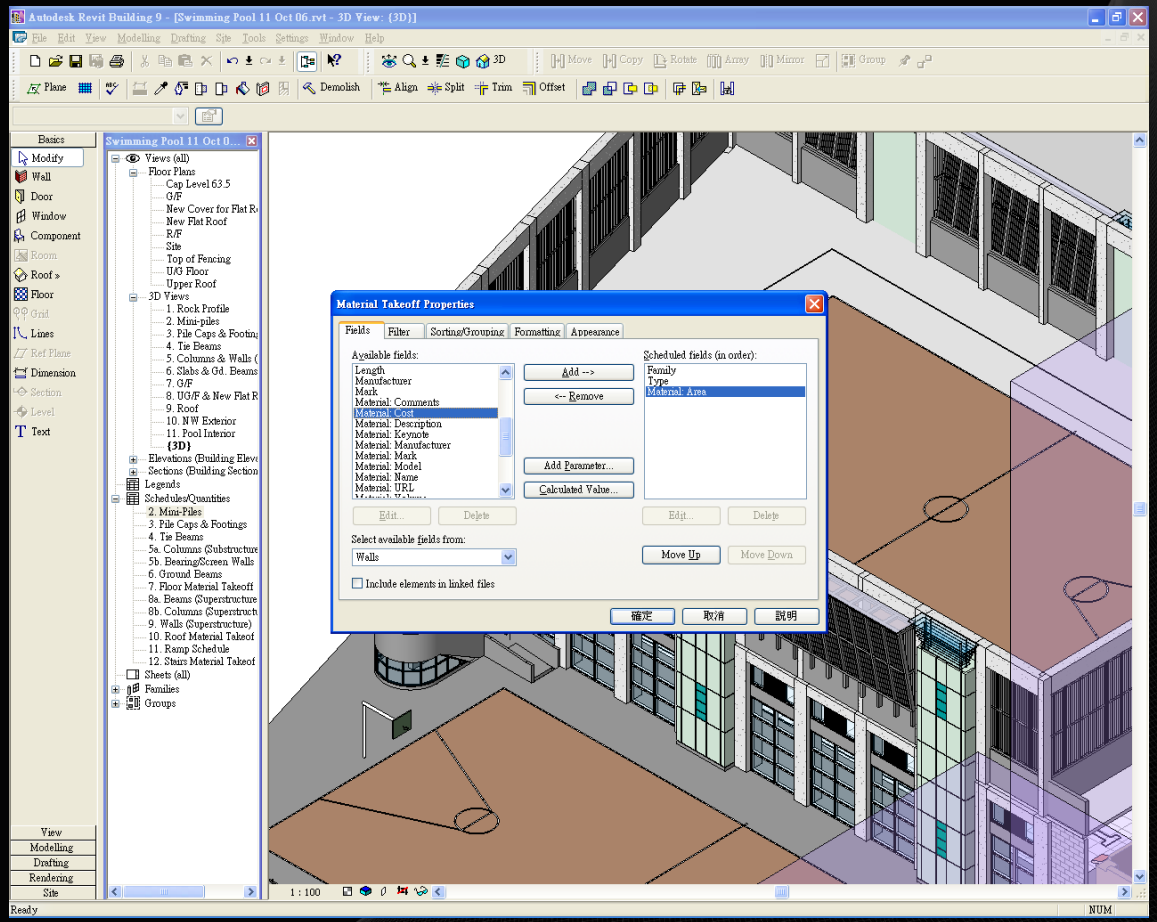
外观1

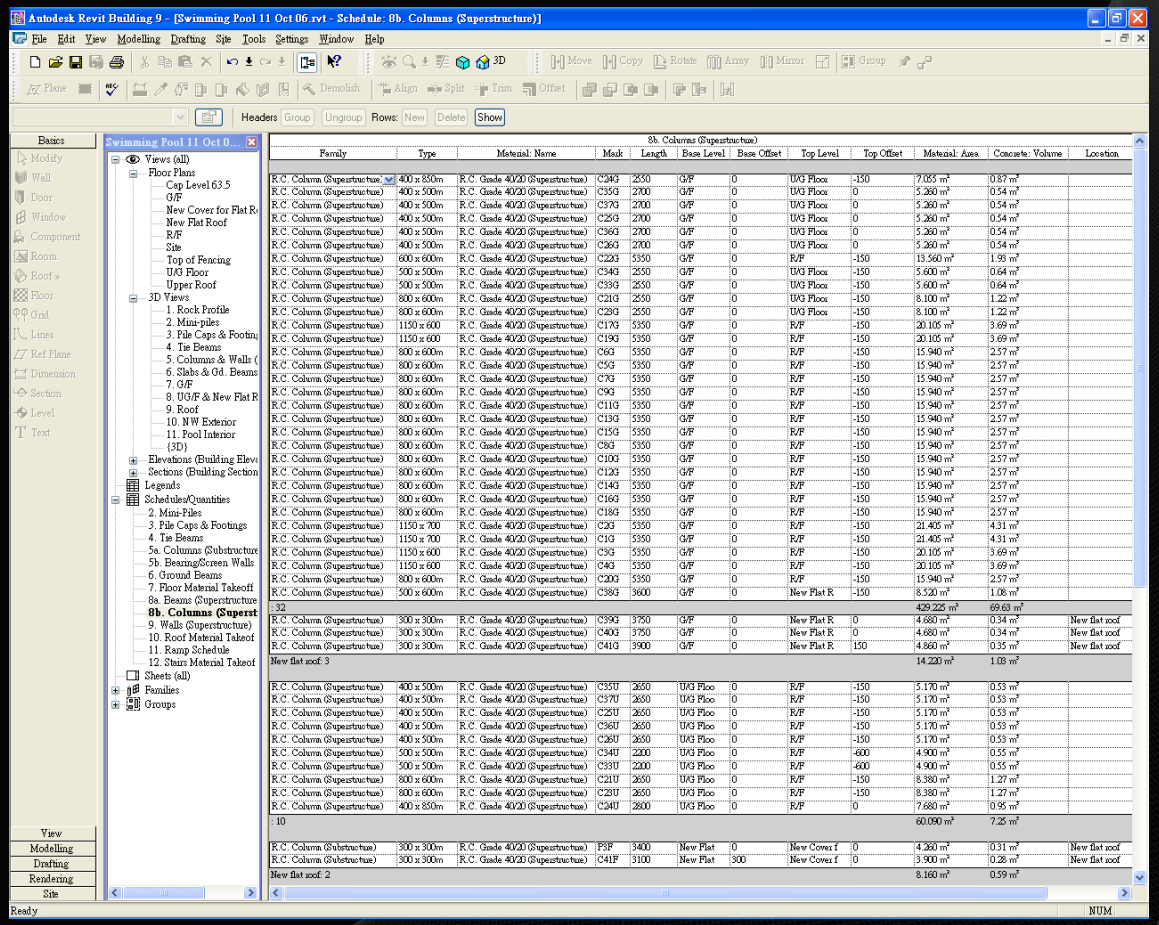

Autodesk Revit Building 9 - [Swimming Pool 11 Oct 06.rvt - 3D View: 11. Pool Interior]
File Edit View Modelling Drafting Site Tools Settings Window Help
Basics
Modify
Wall
Door
Window
Component
Room
Roof
Floor
Grid
Lines
Ref Plane
Dimension
Section
Level
Text
Swimming Pool 11 Oct 0...
Views (all)
Floor Plans
Cap Level 63.5
G/F
New Cover for Flat R
New Flat Roof
R/F
Site
Top of Fencing
UG Floor
Upper Roof
3D Views
1. Rock Profile
2. Mini-piles
3. Pile Caps & Footing
4. Tie Beams
5. Columns & Walls (
6. Slabs & Gd. Beams
7. G/F
8. UG/F & New Flat R
9. Roof
10. NW Exterior
11. Pool Interior
{3D}
Elevations (Building Elev
Sections (Building Section
Legends
Schedules/Quantities
2. Mini-Piles
3. Pile Caps & Footings
4. Tie Beams
5a. Columns (Substructure
5b. Bearing/Screen Walls
6. Ground Beams
7. Floor Material Takeoff
8a. Beams (Superstructure
8b. Columns (Superstructu
9. Walls (Superstructure)
10. Roof Material Takeof
11. Ramp Schedule
12. Stairs Material Takeof
Sheets (all)
Families
Groups
Perspective
View
Modelling
Drafting
Rendering
Site
Rectangular Straight Wall Opening : Rectangular Straight Wall Opening

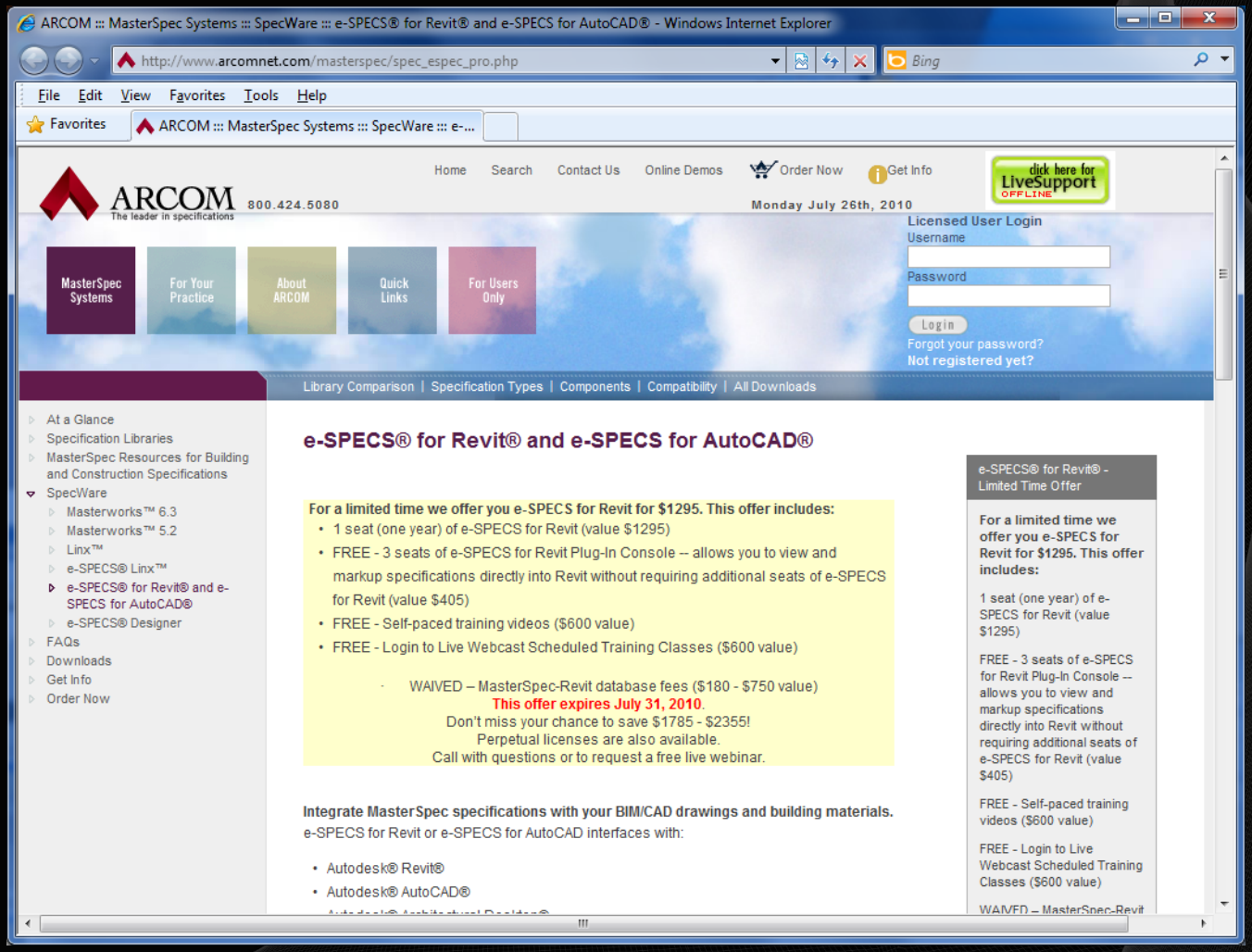
室内1


Autodesk Revit Building 9 - [Swimming Pool 11 Oct 06.rvt - 3D View: {3D}]
File Edit View Modelling Drafting Site Tools Settings Window Help
New
Zoom
View Properties... VP
Dynamically Modify View F8
Orient
Visibility/Graphics... VG
Category Invisible VH
Other Categories Invisible VI
Temporary Hide/Isolate
Apply View Template...
Create View Template from View...
Activate View
Deactivate View
Wireframe WF
Hidden Line HL
Shading
Shading with Edges SD
Advanced Model Graphics... AG
Thin Lines TL
Show Mass
Rendering
Refresh F5
Floor Plan...
Ceiling Plan...
Plan Region
Elevation
Framing Elevation
Section
Default 3D View
Callout
Drafting View...
Area Plan...
Camera
Walkthrough
Legend
Schedule/Quantities...
Material Takeoff...
View List...
Drawing List...
Note Block...
Keynote Legend...
Revision Schedule...
Sheet...
Add View...
Place Titleblock...
Basics
Modify
Wall
Door
Window
Component
Room
Roof
Floor
Grid
Lines
Ref Plane
Dimension
Section
Level
Text
Legends
Schedules/Quantities
2. Mini-Piles
3. Pile Caps & Footings
4. Tie Beams
5a. Columns (Substructure
5b. Bearing/Screen Walls
6. Ground Beams
7. Floor Material Takeoff
8a. Beams (Superstructure
8b. Columns (Superstructu
9. Walls (Superstructure)
10. Roof Material Takeof
11. Ramp Schedule
12. Stairs Material Takeof
Sheets (all)
Families
Groups
View
Modelling
Drafting
Rendering
Site
1 : 100
Create a material takeoff
NUM


Autodesk Revit Building 9 - [Swimming Pool 11 Oct 06.rvt - 3D View: {3D}]
File Edit View Modelling Drafting Site Tools Settings Window Help
Basics
Modify
Wall
Door
Window
Component
Room
Roof
Floor
Grid
Lines
Ref Plane
Dimension
Section
Level
Text
Swimming Pool 11 Oct 0...
Views (all)
Floor Plans
Cap Level 63.5
G/F
New Cover for Flat R
New Flat Roof
R/F
Site
Top of Fencing
UG Floor
Upper Roof
3D Views
1. Rock Profile
2. Mini-piles
3. Pile Caps & Footing
4. Tie Beams
5. Columns & Walls (
6. Slabs & Gd. Beams
7. G/F
8. UG/F & New Flat R
9. Roof
10. NW Exterior
11. Pool Interior
{3D}
Elevations (Building Elev
Sections (Building Section
Legends
Schedules/Quantities
2. Mini-Piles
3. Pile Caps & Footings
4. Tie Beams
5a. Columns (Substructure
5b. Bearing/Screen Walls
6. Ground Beams
7. Floor Material Takeoff
8a. Beams (Superstructure
8b. Columns (Superstructu
9. Walls (Superstructure)
10. Roof Material Takeof
11. Ramp Schedule
12. Stairs Material Takeof
Sheets (all)
Families
Groups
New Material Takeoff
Category:
<Multi-Category>
Casework
Ceilings
Columns
Curtain Panels
Doors
Electrical Equipment
Electrical Fixtures
Floors
Furniture
Furniture Systems
Generic Models
Lighting Fixtures
Mechanical Equipment
Plumbing Fixtures
Roofs
Show categories from all disciplines
Name:
Column Material Takeoff
Phase:
New Construction
OK
Cancel
Help
View
Modelling
Drafting
Rendering
Site
1 : 100
Ready
NUM


Autodesk Revit Building 9 - [Swimming Pool 11 Oct 06.rvt - 3D View: {3D}]
File Edit View Modelling Drafting Site Tools Settings Window Help
Plane Demolish Align Split Trim Offset
Basics
Modify
Wall
Door
Window
Component
Room
Roof
Floor
Grid
Lines
Ref Plane
Dimension
Section
Level
Text
Swimming Pool 11 Oct 0...
Views (all)
Floor Plans
Cap Level 63.5
G/F
New Cover for Flat R
New Flat Roof
R/F
Site
Top of Fencing
UG Floor
Upper Roof
3D Views
1. Rock Profile
2. Mini-piles
3. Pile Caps & Footing
4. Tie Beams
5. Columns & Walls (
6. Slabs & Gd. Beams
7. G/F
8. UG/F & New Flat R
9. Roof
10. NW Exterior
11. Pool Interior
{3D}
Elevations (Building Elev
Sections (Building Section
Legends
Schedules/Quantities
2. Mini-Piles
3. Pile Caps & Footings
4. Tie Beams
5a. Columns (Substructure
5b. Bearing/Screen Walls
6. Ground Beams
7. Floor Material Takeoff
8a. Beams (Superstructure
8b. Columns (Superstructu
9. Walls (Superstructure)
10. Roof Material Takeof
11. Ramp Schedule
12. Stairs Material Takeof
Sheets (all)
Families
Groups
Material Takeoff Properties
Fields
Filter
Sorting/Grouping
Formatting
Appearance
Available fields:
Length
Manufacturer
Mark
Material: Comments
Material: Cost
Material: Description
Material: Keynote
Material: Manufacturer
Material: Mark
Material: Model
Material: Name
Material: URL
Add -->
<-- Remove
Add Parameter...
Calculated Value...
Edit...
Delete
Scheduled fields (in order):
Family
Type
Material: Area
Edit...
Delete
Select available fields from:
Walls
Move Up
Move Down
Include elements in linked files
確定
取消
說明
View
Modelling
Drafting
Rendering
Site
1 : 100
Ready
NUM


Autodesk Revit Building 9 - [Swimming Pool 11 Oct 06.rvt - Schedule: 8b. Columns (Superstructure)]
File Edit View Modelling Drafting Site Tools Settings Window Help
Basics
Swimming Pool 11 Oct 0...
Views (all)
Floor Plans
3D Views
Elevations (Building Elev
Sections (Building Section
Legends
Schedules/Quantities
Sheets (all)
Families
Groups
8b. Columns (Superstructure)
Family | Type | Material: Name | Mark | Length | Base Level | Base Offset | Top Level | Top Offset | Material: Area | Concrete: Volume | Location
R.C. Column (Superstructure) | 400 x 850m | R.C. Grade 40/20 (Superstructure) | C24G | 2550 | G/F | 0 | U/G Floor | -150 | 7.055 m² | 0.87 m³
R.C. Column (Superstructure) | 400 x 500m | R.C. Grade 40/20 (Superstructure) | C35G | 2700 | G/F | 0 | U/G Floor | 0 | 5.260 m² | 0.54 m³
R.C. Column (Superstructure) | 400 x 500m | R.C. Grade 40/20 (Superstructure) | C37G | 2700 | G/F | 0 | U/G Floor | 0 | 5.260 m² | 0.54 m³
R.C. Column (Superstructure) | 400 x 500m | R.C. Grade 40/20 (Superstructure) | C25G | 2700 | G/F | 0 | U/G Floor | 0 | 5.260 m² | 0.54 m³
R.C. Column (Superstructure) | 400 x 500m | R.C. Grade 40/20 (Superstructure) | C36G | 2700 | G/F | 0 | U/G Floor | 0 | 5.260 m² | 0.54 m³
R.C. Column (Superstructure) | 400 x 500m | R.C. Grade 40/20 (Superstructure) | C26G | 2700 | G/F | 0 | U/G Floor | 0 | 5.260 m² | 0.54 m³
R.C. Column (Superstructure) | 600 x 600m | R.C. Grade 40/20 (Superstructure) | C22G | 5350 | G/F | 0 | R/F | -150 | 13.560 m² | 1.95 m³
R.C. Column (Superstructure) | 500 x 500m | R.C. Grade 40/20 (Superstructure) | C34G | 2550 | G/F | 0 | U/G Floor | -150 | 5.600 m² | 0.64 m³
R.C. Column (Superstructure) | 500 x 500m | R.C. Grade 40/20 (Superstructure) | C33G | 2550 | G/F | 0 | U/G Floor | -150 | 5.600 m² | 0.64 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C21G | 2550 | G/F | 0 | U/G Floor | -150 | 8.100 m² | 1.22 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C20G | 2550 | G/F | 0 | U/G Floor | -150 | 8.100 m² | 1.22 m³
R.C. Column (Superstructure) | 1150 x 600 | R.C. Grade 40/20 (Superstructure) | C17G | 5350 | G/F | 0 | R/F | -150 | 20.105 m² | 3.69 m³
R.C. Column (Superstructure) | 1150 x 600 | R.C. Grade 40/20 (Superstructure) | C19G | 5350 | G/F | 0 | R/F | -150 | 20.105 m² | 3.69 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C6G | 5350 | G/F | 0 | R/F | -150 | 15.940 m² | 2.57 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C5G | 5350 | G/F | 0 | R/F | -150 | 15.940 m² | 2.57 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C7G | 5350 | G/F | 0 | R/F | -150 | 15.940 m² | 2.57 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C9G | 5350 | G/F | 0 | R/F | -150 | 15.940 m² | 2.57 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C11G | 5350 | G/F | 0 | R/F | -150 | 15.940 m² | 2.57 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C13G | 5350 | G/F | 0 | R/F | -150 | 15.940 m² | 2.57 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C15G | 5350 | G/F | 0 | R/F | -150 | 15.940 m² | 2.57 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C8G | 5350 | G/F | 0 | R/F | -150 | 15.940 m² | 2.57 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C10G | 5350 | G/F | 0 | R/F | -150 | 15.940 m² | 2.57 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C12G | 5350 | G/F | 0 | R/F | -150 | 15.940 m² | 2.57 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C14G | 5350 | G/F | 0 | R/F | -150 | 15.940 m² | 2.57 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C16G | 5350 | G/F | 0 | R/F | -150 | 15.940 m² | 2.57 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C18G | 5350 | G/F | 0 | R/F | -150 | 15.940 m² | 2.57 m³
R.C. Column (Superstructure) | 1150 x 700 | R.C. Grade 40/20 (Superstructure) | C2G | 5350 | G/F | 0 | R/F | -150 | 21.405 m² | 4.31 m³
R.C. Column (Superstructure) | 1150 x 700 | R.C. Grade 40/20 (Superstructure) | C1G | 5350 | G/F | 0 | R/F | -150 | 21.405 m² | 4.31 m³
R.C. Column (Superstructure) | 1150 x 600 | R.C. Grade 40/20 (Superstructure) | C3G | 5350 | G/F | 0 | R/F | -150 | 20.105 m² | 3.69 m³
R.C. Column (Superstructure) | 1150 x 600 | R.C. Grade 40/20 (Superstructure) | C4G | 5350 | G/F | 0 | R/F | -150 | 20.105 m² | 3.69 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C20G | 5350 | G/F | 0 | R/F | -150 | 15.940 m² | 2.57 m³
R.C. Column (Superstructure) | 500 x 600m | R.C. Grade 40/20 (Superstructure) | C38G | 3600 | G/F | 0 | New Flat R | -150 | 8.520 m² | 1.08 m³
: 32 | | | | | | | | | 429.225 m² | 69.63 m³
R.C. Column (Superstructure) | 300 x 300m | R.C. Grade 40/20 (Superstructure) | C39G | 3750 | G/F | 0 | New Flat R | 0 | 4.680 m² | 0.34 m³ | New flat roof
R.C. Column (Superstructure) | 300 x 300m | R.C. Grade 40/20 (Superstructure) | C40G | 3750 | G/F | 0 | New Flat R | 0 | 4.680 m² | 0.34 m³ | New flat roof
R.C. Column (Superstructure) | 300 x 300m | R.C. Grade 40/20 (Superstructure) | C41G | 3900 | G/F | 0 | New Flat R | 150 | 4.860 m² | 0.35 m³ | New flat roof
New flat roof: 3 | | | | | | | | | 14.220 m² | 1.03 m³
R.C. Column (Superstructure) | 400 x 500m | R.C. Grade 40/20 (Superstructure) | C35U | 2650 | U/G Floo | 0 | R/F | -150 | 5.170 m² | 0.53 m³
R.C. Column (Superstructure) | 400 x 500m | R.C. Grade 40/20 (Superstructure) | C37U | 2650 | U/G Floo | 0 | R/F | -150 | 5.170 m² | 0.53 m³
R.C. Column (Superstructure) | 400 x 500m | R.C. Grade 40/20 (Superstructure) | C25U | 2650 | U/G Floo | 0 | R/F | -150 | 5.170 m² | 0.53 m³
R.C. Column (Superstructure) | 400 x 500m | R.C. Grade 40/20 (Superstructure) | C36U | 2650 | U/G Floo | 0 | R/F | -150 | 5.170 m² | 0.53 m³
R.C. Column (Superstructure) | 400 x 500m | R.C. Grade 40/20 (Superstructure) | C26U | 2650 | U/G Floo | 0 | R/F | -150 | 5.170 m² | 0.53 m³
R.C. Column (Superstructure) | 500 x 500m | R.C. Grade 40/20 (Superstructure) | C34U | 2200 | U/G Floo | 0 | R/F | -600 | 4.900 m² | 0.55 m³
R.C. Column (Superstructure) | 500 x 500m | R.C. Grade 40/20 (Superstructure) | C33U | 2200 | U/G Floo | 0 | R/F | -600 | 4.900 m² | 0.55 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C21U | 2650 | U/G Floo | 0 | R/F | -150 | 8.380 m² | 1.27 m³
R.C. Column (Superstructure) | 800 x 600m | R.C. Grade 40/20 (Superstructure) | C23U | 2650 | U/G Floo | 0 | R/F | -150 | 8.380 m² | 1.27 m³
R.C. Column (Superstructure) | 400 x 850m | R.C. Grade 40/20 (Superstructure) | C24U | 2600 | U/G Floo | 0 | R/F | 0 | 7.680 m² | 0.95 m³
: 10 | | | | | | | | | 60.090 m² | 7.25 m³
R.C. Column (Substructure) | 300 x 300m | R.C. Grade 40/20 (Superstructure) | P3F | 3400 | New Flat | 0 | New Cover f | 0 | 4.260 m² | 0.31 m³ | New flat roof
R.C. Column (Substructure) | 300 x 300m | R.C. Grade 40/20 (Superstructure) | C41F | 3100 | New Flat | 300 | New Cover f | 0 | 3.900 m² | 0.28 m³ | New flat roof
New flat roof: 2 | | | | | | | | | 8.160 m² | 0.59 m³
Ready
NUM



Link: www.arcomnet.com

1

Design visualization

2

Drawing Productions

3

Services Co-ordination and Clash detection with other disciplines

4

Quantity taking and preparation of Tender Document

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Automated Statutory Submission

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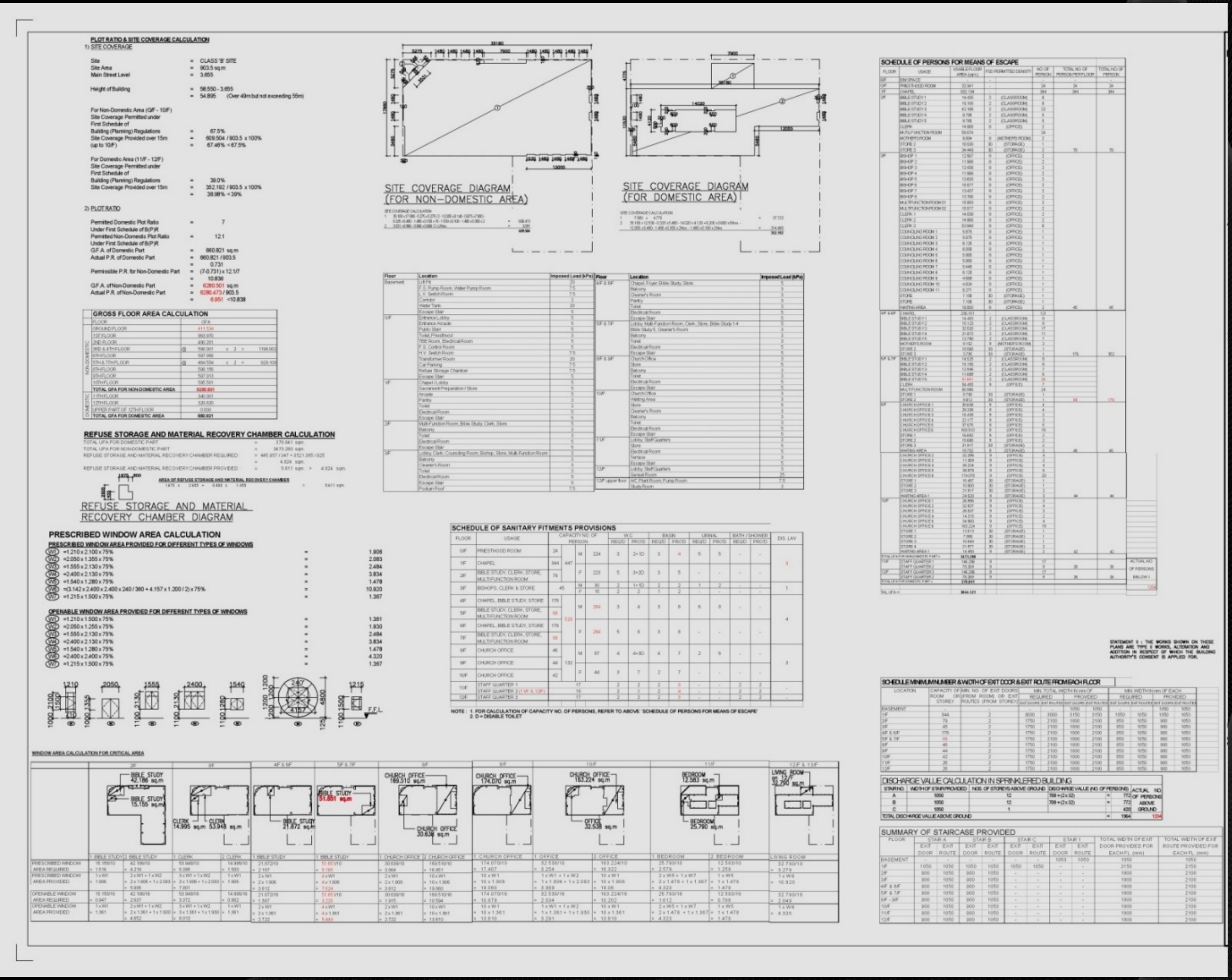
7

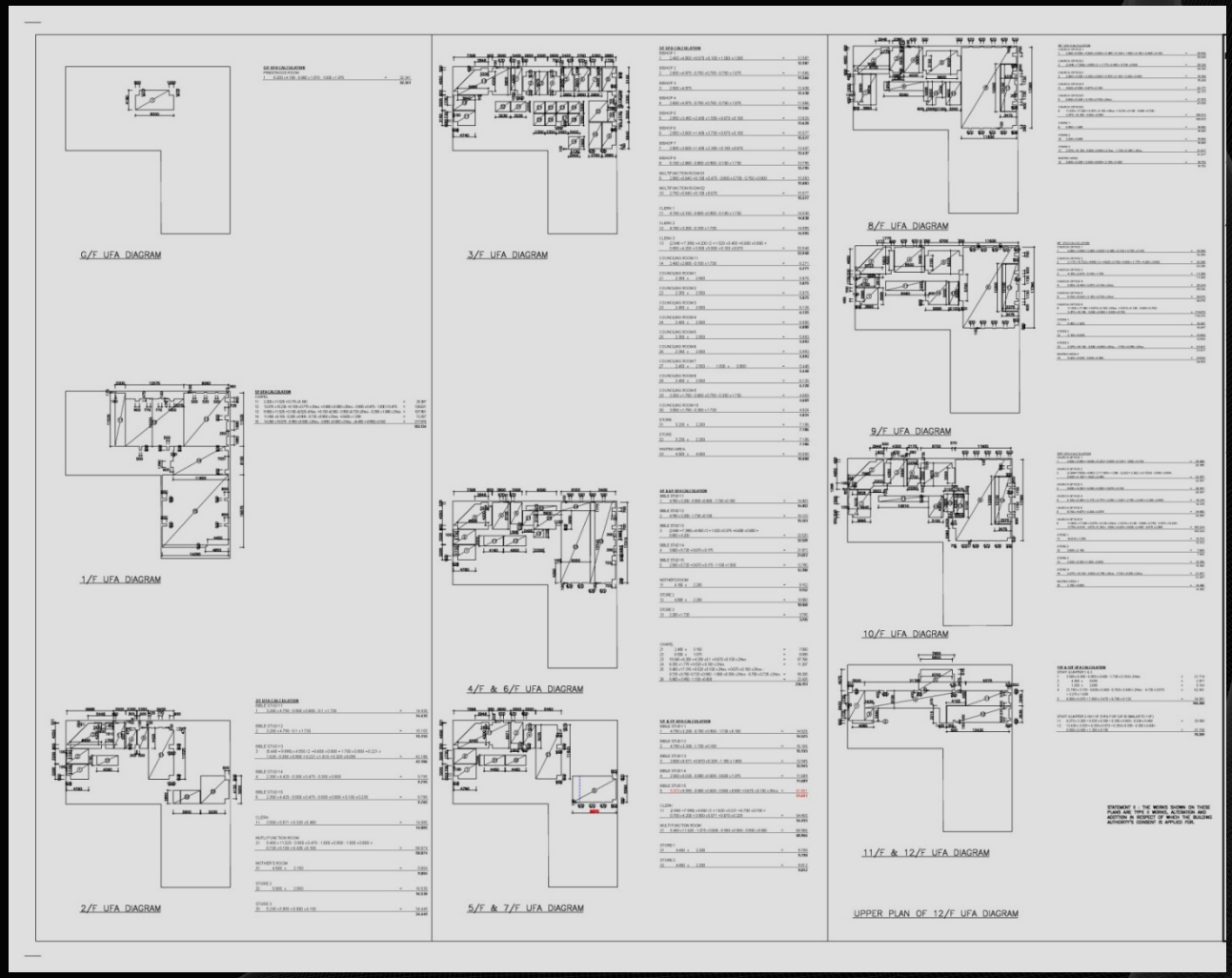
Supply Chain Integration with manufacturing and production

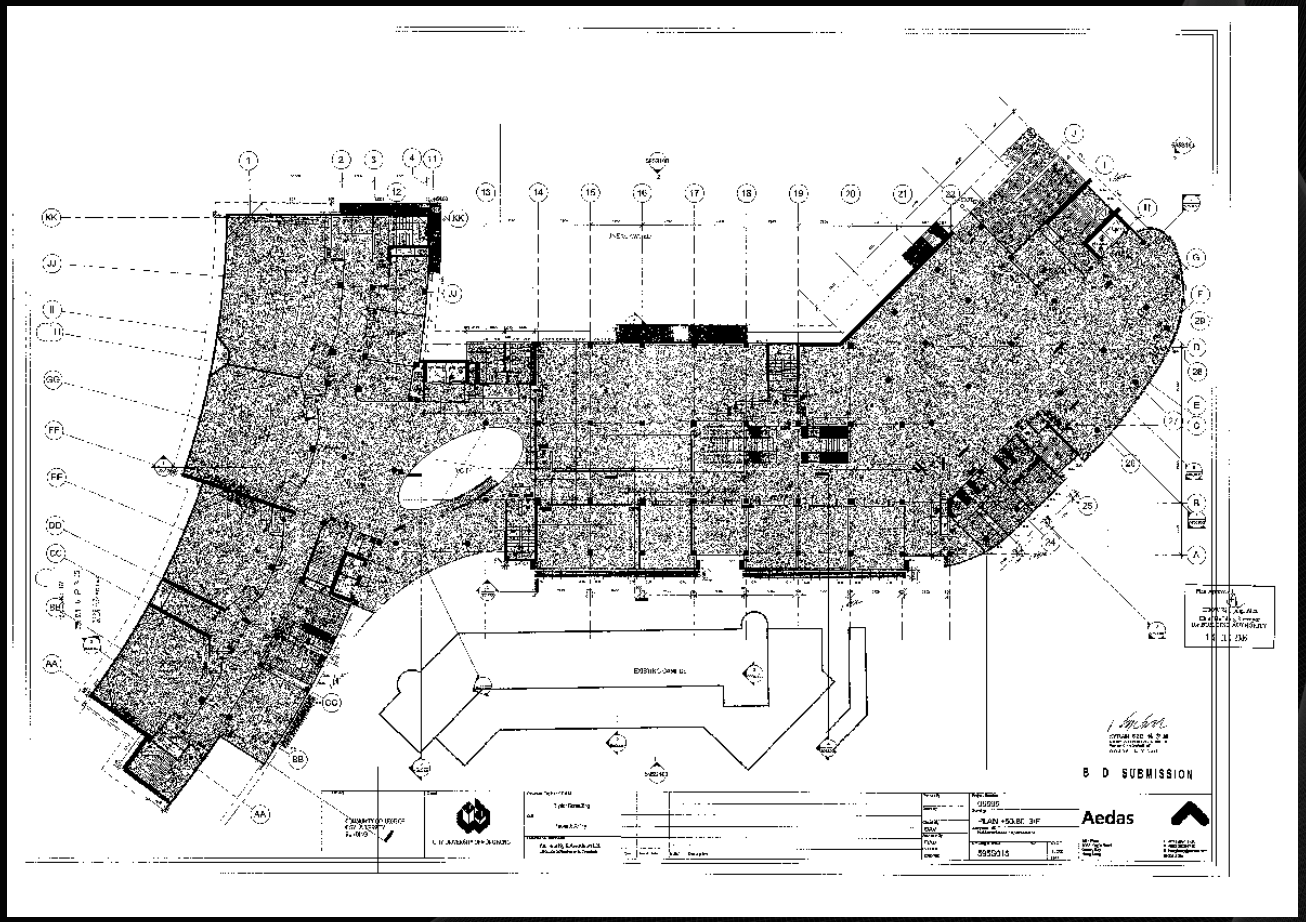
8

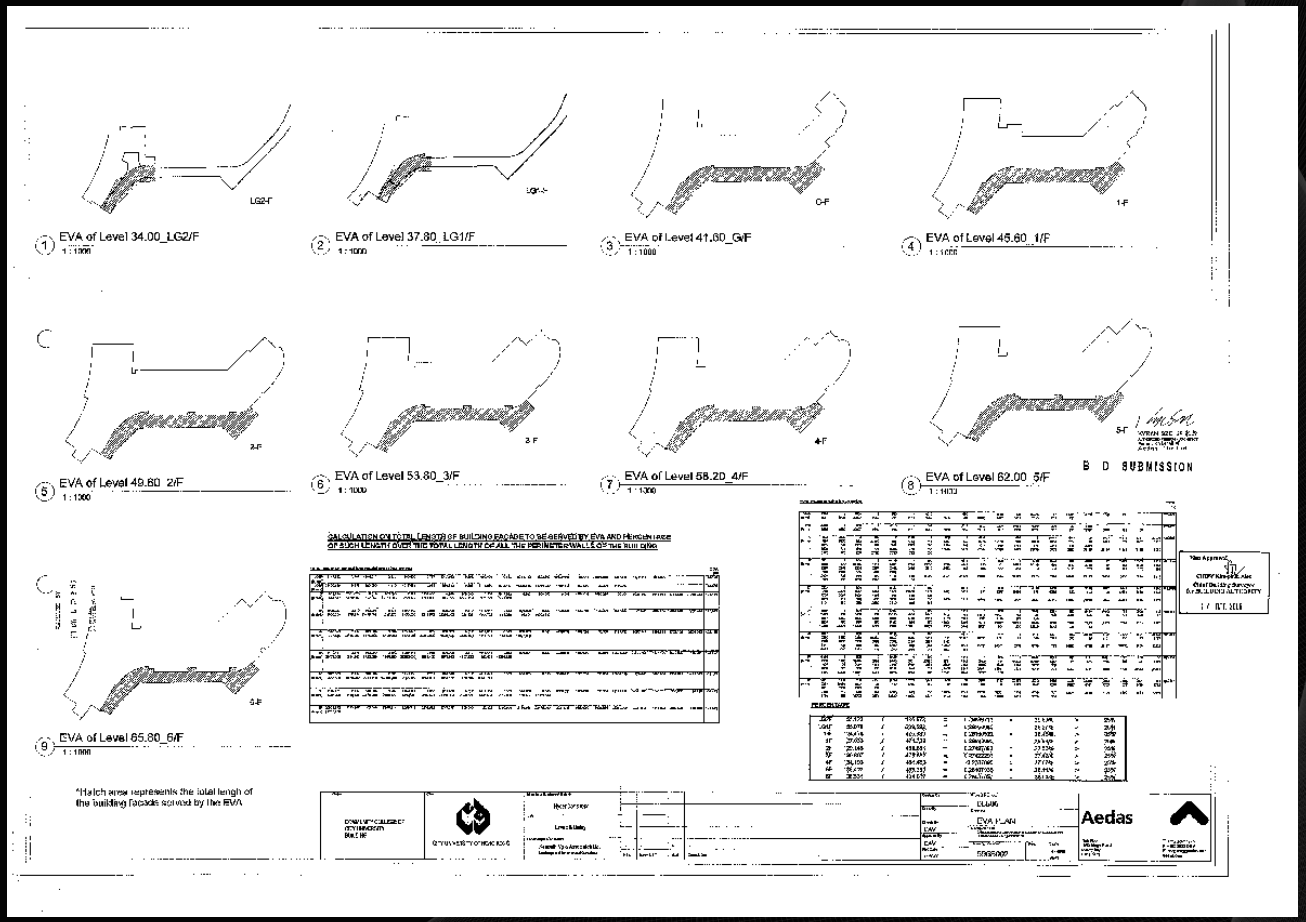
Complex Geometry

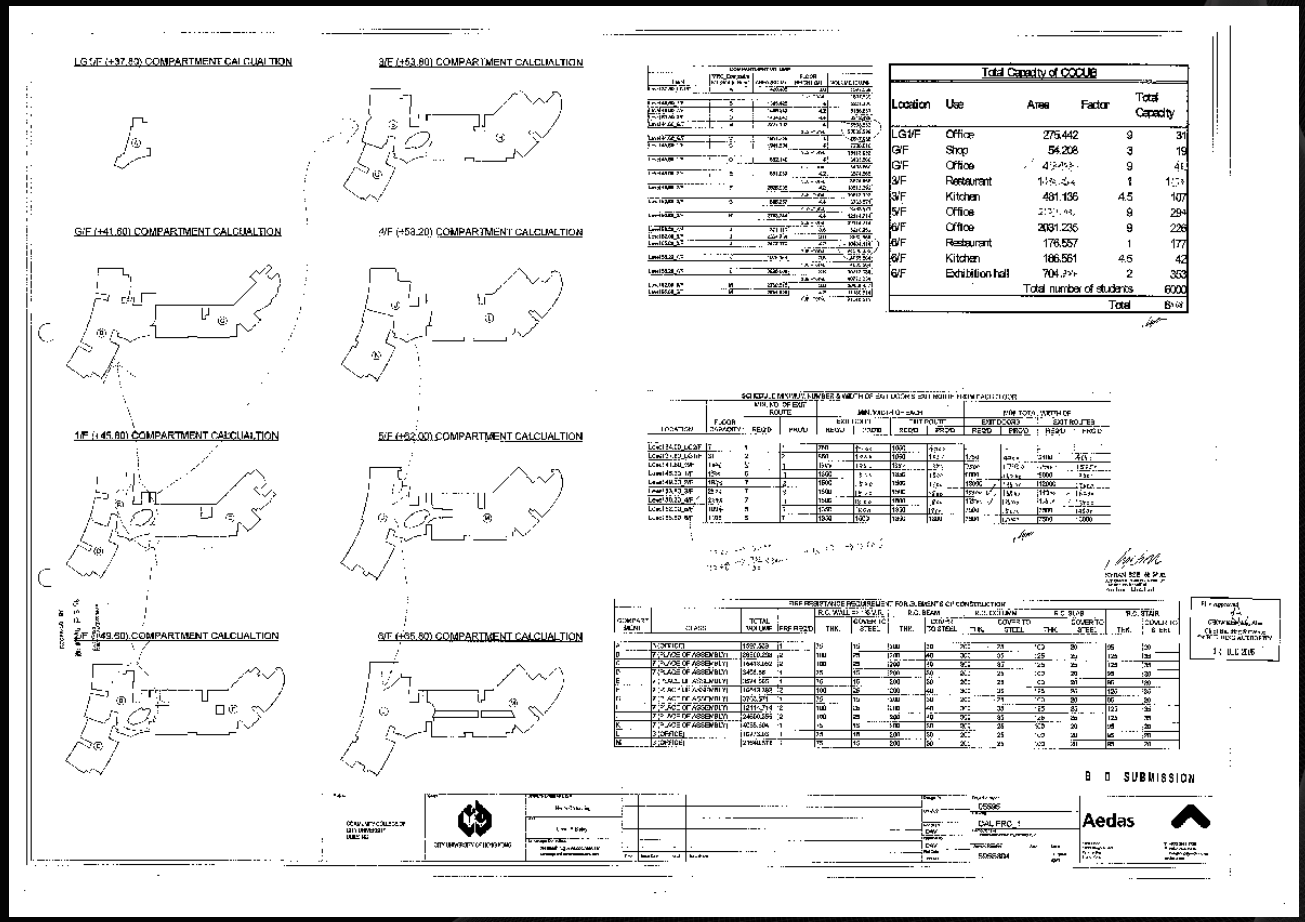


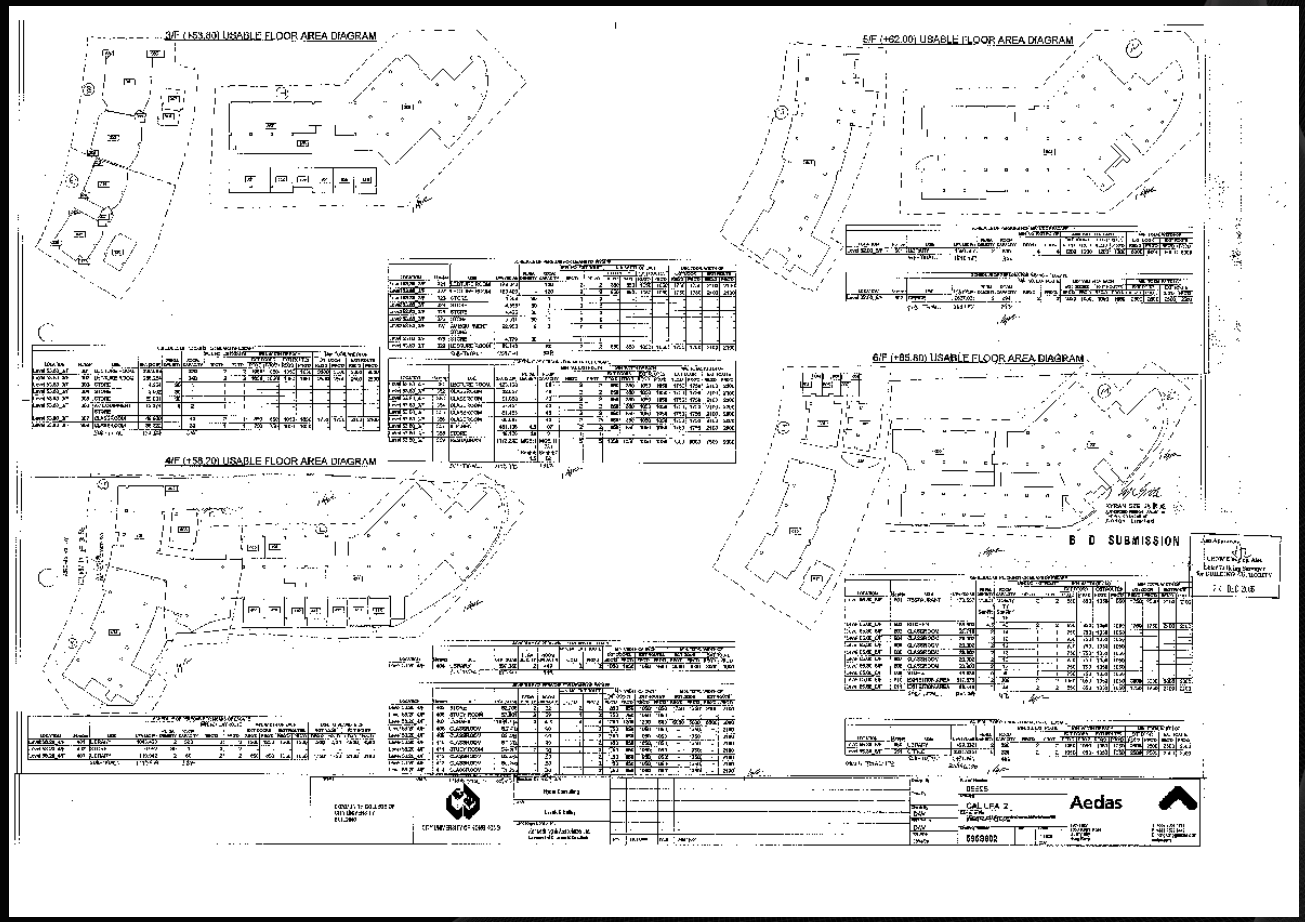
COMMON WAY: PROJECT EXAMPLE


G/F UFA DIAGRAM
3/F UFA DIAGRAM
8/F UFA DIAGRAM
1/F UFA DIAGRAM
4/F & 6/F UFA DIAGRAM
9/F UFA DIAGRAM
10/F UFA DIAGRAM
2/F UFA DIAGRAM
5/F & 7/F UFA DIAGRAM
11/F & 12/F UFA DIAGRAM
UPPER PLAN OF 12/F UFA DIAGRAM


B D SUBMISSION
Aedas


EVA of Level 34.00_LG2/F
EVA of Level 37.80_LG1/F
EVA of Level 41.60_G/F
EVA of Level 45.60_1/F
EVA of Level 49.60_2/F
EVA of Level 53.80_3/F
EVA of Level 58.20_4/F
EVA of Level 62.00_5/F
B D SUBMISSION
EVA of Level 65.80_6/F
*Hatch area represents the total length of the building facades served by the EVA
Aedas


LG1/F (+37.80) COMPARTMENT CALCULATION
3/F (+53.80) COMPARTMENT CALCULATION
G/F (+41.60) COMPARTMENT CALCULATION
4/F (+58.20) COMPARTMENT CALCULATION
1/F (+45.60) COMPARTMENT CALCULATION
5/F (+62.00) COMPARTMENT CALCULATION
2/F (+49.60) COMPARTMENT CALCULATION
6/F (+65.80) COMPARTMENT CALCULATION
Total Capacity of CCUB
Location Use Area Factor Total Capacity
LG1/F Office 275,442 9 31
G/F Shop 54,208 3 19
G/F Office 9 46
3/F Restaurant 1 127
3/F Kitchen 491.136 4.5 107
5/F Office 9 294
6/F Office 2031.235 9 226
6/F Restaurant 176.557 1 177
6/F Kitchen 186.551 4.5 42
6/F Exhibition hall 704.[illegible] 2 353
Total number of students 6000
Total
B O SUBMISSION
Aedas


3/F (+53.80) USABLE FLOOR AREA DIAGRAM
5/F (+62.00) USABLE FLOOR AREA DIAGRAM
6/F (+66.80) USABLE FLOOR AREA DIAGRAM
4/F (+58.20) USABLE FLOOR AREA DIAGRAM
B D SUBMISSION
Aedas

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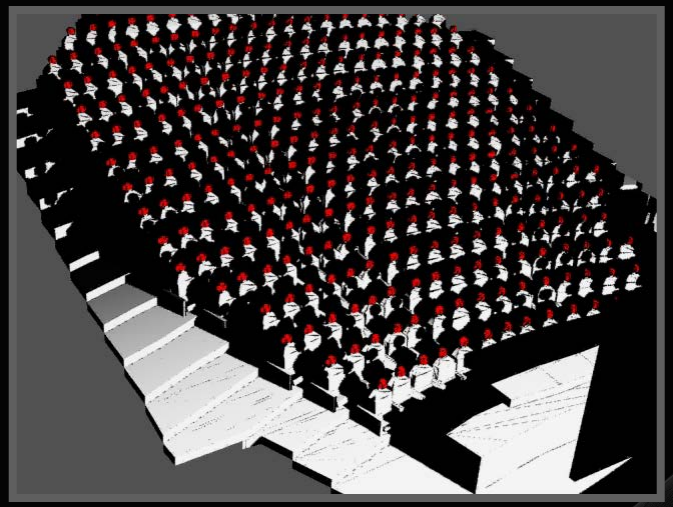
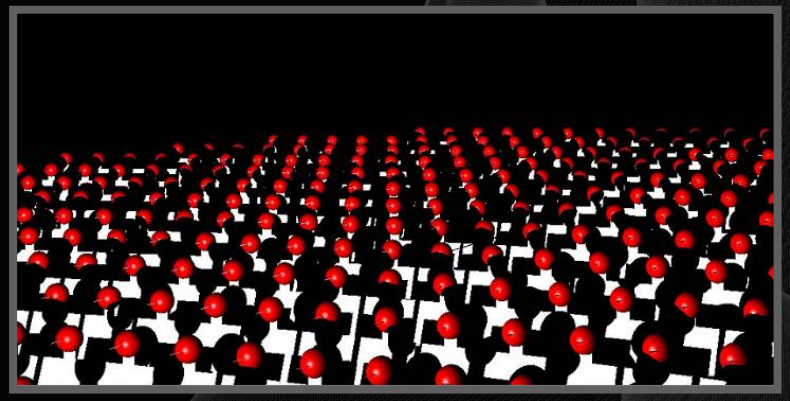
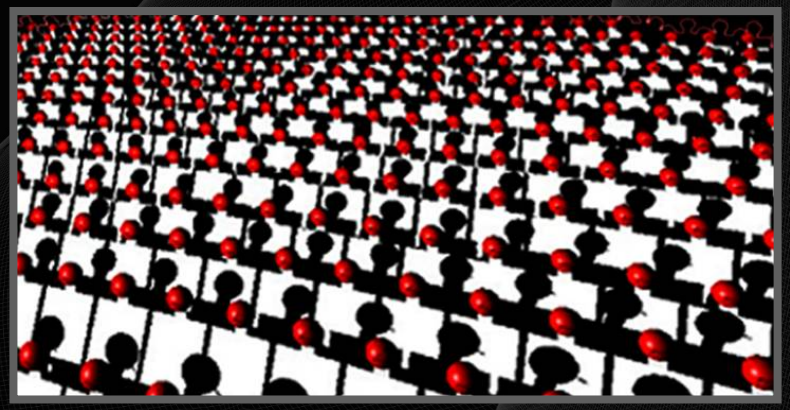


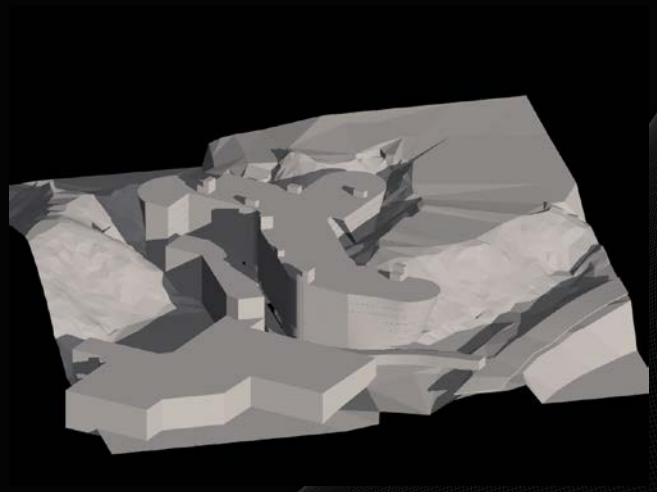
Radiating Light Method



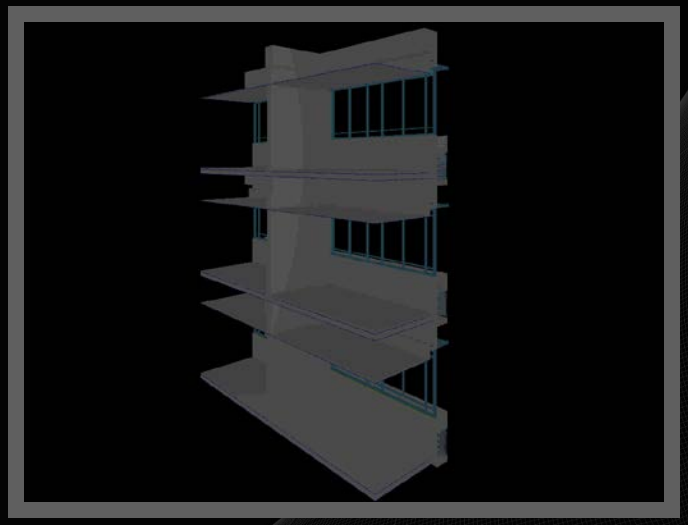
Unsatisfactory sightlines



Satisfactory sightlines



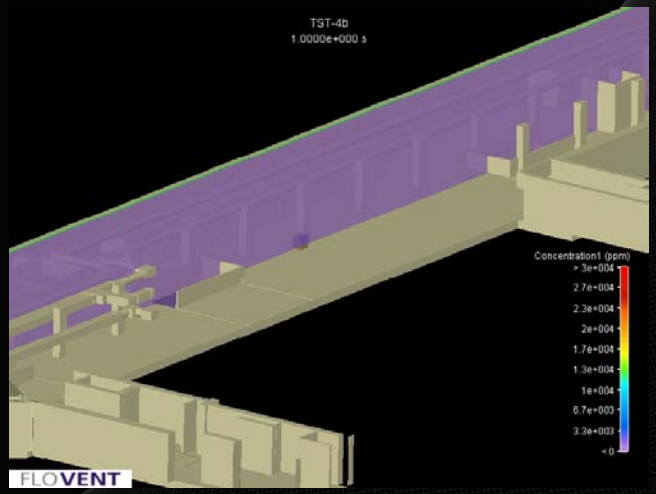
SUN STUDY

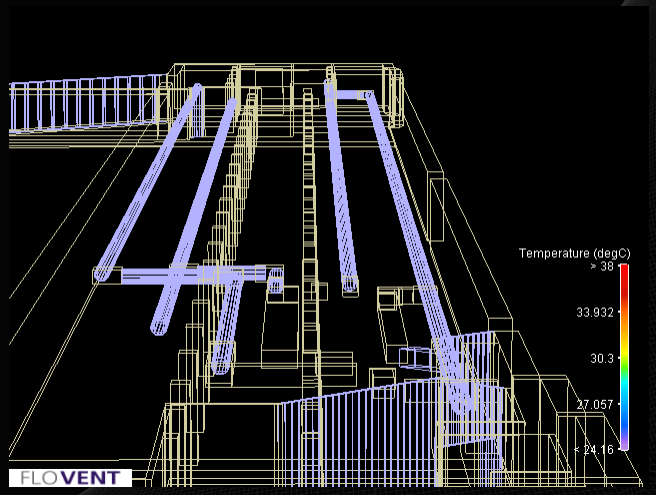


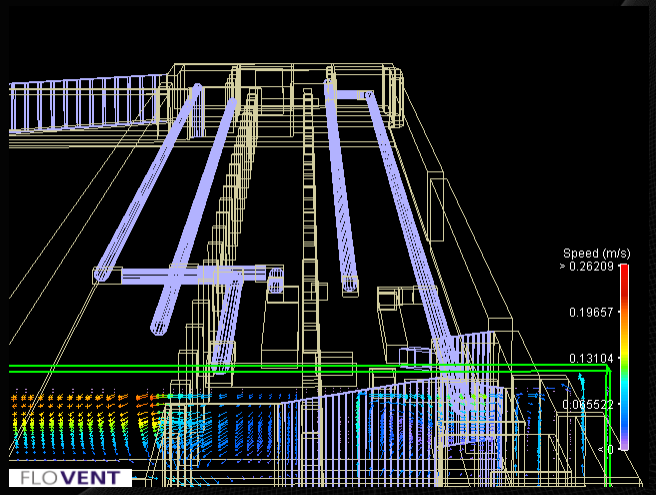
FAÇADE SOLAR STUDY

21/12/2006 7:00am – 6:00pm

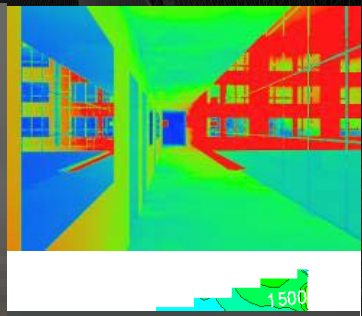

TST-4c
1.0000e+000 s
Temperature (degC)
> 500
446.67
393.33
340
286.67
233.33
180
126.67
73.333
< 20
FLOVENT

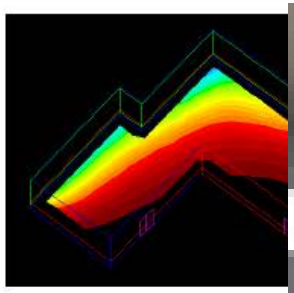

TST-4b
1.0000e+000 s
Concentration1 (ppm)
> 3e+004
2.7e+004
2.3e+004
2e+004
1.7e+004
1.3e+004
1e+004
6.7e+003
3.3e+003
< 0
FLOVENT

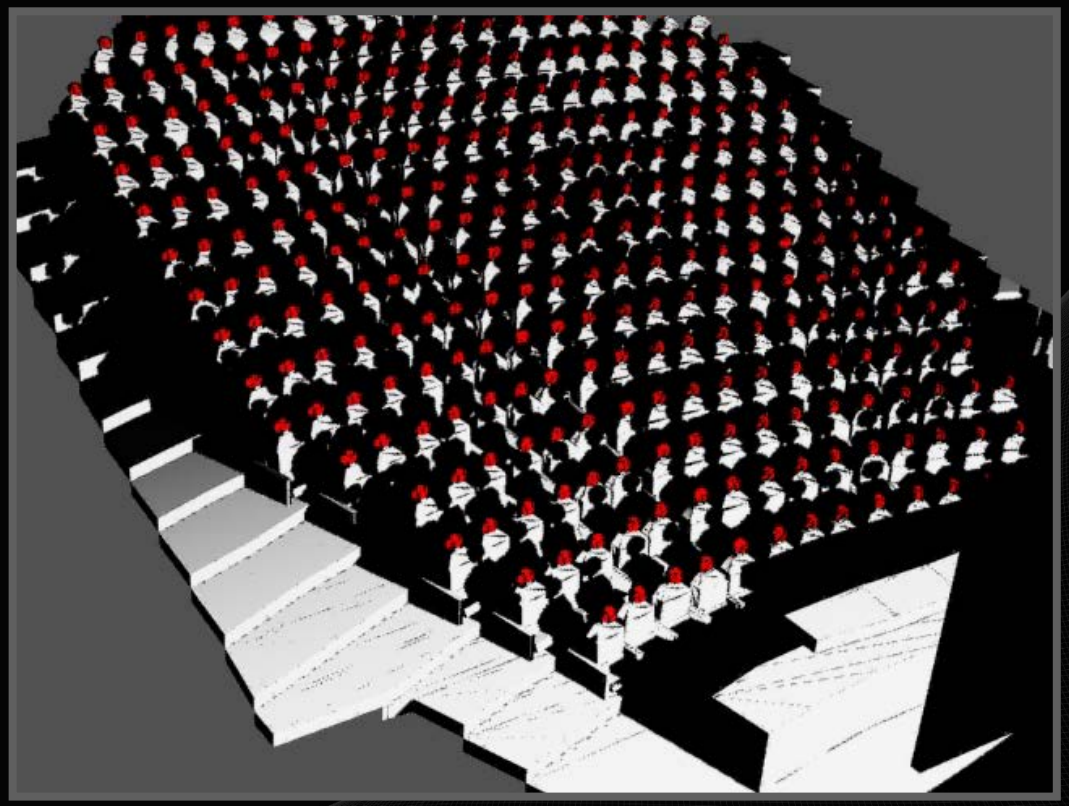

Temperature (degC)
> 38
33.932
30.3
27.057
< 24.16
FLOVENT

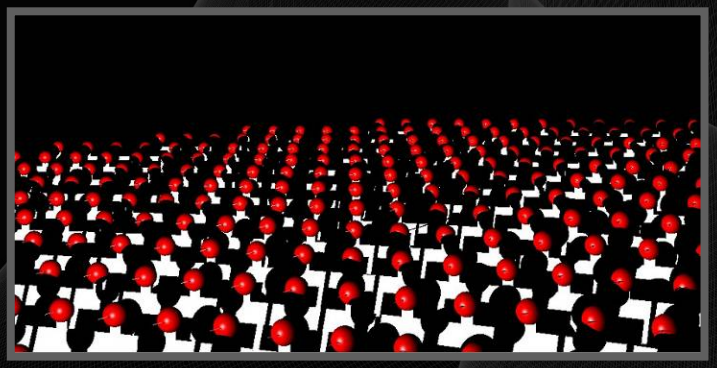

Speed (m/s)
> 0.26209
0.19657
0.13104
0.065522
<0
FLOVENT

Sustainable Design

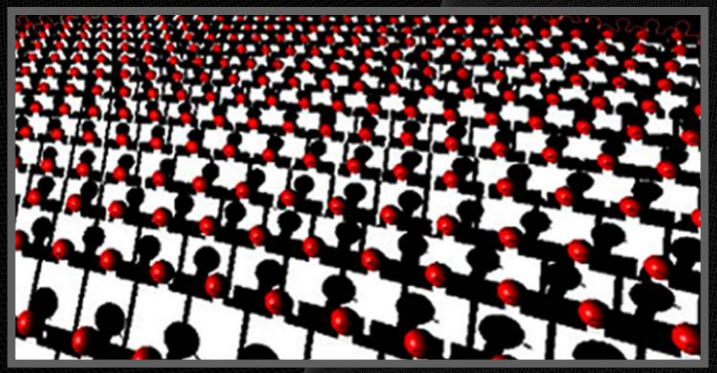








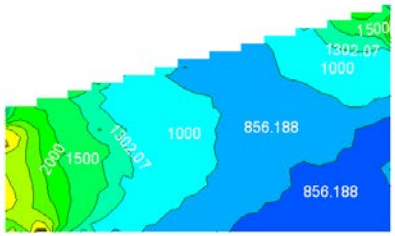
Unsatisfactory sightlines

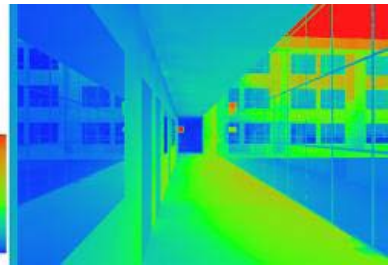


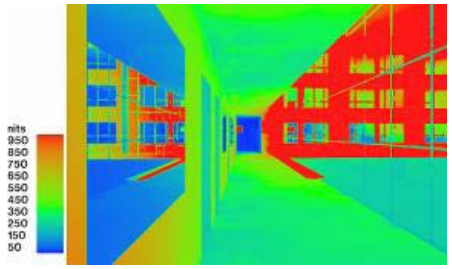
Satisfactory sightlines

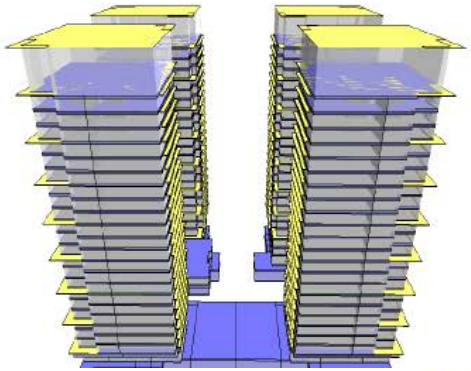
Radiating Light Method

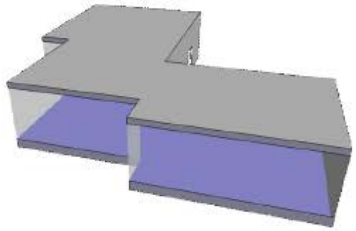
Month	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00
Jan									100.0	99.7	100.0	100.0	100.0	84.6	38.8	5.2								
Feb								100.0	100.0	100.0	100.0	100.0	100.0	98.7	73.9	32.7	3.0							
Mar							100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	91.5	60.4	25.7							
Apr						0.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.0	84.0	51.3	0.0						
May					0.0	0.0	0.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	92.9	0.0	0.0	0.0					
Jun				0.0	0.0	0.0	0.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	96.5	0.0	0.0	0.0	0.0				
Jul					0.0	0.0	0.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	96.3	0.0	0.0	0.0	0.0				
Aug					0.0	0.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	90.2	64.8	0.0	0.0					
Sep						0.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	92.2	64.0	30.8	0.0						
Oct							100.0	100.0	100.0	100.0	100.0	100.0	100.0	95.0	63.7	26.7								
Nov								100.0	100.0	100.0	100.0	100.0	100.0	77.0	31.7	1.8								
Dec									100.0	95.1	93.6	100.0	93.0	67.6	22.2									71.82

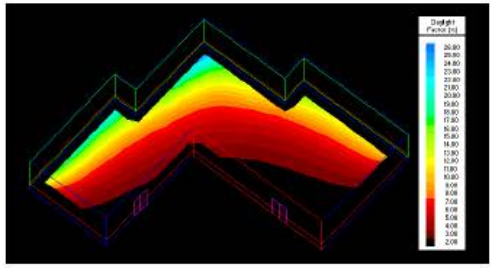


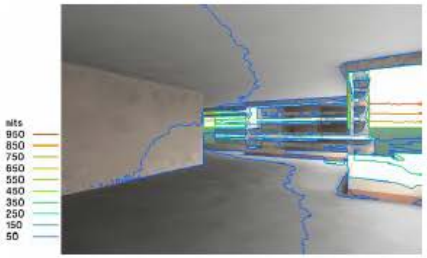


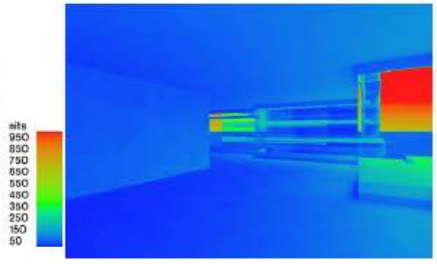


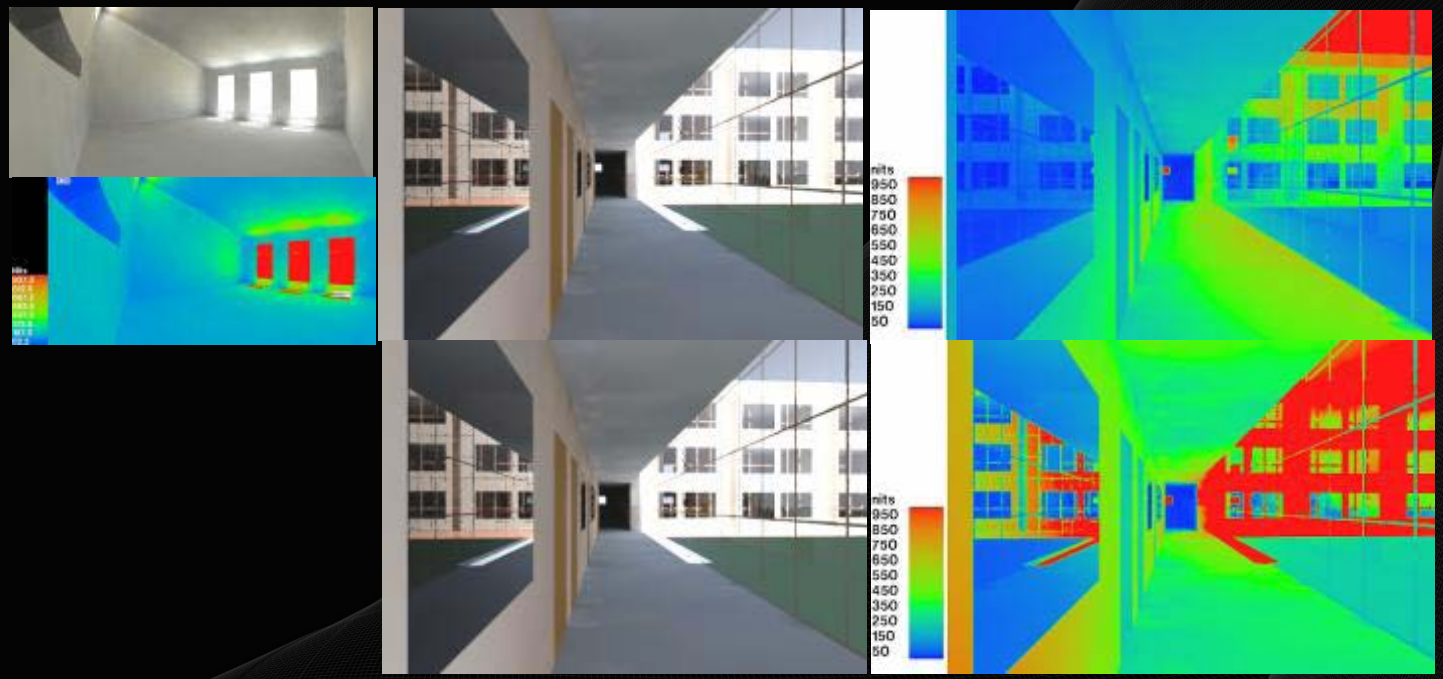











nits
950
850
750
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450
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150
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nits
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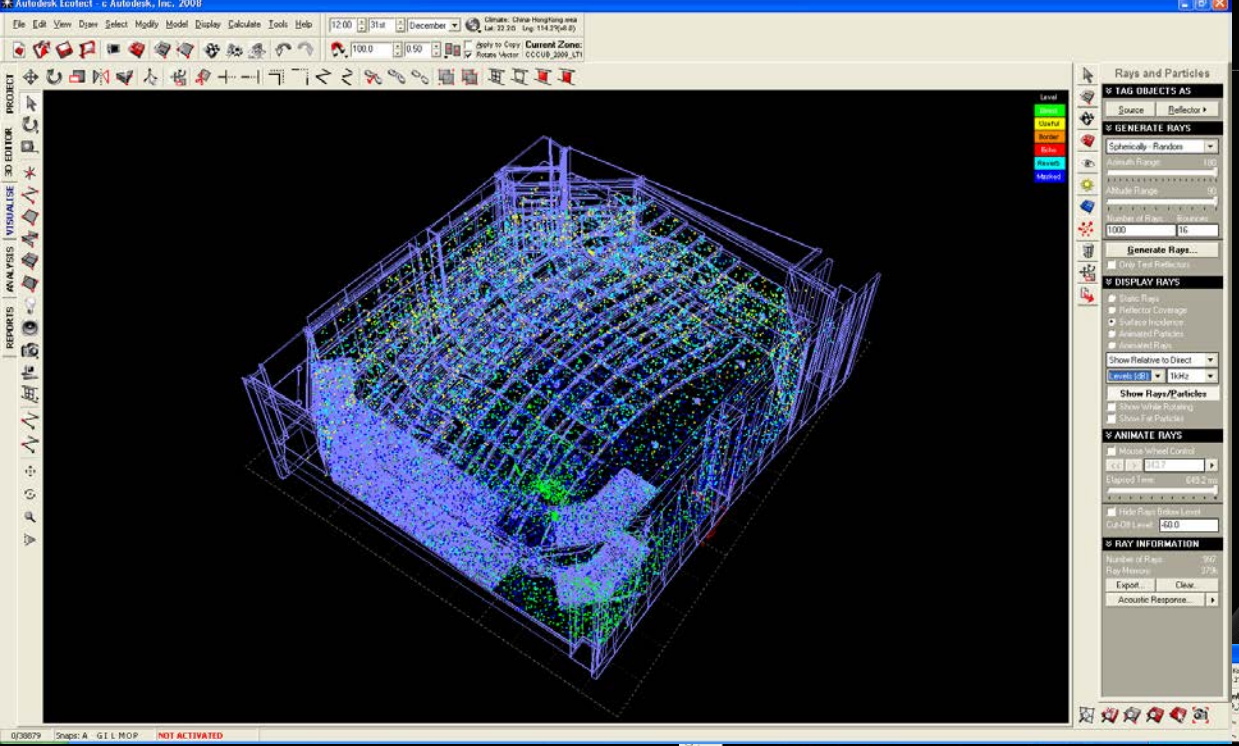
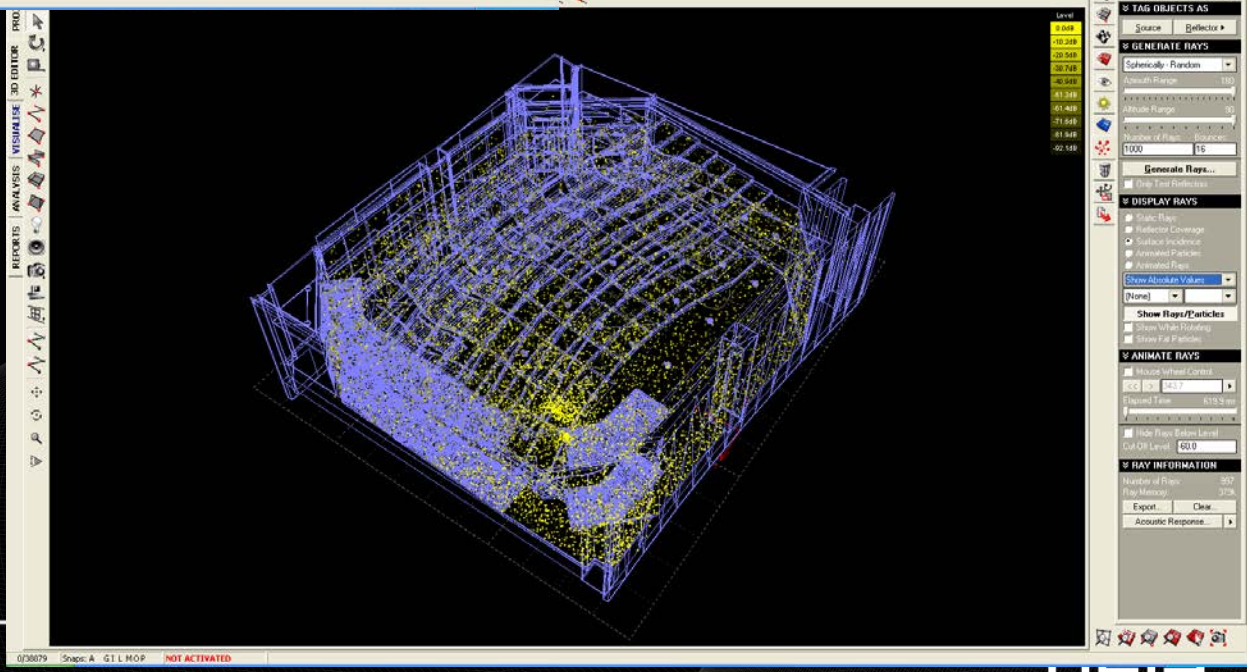
450
350
250
150
50


Autodesk Ecotect - c Autodesk, Inc. 2008
Rays and Particles
TAG OBJECTS AS
GENERATE RAYS
DISPLAY RAYS
ANIMATE RAYS
RAY INFORMATION


Rays and Particles
TAG OBJECTS AS
GENERATE RAYS
DISPLAY RAYS
ANIMATE RAYS
RAY INFORMATION

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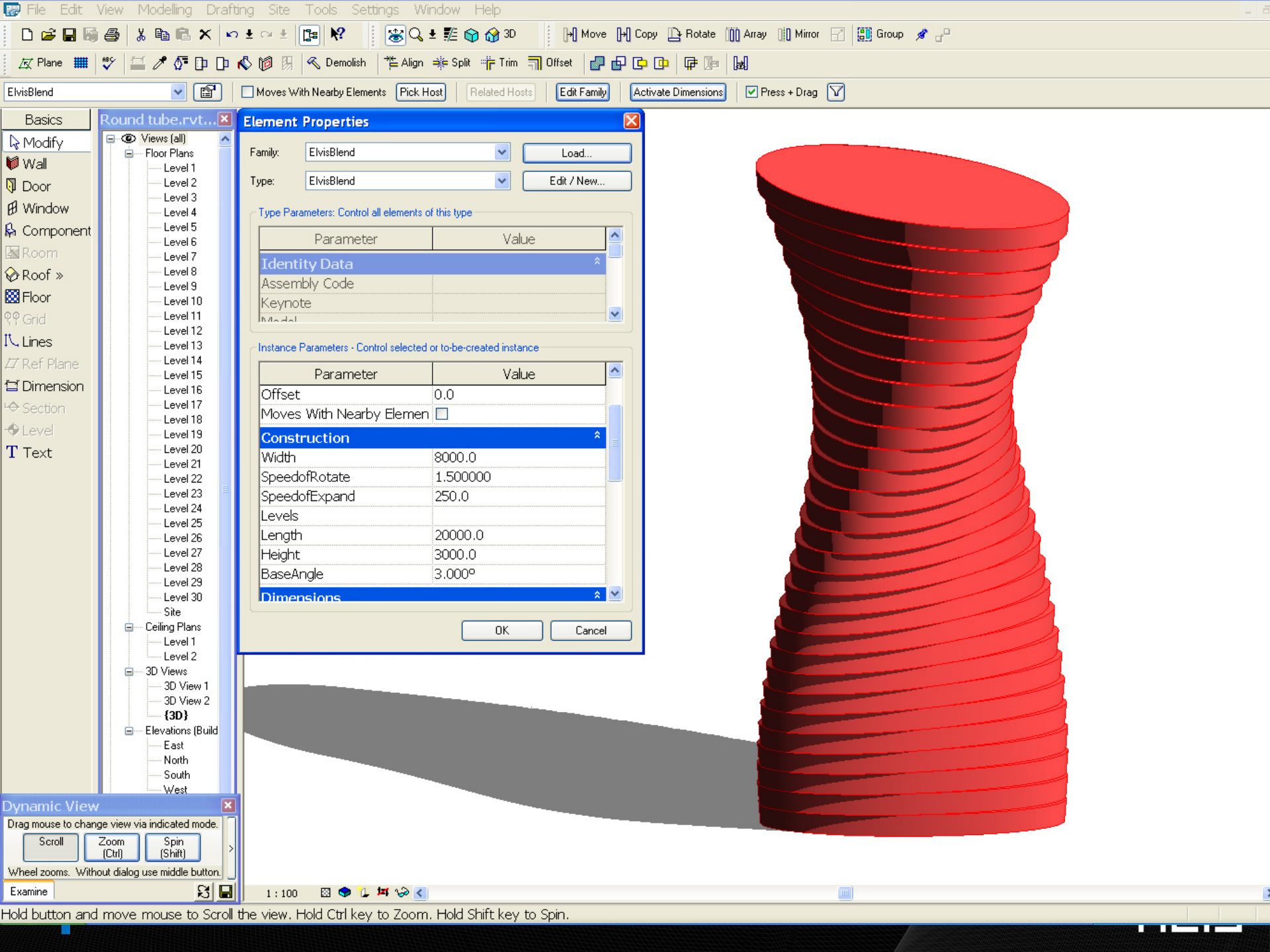
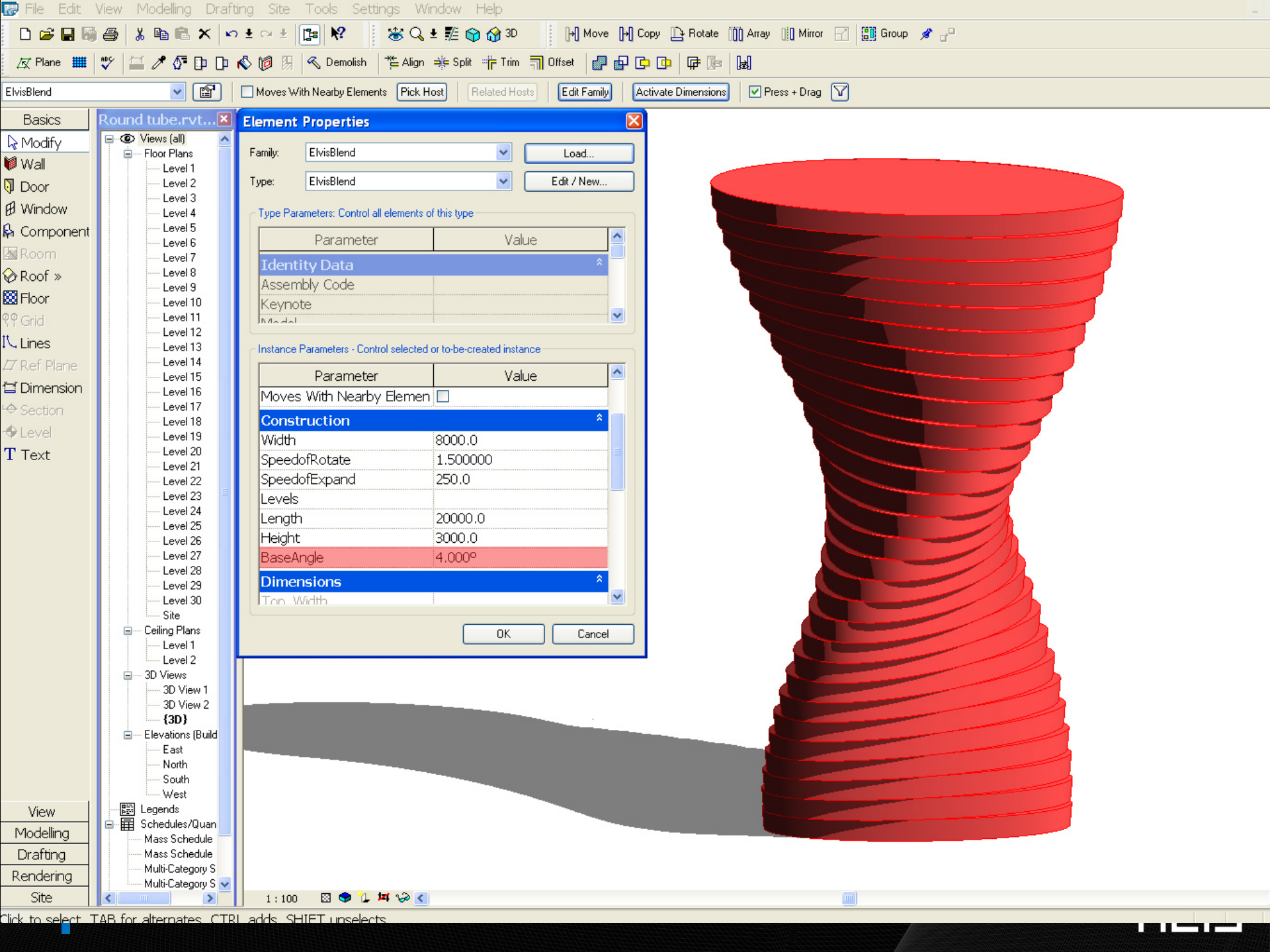

File Edit View Modelling Drafting Site Tools Settings Window Help
Move Copy Rotate Array Mirror Group
Plane Demolish Align Split Trim Offset
ElvisBlend
Moves With Nearby Elements
Pick Host
Related Hosts
Edit Family
Activate Dimensions
Press + Drag
Basics
Modify
Wall
Door
Window
Component
Room
Roof
Floor
Grid
Lines
Ref Plane
Dimension
Section
Level
Text
Round tube.rvt...
Views (all)
Floor Plans
Level 1
Level 2
Level 3
Level 4
Level 5
Level 6
Level 7
Level 8
Level 9
Level 10
Level 11
Level 12
Level 13
Level 14
Level 15
Level 16
Level 17
Level 18
Level 19
Level 20
Level 21
Level 22
Level 23
Level 24
Level 25
Level 26
Level 27
Level 28
Level 29
Level 30
Site
Ceiling Plans
Level 1
Level 2
3D Views
3D View 1
3D View 2
{3D}
Elevations (Build
East
North
South
West
Element Properties
Family: ElvisBlend
Load...
Type: ElvisBlend
Edit / New...
Type Parameters: Control all elements of this type
Parameter
Value
Identity Data
Assembly Code
Keynote
Instance Parameters - Control selected or to-be-created instance
Parameter
Value
Offset 0.0
Moves With Nearby Elemen
Construction
Width 8000.0
SpeedofRotate 1.500000
SpeedofExpand 250.0
Levels
Length 20000.0
Height 3000.0
BaseAngle 3.000°
Dimensions
OK
Cancel
Dynamic View
Drag mouse to change view via indicated mode.
Scroll
Zoom (Ctrl)
Spin (Shift)
Wheel zooms. Without dialog use middle button.
Examine
1 : 100
Hold button and move mouse to Scroll the view. Hold Ctrl key to Zoom. Hold Shift key to Spin.


File Edit View Modelling Drafting Site Tools Settings Window Help
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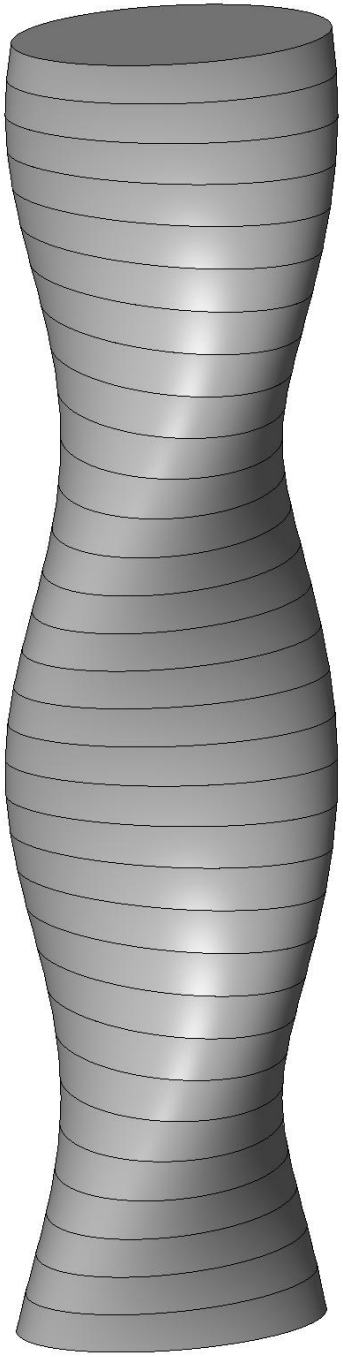
Basics
Modify
Wall
Door
Window
Component
Room
Roof
Floor
Grid
Lines
Ref Plane
Dimension
Section
Level
Text
Round tube.rvt...
Views (all)
Floor Plans
Level 1
Level 2
Level 3
Level 4
Level 5
Level 6
Level 7
Level 8
Level 9
Level 10
Level 11
Level 12
Level 13
Level 14
Level 15
Level 16
Level 17
Level 18
Level 19
Level 20
Level 21
Level 22
Level 23
Level 24
Level 25
Level 26
Level 27
Level 28
Level 29
Level 30
Site
Ceiling Plans
Level 1
Level 2
3D Views
3D View 1
3D View 2
{3D}
Elevations (Build
East
North
South
West
Legends
Schedules/Quan
Mass Schedule
Mass Schedule
Multi-Category S
Multi-Category S
View
Modelling
Drafting
Rendering
Site
Element Properties
Family: ElvisBlend
Load...
Type: ElvisBlend
Edit / New...
Type Parameters: Control all elements of this type
Parameter
Value
Identity Data
Assembly Code
Keynote
Instance Parameters - Control selected or to-be-created instance
Parameter
Value
Moves With Nearby Elemen
Construction
Width 8000.0
SpeedofRotate 1.500000
SpeedofExpand 250.0
Levels
Length 20000.0
Height 3000.0
BaseAngle 4.000°
Dimensions
OK
Cancel
1 : 100
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.



absoluteworld
BUILDING 2

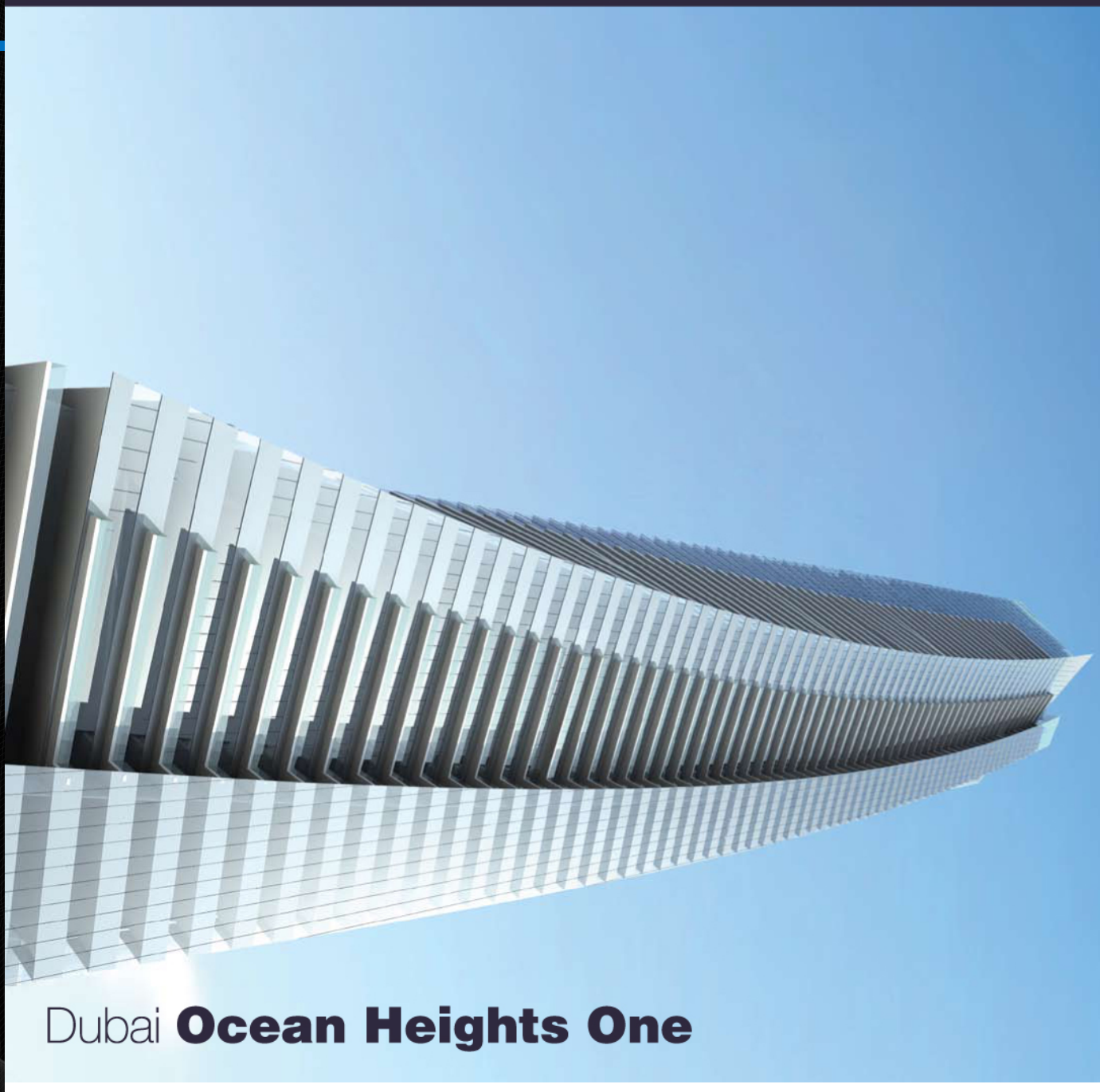
AbsoluteWorld's two buildings, as envisioned by their creator, Yansong Ma. The buildings were designed to complement and enhance each other, each with its own unique personality, but created from the same architectural language.

Commenting on the design, Ma says: "They talk to each other and harmonize with each other. There is a synergy between them, an aura which transcends each of the individual buildings to create a totally unique and original urban space."

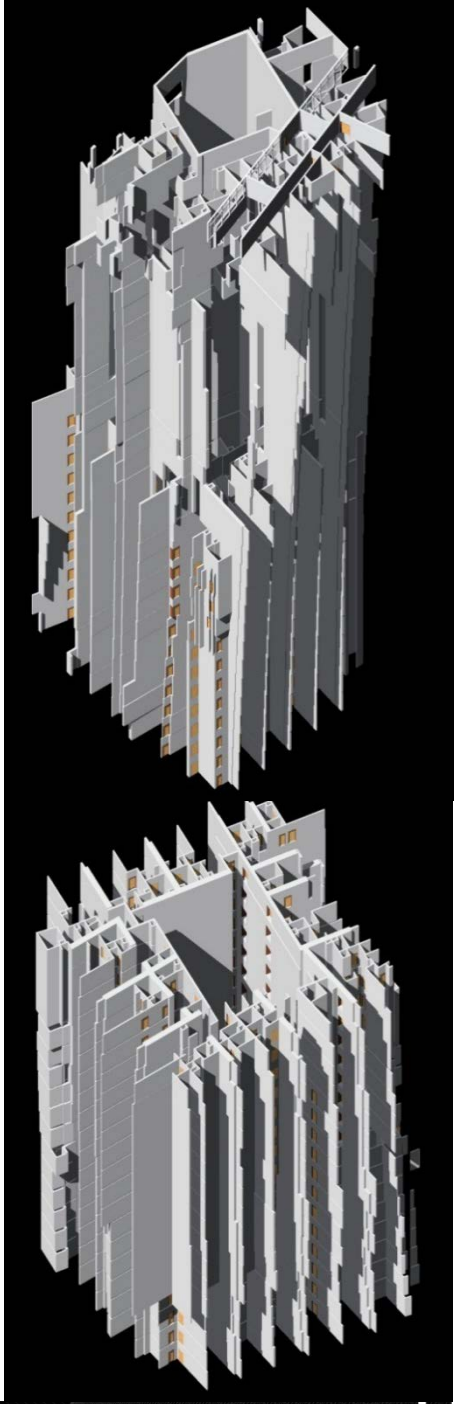
absoluteworld
BUILDING 1

MON. - THURS.: 12 P.M. - 7 P.M.
SAT. & SUN.: 11 A.M. - 6 P.M.
FRI.: CLOSED

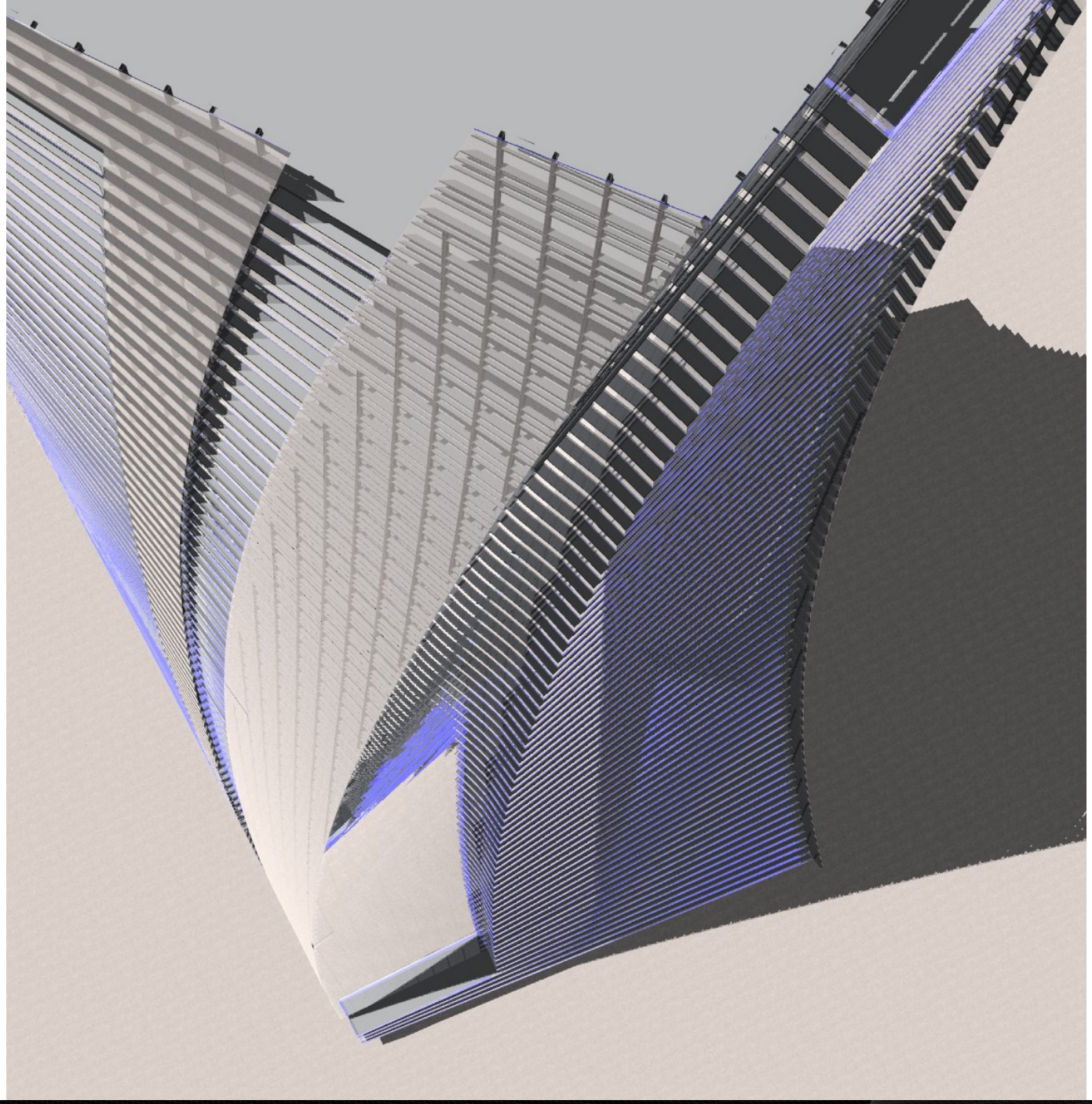
Program **Residential** Site Area **3,746 sqm**
Floor Area 858,655 sqm Building Height **304 m**

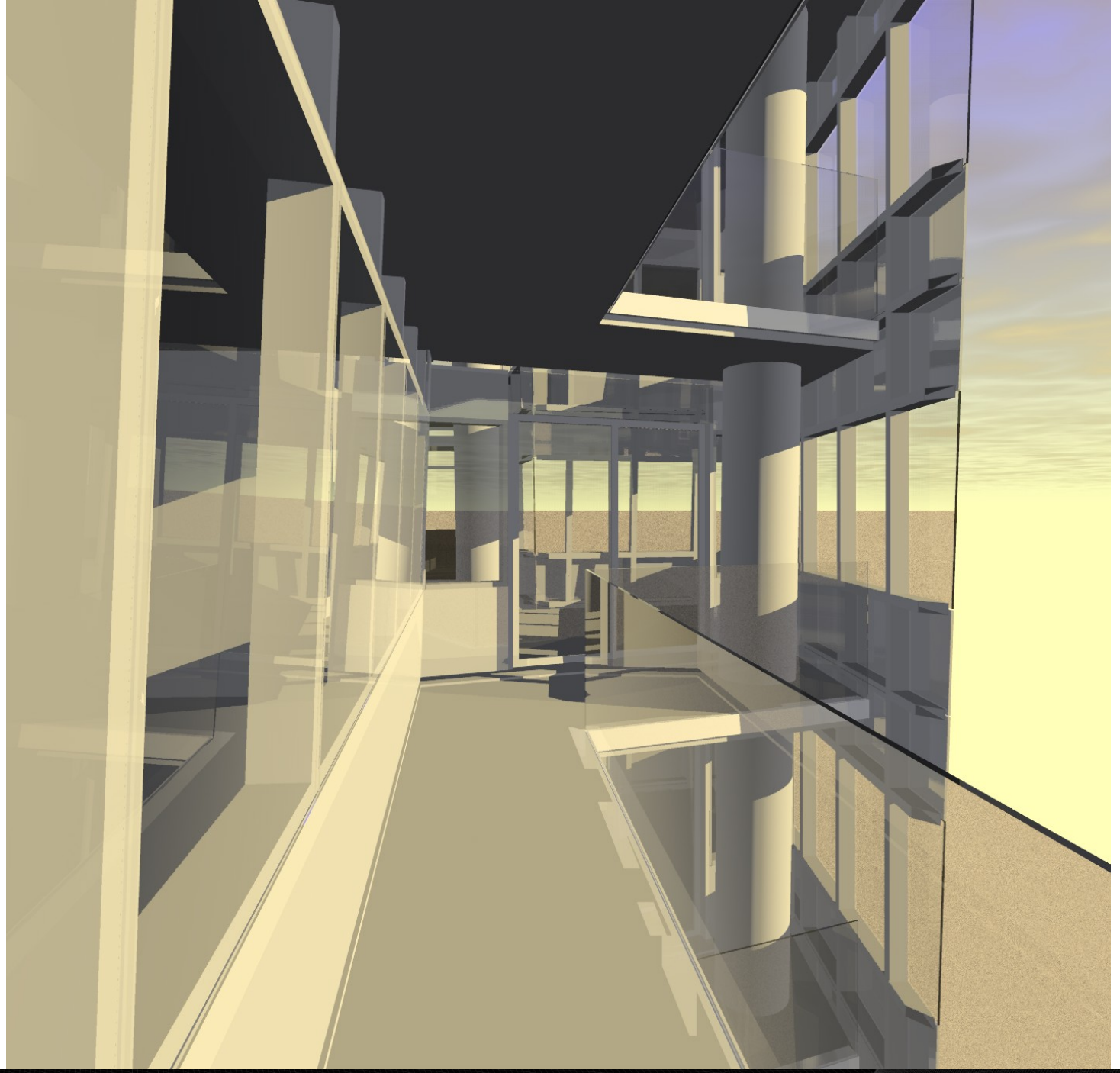


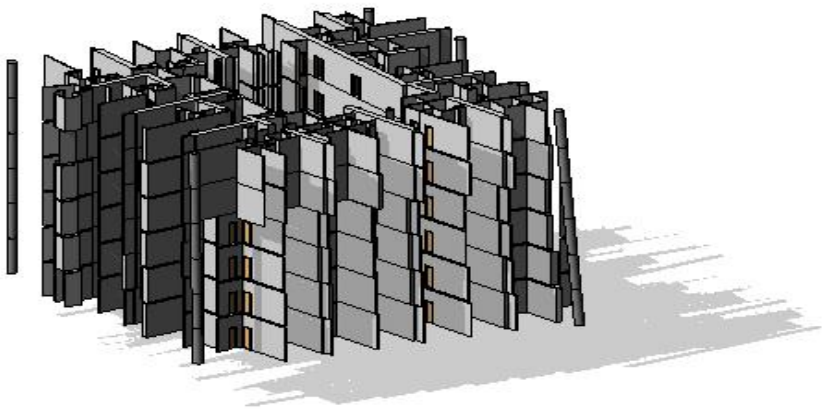
Dubai **Ocean Heights One**

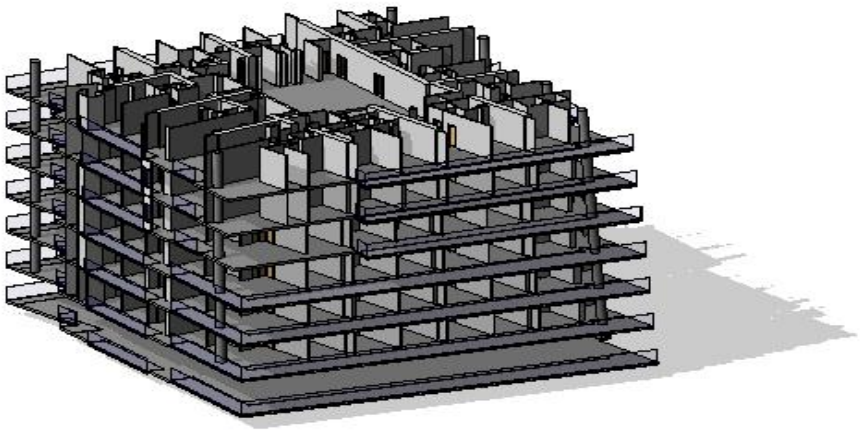


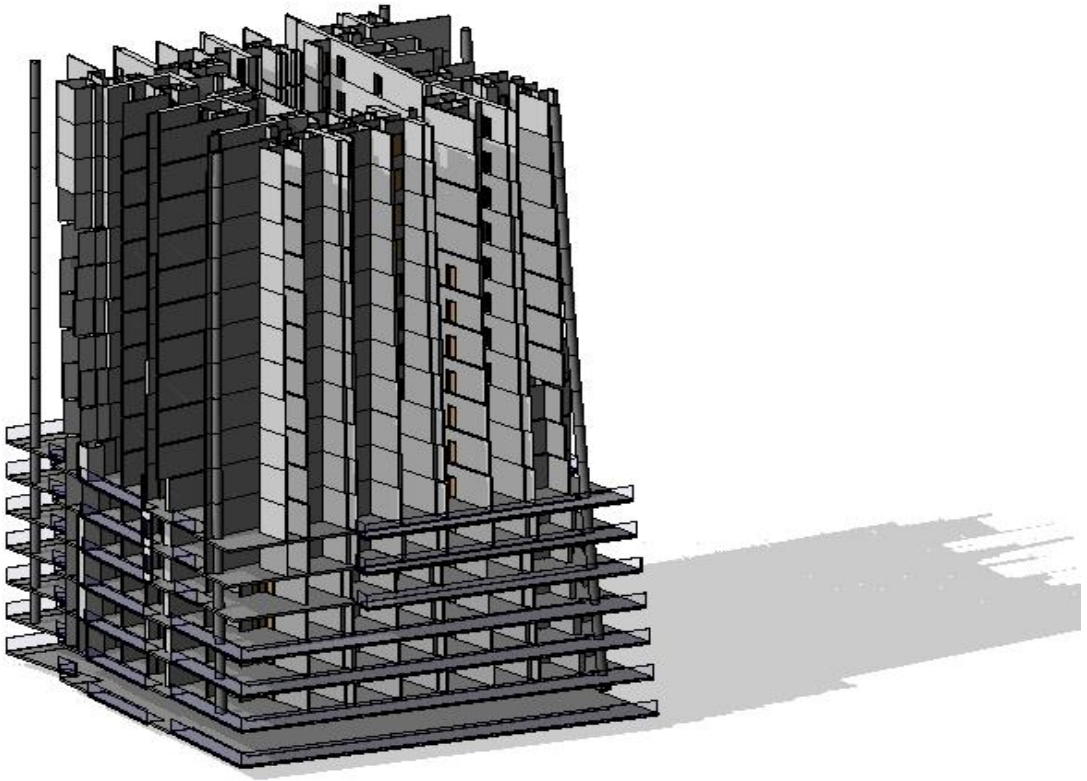
COMPLEX GEOMETRY

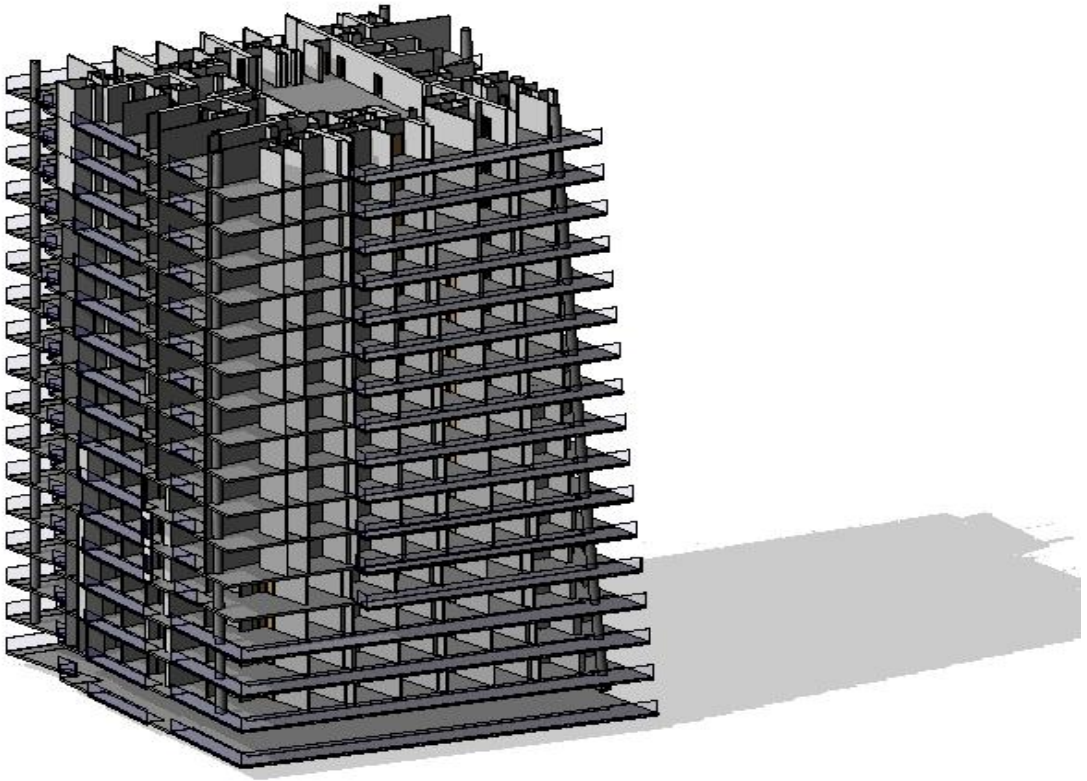


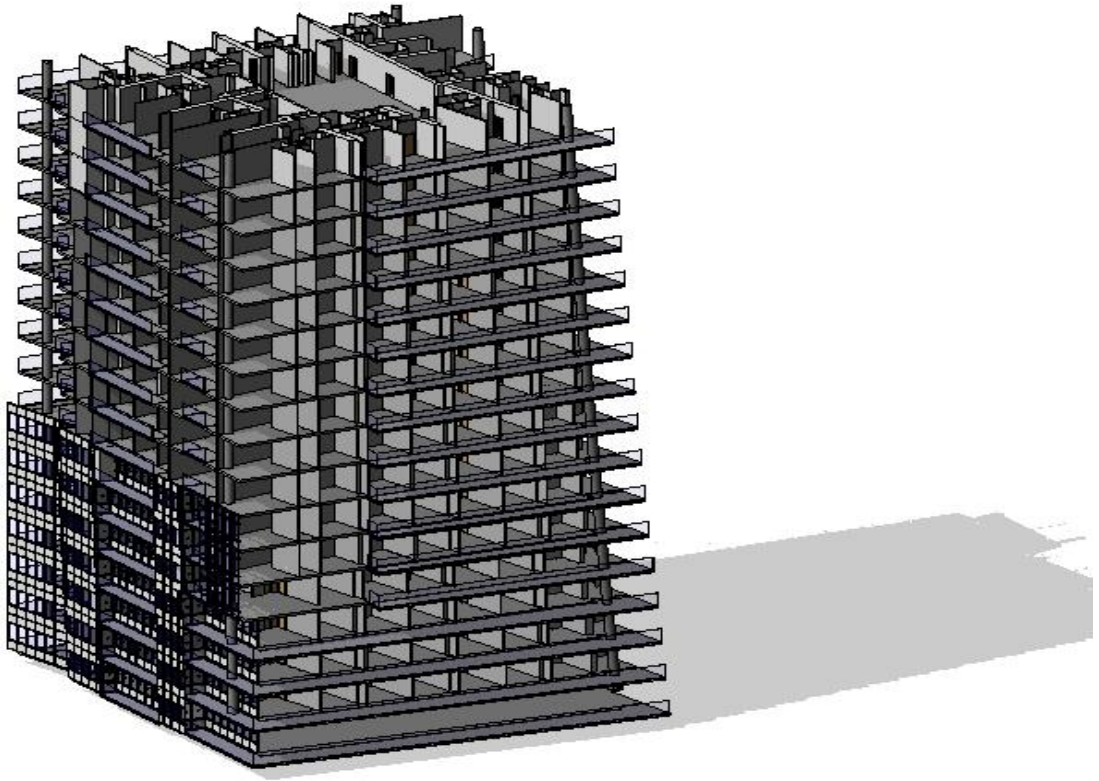


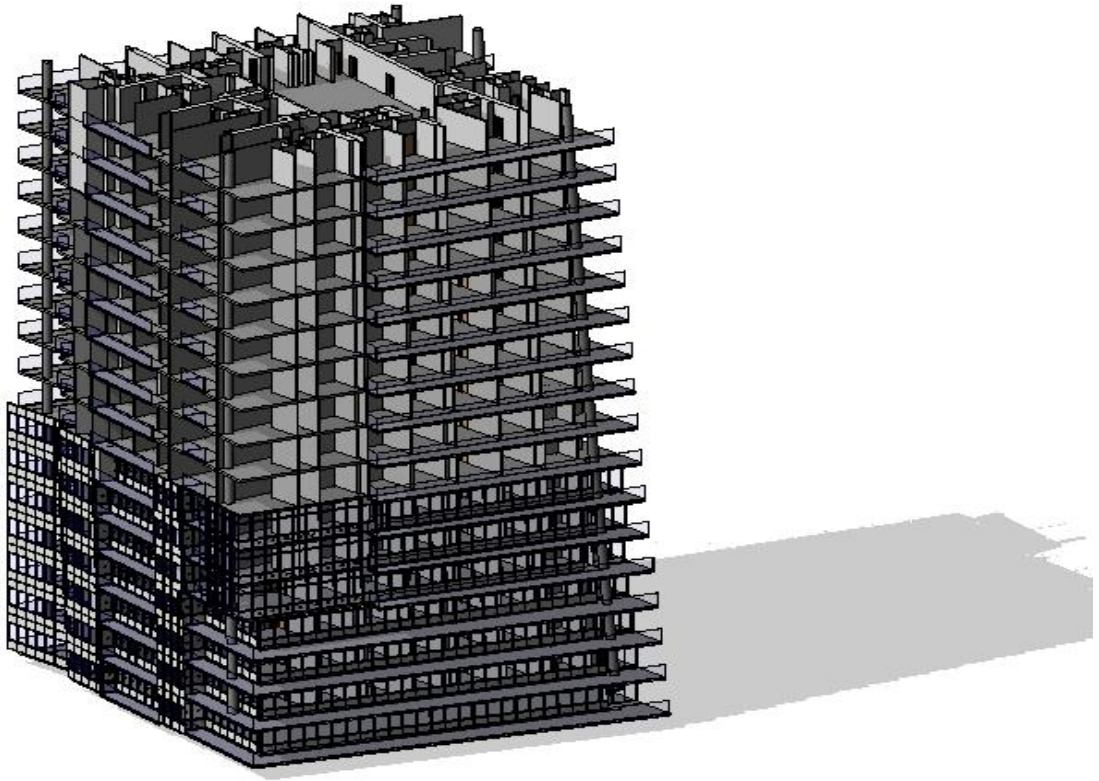


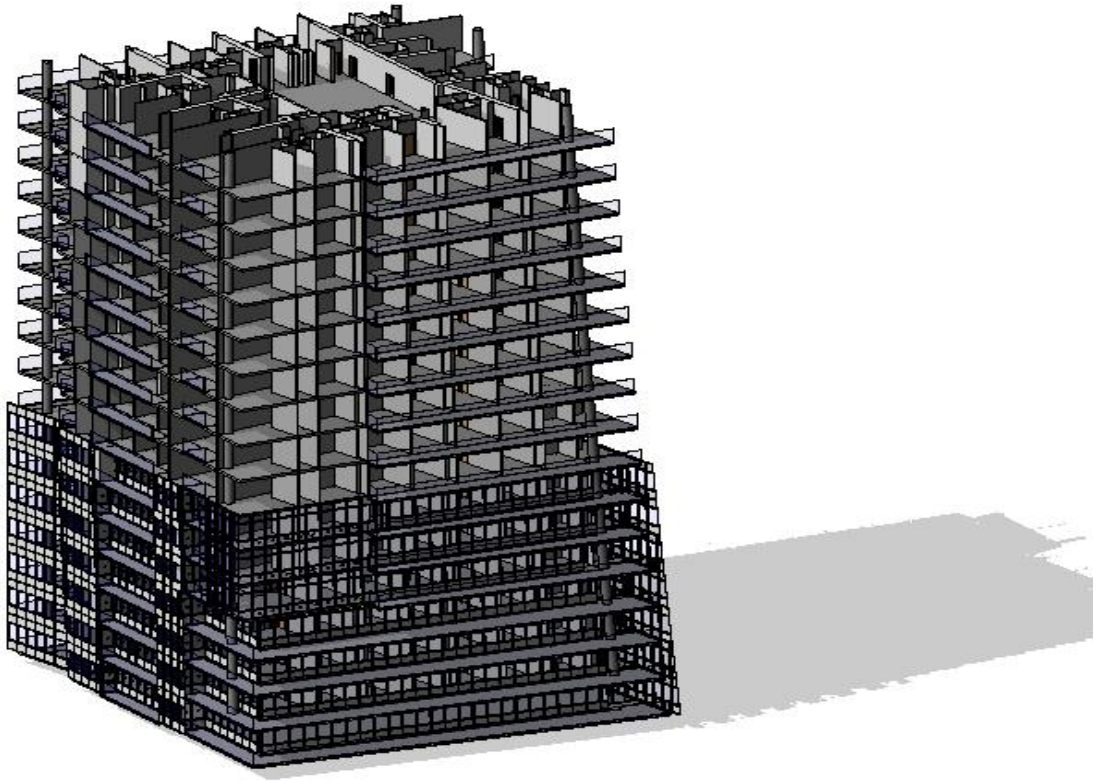


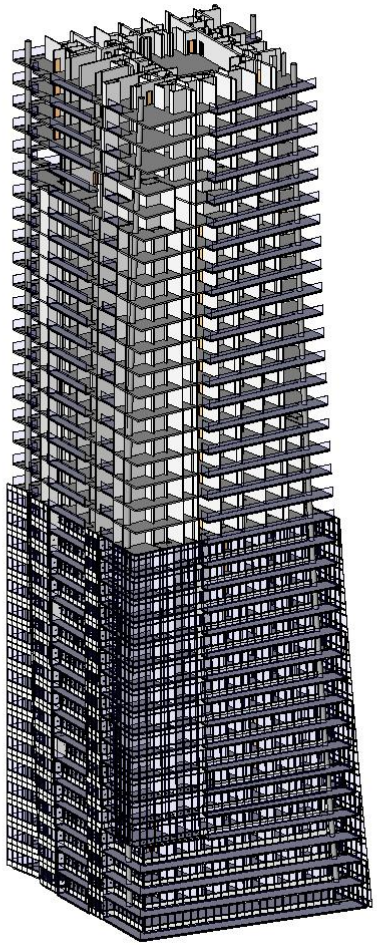


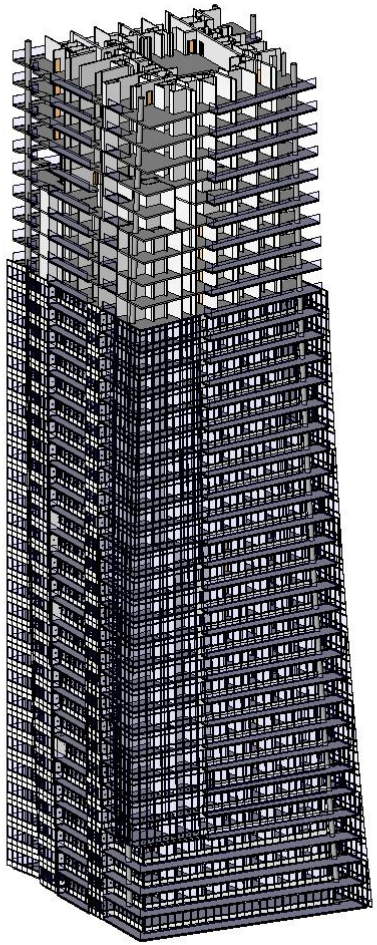


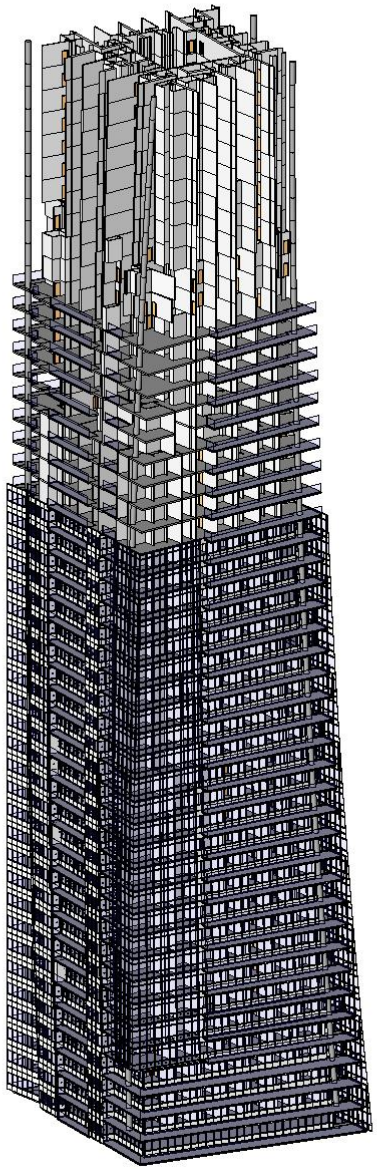


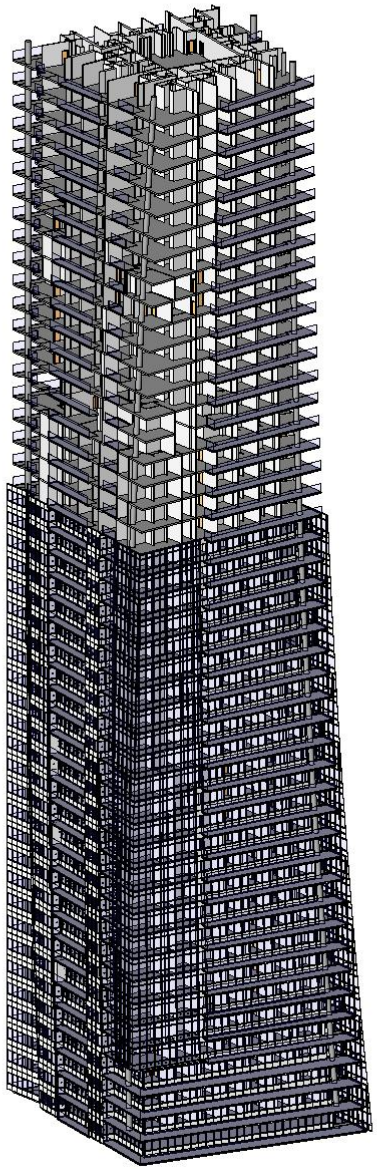


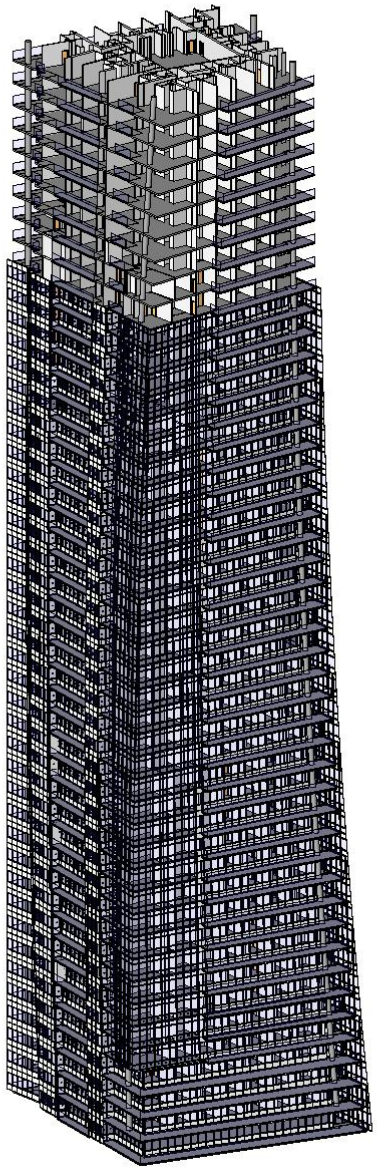


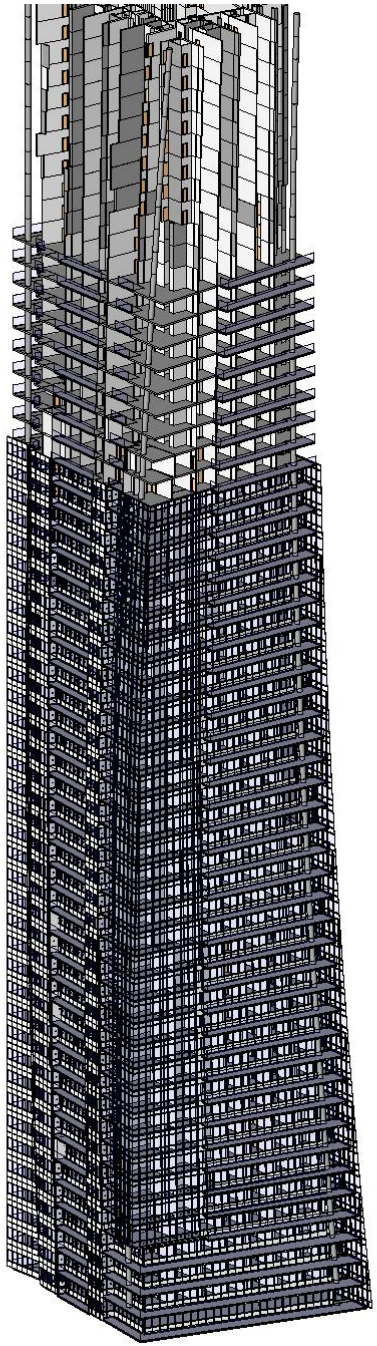


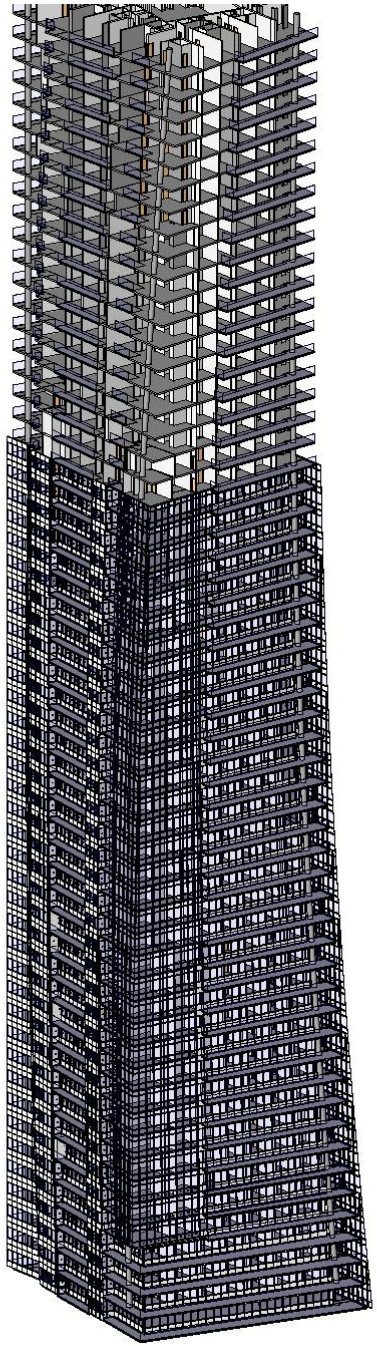


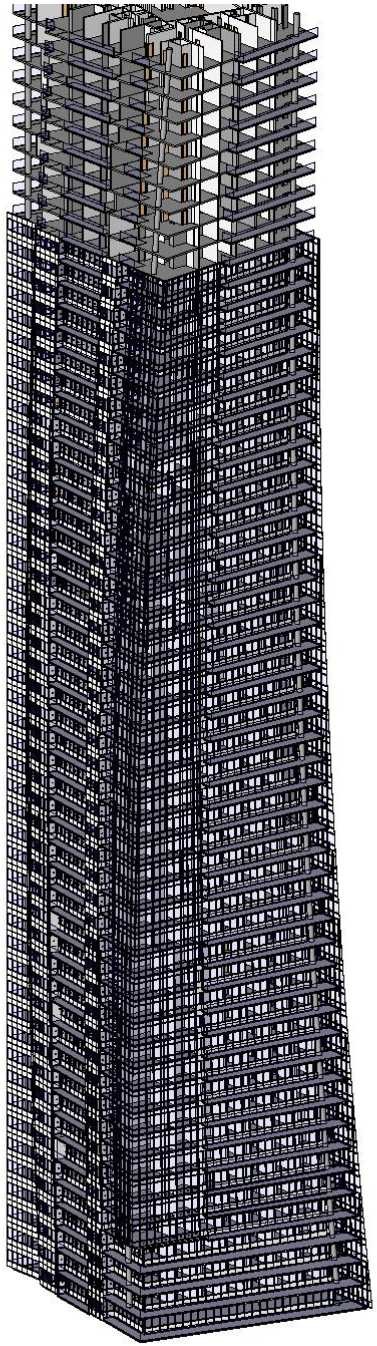


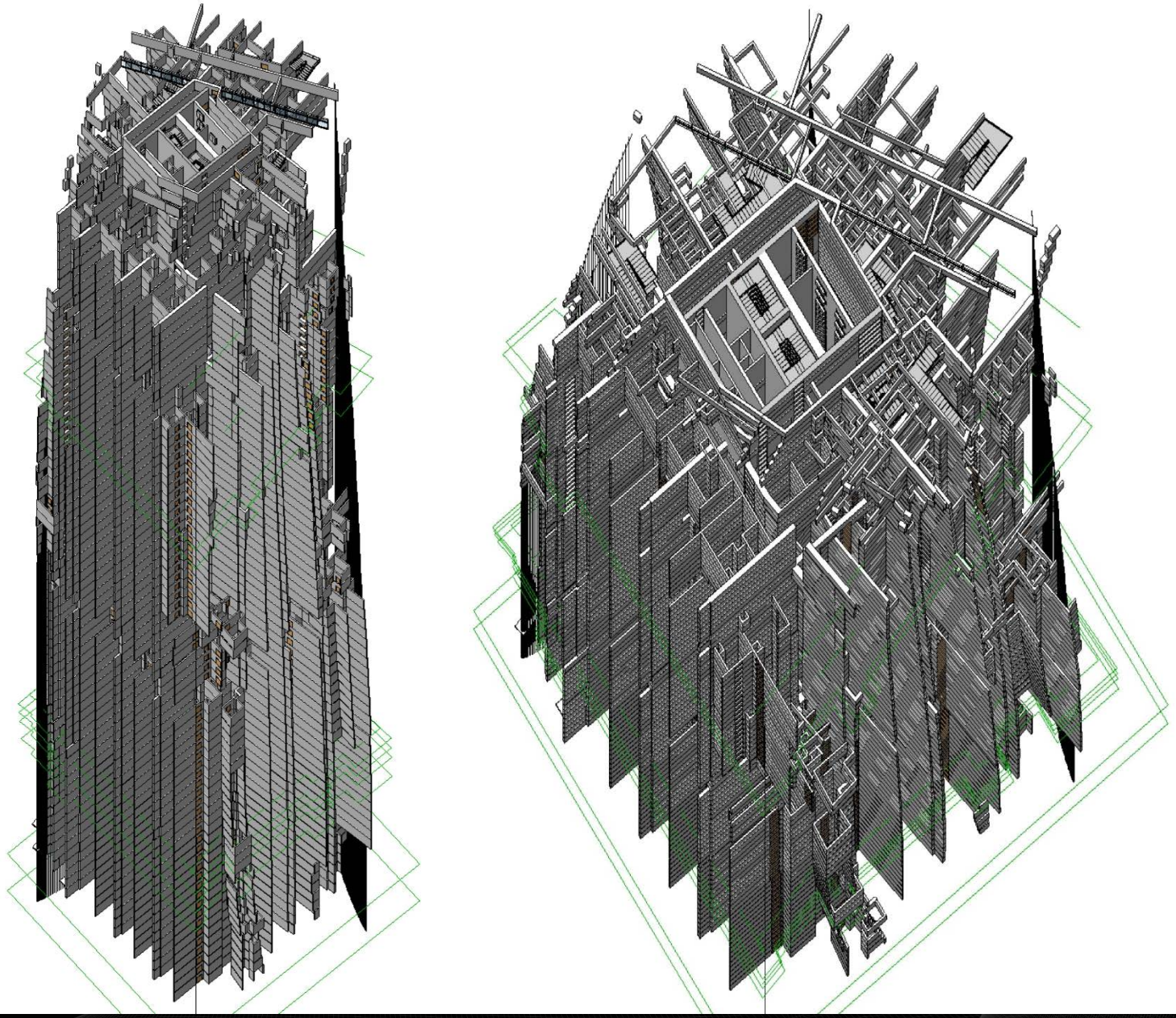




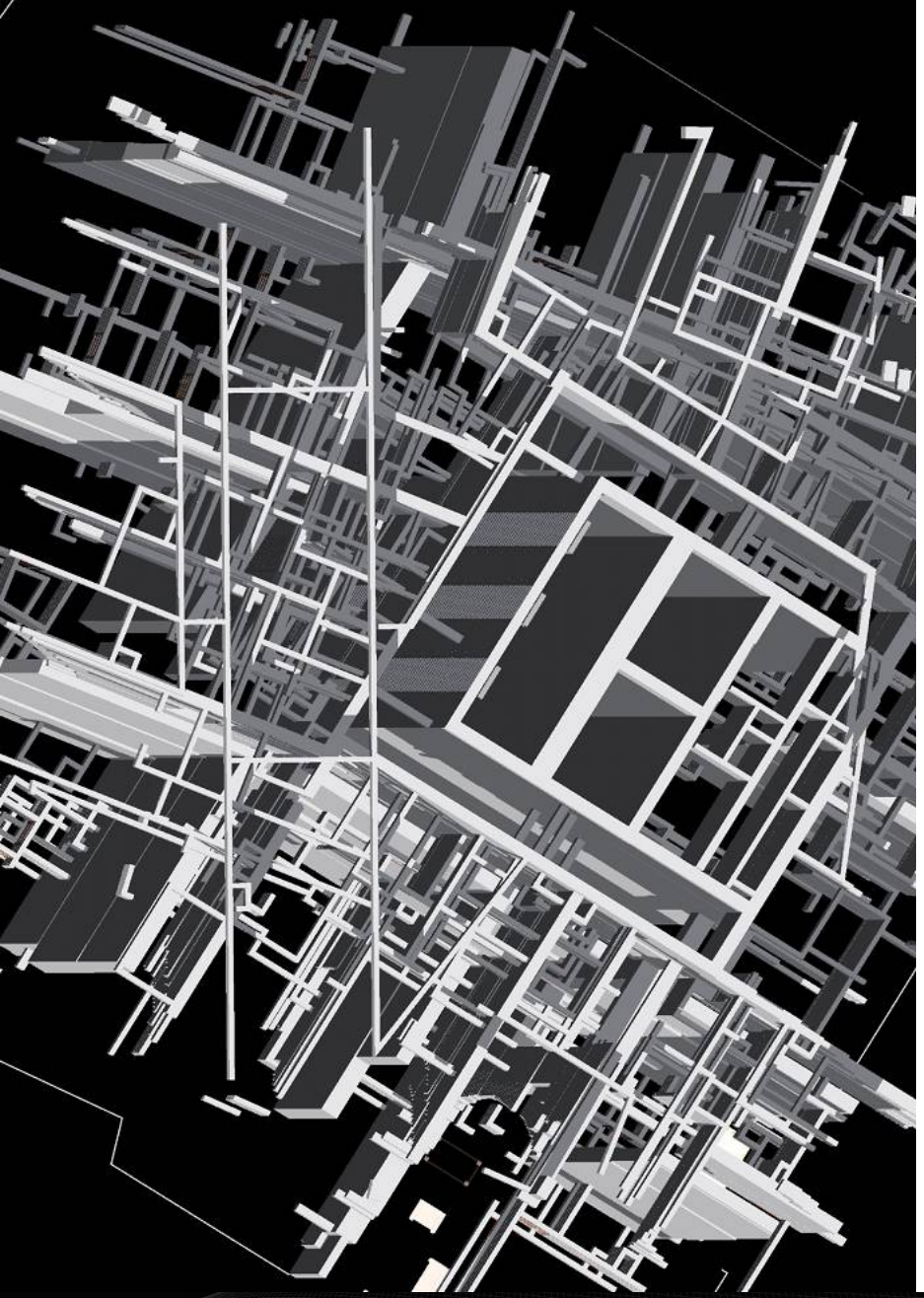


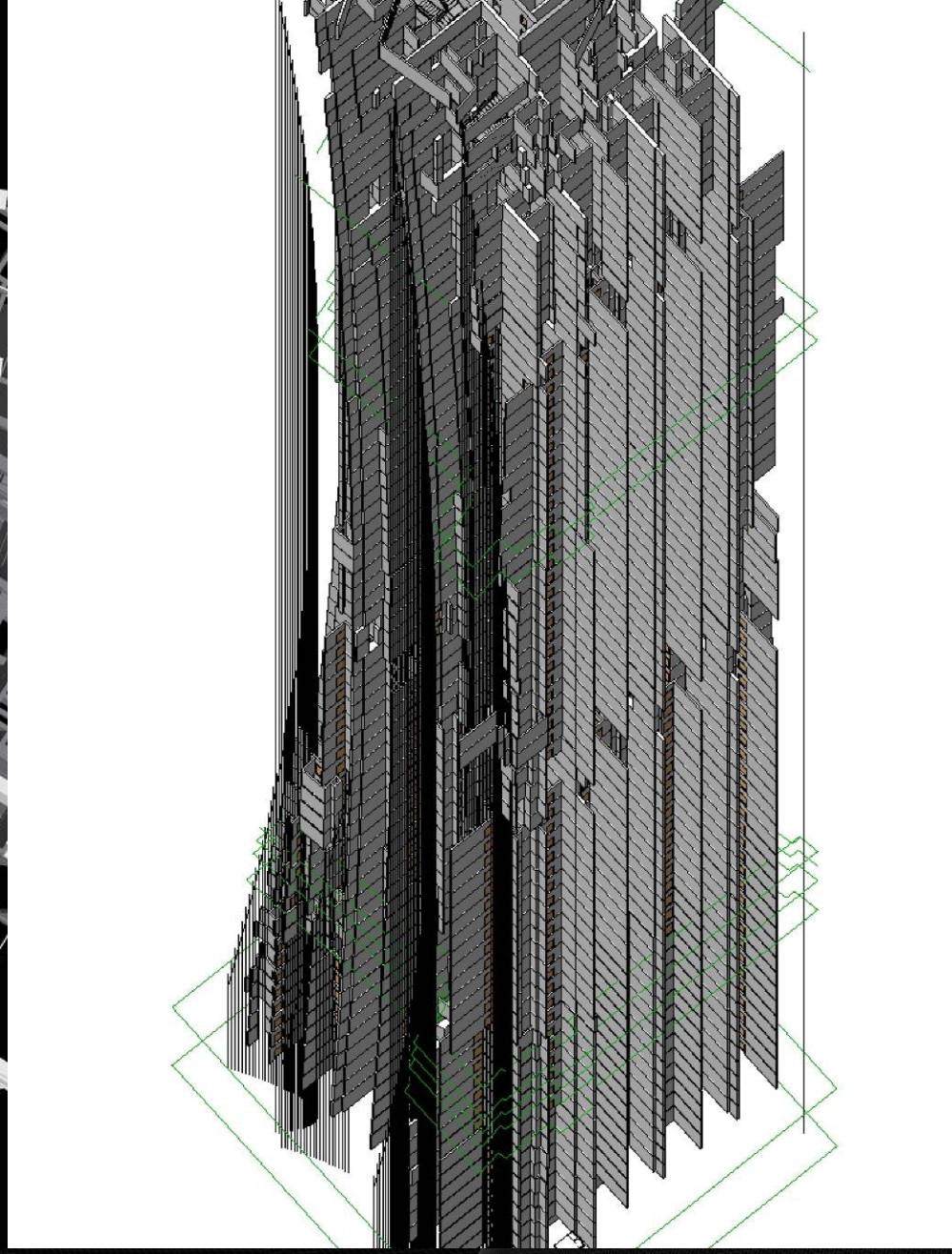




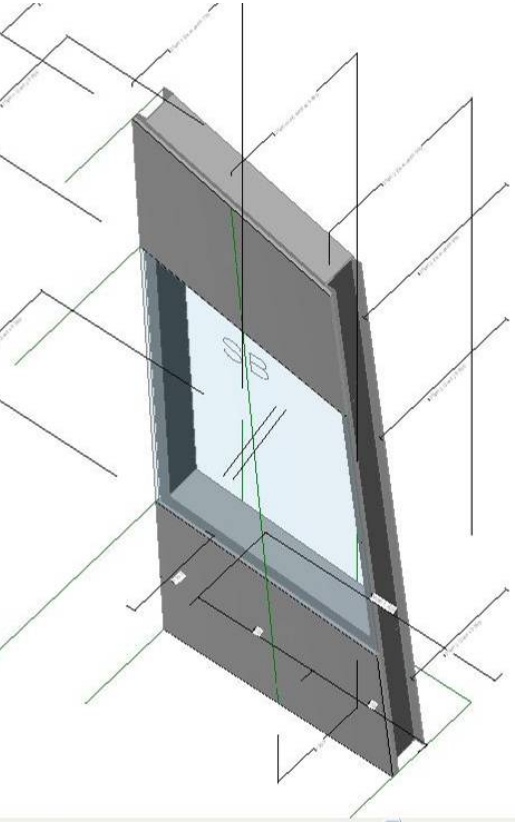


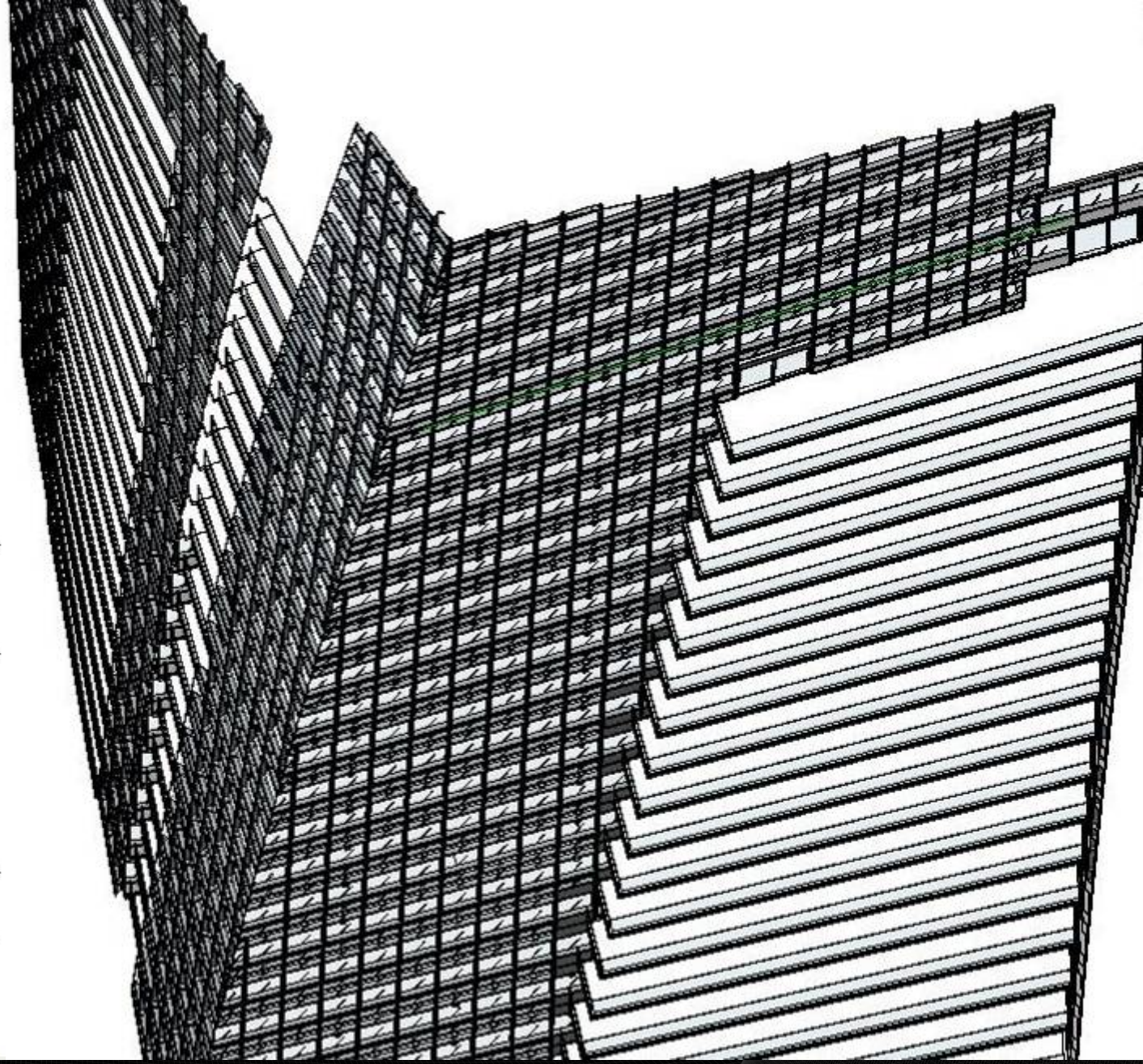
VERTICAL CO-ORDINATION



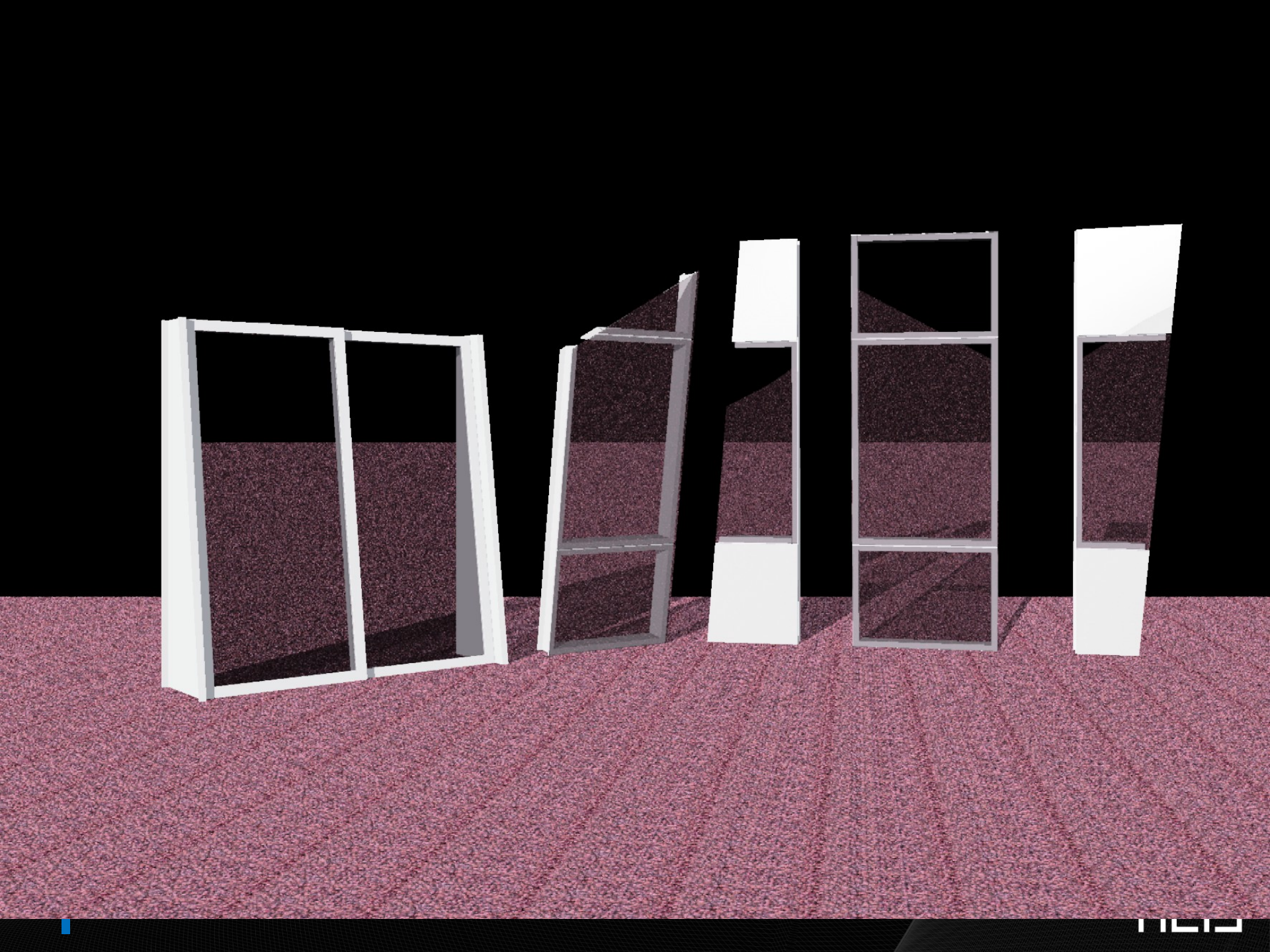


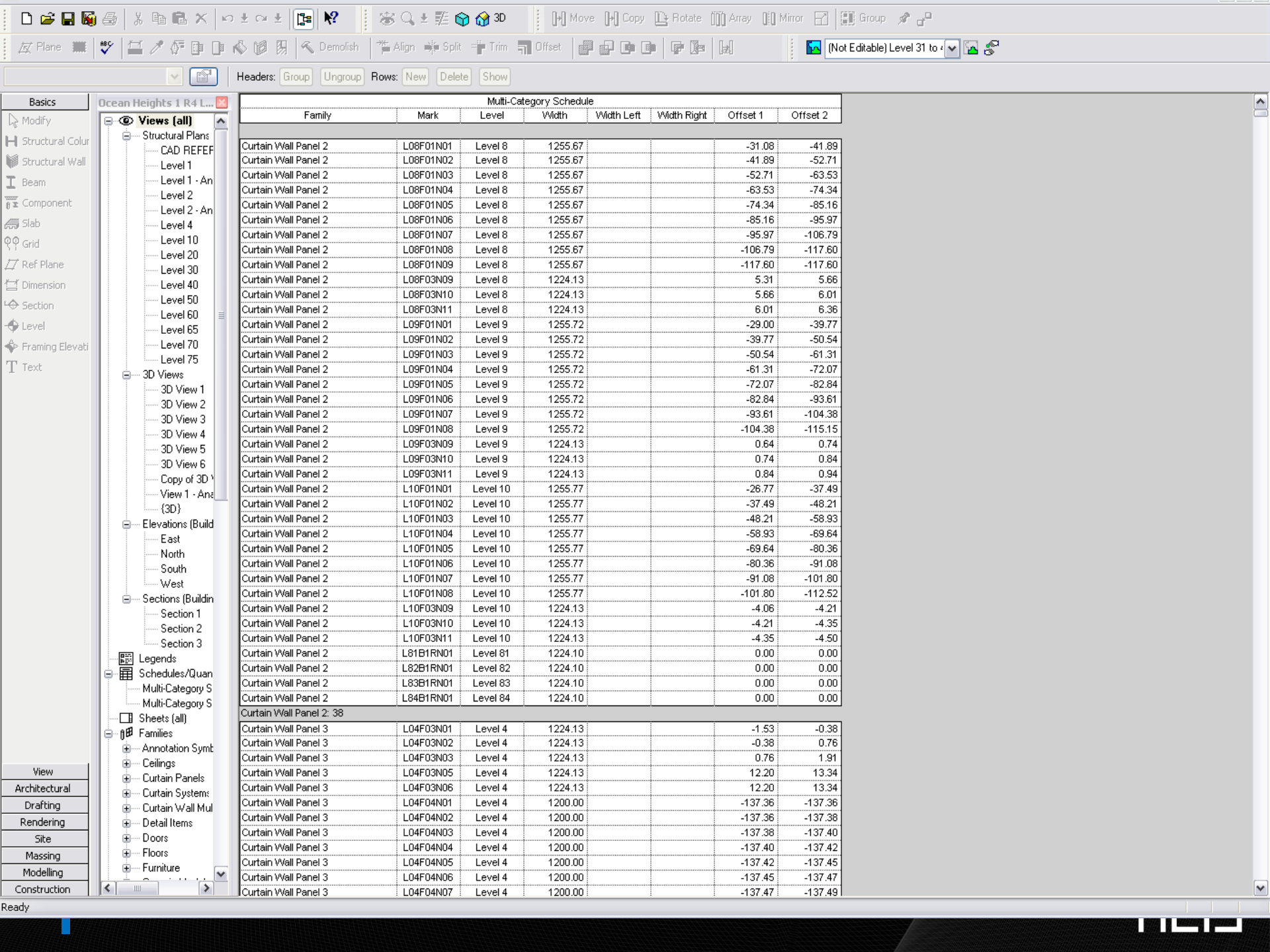
INTERNAL vs EXTERNAL





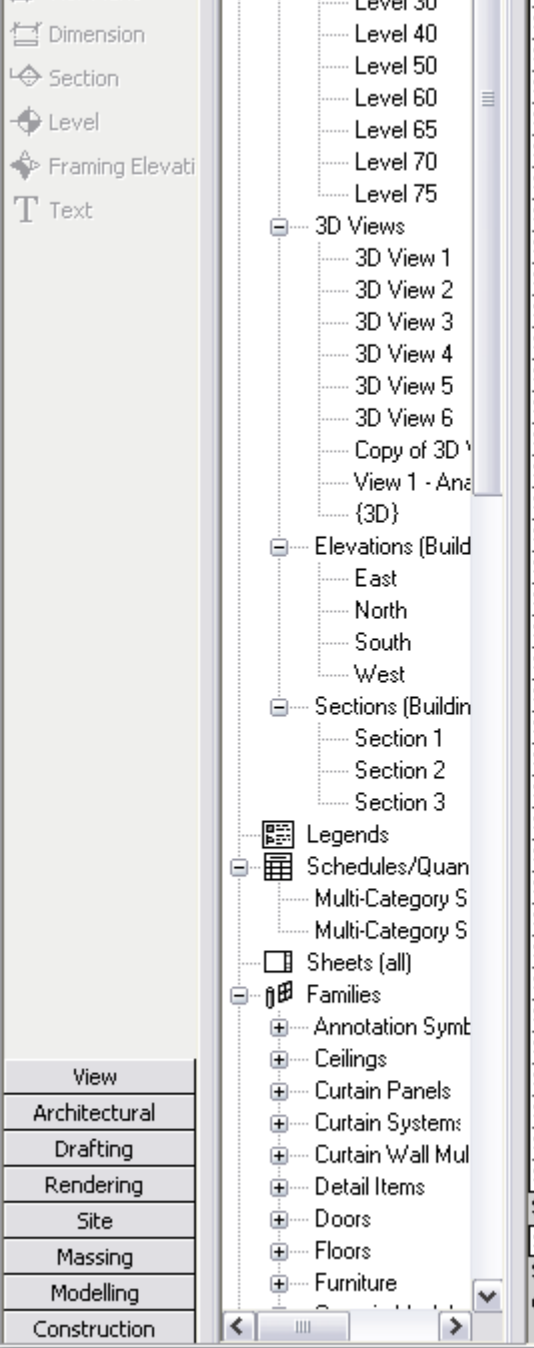
COMPLICATED CURTAIN WALL





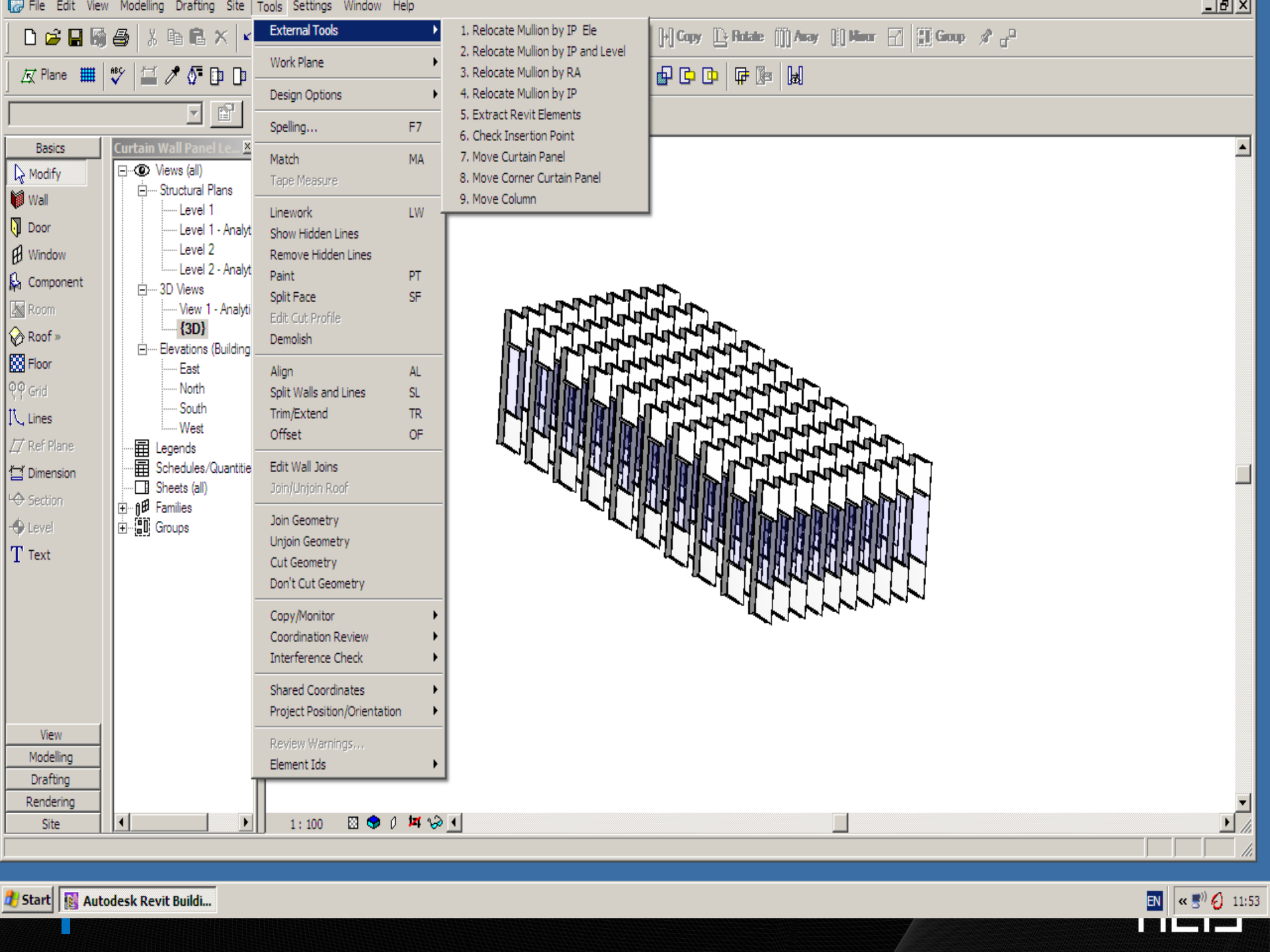
Multi-Category Schedule

Family	Mark	Level	Width	Width Left	Width Right	Offset 1	Offset 2
Curtain Wall Panel 2	L08F01N01	Level 8	1255.67			-31.08	-41.89
Curtain Wall Panel 2	L08F01N02	Level 8	1255.67			-41.89	-52.71
Curtain Wall Panel 2	L08F01N03	Level 8	1255.67			-52.71	-63.53
Curtain Wall Panel 2	L08F01N04	Level 8	1255.67			-63.53	-74.34
Curtain Wall Panel 2	L08F01N05	Level 8	1255.67			-74.34	-85.16
Curtain Wall Panel 2	L08F01N06	Level 8	1255.67			-85.16	-95.97
Curtain Wall Panel 2	L08F01N07	Level 8	1255.67			-95.97	-106.79
Curtain Wall Panel 2	L08F01N08	Level 8	1255.67			-106.79	-117.60
Curtain Wall Panel 2	L08F01N09	Level 8	1255.67			-117.60	-117.60
Curtain Wall Panel 2	L08F03N09	Level 8	1224.13			5.31	5.66
Curtain Wall Panel 2	L08F03N10	Level 8	1224.13			5.66	6.01
Curtain Wall Panel 2	L08F03N11	Level 8	1224.13			6.01	6.36
Curtain Wall Panel 2	L09F01N01	Level 9	1255.72			-29.00	-39.77
Curtain Wall Panel 2	L09F01N02	Level 9	1255.72			-39.77	-50.54
Curtain Wall Panel 2	L09F01N03	Level 9	1255.72			-50.54	-61.31
Curtain Wall Panel 2	L09F01N04	Level 9	1255.72			-61.31	-72.07
Curtain Wall Panel 2	L09F01N05	Level 9	1255.72			-72.07	-82.84
Curtain Wall Panel 2	L09F01N06	Level 9	1255.72			-82.84	-93.61
Curtain Wall Panel 2	L09F01N07	Level 9	1255.72			-93.61	-104.38
Curtain Wall Panel 2	L09F01N08	Level 9	1255.72			-104.38	-115.15
Curtain Wall Panel 2	L09F03N09	Level 9	1224.13			0.64	0.74
Curtain Wall Panel 2	L09F03N10	Level 9	1224.13			0.74	0.84
Curtain Wall Panel 2	L09F03N11	Level 9	1224.13			0.84	0.94
Curtain Wall Panel 2	L10F01N01	Level 10	1255.77			-26.77	-37.49
Curtain Wall Panel 2	L10F01N02	Level 10	1255.77			-37.49	-48.21
Curtain Wall Panel 2	L10F01N03	Level 10	1255.77			-48.21	-58.93
Curtain Wall Panel 2	L10F01N04	Level 10	1255.77			-58.93	-69.64
Curtain Wall Panel 2	L10F01N05	Level 10	1255.77			-69.64	-80.36
Curtain Wall Panel 2	L10F01N06	Level 10	1255.77			-80.36	-91.08
Curtain Wall Panel 2	L10F01N07	Level 10	1255.77			-91.08	-101.80
Curtain Wall Panel 2	L10F01N08	Level 10	1255.77			-101.80	-112.52
Curtain Wall Panel 2	L10F03N09	Level 10	1224.13			-4.06	-4.21
Curtain Wall Panel 2	L10F03N10	Level 10	1224.13			-4.21	-4.35
Curtain Wall Panel 2	L10F03N11	Level 10	1224.13			-4.35	-4.50
Curtain Wall Panel 2	L81B1RN01	Level 81	1224.10			0.00	0.00
Curtain Wall Panel 2	L82B1RN01	Level 82	1224.10			0.00	0.00
Curtain Wall Panel 2	L83B1RN01	Level 83	1224.10			0.00	0.00
Curtain Wall Panel 2	L84B1RN01	Level 84	1224.10			0.00	0.00
Curtain Wall Panel 2: 38							
Curtain Wall Panel 3	L04F03N01	Level 4	1224.13			-1.53	-0.38
Curtain Wall Panel 3	L04F03N02	Level 4	1224.13			-0.38	0.76
Curtain Wall Panel 3	L04F03N03	Level 4	1224.13			0.76	1.91
Curtain Wall Panel 3	L04F03N05	Level 4	1224.13			12.20	13.34
Curtain Wall Panel 3	L04F03N06	Level 4	1224.13			12.20	13.34
Curtain Wall Panel 3	L04F04N01	Level 4	1200.00			-137.36	-137.36
Curtain Wall Panel 3	L04F04N02	Level 4	1200.00			-137.36	-137.38
Curtain Wall Panel 3	L04F04N03	Level 4	1200.00			-137.38	-137.40
Curtain Wall Panel 3	L04F04N04	Level 4	1200.00			-137.40	-137.42
Curtain Wall Panel 3	L04F04N05	Level 4	1200.00			-137.42	-137.45
Curtain Wall Panel 3	L04F04N06	Level 4	1200.00			-137.45	-137.47
Curtain Wall Panel 3	L04F04N07	Level 4	1200.00			-137.47	-137.49



Sliding Door	L72B01D02	Level 72	2400.00			0.00	
Sliding Door	L72B02D02	Level 72	2500.00			0.00	
Sliding Door	L72B04D01	Level 72	1800.00			0.00	
Sliding Door	L72B05D03	Level 72	2550.00			0.00	
Sliding Door	L72B05D05	Level 72	2550.00			0.00	
Sliding Door	L72B05D08	Level 72	2550.00			0.00	
Sliding Door	L72B05D10	Level 72	2550.00			0.00	
Sliding Door	L72B05D12	Level 72	2550.00			0.00	
Sliding Door	L72B05D15	Level 72	2550.00			0.00	
Sliding Door	L73B01D02	Level 73	2400.00			0.00	
Sliding Door	L73B02D02	Level 73	2500.00			0.00	
Sliding Door	L73B04D01	Level 73	1700.00			0.00	
Sliding Door	L73B05D03	Level 73	2550.00			0.00	
Sliding Door	L73B05D05	Level 73	2550.00			0.00	
Sliding Door	L73B05D08	Level 73	2550.00			0.00	
Sliding Door	L73B05D10	Level 73	2550.00			0.00	
Sliding Door	L73B05D12	Level 73	2550.00			0.00	
Sliding Door	L73B05D15	Level 73	2550.00			0.00	
Sliding Door	L74B01D02	Level 74	2400.00			0.00	
Sliding Door	L74B02D02	Level 74	2500.00			0.00	
Sliding Door	L74B04D01	Level 74	1600.00			0.00	
Sliding Door	L74B05D03	Level 74	2550.00			0.00	
Sliding Door	L74B05D05	Level 74	2550.00			0.00	
Sliding Door	L74B05D08	Level 74	2550.00			0.00	
Sliding Door	L74B05D10	Level 74	2550.00			0.00	
Sliding Door	L74B05D12	Level 74	2550.00			0.00	
Sliding Door	L74B05D15	Level 74	2550.00			0.00	
Sliding Door	L75B01D02	Level 75	2400.00			0.00	
Sliding Door	L75B02D02	Level 75	2500.00			0.00	
Sliding Door	L76B01D02	Level 76	2400.00			0.00	
Sliding Door	L76B02D02	Level 76	2500.00			0.00	
Sliding Door	L77B01D02	Level 77	2400.00			0.00	
Sliding Door	L77B02D01	Level 77	2426.17			0.00	
Sliding Door	L78B01D02	Level 78	2400.00			0.00	
Sliding Door	L78B02D01	Level 78	2203.01			0.00	
Sliding Door	L79B01D02	Level 79	2400.00			0.00	
Sliding Door	L79B02D01	Level 79	1974.15			0.00	
Sliding Door: 649							
Sliding Door to Replace CW Pan	L10F01N10	Level 10	1255.77			-123.24	
Sliding Door to Replace CW Panel: 1							
Grand total: 9740							

Ready


File Edit View Modelling Drafting Site Tools Settings Window Help
External Tools
1. Relocate Mullion by IP Ele
2. Relocate Mullion by IP and Level
3. Relocate Mullion by RA
4. Relocate Mullion by IP
5. Extract Revit Elements
6. Check Insertion Point
7. Move Curtain Panel
8. Move Corner Curtain Panel
9. Move Column
Work Plane
Design Options
Spelling... F7
Match MA
Tape Measure
Linework LW
Show Hidden Lines
Remove Hidden Lines
Paint PT
Split Face SF
Edit Cut Profile
Demolish
Align AL
Split Walls and Lines SL
Trim/Extend TR
Offset OF
Edit Wall Joins
Join/Unjoin Roof
Join Geometry
Unjoin Geometry
Cut Geometry
Don't Cut Geometry
Copy/Monitor
Coordination Review
Interference Check
Shared Coordinates
Project Position/Orientation
Review Warnings...
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Door
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Curtain Wall Panel Le...
Views (all)
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Level 1 - Analyt
Level 2
Level 2 - Analyt
3D Views
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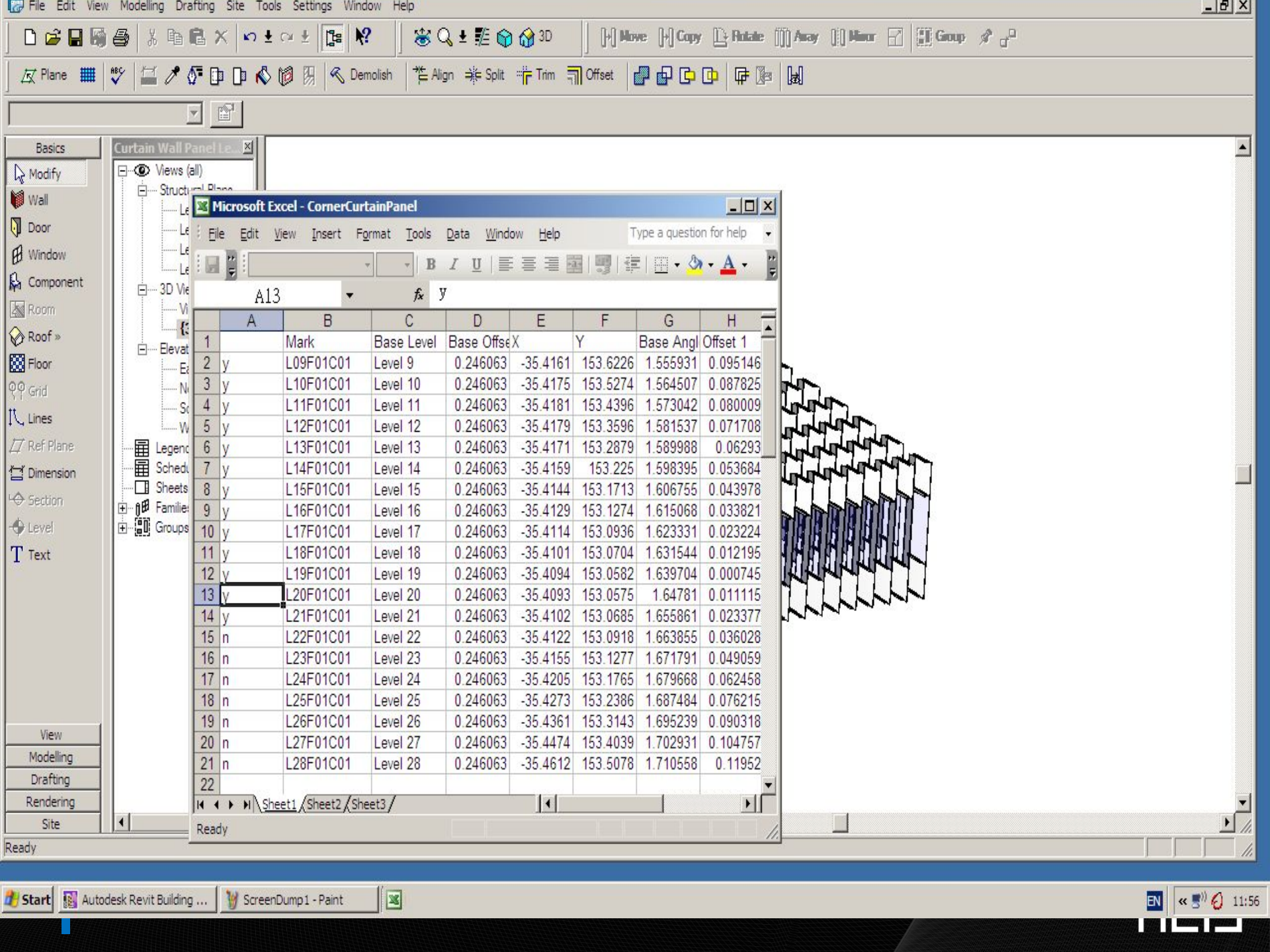
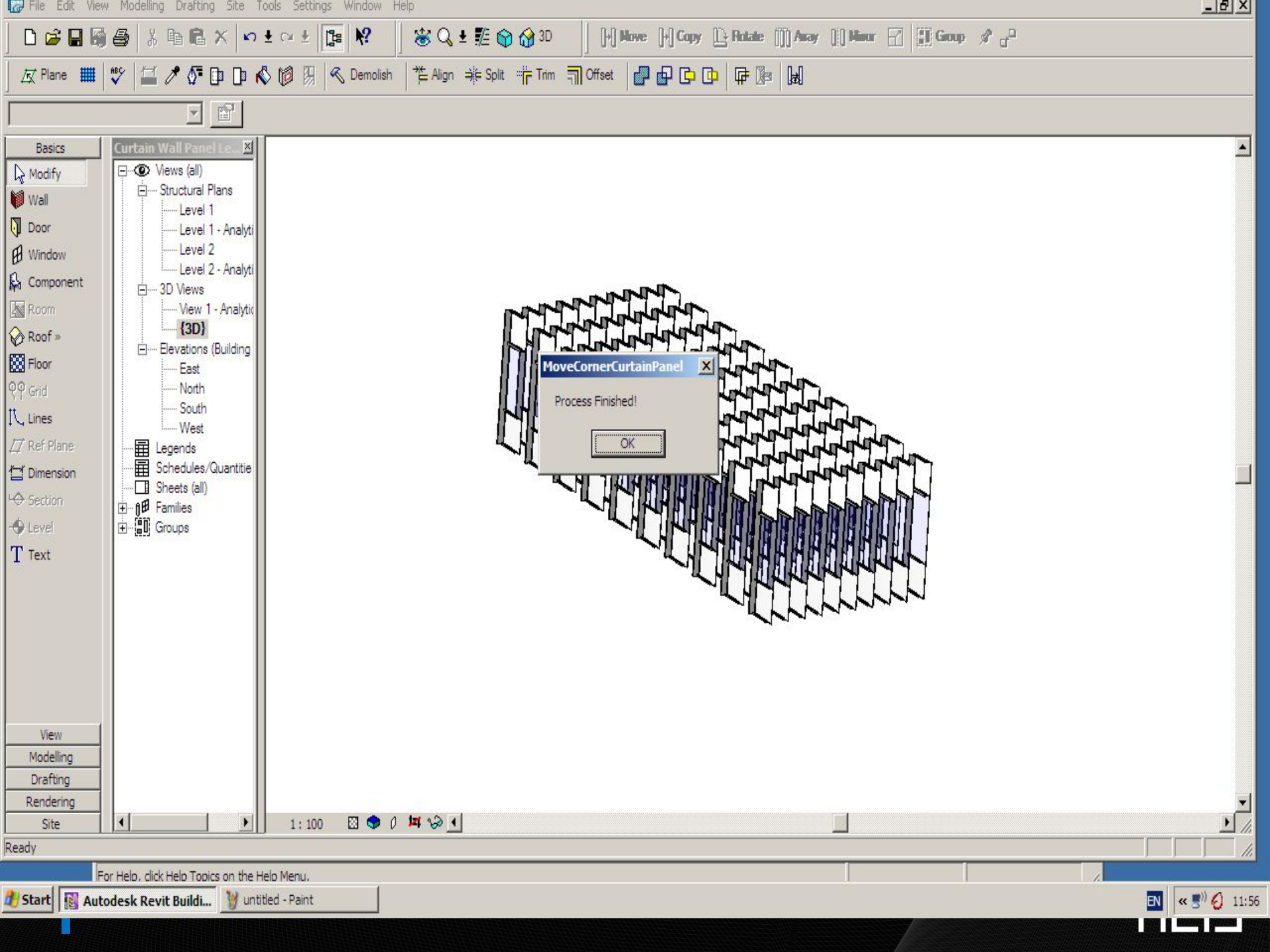


	A	B	C	D	E	F	G	H
1		Mark	Base Level	Base Offse	X	Y	Base Angl	Offset 1
2	y	L09F01C01	Level 9	0.246063	-35.4161	153.6226	1.555931	0.095146
3	y	L10F01C01	Level 10	0.246063	-35.4175	153.5274	1.564507	0.087825
4	y	L11F01C01	Level 11	0.246063	-35.4181	153.4396	1.573042	0.080009
5	y	L12F01C01	Level 12	0.246063	-35.4179	153.3596	1.581537	0.071708
6	y	L13F01C01	Level 13	0.246063	-35.4171	153.2879	1.589988	0.06293
7	y	L14F01C01	Level 14	0.246063	-35.4159	153.225	1.598395	0.053684
8	y	L15F01C01	Level 15	0.246063	-35.4144	153.1713	1.606755	0.043978
9	y	L16F01C01	Level 16	0.246063	-35.4129	153.1274	1.615068	0.033821
10	y	L17F01C01	Level 17	0.246063	-35.4114	153.0936	1.623331	0.023224
11	y	L18F01C01	Level 18	0.246063	-35.4101	153.0704	1.631544	0.012195
12	y	L19F01C01	Level 19	0.246063	-35.4094	153.0582	1.639704	0.000745
13	y	L20F01C01	Level 20	0.246063	-35.4093	153.0575	1.64781	0.011115
14	y	L21F01C01	Level 21	0.246063	-35.4102	153.0685	1.655861	0.023377
15	n	L22F01C01	Level 22	0.246063	-35.4122	153.0918	1.663855	0.036028
16	n	L23F01C01	Level 23	0.246063	-35.4155	153.1277	1.671791	0.049059
17	n	L24F01C01	Level 24	0.246063	-35.4205	153.1765	1.679668	0.062458
18	n	L25F01C01	Level 25	0.246063	-35.4273	153.2386	1.687484	0.076215
19	n	L26F01C01	Level 26	0.246063	-35.4361	153.3143	1.695239	0.090318
20	n	L27F01C01	Level 27	0.246063	-35.4474	153.4039	1.702931	0.104757
21	n	L28F01C01	Level 28	0.246063	-35.4612	153.5078	1.710558	0.11952
22								


File Edit View Modelling Drafting Site Tools Settings Window Help
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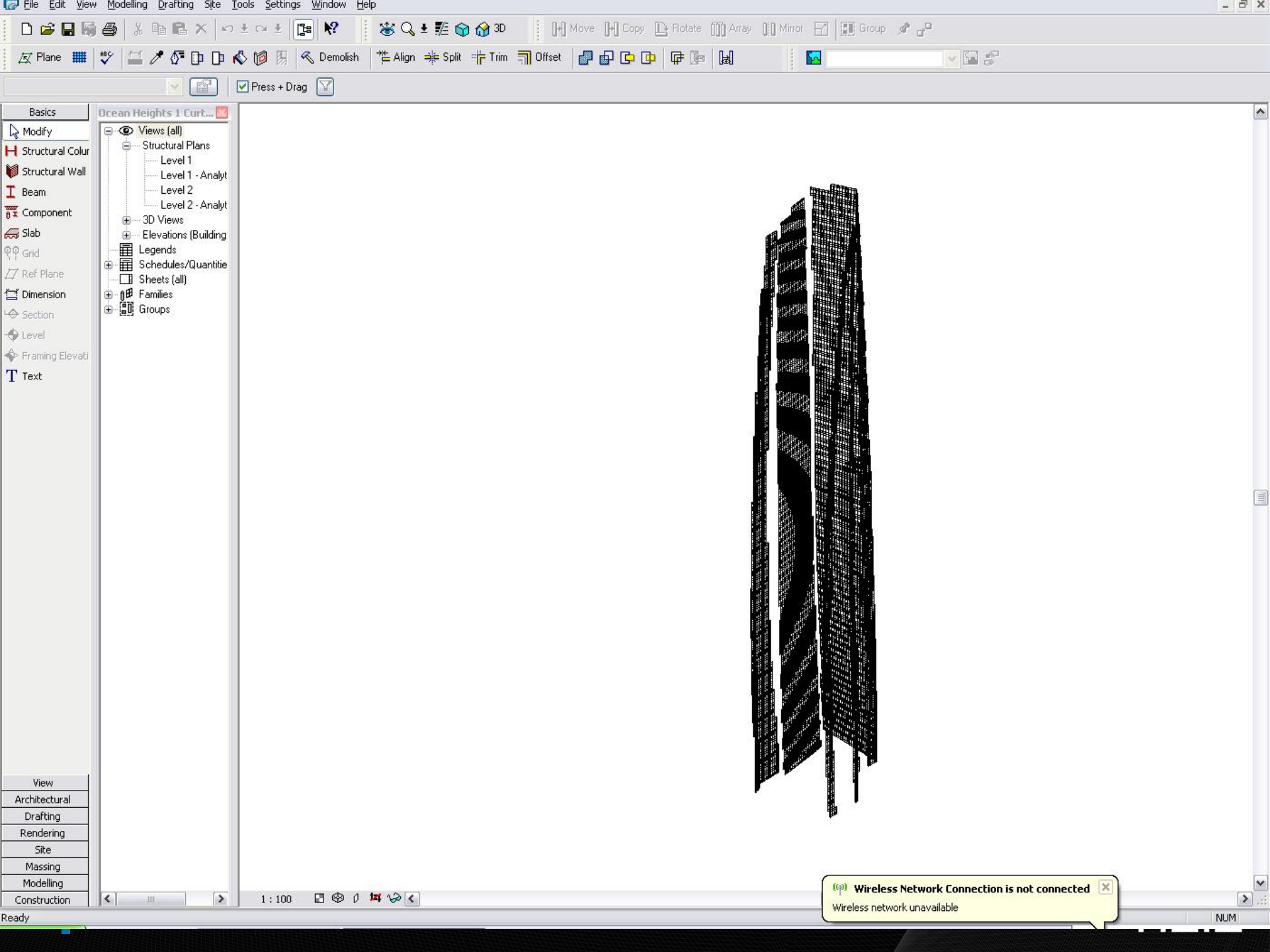
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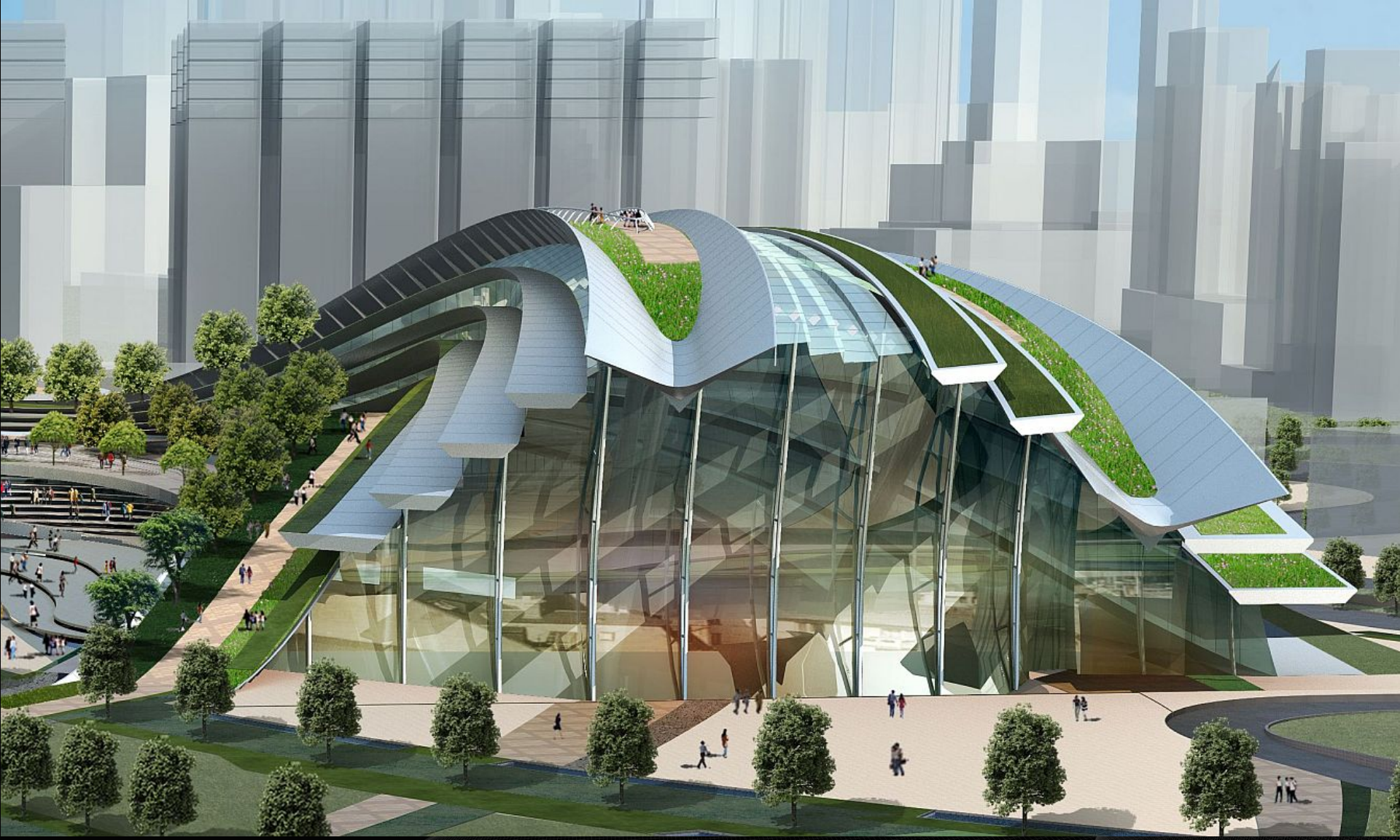
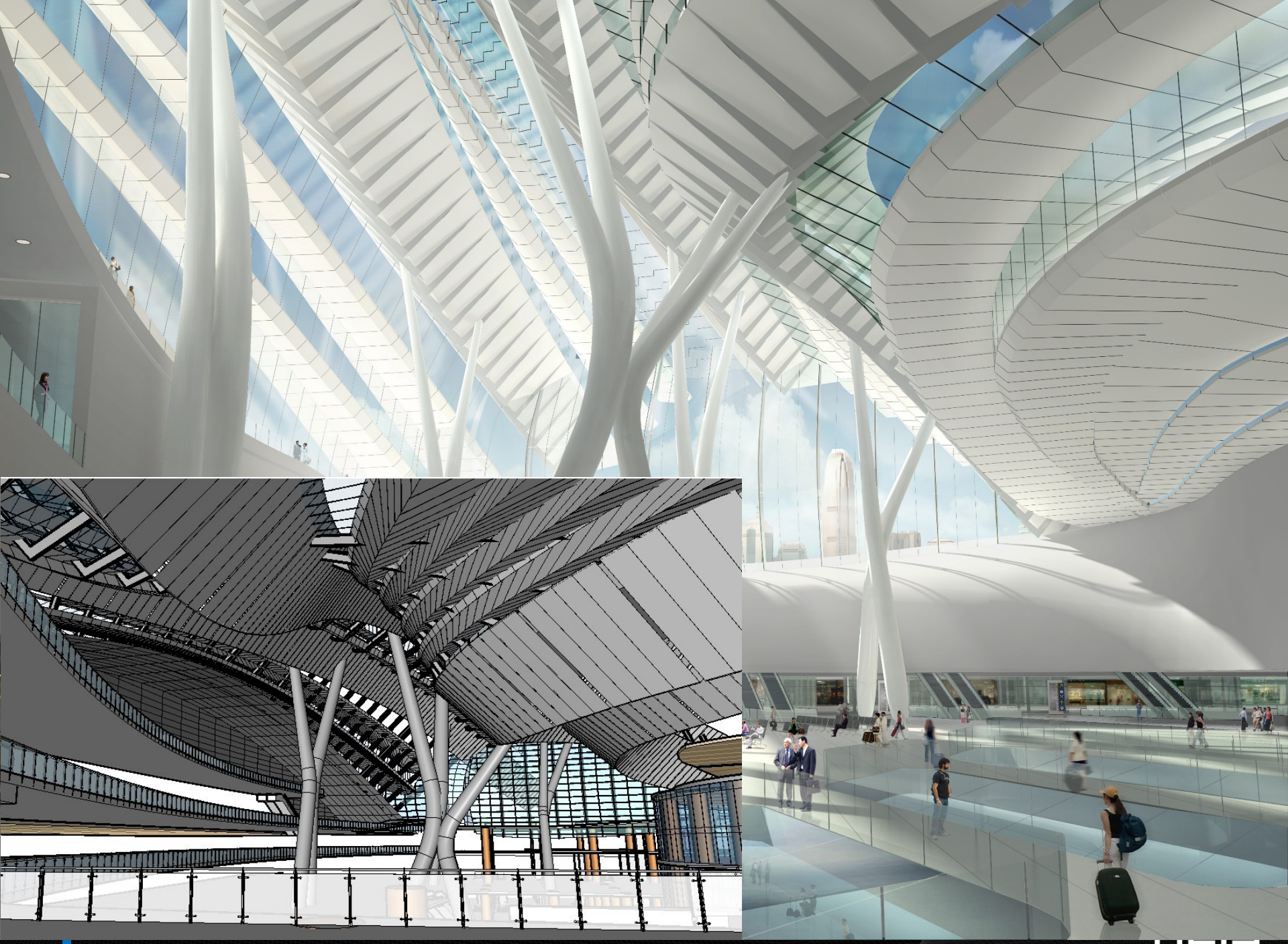
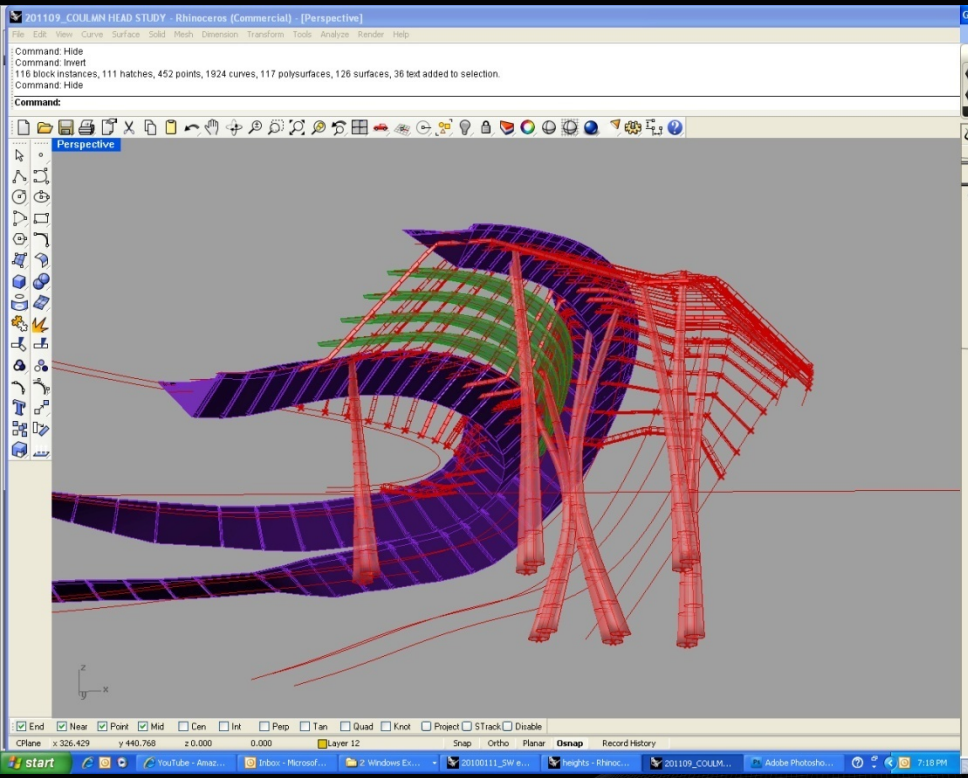
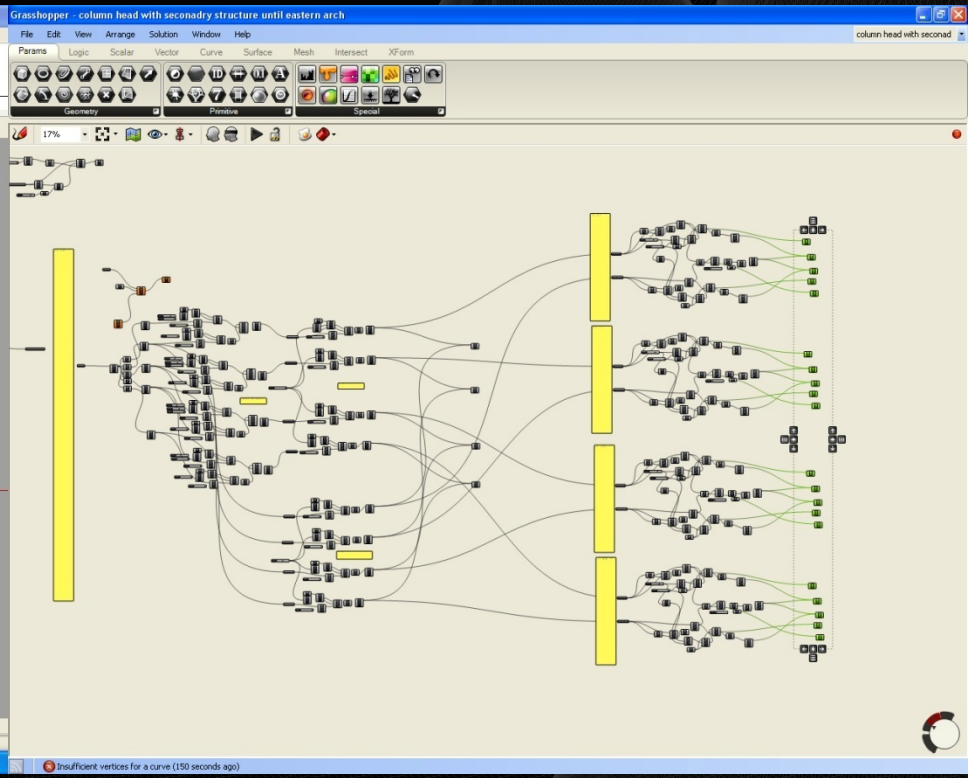
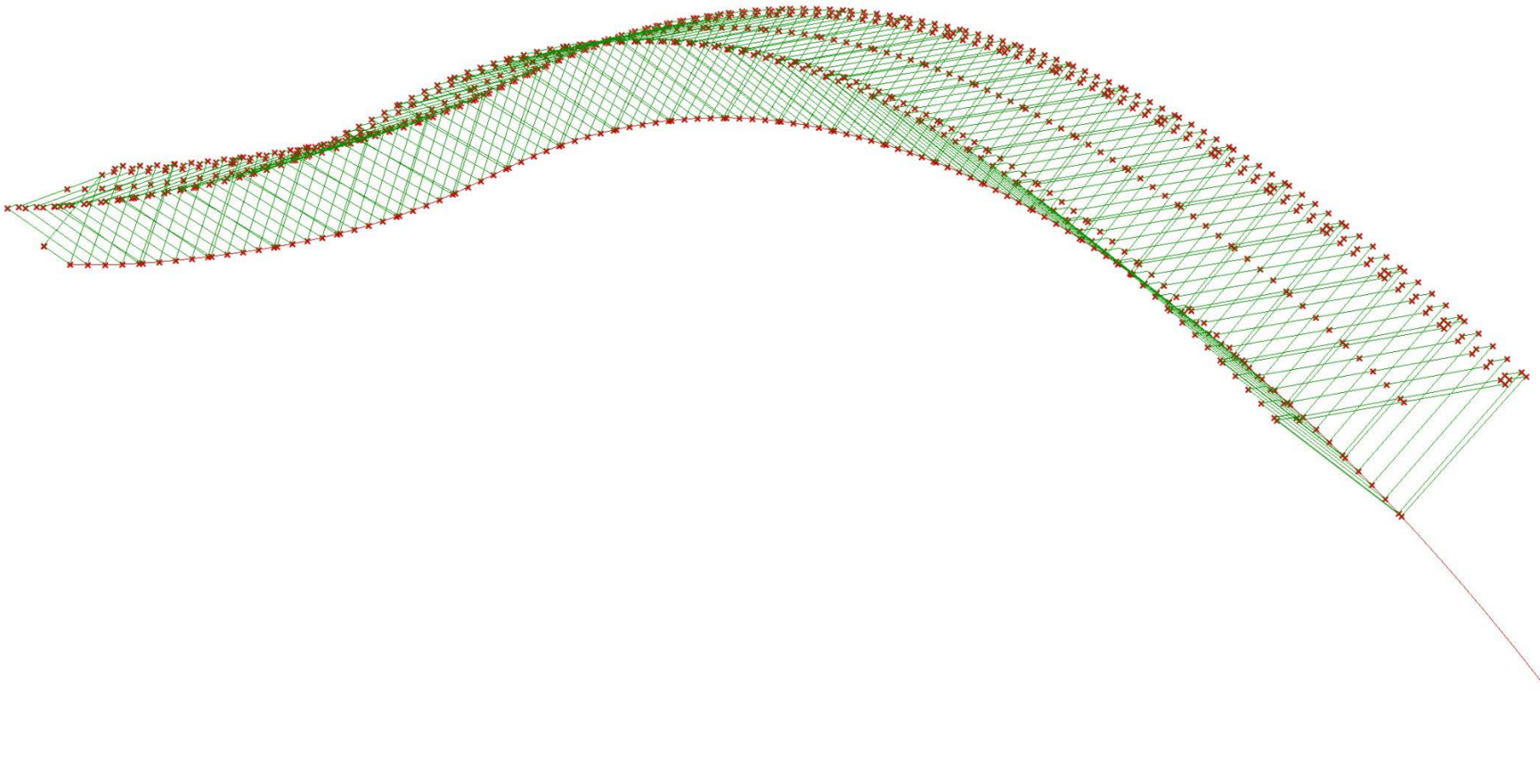
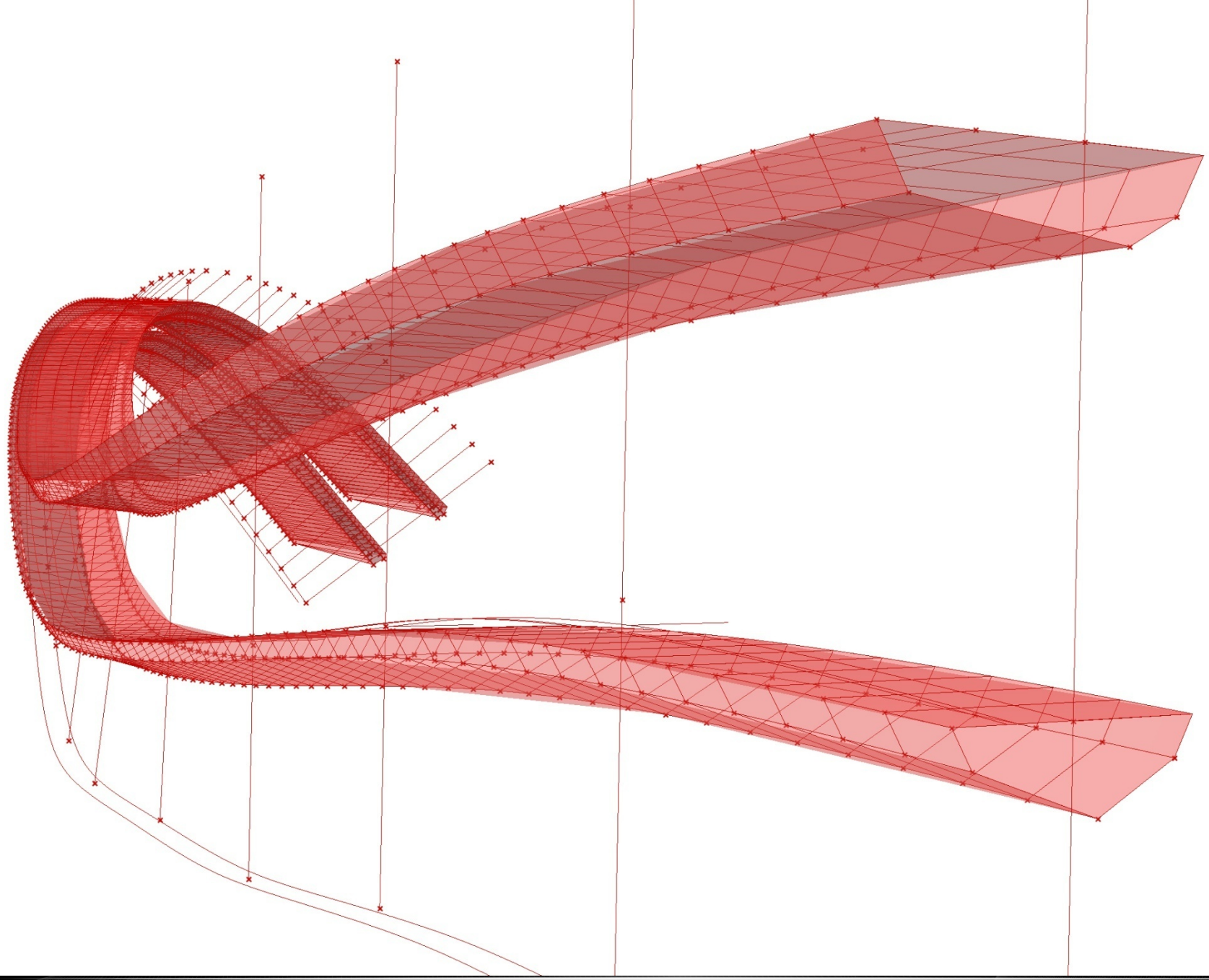





201109_COULMN HEAD STUDY - Rhinoceros (Commercial) - [Perspective]
Command: Hide
Command: Invert
116 block instances, 111 hatches, 452 points, 1924 curves, 117 polysurfaces, 126 surfaces, 36 text added to selection.
Command: Hide
Command:
Perspective


Grasshopper - column head with seconadry structure until eastern arch
Insufficient vertices for a curve (150 seconds ago)

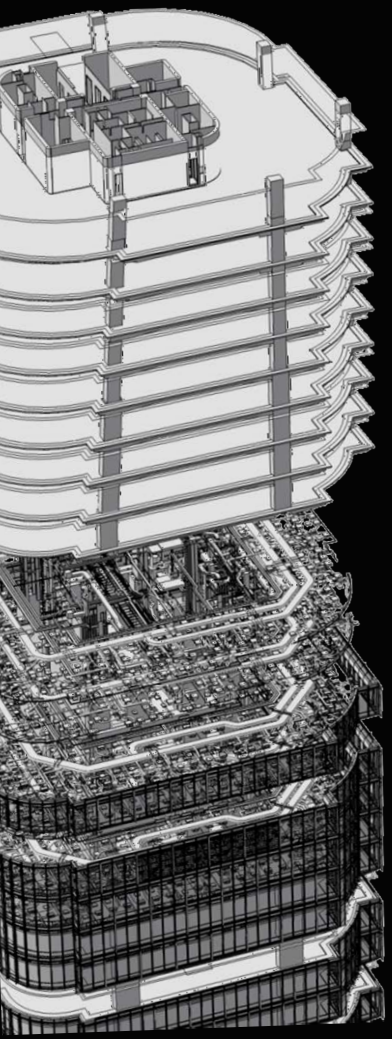


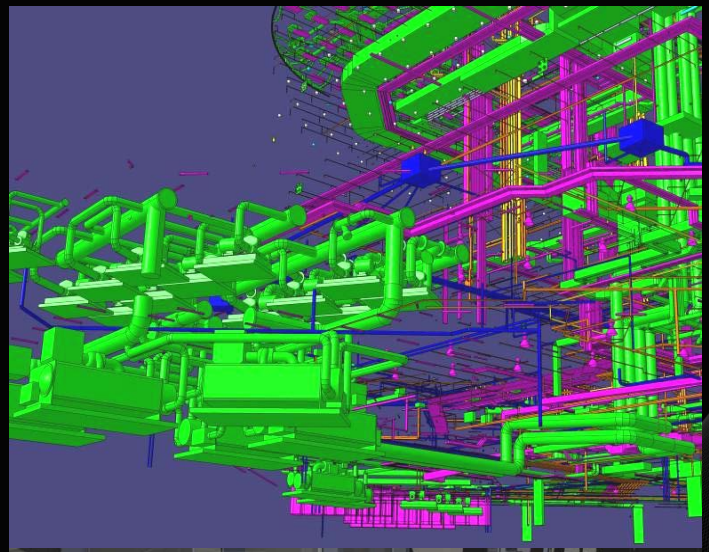


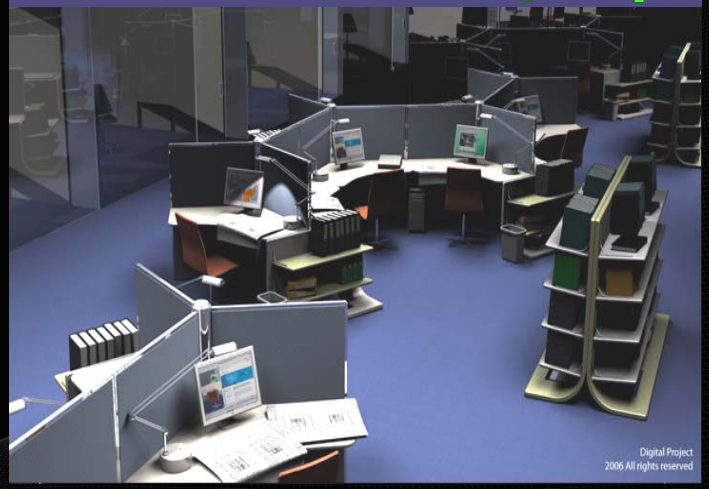
```
                {
                    case 'x':
                        p[index].x = System.Convert.ToDouble(para.AsValueString());
                        break;
                    case 'y':
                        p[index].y = System.Convert.ToDouble(para.AsValueString());
                        break;
                    case 'z':
                        p[index].z = System.Convert.ToDouble(para.AsValueString());
                        break;
                    default:
                        MessageBox.Show("Wrong format of parameter name");
                        break;
                }
            }
        }
    }
    CladdingPanel cl = new CladdingPanel(p, PanelCounter); // new panel created from list of points.
    double Area_m2 = cl.PanelArea / 1000000; // division by 1000000 to get area in m2 from mm2

    //current family type parameter is updated with value of Area_m2 ;
    document.BeginTransaction();
    if( symbol.ParametersMap["Area"].Set(Area_m2) == false )
    {
        MessageBox.Show("Wrong parameter type");
    }
    document.EndTransaction();

    ArrayOfPanels.Add(cl); // new panel inserted into the array of panels

    output += cl.UniqueNumber + "                " + Area_m2 + "  " + cl.T_edge[0] + "  " + cl.T_edge[1] + "  " + cl.T_edge[2] + "  " + cl.T_edge[3

    // creating panel objects in space
    document.BeginTransaction();
    FamilyInstance instance = document.Create.NewFamilyInstance(location, symbol, StructuralType.NonStructural);
    document.EndTransaction();
}
//MessageBox.Show(output);
```

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1		P01x## lengt	P01y## lengt	P01z## lengt	P02x## lengt	P02y## lengt	P02z## lengt	P03x## lengt	P03y## lengt	P03z## lengt	P04x## lengt	P04y## lengt	P04z## lengt	Panel Type##	other##			
2	P3S06P001	149572.632	43124.1138	30997.4089	150034.096	44497.0923	31201.1007	151479.165	44220.6936	29756.4955	151017.994	42846.0425	29553.4116	P3S06P001				
3	P3S06P002	150034.096	44497.0923	31201.1007	150490.205	45872.5015	31400.2904	151935	45597.7674	29955.086	151479.165	44220.6936	29756.4955	P3S06P002				
4	P3S06P003	150490.205	45872.5015	31400.2904	150940.93	47250.3052	31594.9821	152385.473	46977.2334	30149.1841	151935	45597.7674	29955.086	P3S06P003				
5	P3S06P004	150940.93	47250.3052	31594.9821	151386.267	48630.4698	31785.1616	152830.57	48359.0618	30338.7828	152385.473	46977.2334	30149.1841	P3S06P004				
6	P3S06P005	151386.267	48630.4698	31785.1616	151474.689	48906.7825	31822.6539	152918.944	48635.7079	30376.1616	152830.57	48359.0618	30338.7828	P3S06P005				
7	P3S06P006	151474.689	48906.7825	31822.6539	151913.575	50289.7323	32007.3872	153357.585	50020.3276	30560.3477	152918.944	48635.7079	30376.1616	P3S06P006				
8	P3S06P007	151913.575	50289.7323	32007.3872	152347.08	51674.9657	32187.576	153790.836	51407.2369	30740.0246	153357.585	50020.3276	30560.3477	P3S06P007				
9	P3S06P008	152347.08	51674.9657	32187.576	152775.147	53062.4739	32363.2813	154218.667	52796.4316	30915.2314	153790.836	51407.2369	30740.0246	P3S06P008				
10	P3S06P009	152775.147	53062.4739	32363.2813	153197.744	54452.3272	32534.6167	154641.09	54188.0429	31086.0665	154218.667	52796.4316	30915.2314	P3S06P009				
11	P3S06P010	153197.744	54452.3272	32534.6167	153281.603	54730.5766	32568.3694	154724.924	54466.654	31119.7184	154641.09	54188.0429	31086.0665	P3S06P010				
12	P3S06P011	153281.603	54730.5766	32568.3694	153697.624	56123.188	32734.5715	155140.841	55861.1282	31285.4274	154724.924	54466.654	31119.7184	P3S06P011				
13	P3S06P012	153697.624	56123.188	32734.5715	154108.128	57517.7498	32896.4211	155551.199	57257.4509	31446.8027	155140.841	55861.1282	31285.4274	P3S06P012				
14	P3S06P013	154108.128	57517.7498	32896.4211	154513.02	58914.0007	33053.6684	155965.863	58655.1793	31603.5689	155551.199	57257.4509	31446.8027	P3S06P013				
15	P3S06P014	154513.02	58914.0007	33053.6684	154912.275	60311.9726	33206.0604	156354.833	60054.3601	31755.4605	155965.863	58655.1793	31603.5689	P3S06P014				
16	P3S06P015	154912.275	60311.9726	33206.0604	154991.455	60591.8003	33235.9403	156433.956	60334.4167	31785.2395	156354.833	60054.3601	31755.4605	P3S06P015				
17	P3S06P016	154991.455	60591.8003	33235.9403	155384.039	61992.164	33382.3144	156826.258	61735.9125	31931.1206	156433.956	60334.4167	31785.2395	P3S06P016				
18	P3S06P017	155384.039	61992.164	33382.3144	155771.104	63394.5402	33523.6095	157213.036	63139.4019	32071.9532	156826.258	61735.9125	31931.1206	P3S06P017				
19	P3S06P018	155771.104	63394.5402	33523.6095	156152.641	64799.0536	33659.8994	157594.329	64545.1147	32207.8035	157213.036	63139.4019	32071.9532	P3S06P018				
20	P3S06P019	156152.641	64799.0536	33659.8994	156528.665	66205.8406	33791.3989	157970.193	65953.318	32338.8909	157594.329	64545.1147	32207.8035	P3S06P019				
21	P3S06P020	156528.665	66205.8406	33791.3989	156603.207	66487.4657	33817.1437	158044.711	66235.2527	32364.5566	157970.193	65953.318	32338.8909	P3S06P020				
22	P3S06P021	156603.207	66487.4657	33817.1437	156972.591	67896.8372	33943.1573	158414.002	67646.2548	32490.1972	158044.711	66235.2527	32364.5566	P3S06P021				
23	P3S06P022	156972.591	67896.8372	33943.1573	157336.329	69307.9002	34064.607	158777.619	69058.83	32611.2857	158414.002	67646.2548	32490.1972	P3S06P022				
24	P3S06P023	157336.329	69307.9002	34064.607	157694.338	70720.5482	34181.3772	159135.5	70472.822	32727.6793	158777.619	69058.83	32611.2857	P3S06P023				
25	P3S06P024	157694.338	70720.5482	34181.3772	158046.558	72134.4265	34293.1711	159487.514	71887.6646	32839.0806	159135.5	70472.822	32727.6793	P3S06P024				
26	P3S06P025	158046.558	72134.4265	34293.1711	158116.297	72417.2914	34314.8748	159557.191	72170.6364	32860.703	159487.514	71887.6646	32839.0806	P3S06P025				
27	P3S06P026	158116.297	72417.2914	34314.8748	158461.474	73832.0687	34419.7934	159901.955	73585.5129	32965.2043	159557.191	72170.6364	32860.703	P3S06P026				
28	P3S06P027	158461.474	73832.0687	34419.7934	158800.798	75247.6674	34518.1928	160240.723	75000.5299	33063.172	159901.955	73585.5129	32965.2043	P3S06P027				
29	P3S06P028	158800.798	75247.6674	34518.1928	159134.34	76664.522	34609.6099	160573.676	76416.4942	33154.1589	160240.723	75000.5299	33063.172	P3S06P028				
30	P3S06P029	159134.34	76664.522	34609.6099	159462.105	78082.6818	34693.7628	160900.837	77833.534	33237.8995	160573.676	76416.4942	33154.1589	P3S06P029				
31	P3S06P030	159462.105	78082.6818	34693.7628	159526.964	78366.4655	34709.6976	160965.574	78117.0662	33253.7554	160900.837	77833.534	33237.8995	P3S06P030				
32	P3S06P031	159526.964	78366.4655	34709.6976	159847.917	79786.6698	34784.8936	161285.941	79536.0393	33328.5833	160965.574	78117.0662	33253.7554	P3S06P031				
33	P3S06P032	159847.917	79786.6698	34784.8936	160163.369	81209.1412	34852.7734	161600.864	80957.3769	33396.1369	161285.941	79536.0393	33328.5833	P3S06P032				
34	P3S06P033	160163.369	81209.1412	34852.7734	160473.329	82633.6703	34913.5237	161910.348	82380.8678	33456.5958	161600.864	80957.3769	33396.1369	P3S06P033				
35	P3S06P034	160473.329	82633.6703	34913.5237	160777.356	84058.5399	34967.1102	162213.944	83804.7494	33509.9212	161910.348	82380.8678	33456.5958	P3S06P034				
36	P3S06P035	160777.356	84058.5399	34967.1102	160837.419	84343.4967	34976.9482	162273.925	84089.5132	33519.7114	162213.944	83804.7494	33509.9212	P3S06P035				
37	P3S06P036	160837.419	84343.4967	34976.9482	161133.92	85768.179	35021.638	162570.037	85513.2534	33564.1916	162273.925	84089.5132	33519.7114	P3S06P036				
38	P3S06P037	161133.92	85768.179	35021.638	161424.472	87194.961	35058.7408	162860.157	86938.7178	33601.1181	162570.037	85513.2534	33564.1916	P3S06P037				
39	P3S06P038	161424.472	87194.961	35058.7408	161710.115	88626.5835	35088.1259	163145.242	88368.1089	33630.3397	162860.157	86938.7178	33601.1181	P3S06P038				
40	P3S06P039	161710.115	88626.5835	35088.1259	161991.372	90062.1491	35109.5513	163425.853	89800.6144	33651.6209	163145.242	88368.1089	33630.3397	P3S06P039				
41	P3S06P040	161991.372	90062.1491	35109.5513	162046.965	90348.8387	35112.8371	163481.328	90086.742	33654.8892	163425.853	89800.6144	33651.6209	P3S06P040				
42	P3S06P041	162046.965	90348.8387	35112.8371	162320.456	91777.2531	35124.1735	163754.377	91513.2313	33666.1912	163481.328	90086.742	33654.8892	P3S06P041				
43	P3S06P042	162320.456	91777.2531	35124.1735	162582.475	93187.6147	35126.9896	164016.659	92925.0915	33668.9867	163754.377	91513.2313	33666.1912	P3S06P042				
44	P3S06P043	162582.475	93187.6147	35126.9896	162829.645	94581.4583	35120.9812	164264.753	94323.8778	33663.0219	164016.659	92925.0915	33668.9867	P3S06P043				
45	P3S06P044	162829.645	94581.4583	35120.9812	163061.499	95969.2134	35106.3212	164497.923	95718.4959	33648.43	164264.753	94323.8778	33663.0219	P3S06P044				
46	P3S06P045	163061.499	95969.2134	35106.3212	163106.102	96246.957	35102.3827	164542.813	95997.7544	33644.5105	164497.923	95718.4959	33648.43	P3S06P045				
47	P3S06P046	163106.102	96246.957	35102.3827	163320.49	97637.9911	35078.0455	164758.697	97396.9078	33620.3	164542.813	95997.7544	33644.5105	P3S06P046				
48	P3S06P047	163320.49	97637.9911	35078.0455	163520.279	99032.009	35046.564	164960.051	98799.6342	33588.9721	164758.697	97396.9078	33620.3	P3S06P047				
49	P3S06P048	163520.279	99032.009	35046.564	163705.317	100428.531	35008.5126	165146.721	100205.375	33551.0749	164960.051	98799.6342	33588.9721	P3S06P048				
50	P3S06P049	163705.317	100428.531	35008.5126	163875.579	101827.244	34964.325	165318.621	101613.731	33507.0618	165146.721	100205.375	33551.0749	P3S06P049				

```
            if
            (
                Math.Abs(nextPanel.G_edge[0] - G_edge[0]) <= tolerance
                &&
                Math.Abs(nextPanel.G_edge[1] - G_edge[1]) <= tolerance
                &&
                Math.Abs(nextPanel.G_edge[2] - G_edge[2]) <= tolerance
                &&
                Math.Abs(nextPanel.G_edge[3] - G_edge[3]) <= tolerance
                &&
                Math.Abs(nextPanel.G_diagonal_1 - G_diagonal_1) <= tolerance * Math.Sqrt(2)
            )
            { return true; }
            else
            { return false; }

        }

    }
    #endregion

    public class Group
    {
        public int GroupNumber;
        public double[] Edge; //array of lengths of groups's edges.
        public double Diagonal; //length of group's diagonal.
        public double Area; //area of a groupped panel;
    }

    double toFeet(double value) //convertion of linear sizes for family instances
    {
        return value * FACTOR_MMtoFT;
    }

    double toSqFeet(double value) //convertion of areal sizes for family instances
    {
```



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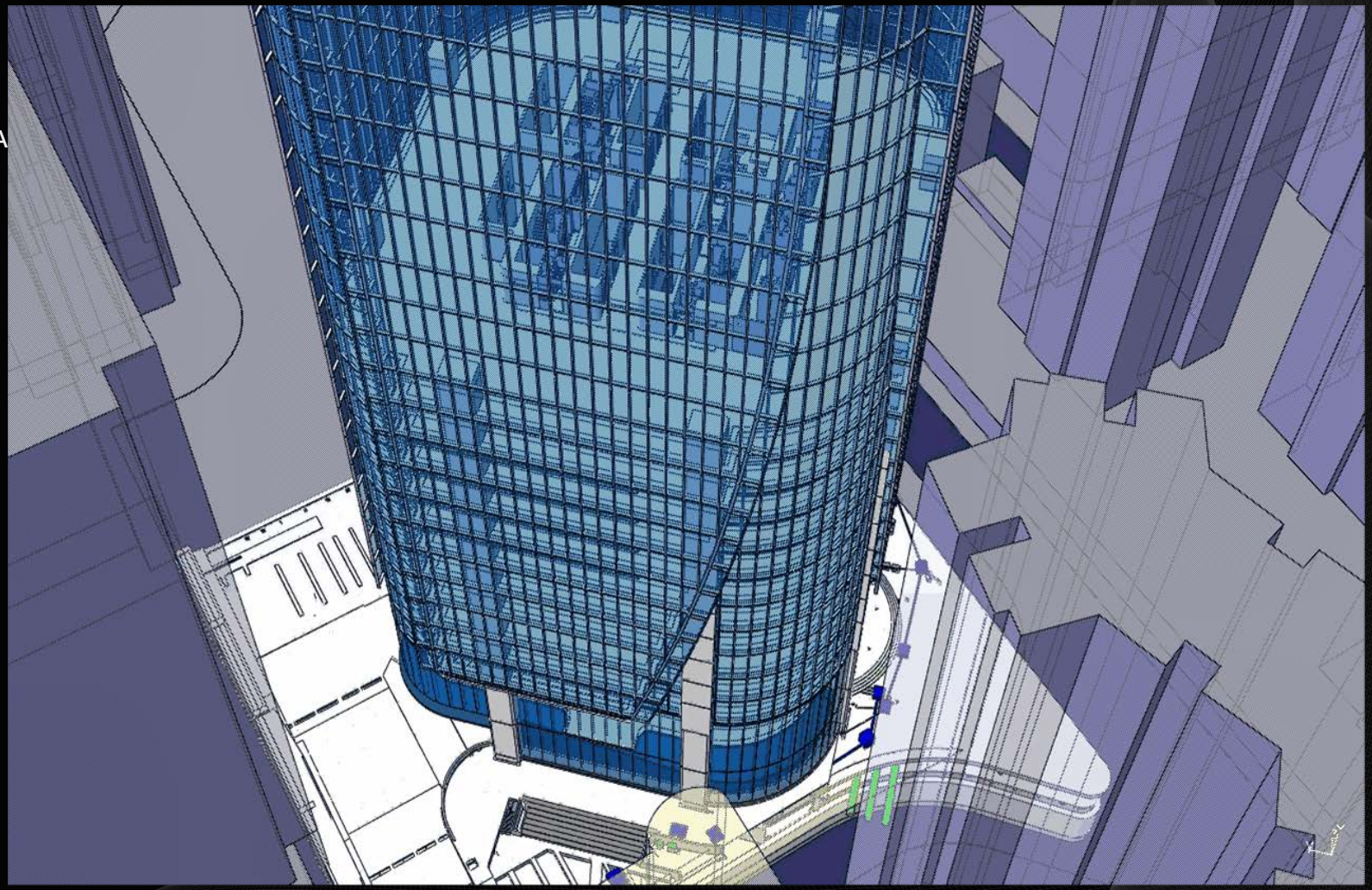
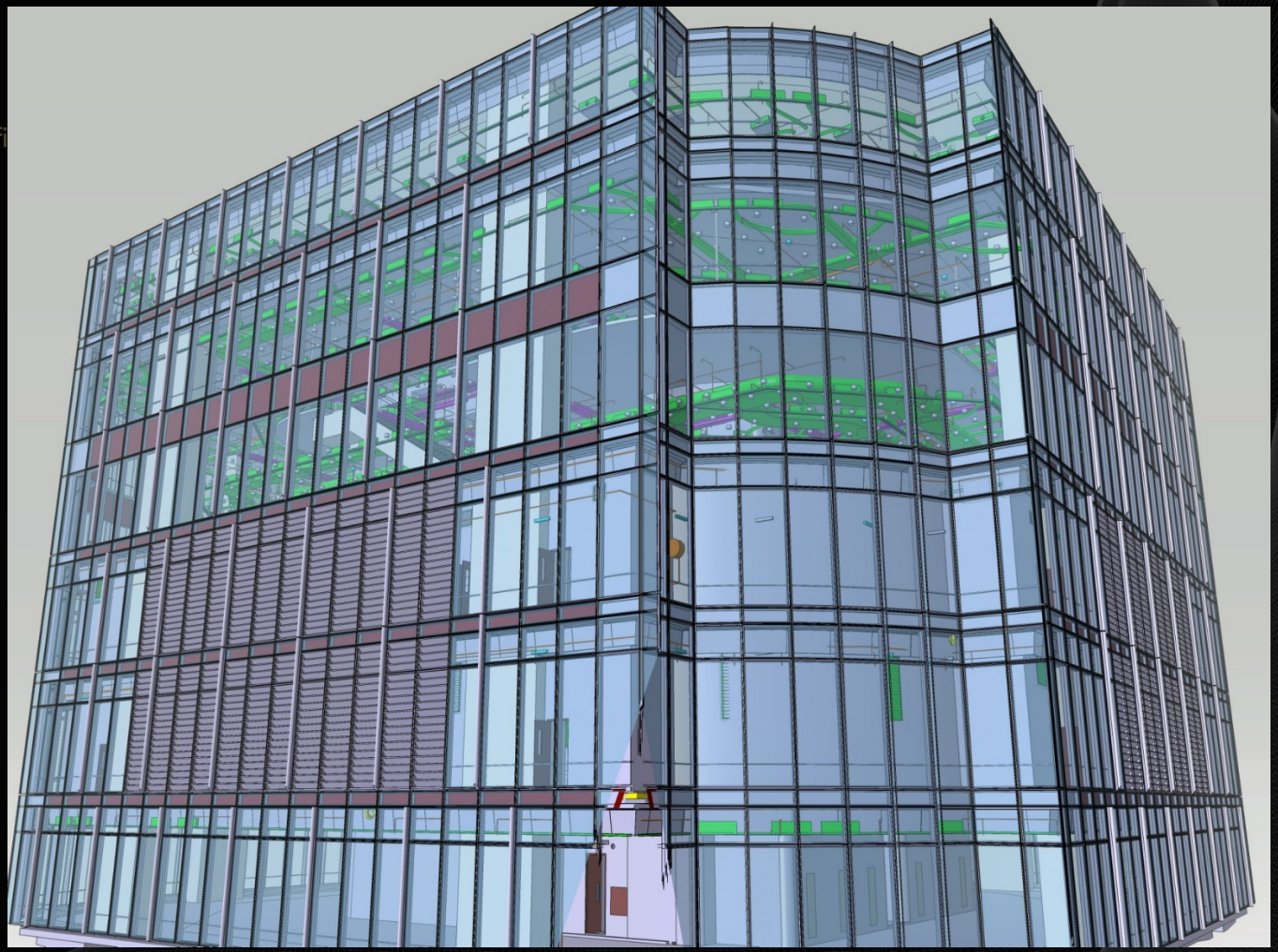
One Island East

Tender Model by Consultants

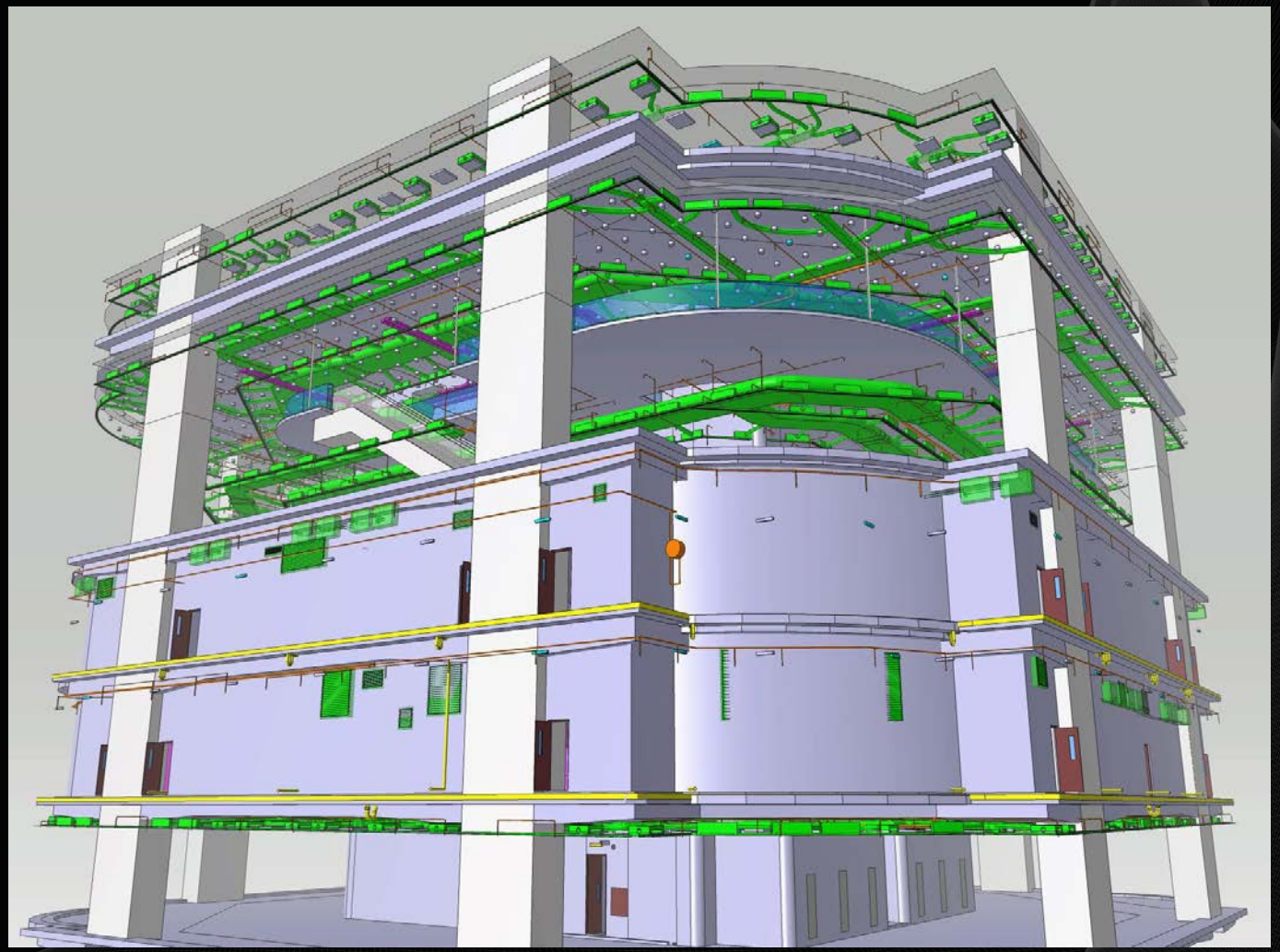
BIM A



BIM MEP Confi



BIM MEP Configuration



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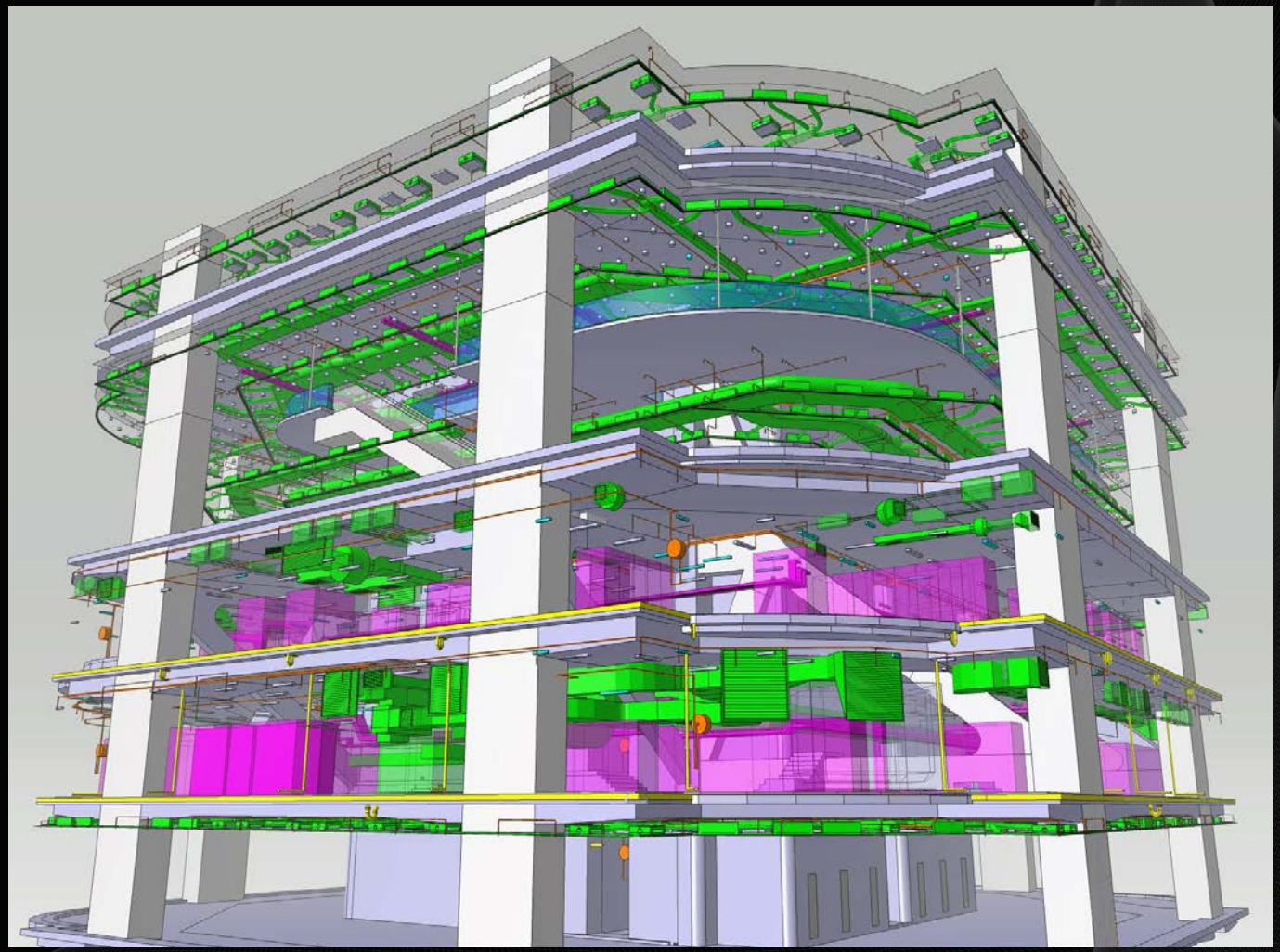
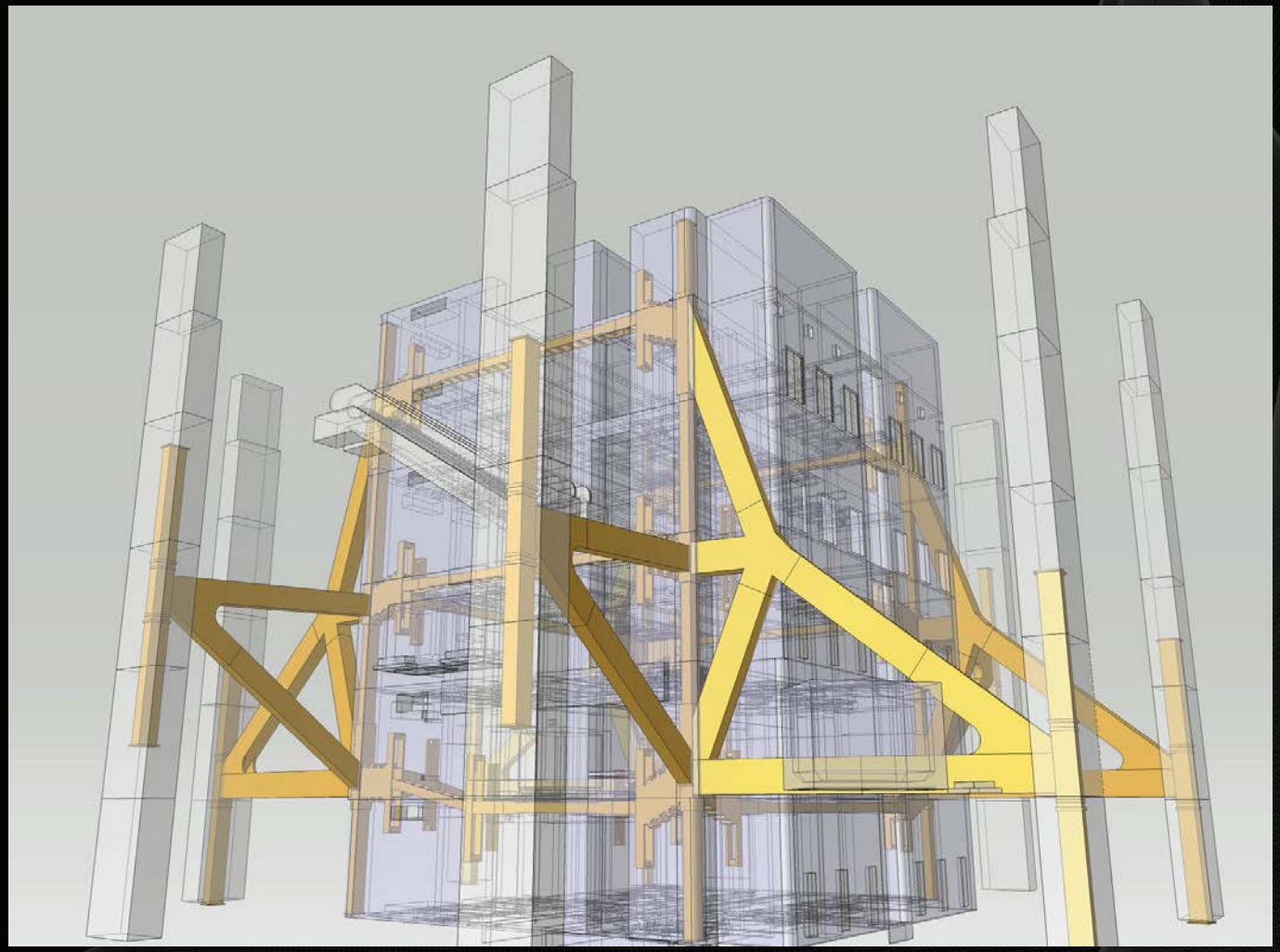
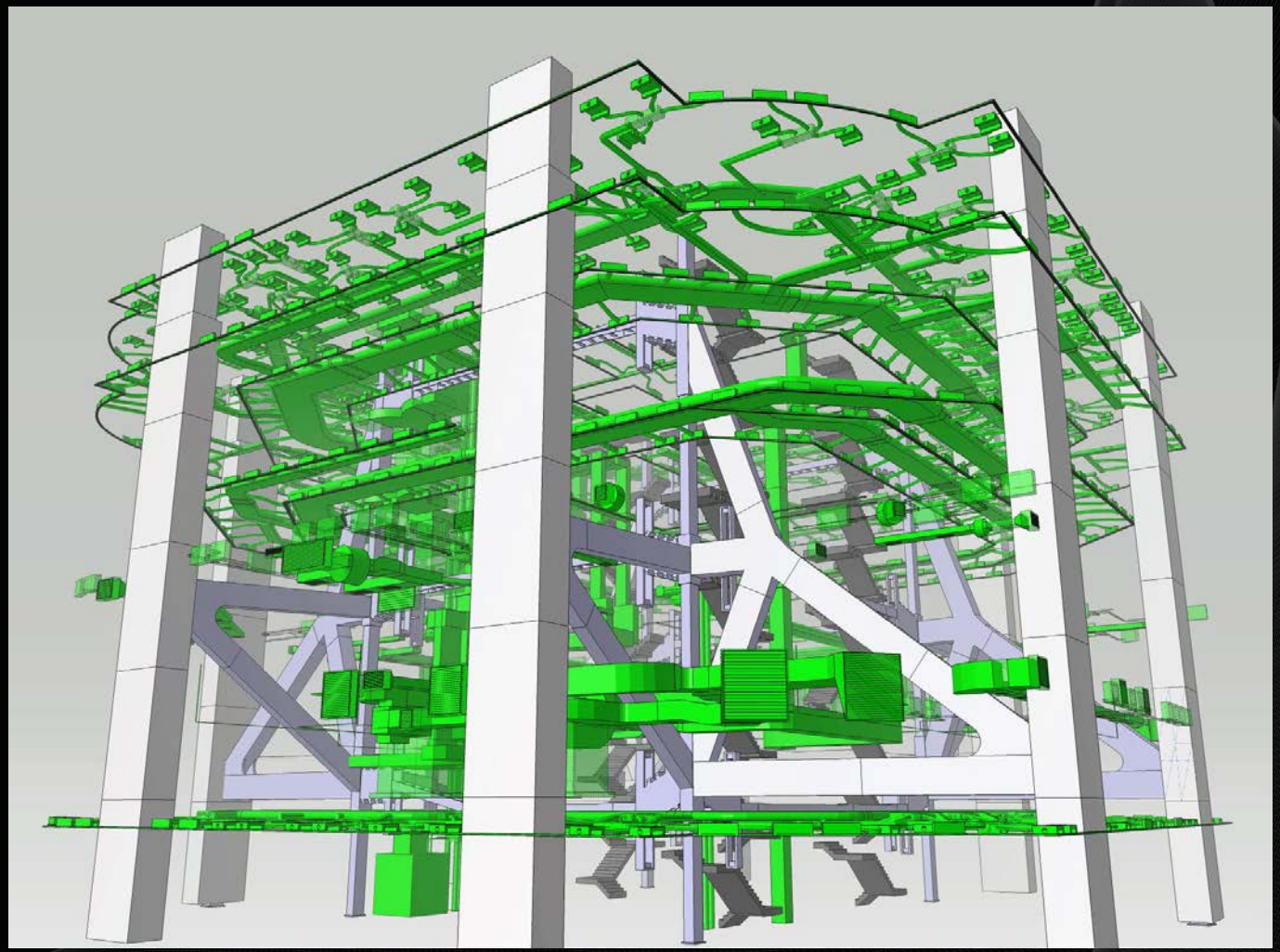


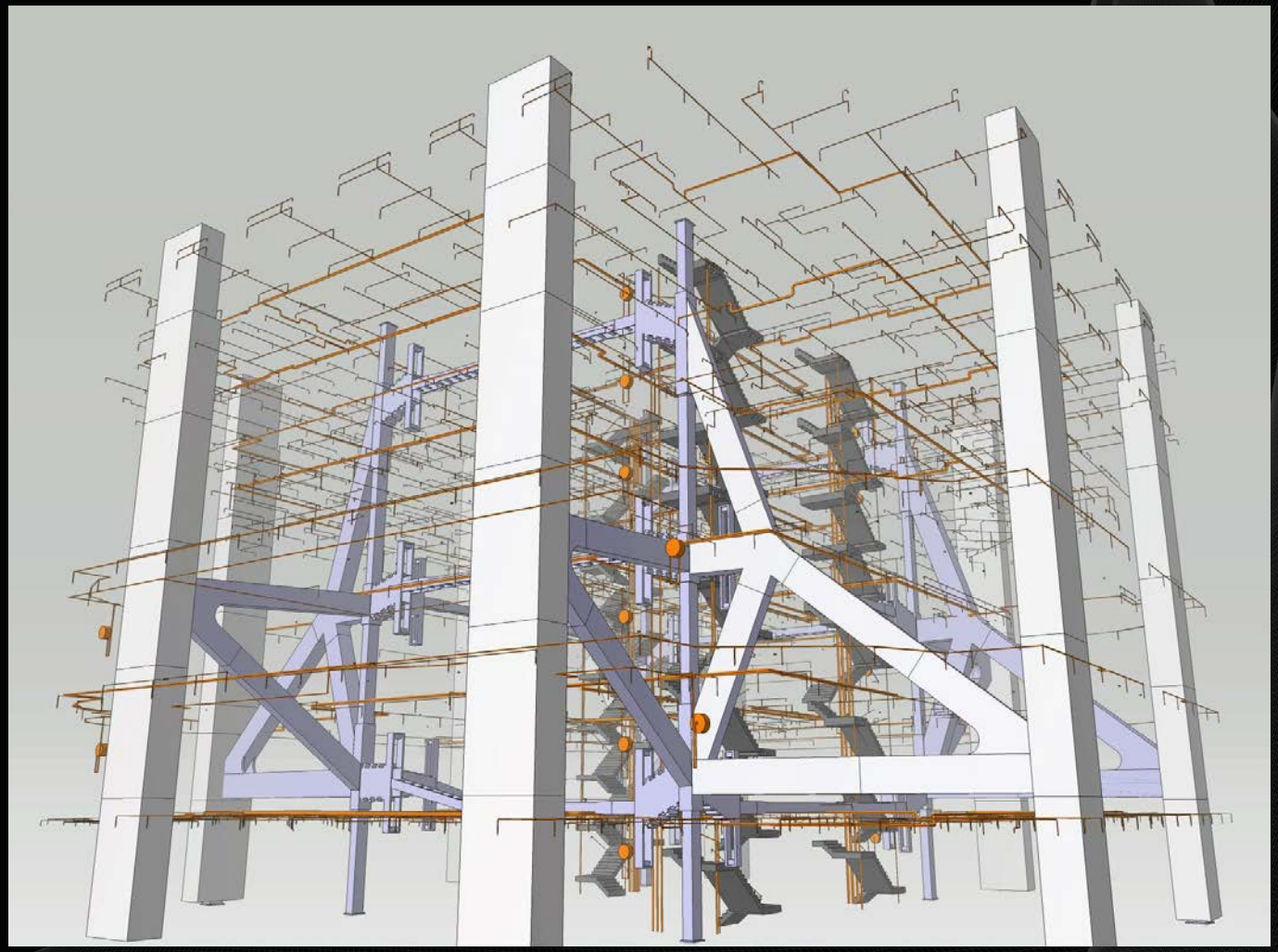
BIM Complex Structures Configuration



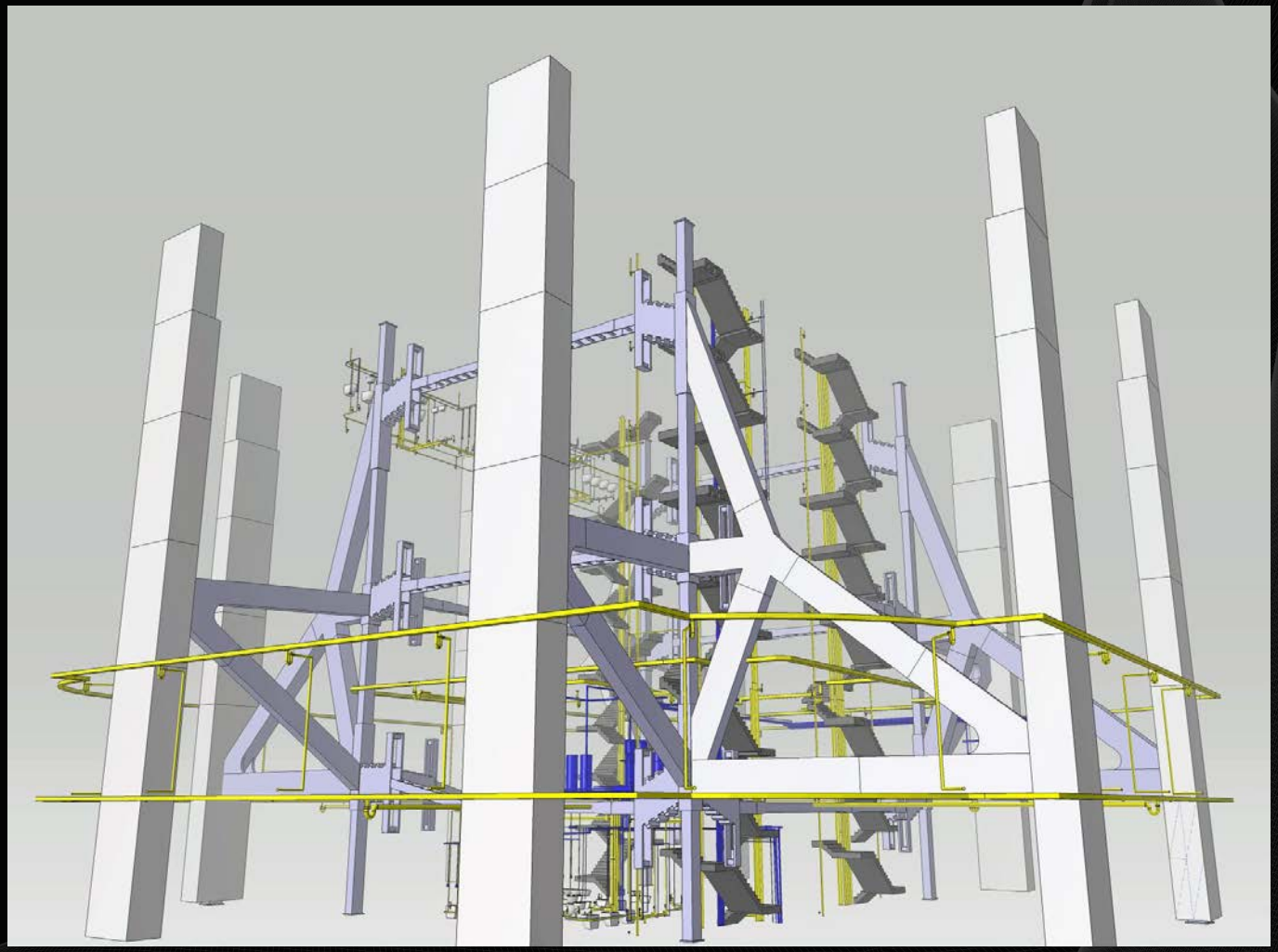
BIM HVAC Configuration



BIM FS Configuration



BIM Plumb & Drainage Configuration



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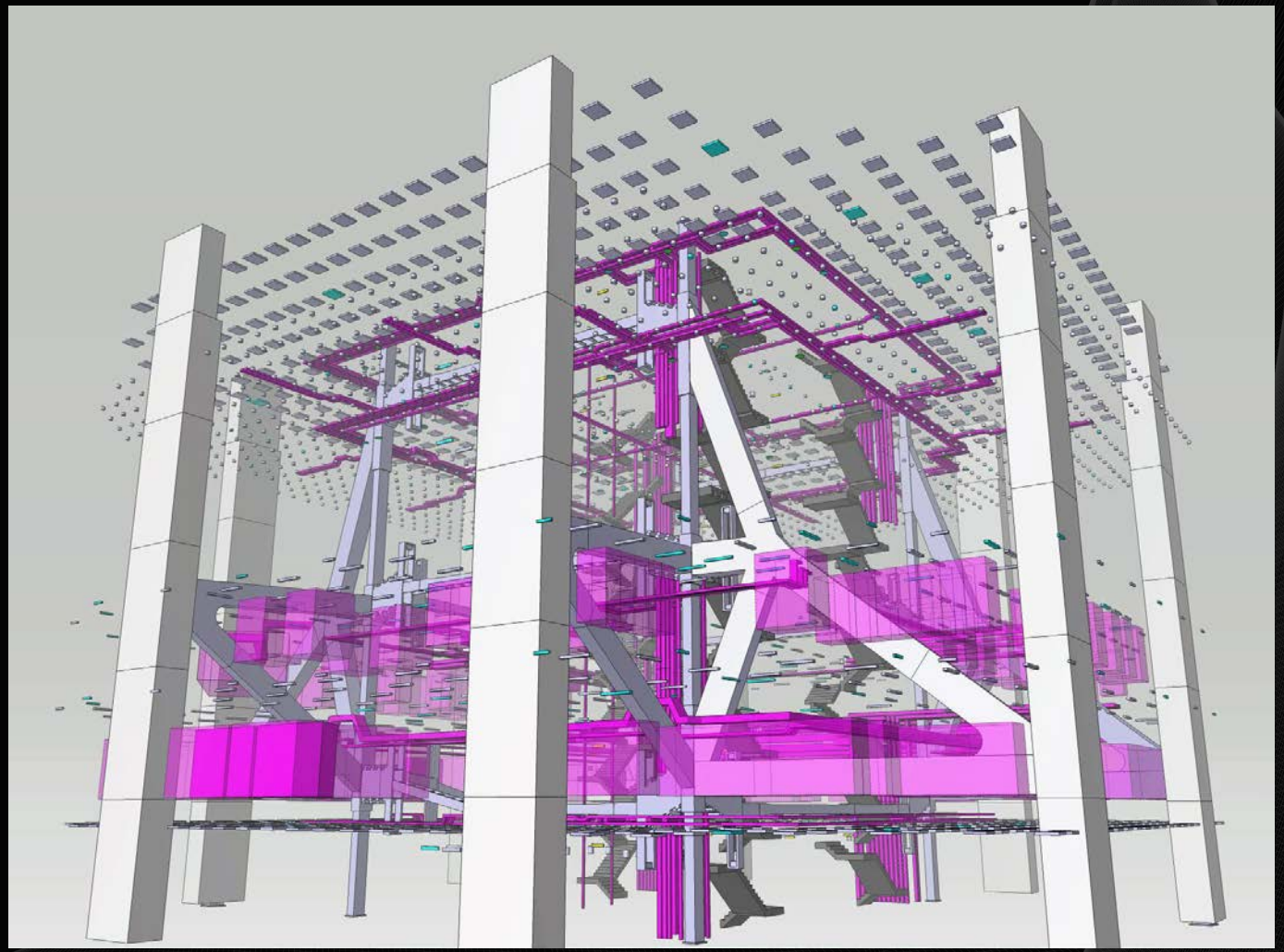
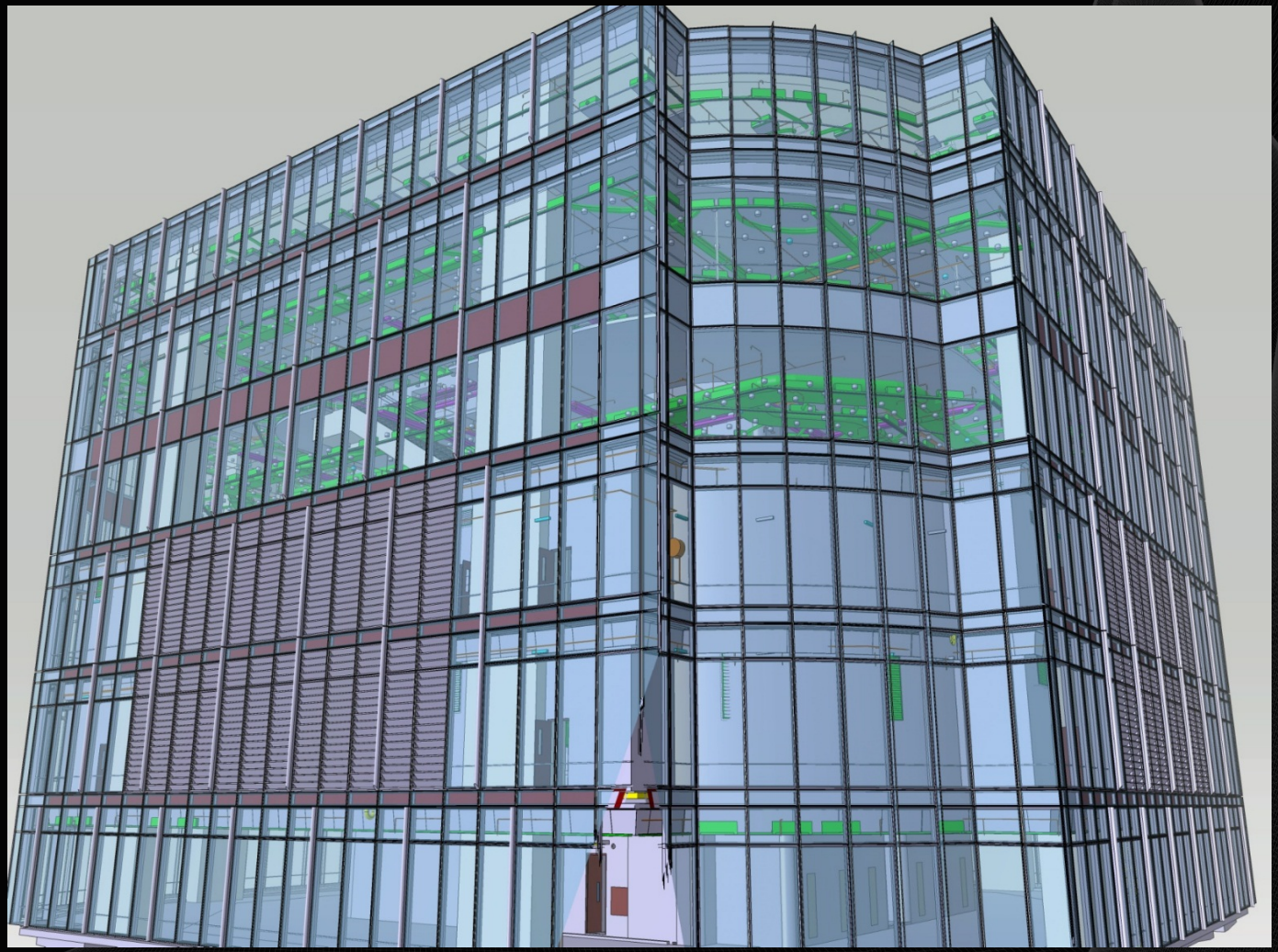
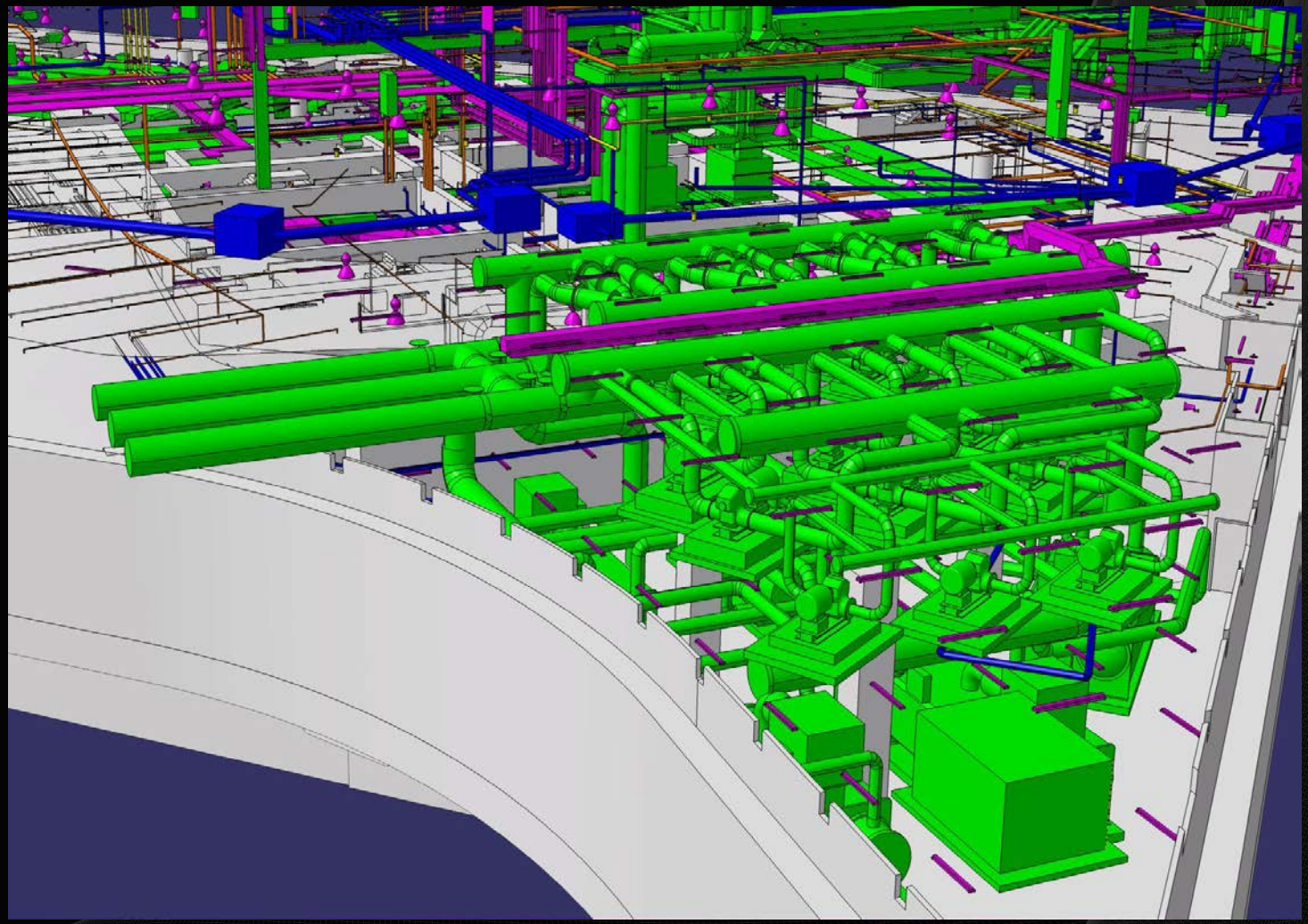




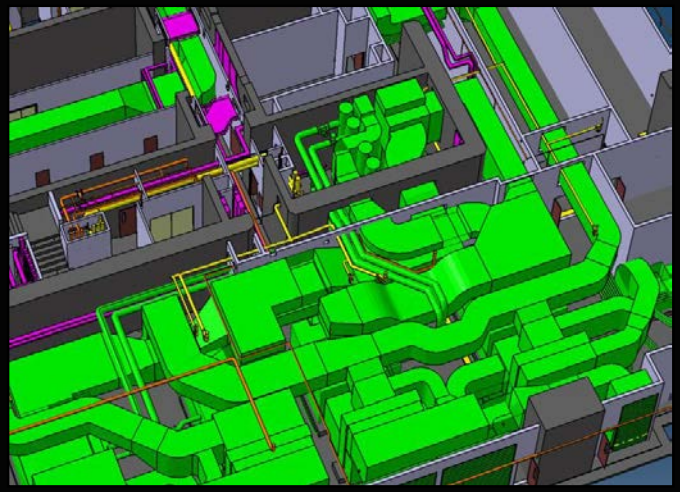
One Island East

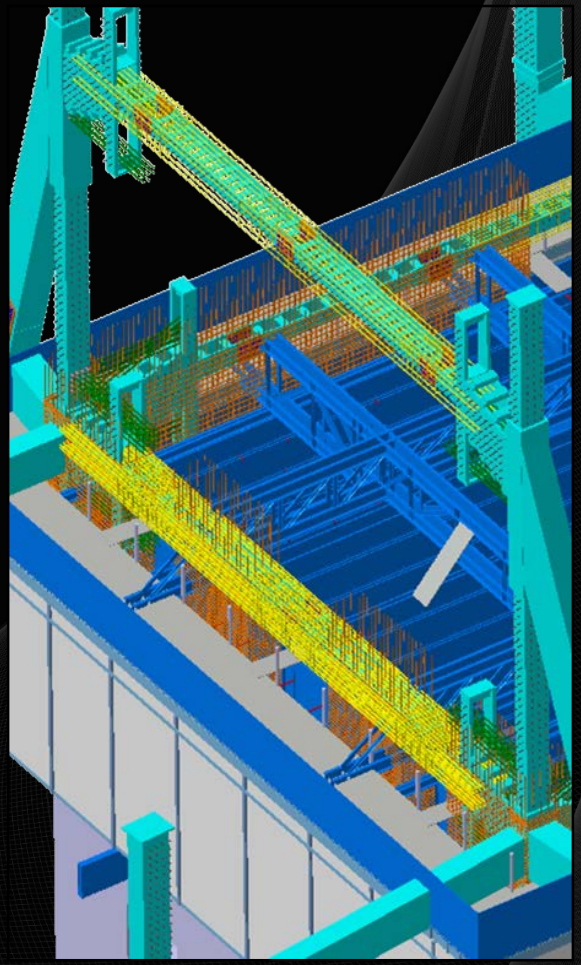
Detail Design and Coordination



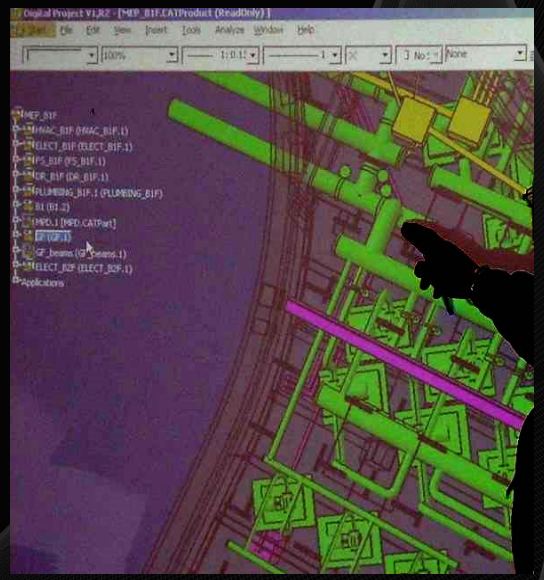
Chiller Plants at IsE Basement

Detail Design and Coordination



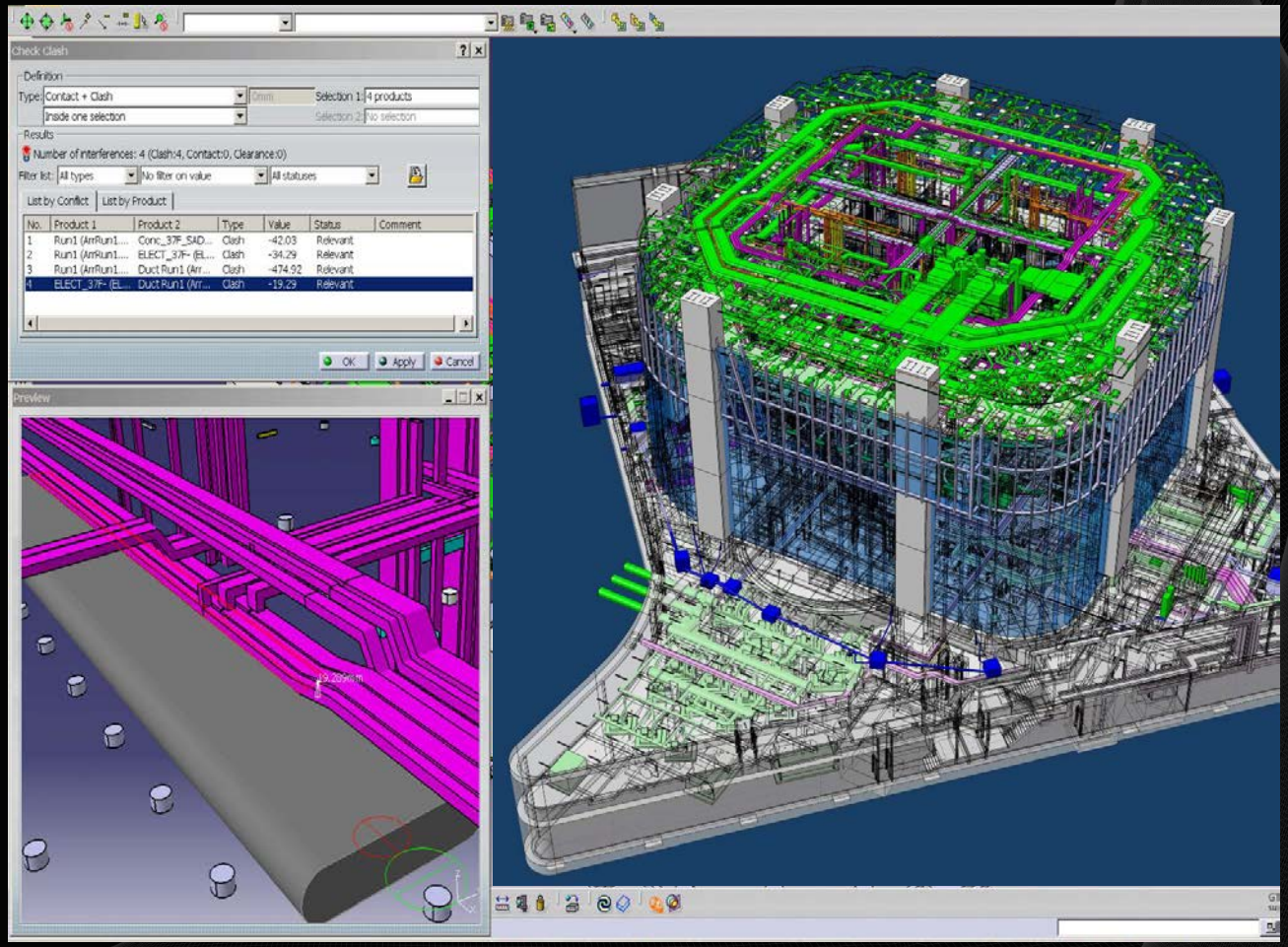


Detail Design and Coordination

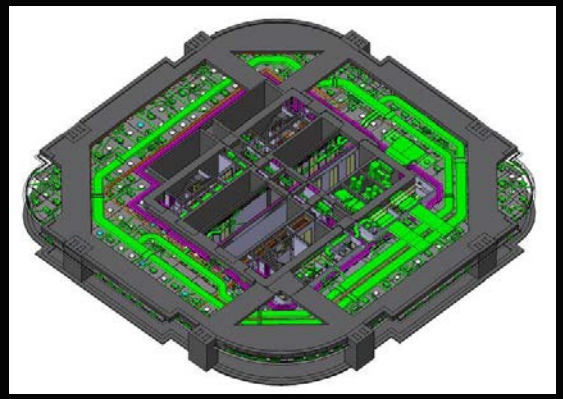


Owner, Architect, Structural, MEP, QS working in the same room on the same Contract 3D Building Information Model

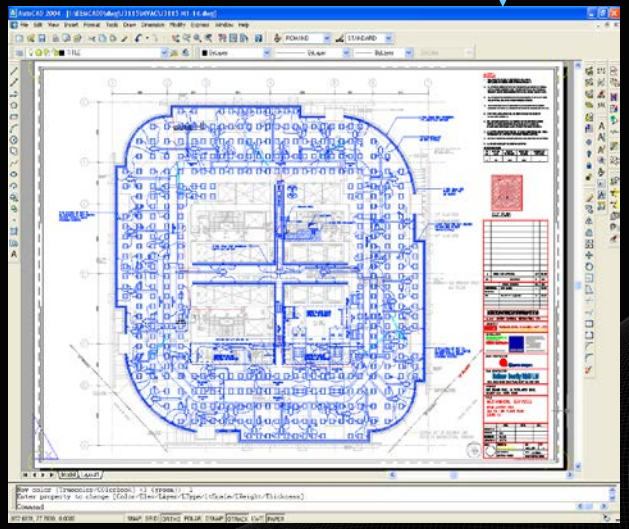
Detail Design and Coordination

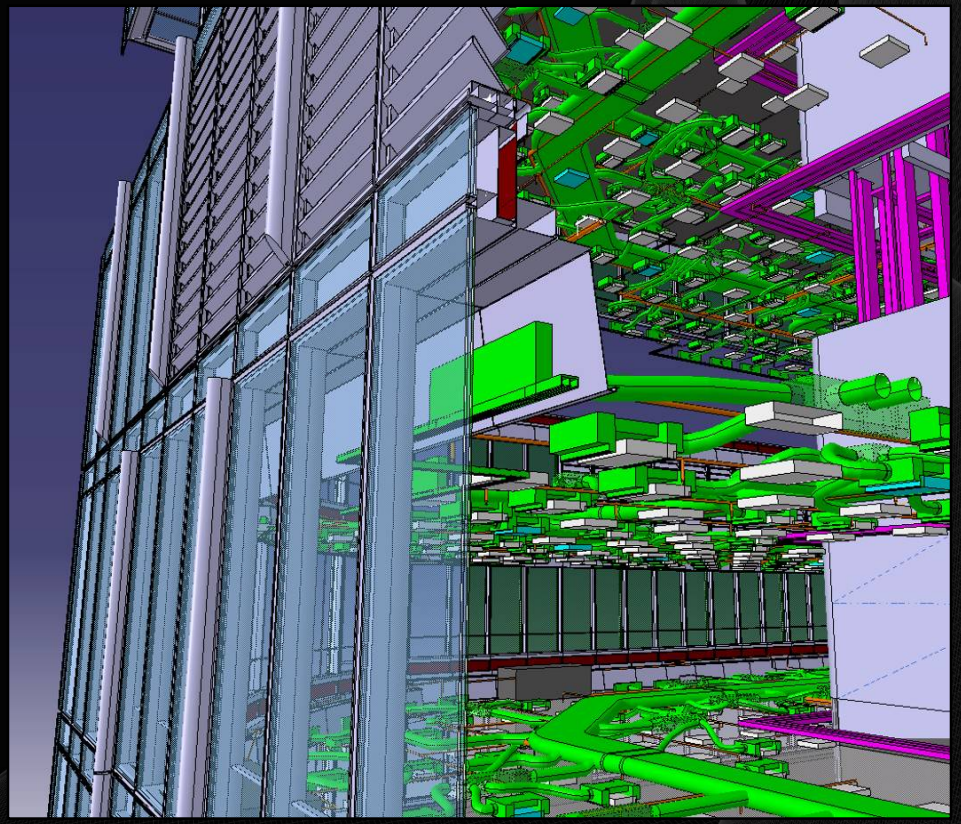


Automatic Clash Identification and Management



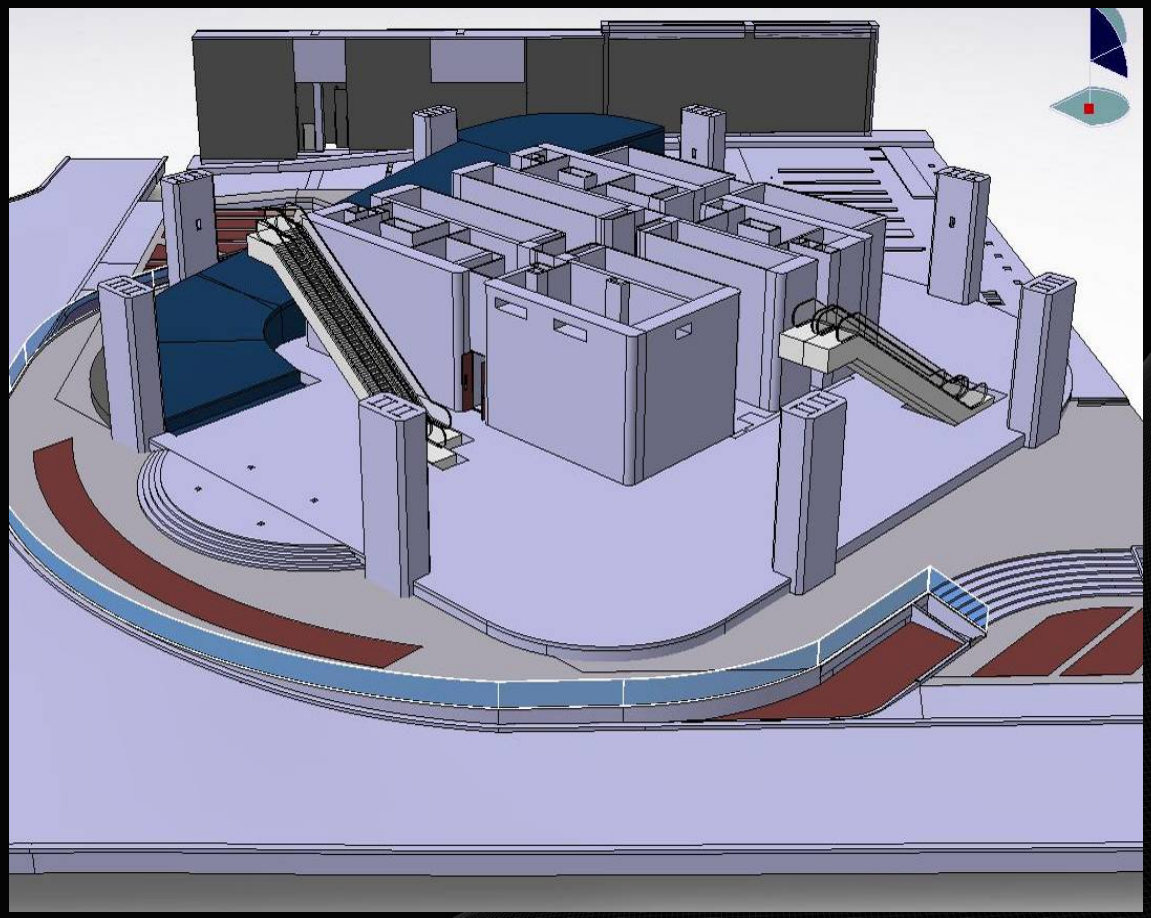
Coordinated 3D geometries



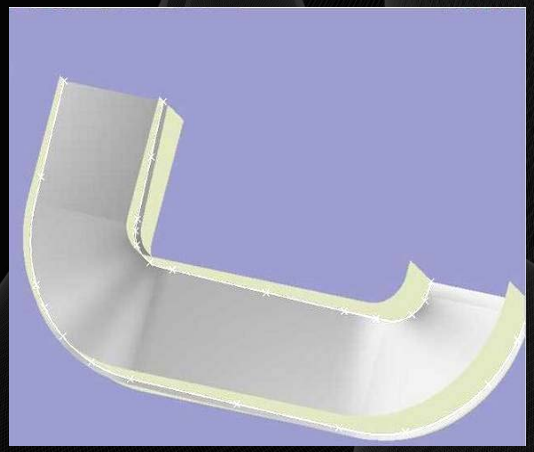


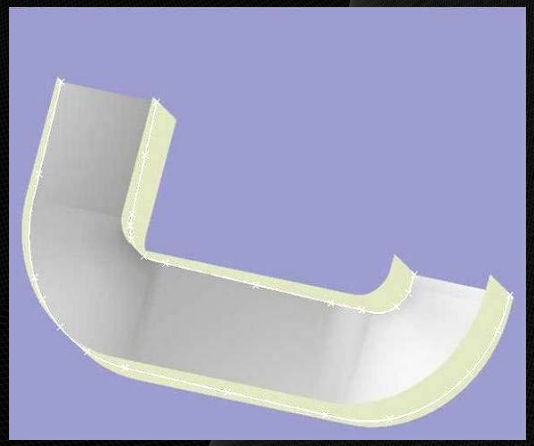
Live Sectioning

2D geometries output to ACAD for further coordination

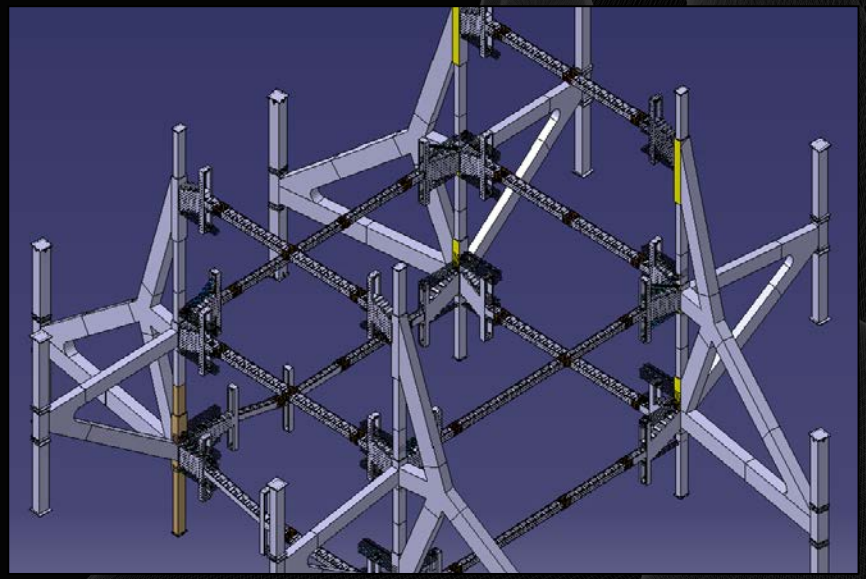


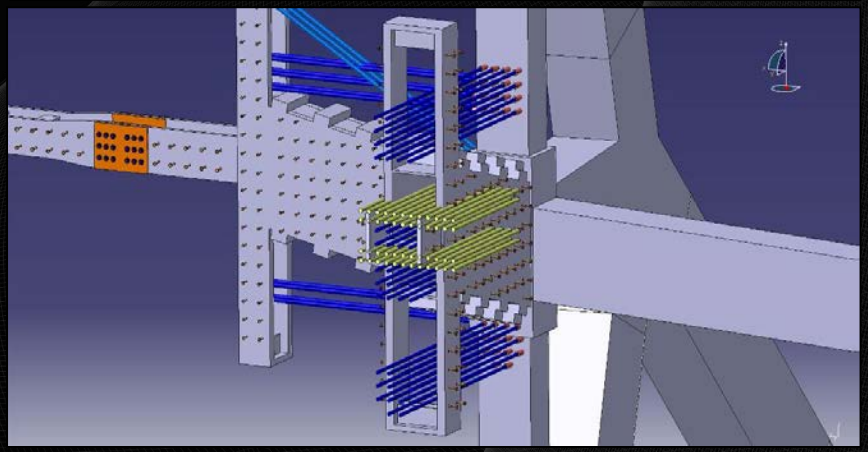
Road Curb Design Review



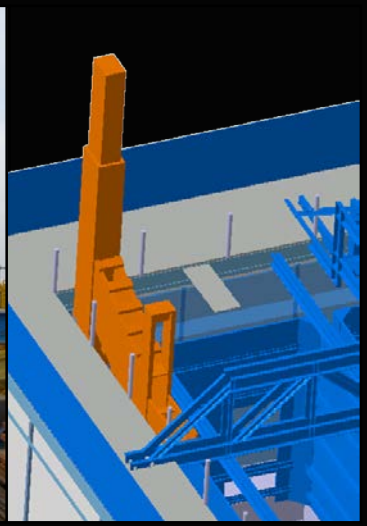


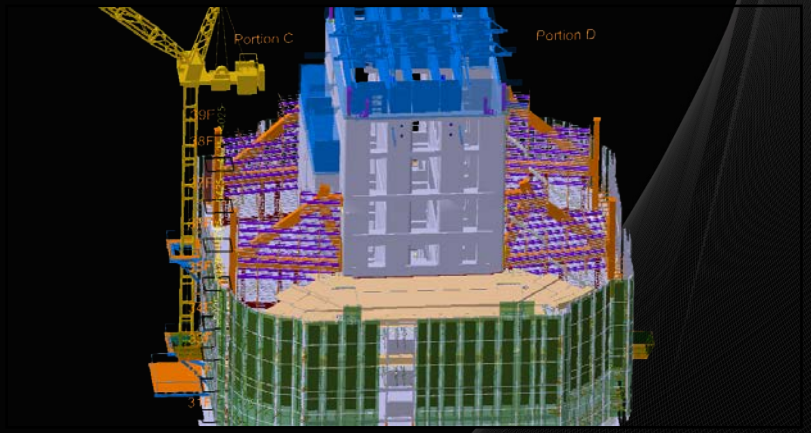
Car-ramp Design Review

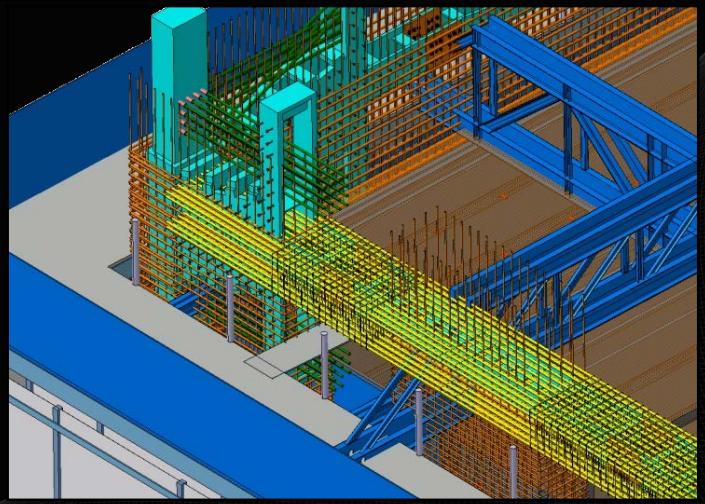




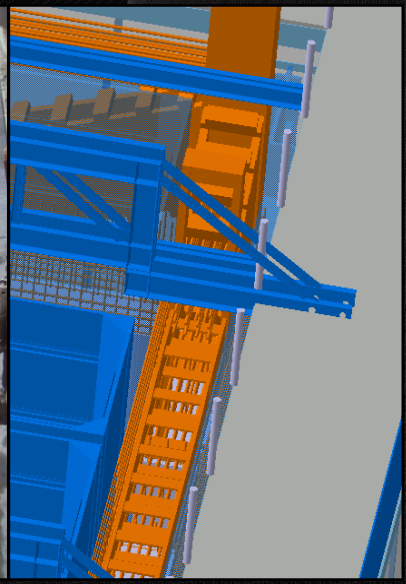
Steel Outrigger and Rebars



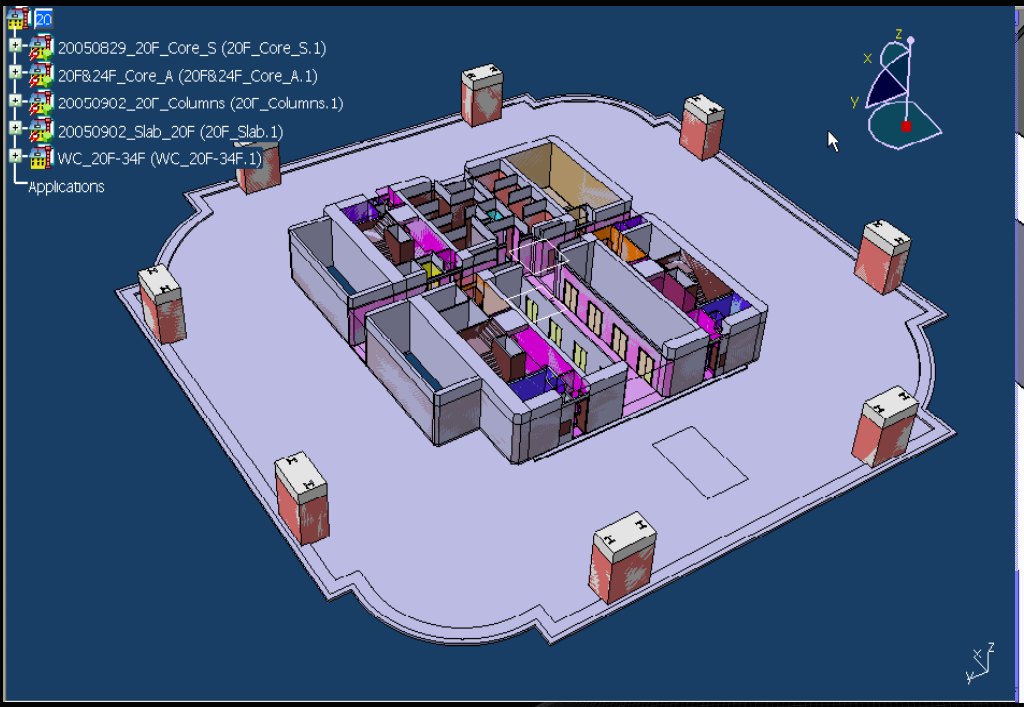




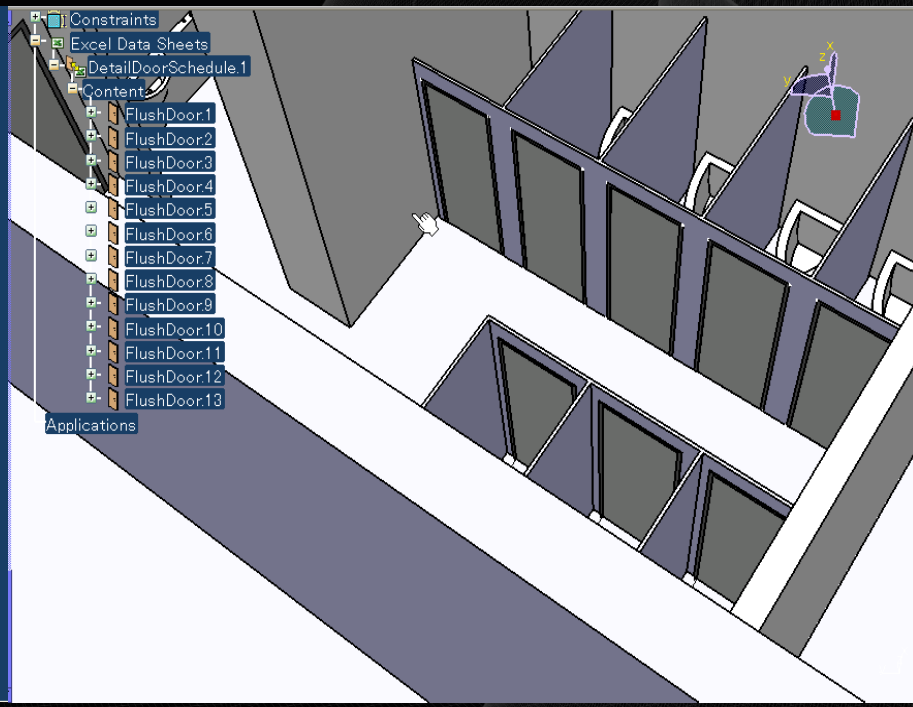
Steel Outrigger

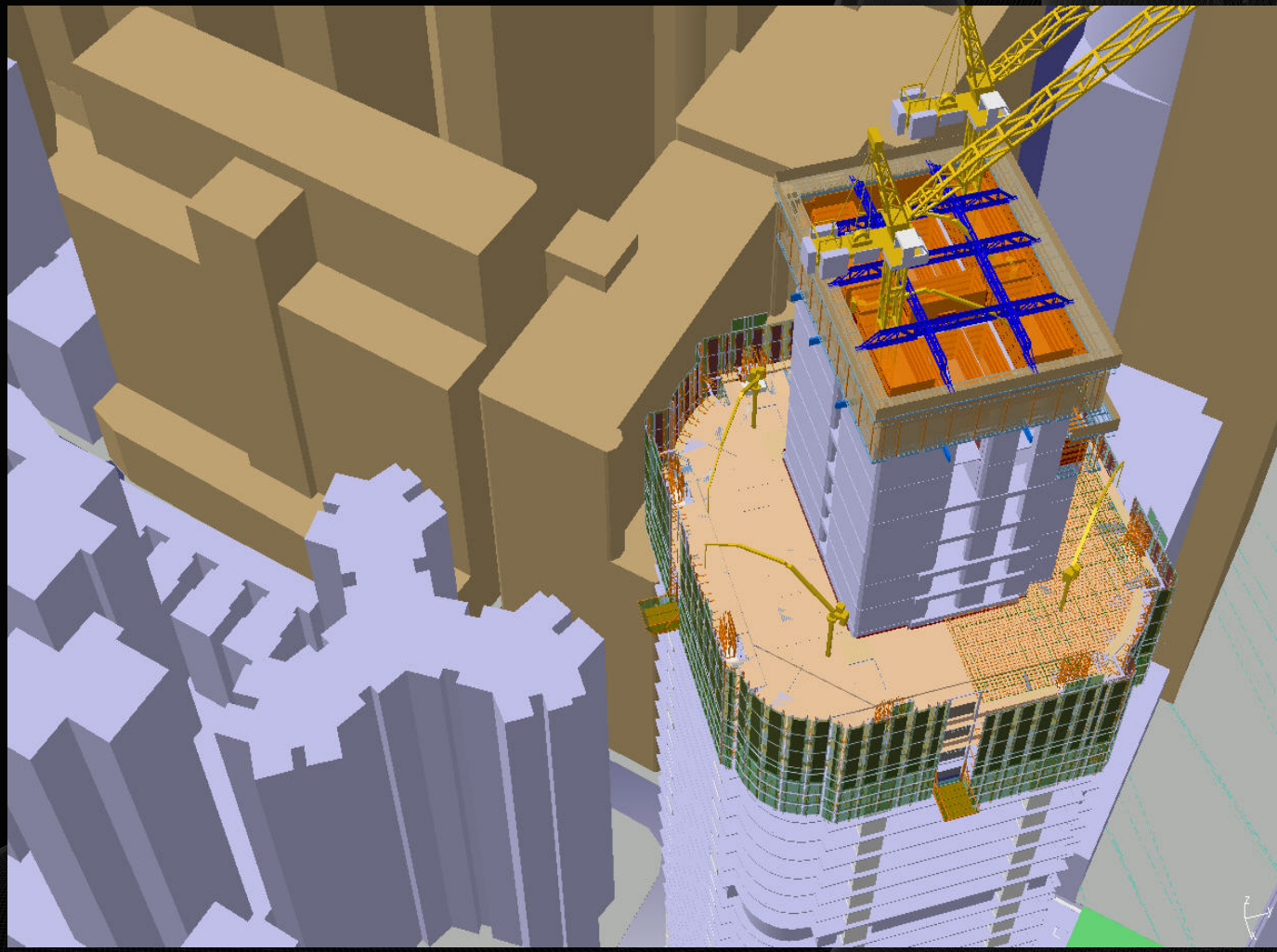


Quantity Extraction from BIM



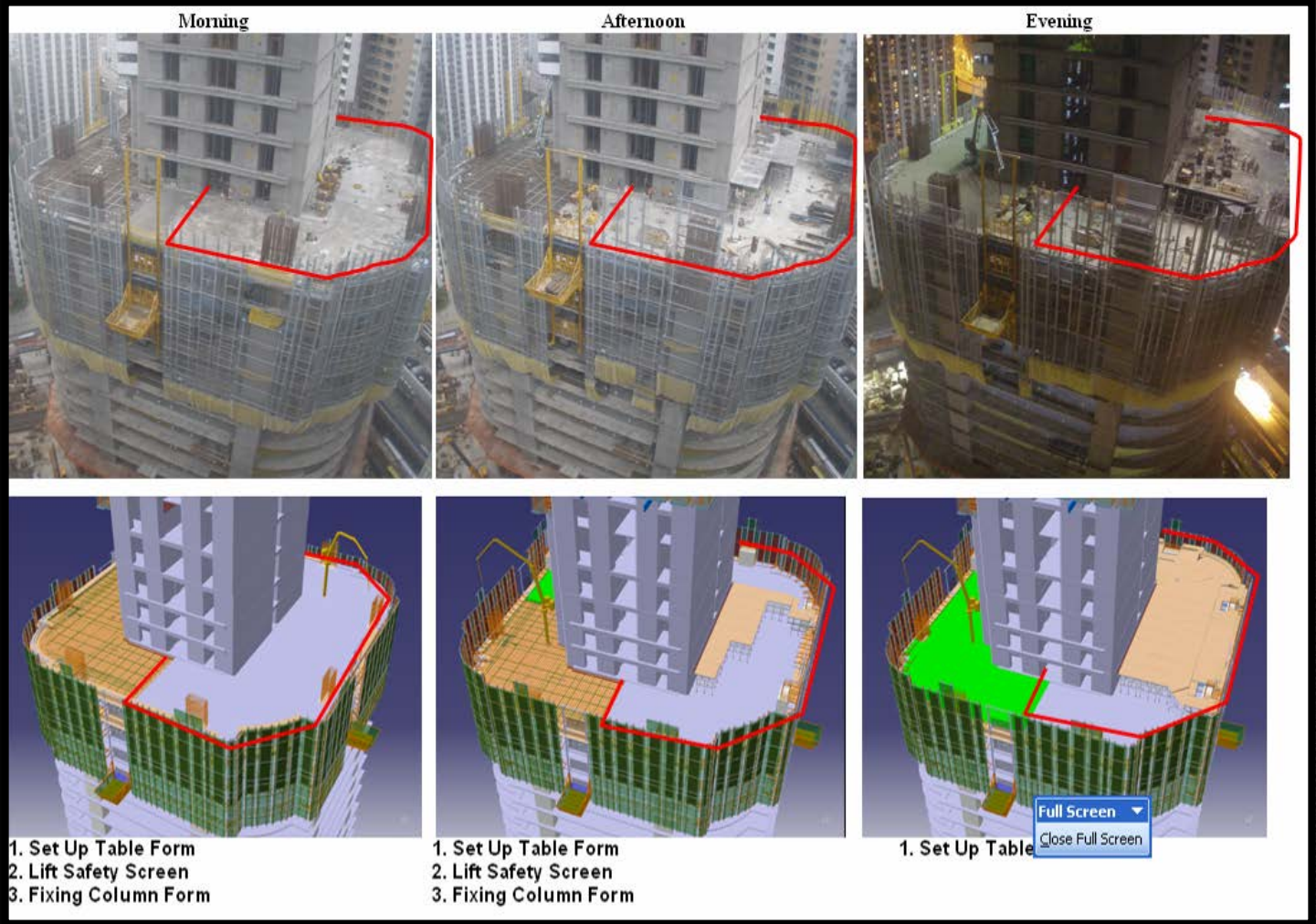
Work Scheduling utilizing BIM





Detail study on the critical process

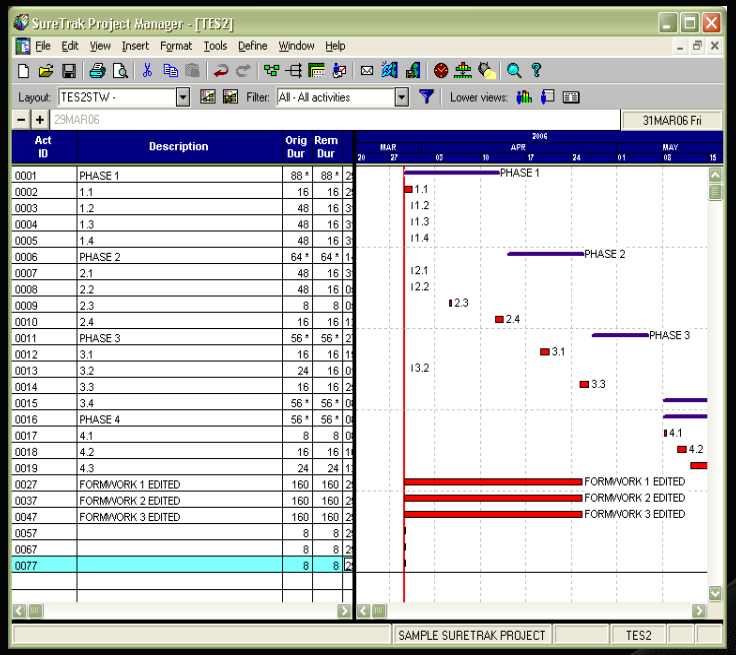
4-day floor cycle

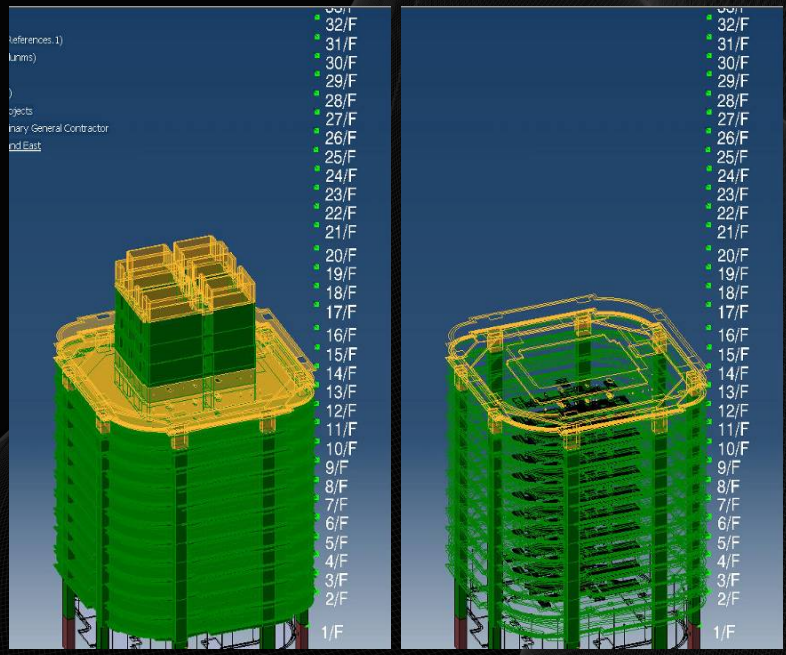


Virtual Prototyping

4 Day Cycle Simulation (Day 1)

Data exchanging between Primavera and Digital Project





Primavera

Digital Project

Design

Collaboration

Analysis

Documentation

Project Management

True BIM for architects is a process for

Erweiterte Realität
zur Visualisierung
von Planungsdaten
vor Ort

- Setting realistic expectations of BIM from the facility maintenance operation team's perspectives.

Virtual Asset

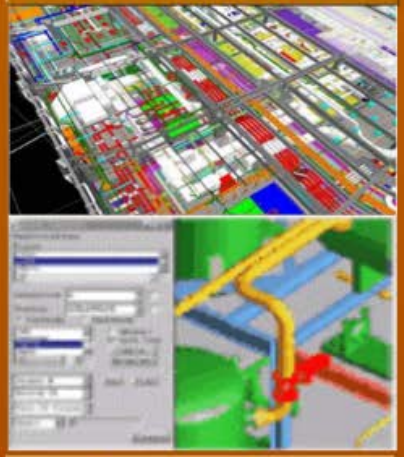
Physical Asset

Physical Asset

Virtual Asset

As-built BIM Field Checking

As-Built Data

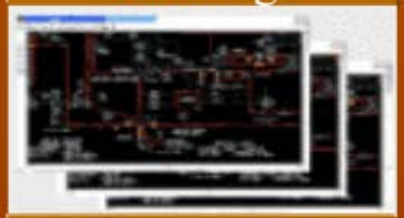


Inspection Data

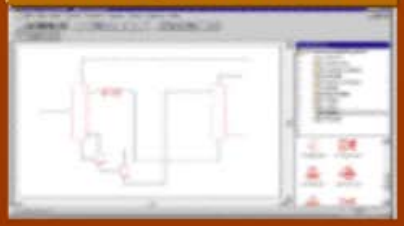
Operation (DCS/PI)

Virtual Asset Portal

Engineering Drawings



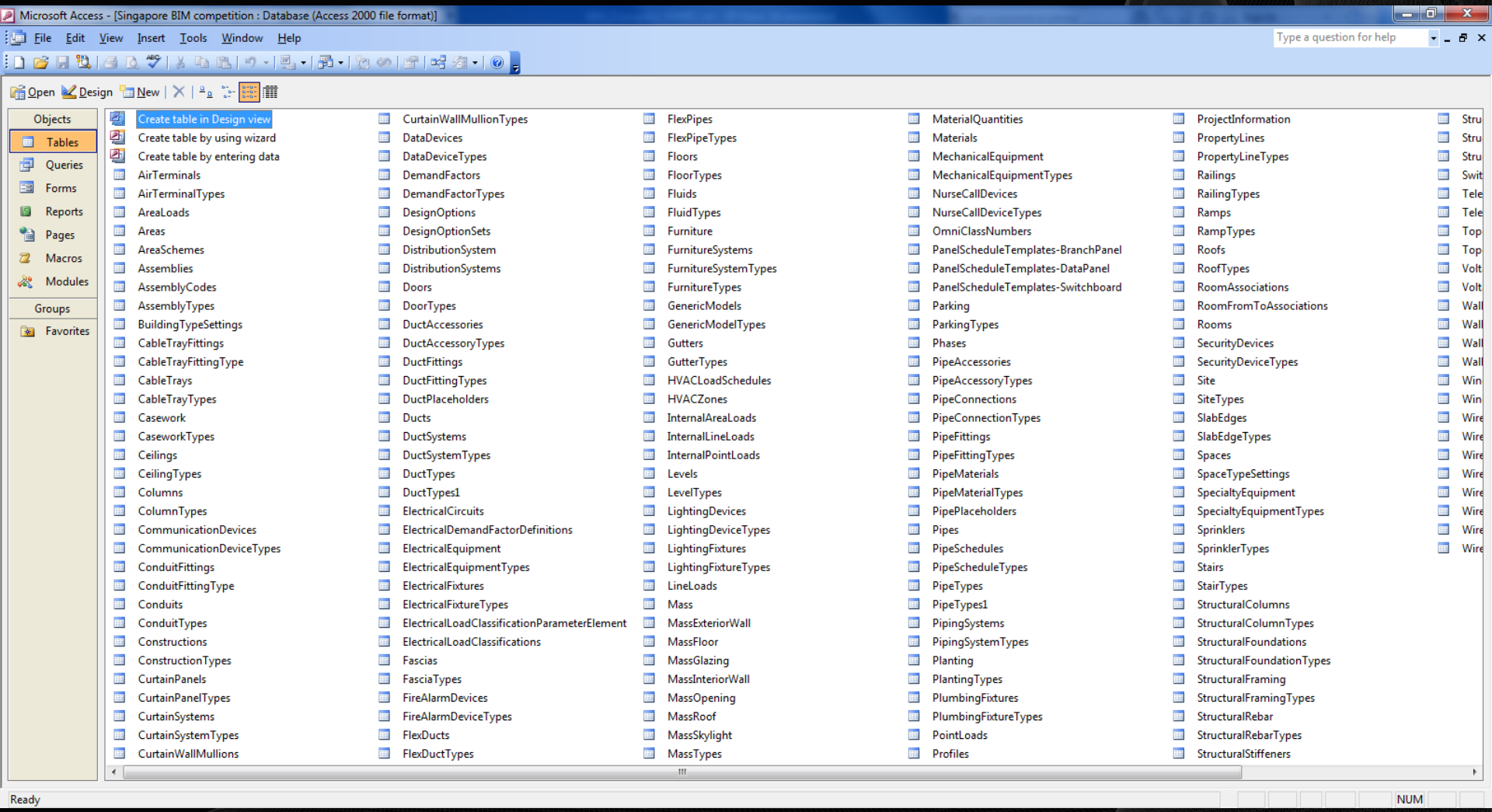
Intelligent P&ID



Operation Safety Procedures

FI HR CRM KM

Maintenance


Microsoft Access - [Singapore BIM competition : Database (Access 2000 file format)]
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Type a question for help
Open Design New
Objects
Tables
Queries
Forms
Reports
Pages
Macros
Modules
Groups
Favorites
Create table in Design view
Create table by using wizard
Create table by entering data
AirTerminals
AirTerminalTypes
AreaLoads
Areas
AreaSchemes
Assemblies
AssemblyCodes
AssemblyTypes
BuildingTypeSettings
CableTrayFittings
CableTrayFittingType
CableTrays
CableTrayTypes
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CaseworkTypes
Ceilings
CeilingTypes
Columns
ColumnTypes
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FireAlarmDeviceTypes
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FloorTypes
Fluids
FluidTypes
Furniture
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InternalLineLoads
InternalPointLoads
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MassInteriorWall
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PanelScheduleTemplates-DataPanel
PanelScheduleTemplates-Switchboard
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PipeAccessoryTypes
PipeConnections
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RoofTypes
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Rooms
SecurityDevices
SecurityDeviceTypes
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SprinklerTypes
Stairs
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StructuralColumns
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Ready
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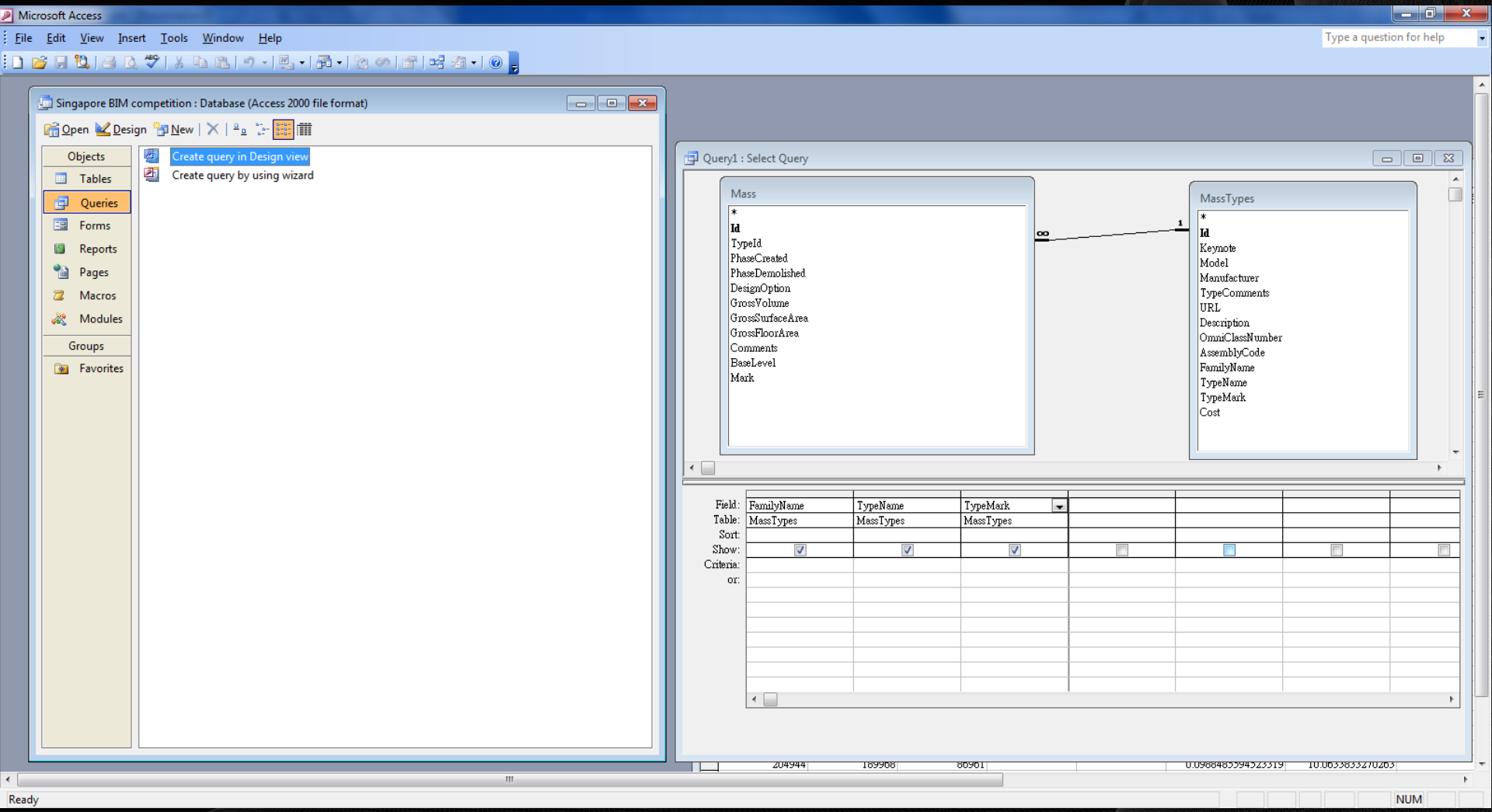
Microsoft Access
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Singapore BIM competition : Database (Access 2000 file format)
Open Design New
Objects
Tables
Queries
Forms
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Modules
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Create query in Design view
Create query by using wizard
Query1 : Select Query
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PhaseCreated
PhaseDemolished
DesignOption
GrossVolume
GrossSurfaceArea
GrossFloorArea
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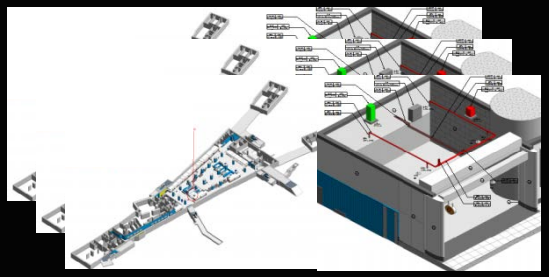
MODELLING + INDIVIDUAL DATABASE

FLEET WIDE DATABASE

APPLICATIONS

S1



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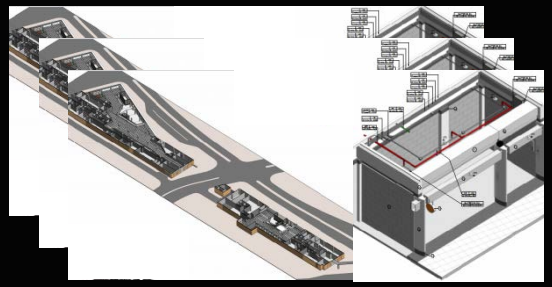

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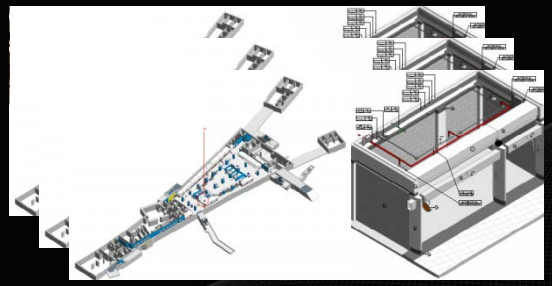

MEGA DATABASE

OTHER DATABASES

APP 1

E.G. CCTV MONITORING

APP 2

E.G. RETAIL

APP3

SAT Tower Mullion	SAT Tower Mullion
SAT Tower Surface Ref	SAT Tower Surface Ref
Tower Panel	S01-P001
Tower Panel	S01-P002
Tower Panel	S01-P003
Tower Panel	S01-P004
Tower Panel	S01-P005
Tower Panel	S01-P006
Tower Panel	S01-P007
Tower Panel	S01-P008
Tower Panel	S01-P009
Tower Panel	S01-P010
Tower Panel	S01-P011
Tower Panel	S01-P012
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Tower Panel	S01-P036
Tower Panel	S01-P037
Tower Panel	S01-P038
Tower Panel	S01-P039
Tower Panel	S01-P040

Record: 1 of 2503

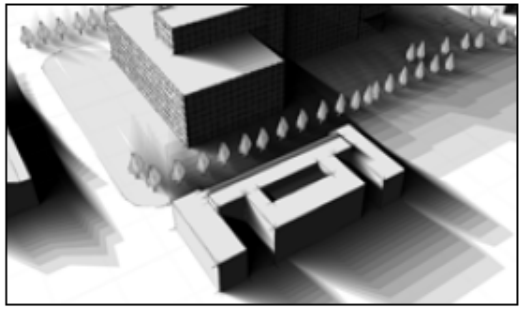

vanilla
atelier


TOTAL IMMERSION
TOTAL
IMMERSION


AUDITOIRE
TOTAL
IMMERSION

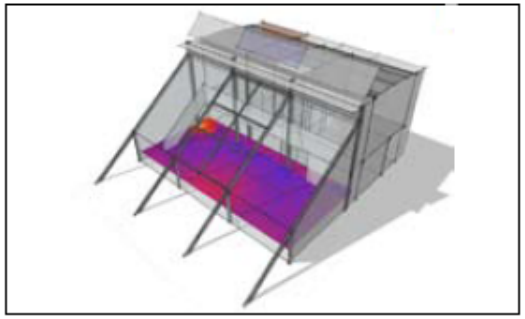
Shadows and Reflections

Display the sun's position and path relative to the model at any date, time, and location using this simulation tool. View how sunlight enters through windows and moves around within a space.



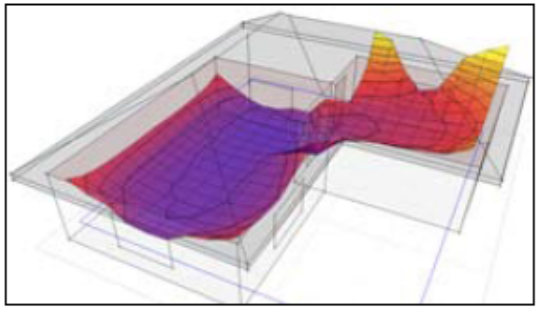
Daylighting

Calculate daylight factors and illuminance levels at any point in the model or over the analysis grid. This tool helps determine potential savings due to daylight-linked lighting design.



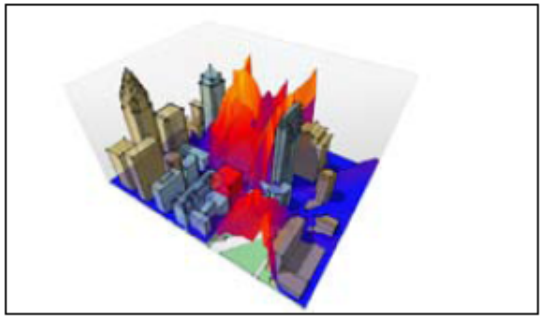
Thermal Performance

Calculate heating and sensible cooling loads for models with any number of zones or types of geometry. Analyze effects of occupancy, internal gains, infiltration, and equipment items.



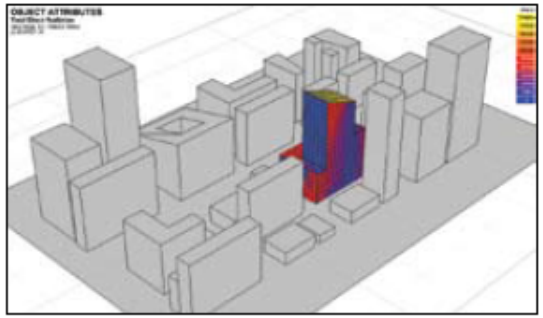
Visual Impact

Analyze site projection angles, assess obstructions, calculate vertical sky components for any point or surface, and visualize the no-sky line in any space.

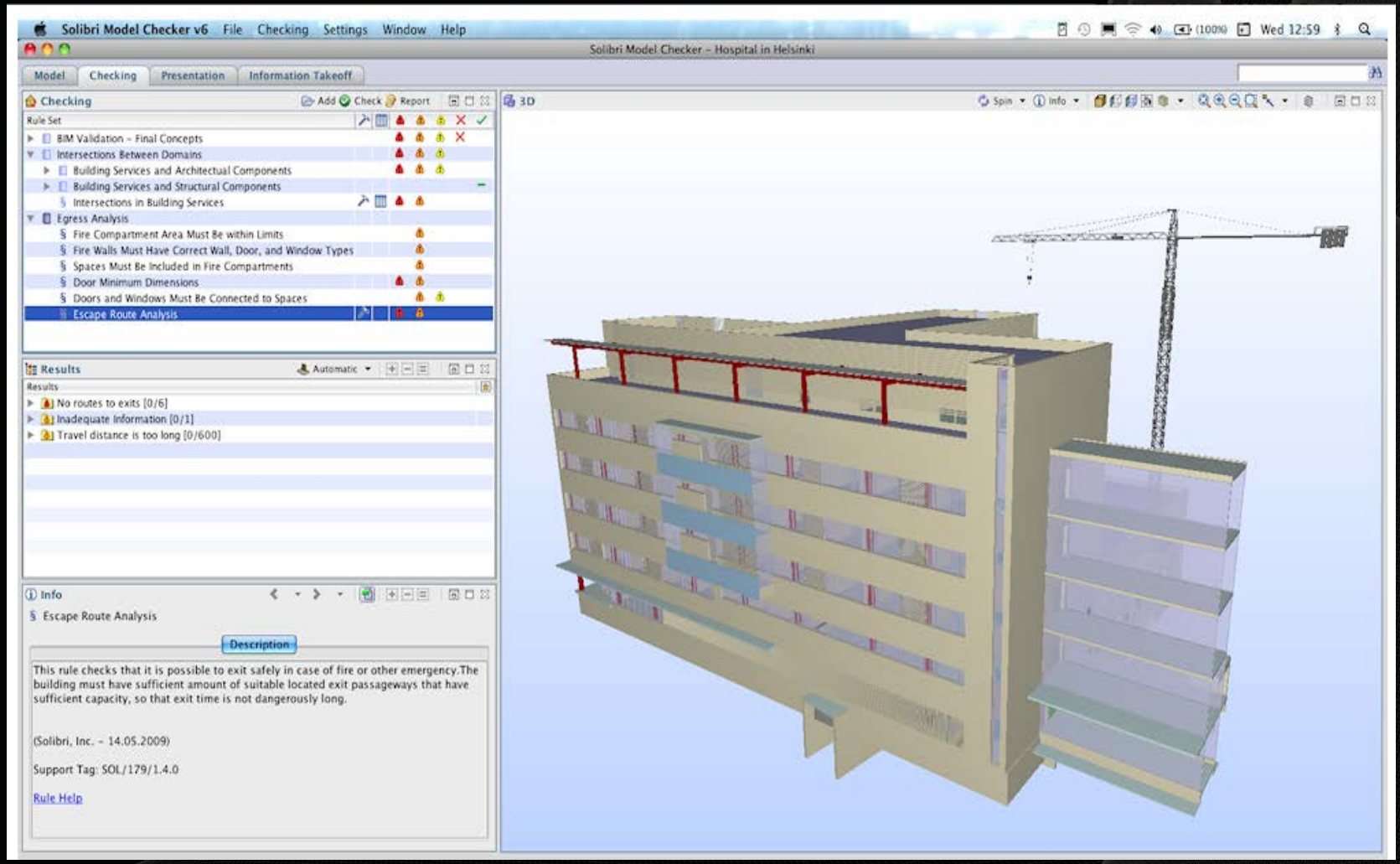


Solar Radiation

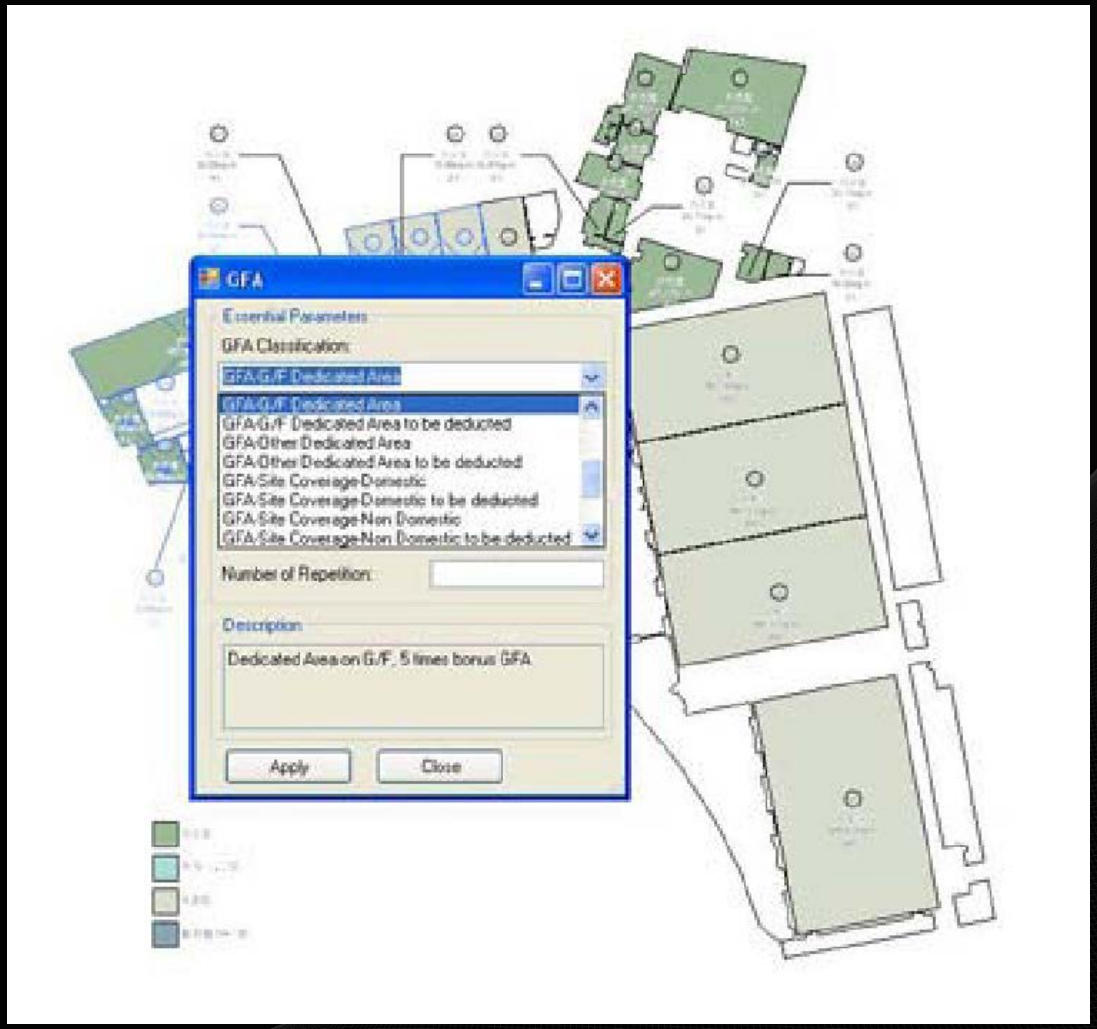
Visualize incident solar radiation on windows and surfaces, showing differential incident solar radiation calculated over any period.



www.autodesk.com



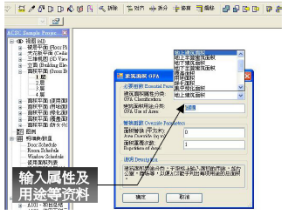
www.solibri.com



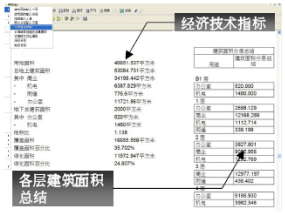
BIT
建筑资讯科技有限公司

ACS · C@REVIT 产品说明

ACS·C@REVIT 是为中国建筑设计而开发的一套自动规范检算系统，系统专门为 Autodesk Revit 而设。只要简单勾出各类面积，输入属性及用途等资料，程式便能自动完成规范检算。相比传统做法能大幅提升其效率达数倍以上。



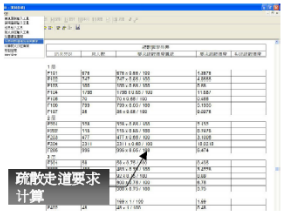
支援各类建筑面积运算、经济技术指标、使用面积人数换算、疏散走道要求、洁具要求、及防火分区面积结算。



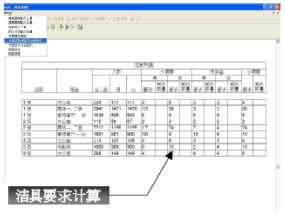
1. 经济技术指标运算包括:
- 用地面积
- 地上，地下及不同功能性质的建筑面积结算及容积率
- 绿地总面积及绿地率
- 建筑密度

2. 使用面积运算包括:

- 跟据使用面积用途计算人数



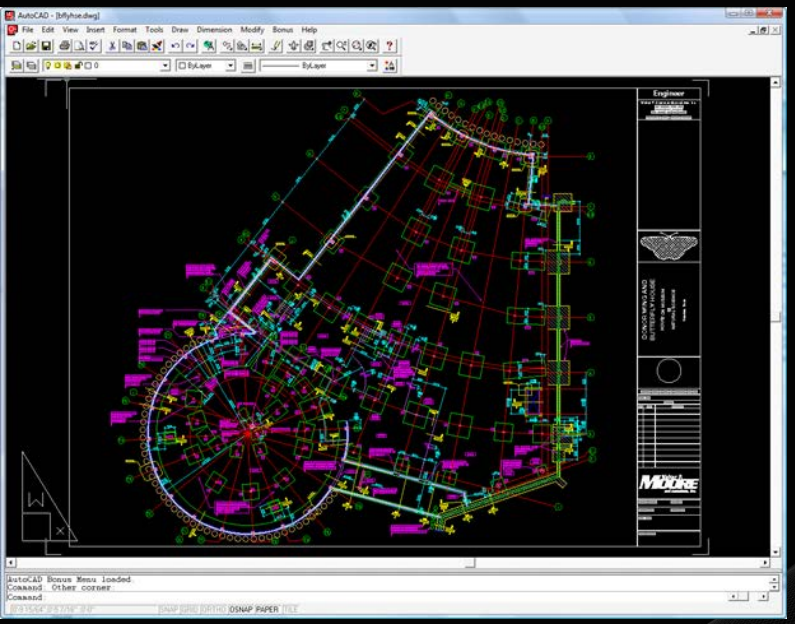
- 跟据不同楼层或防火分区的总人数及其建筑物功能性质计算疏散走道要求



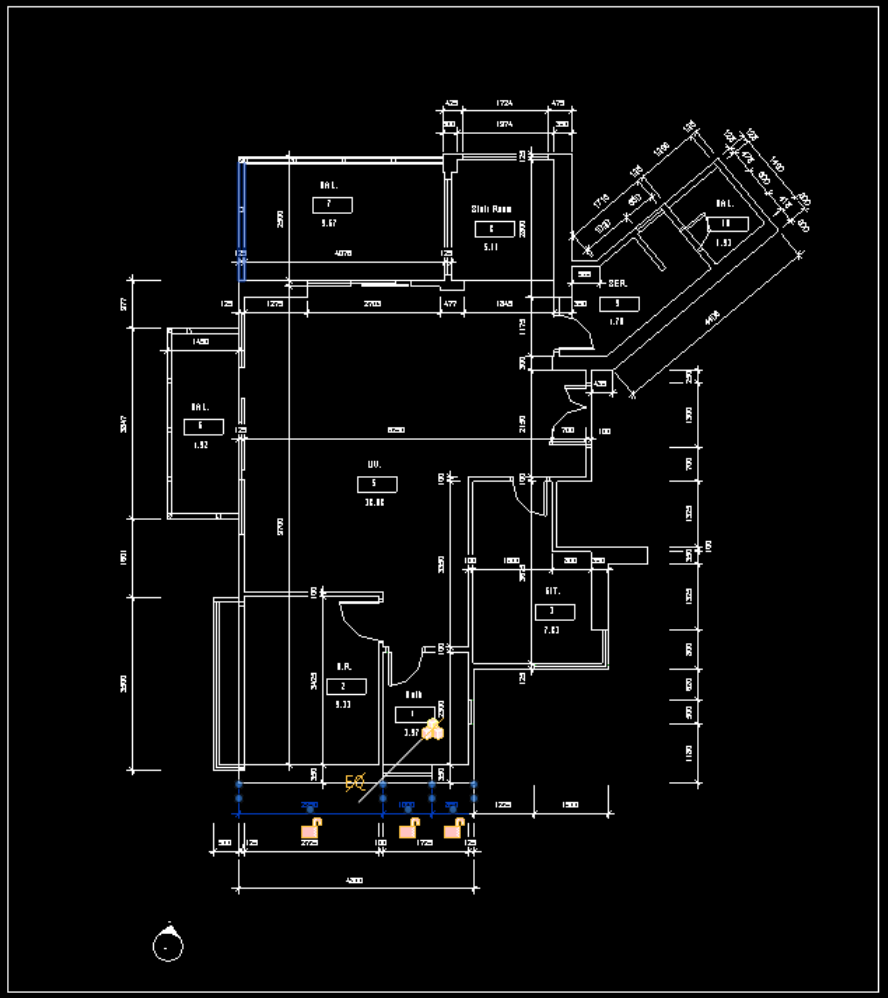
- 跟据不同楼层或区域的总人数及其用途，计算男女人数分布，及

Link: www. bit-world.com

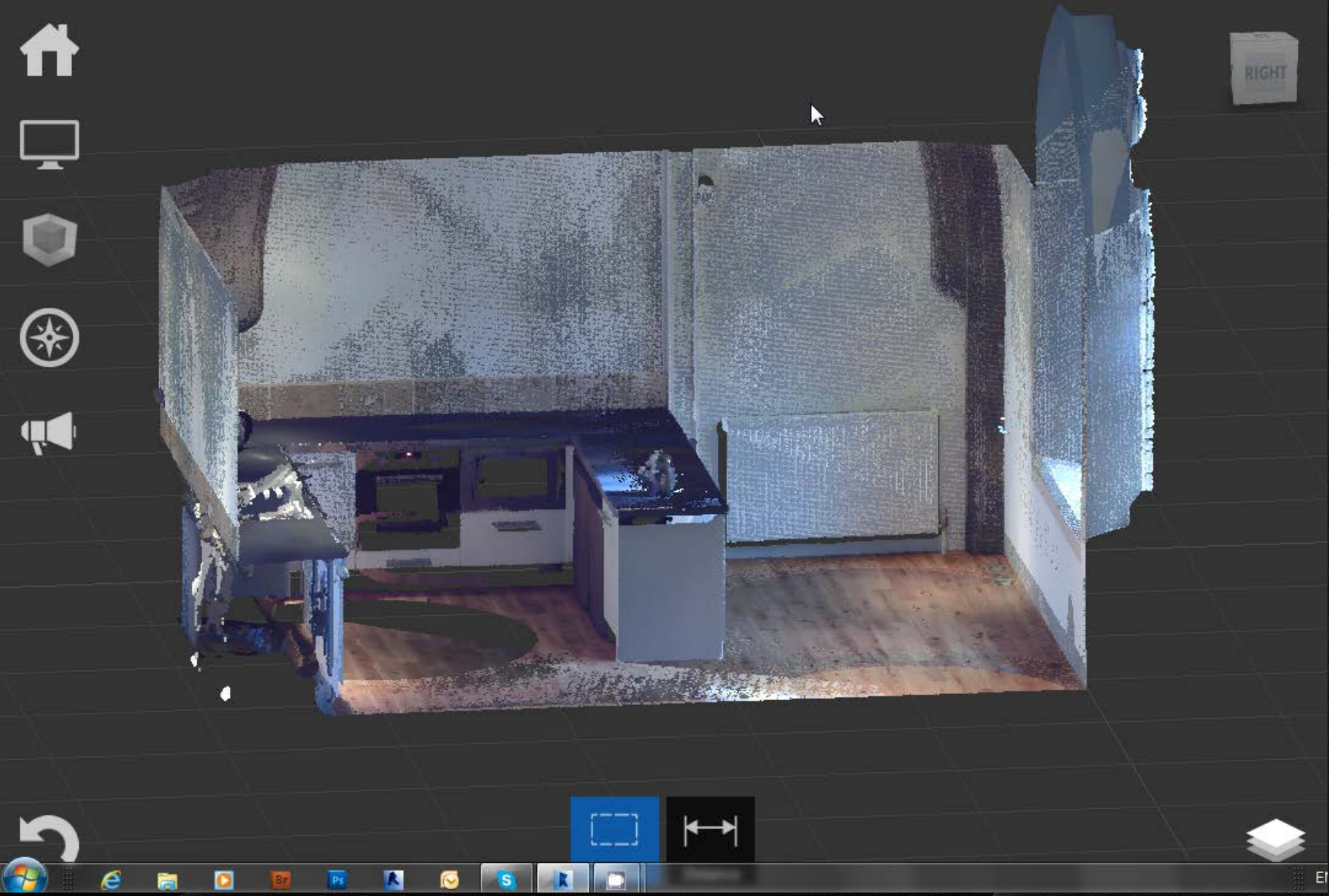
Design / Approved Information = As built Information?



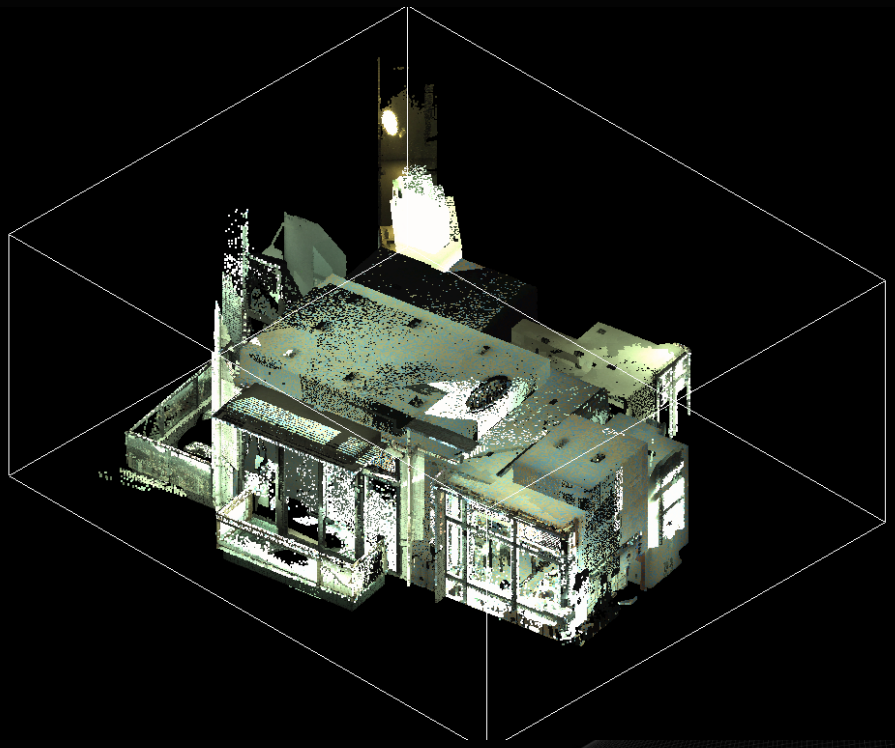
Design / Approved drawing information

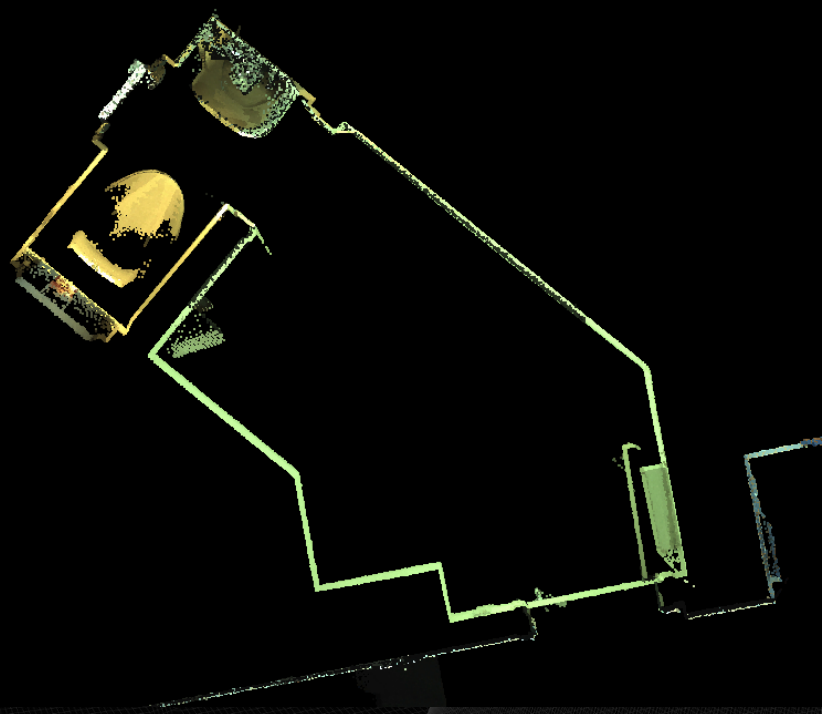


Laser Scanner - 50,000 pts /s; Range: 300m; Accuracy 6mm

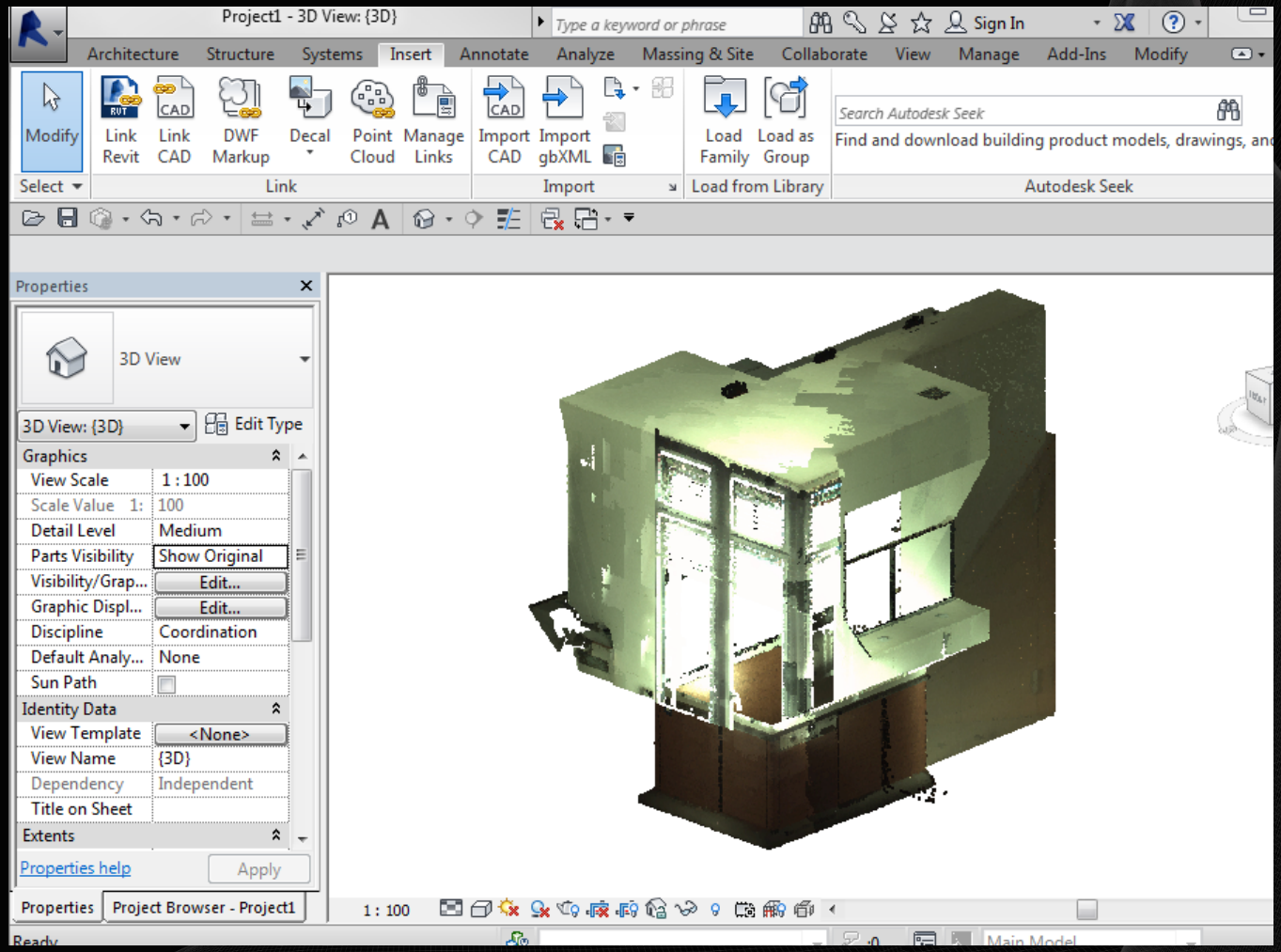


Point Cloud

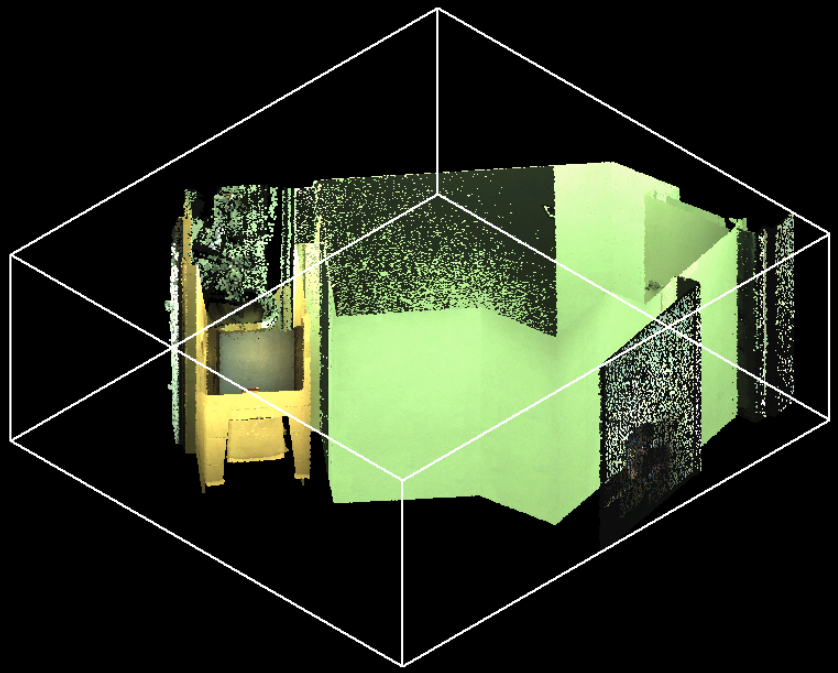


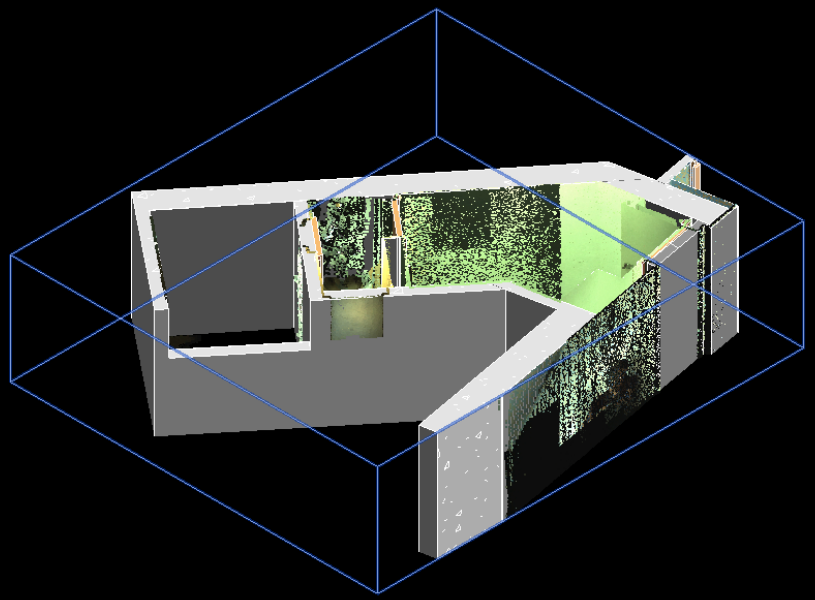


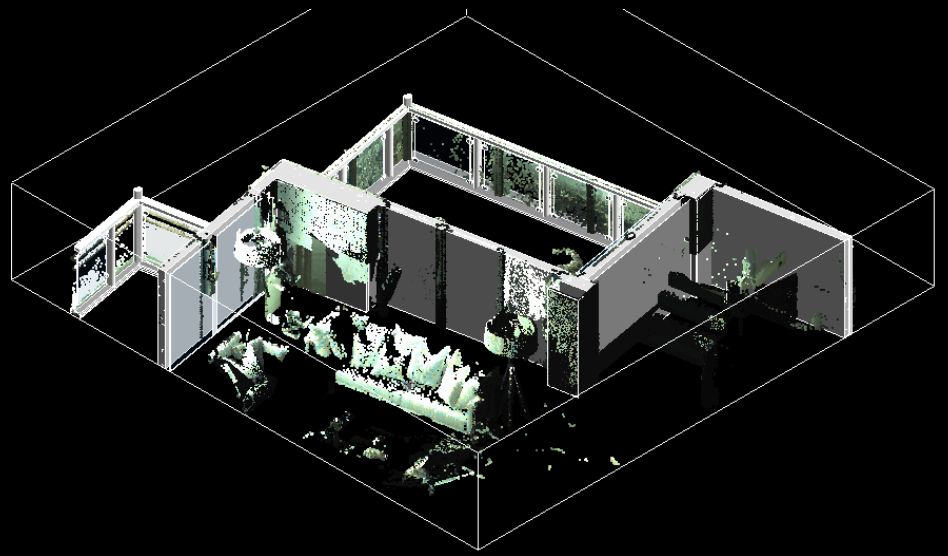
Point Cloud Data



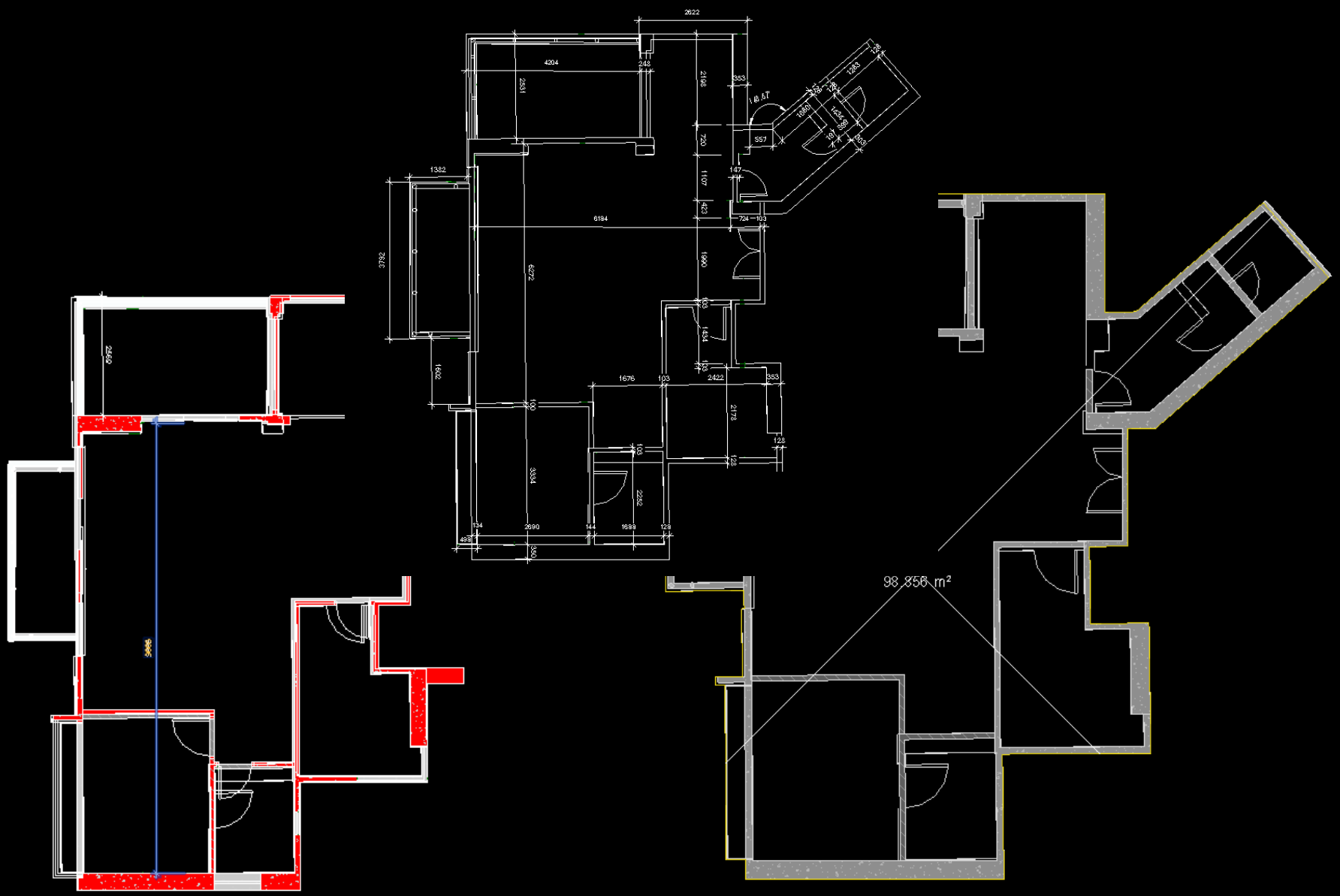
Point Cloud to BIM Model



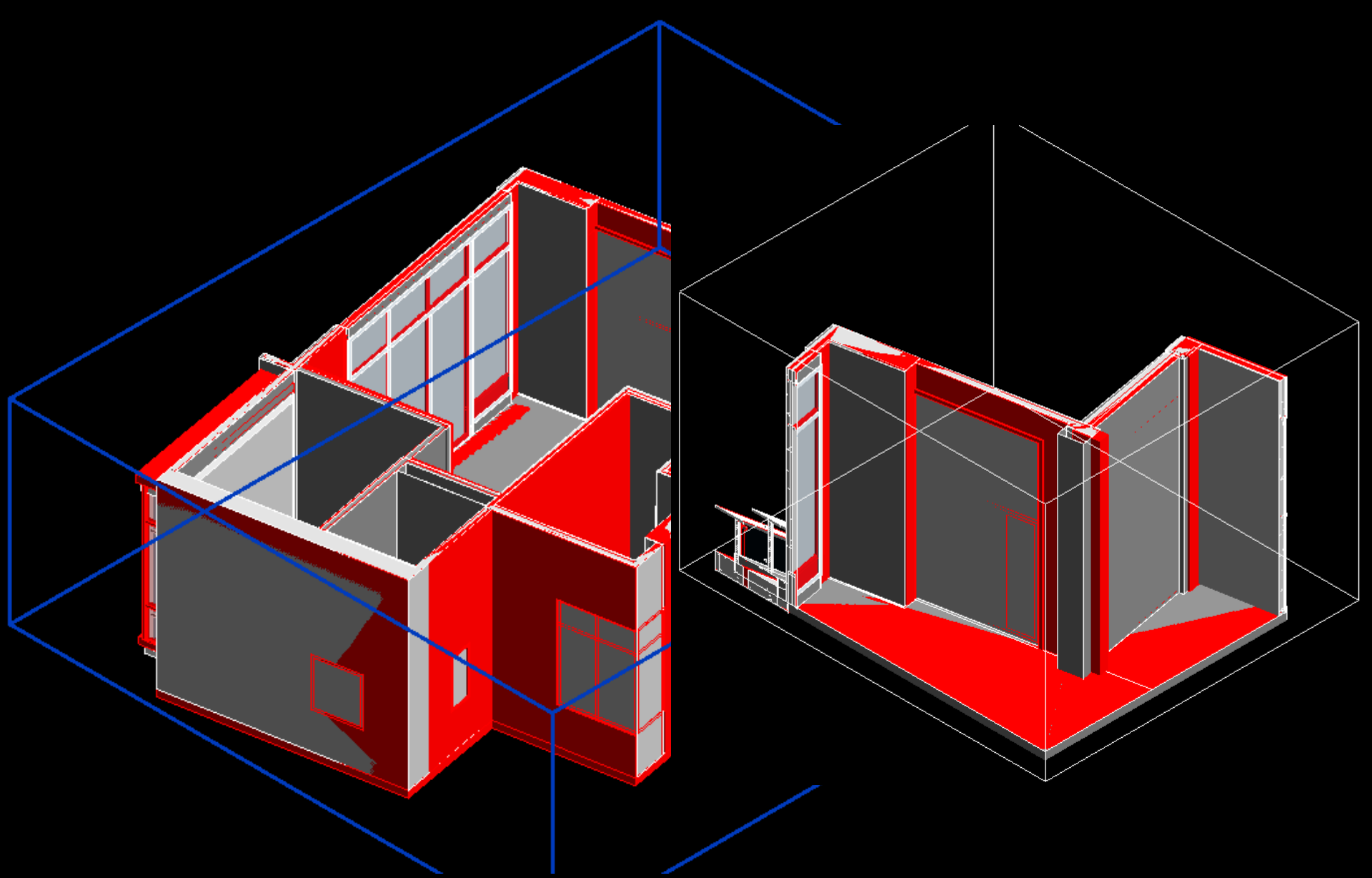




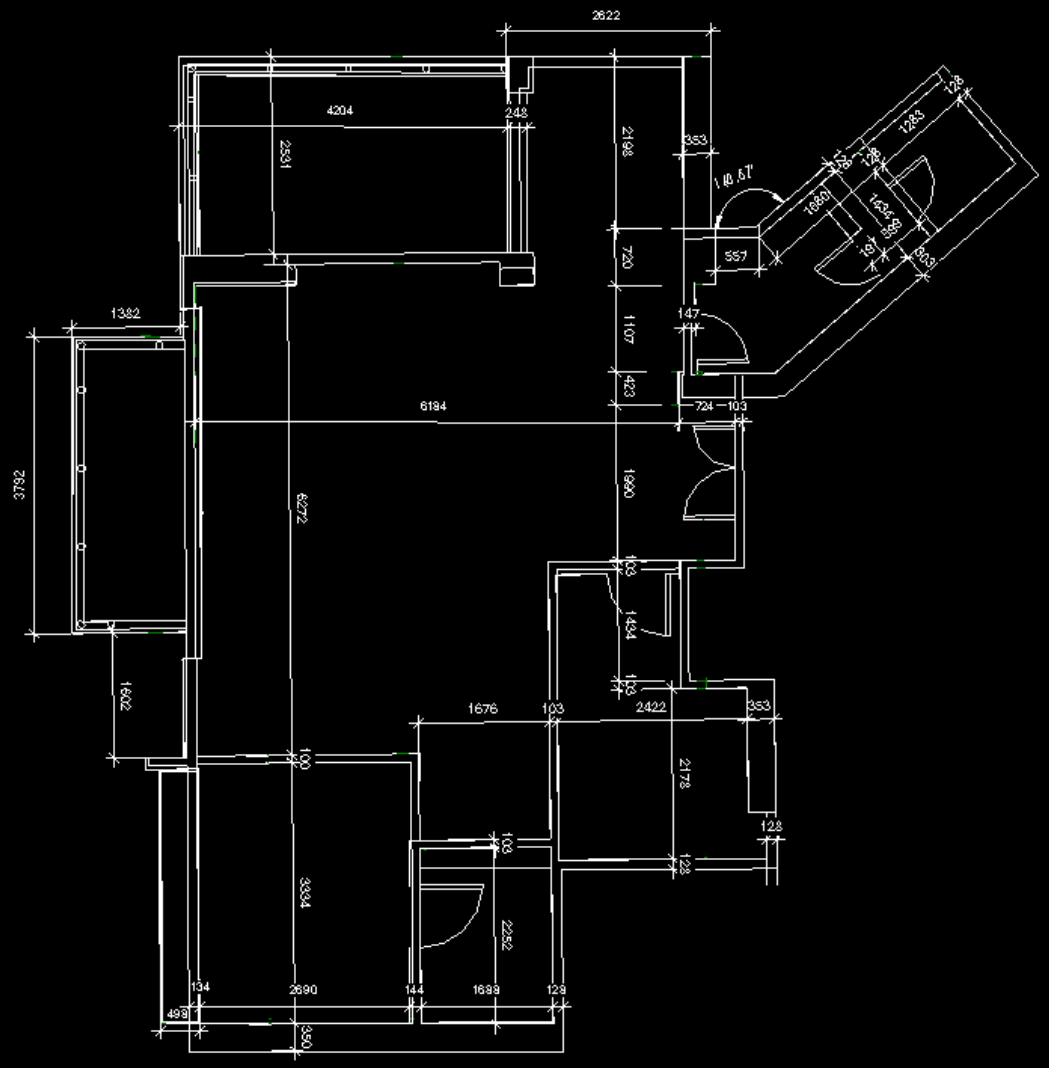
Point Cloud to BIM Model



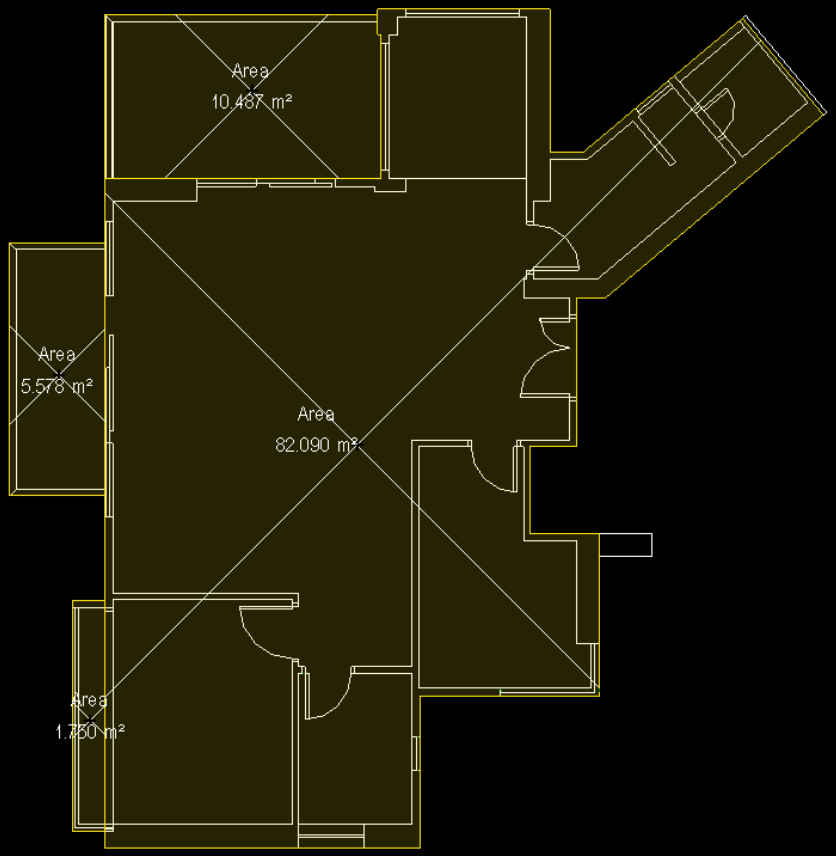
Design / Approved Model + As-built Model



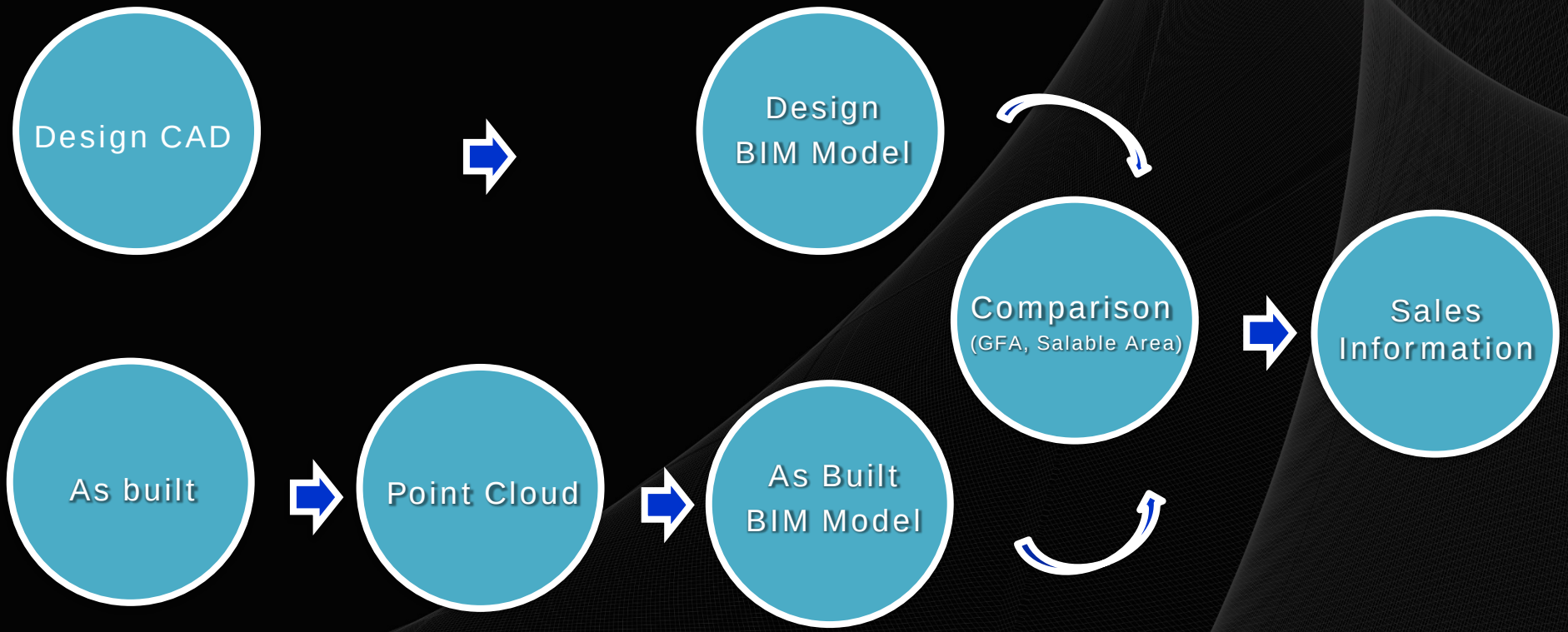
Building Information Modelling



As-built Model > As-built Plan



Area Comparison As-built Model > As-built Plan


Design CAD
Design
BIM Model
As built
Point Cloud
As Built
BIM Model
Comparison
(GFA, Salable Area)
Sales
Information

Difference is …. -0.9 % (As-Built is less than Approved Information)

Assuming an average unit in HK is 700 sq.ft, and say $8000/ sq ft

Less 0.9% = 700 x $8000 x 0.9 = $50,400

Assuming HK has 45,000 new units/ year

Then $50,400 x 45,000 = HK$2.3 Billion (23億)

Design / Approved Information <> As built Information?

Unknown  Known

Implications

As owner – sales information vs actual as-built, legal liability?

As buyer – has ability to tell the actual area, any legal implications?
“rescission of agreement” 踢契 during down times?

As A.P., rethink about the certified area?

As Contractor, any process to arrive better precision?

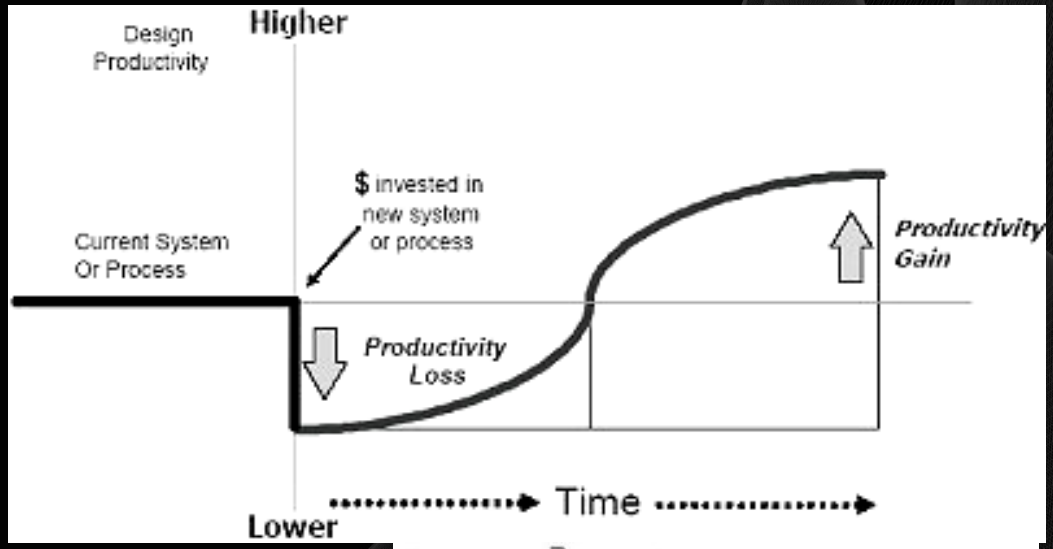
As legislative body, is there a benchmark for tolerance? 0.4%, 0.5%, 0.6%....?

As Inspection Authority, is the current practice sufficient to safeguard deviation?

As professionals... New opportunities… Point Cloud scanning, BIM Process?

BIM Technology  Change in Practices

Implications



Source: 26/1/07:
http://aec.cadalyst.com/aec/article/articleDetail.jsp?id=124222

PRODUCTIVITY

>60%

$$\frac{\left(B-\left(\frac{B}{1+E}\right)\right)\times(12-C)}{A+(B\times C\times D)} = \text{First Year ROI}$$

A = cost of hardware and software (dollars)
B = monthly labor cost (dollars)
C = training time (months)
D = productivity lost during training (percentage)
E = productivity gain after training (percentage)

A = cost of hardware and software	$6,000
B = monthly labor cost	$4,200
C = training time	3 months
D = productivity loss during training	50%
E = productivity gain after training	25%