

Fake BIM, Half BIM, True BIM



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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

二、推广应用工作的目标

粤建科函〔2014〕1652号

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。

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》

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：xiejj

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？

NCIC

Guangdong Province

Beijing

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。



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

BIM in China

China BIM Standard

BIM Examination in China



中国图学学会
CHINA GRAPHICS SOCIETY

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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；

B

= Building

建築

I

= Information

資訊

M

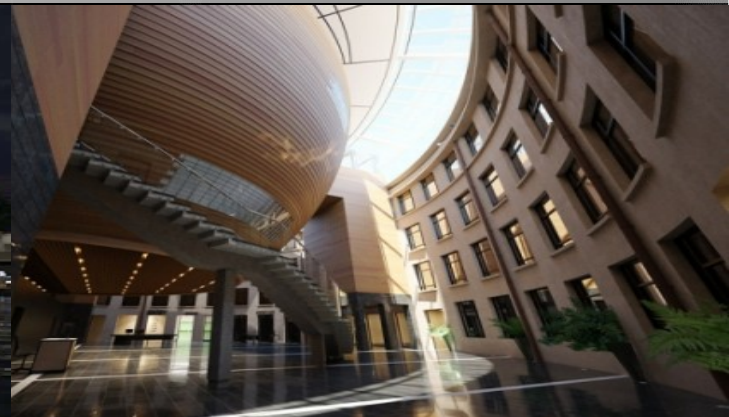
= Modelling

模型/ 模擬

Fake BIM

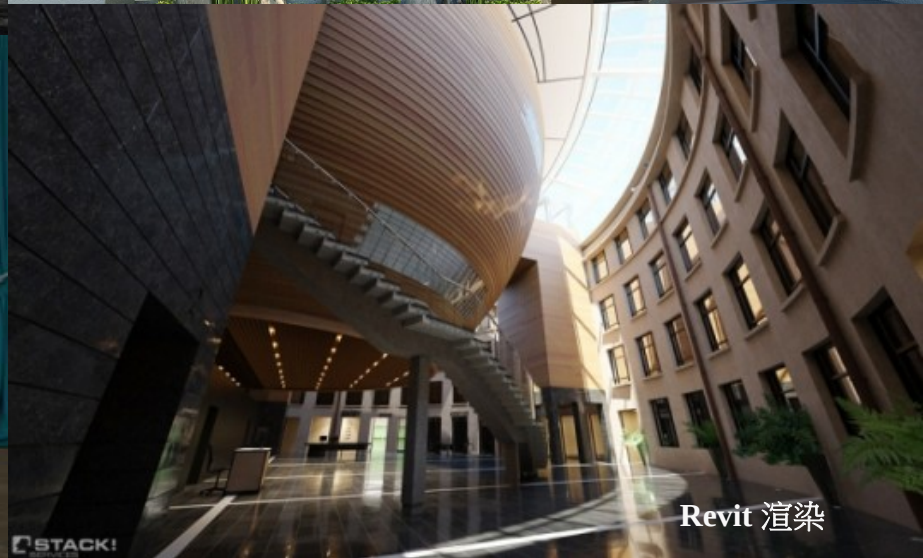
M + ?

JUST 3D MODEL – NOT BIM



Fake BIM

NCIO



Fake BIM

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

**Use BIM tools not
necessarily means
BIM!**

NCIO



Movie

互動展示

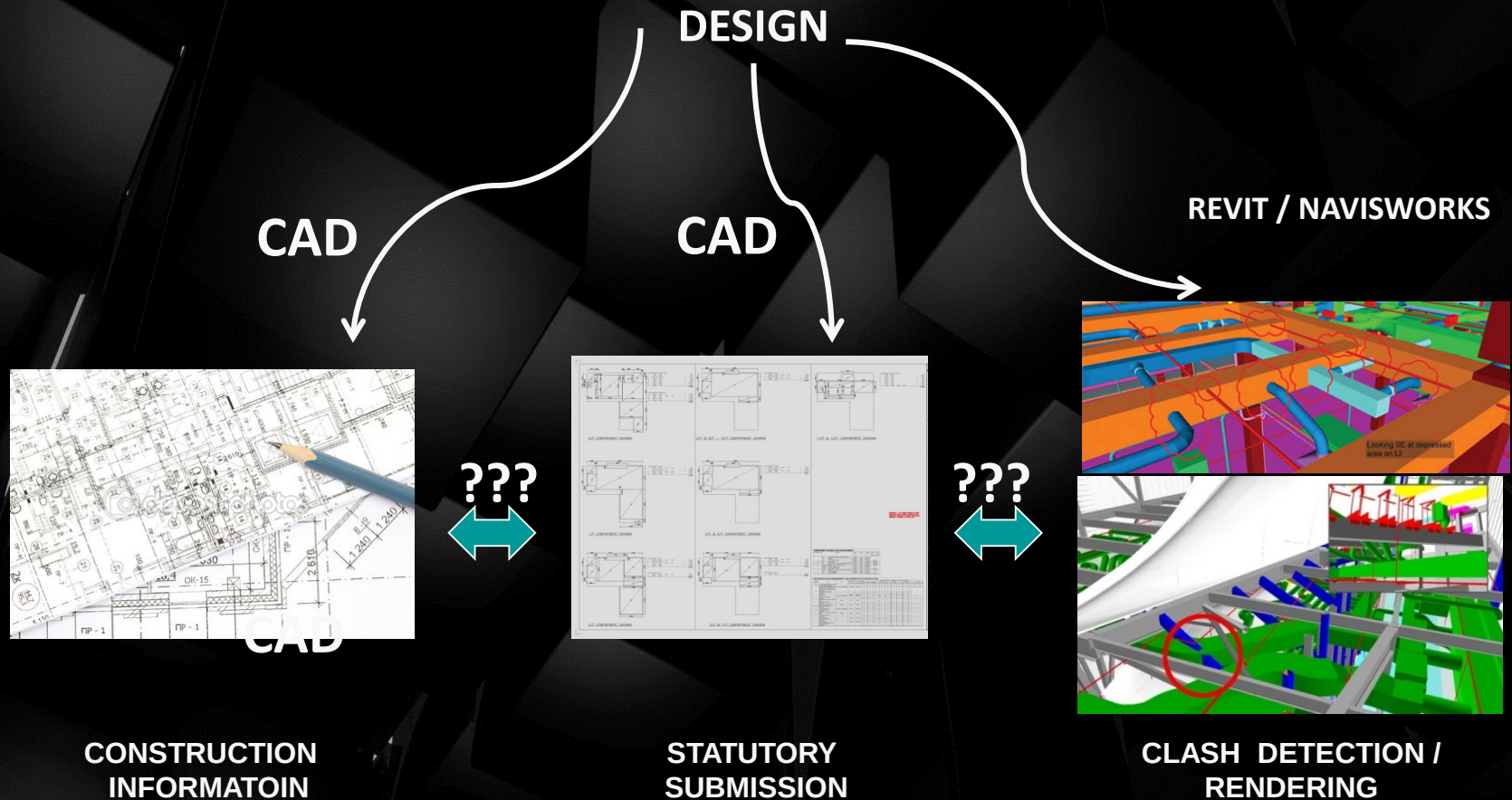
HALF-BIM

I <> M

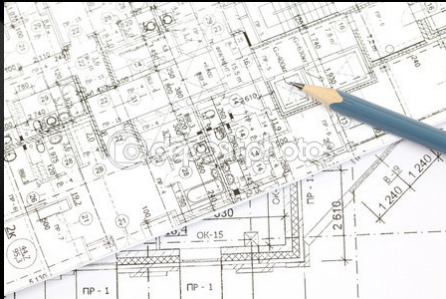
3D MODEL >> QTO , CLASH ANALYSIS

HALF BIM

NCIO



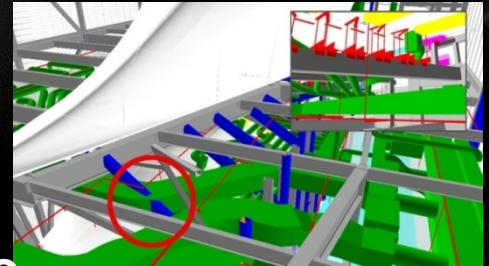
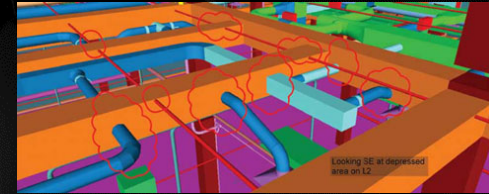
REAL BIM



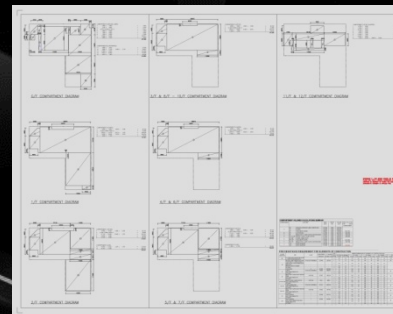
CONSTRUCTION
INFORMATOIN

DESIGN
in
BIM

Single Source Database



CLASH
DETECTION



STATUTORY
SUBMISSION

REAL BIM

I = M

I > M

INFORMATION FROM MODEL,
INFORMATION MORE IMPORTANT

B I M

כובע



Modelling — Information **Business**

REAL BIM

$$M + I = B$$

BIM is a process, Business is the objective

Design Tool

Collaboration Tool

Analytical Tool

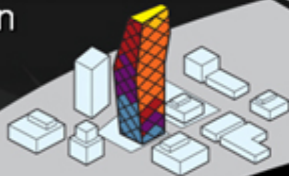
Documentation Tool

Detailed Design

Analysis

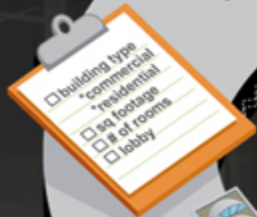
Documentation

Conceptual Design



VISUALIZATION

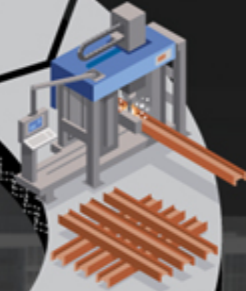
Programming



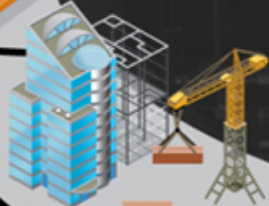
Building Information Modeling

Project Management Tool

Fabrication



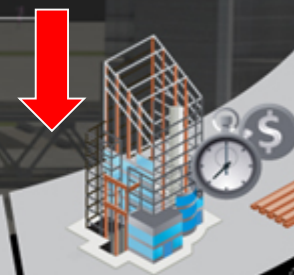
Renovation



Operation and Maintenance



Construction Logistics



Construction 4D/5D

Demolition



Use of Building Information Modeling



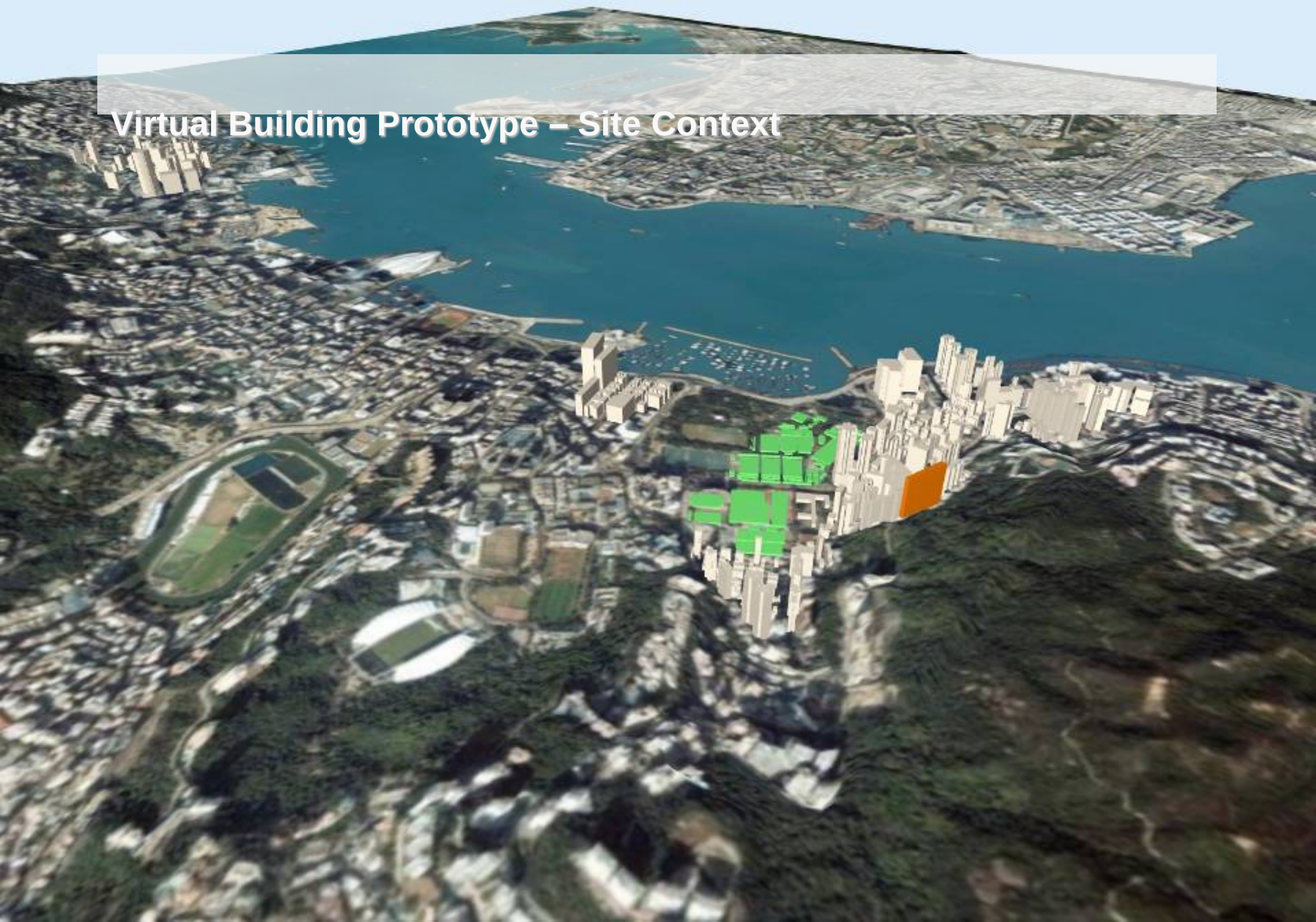
1. **Design visualization** 設計の可視化
2. **Drawing Productions** 図面製作
3. **Services Co-ordination and Clash detection with other disciplines** 多部門との連携と干渉チェック
4. **Quantity taking and preparation of Tender Document** 数量拾い及び入札書類の作成
5. **Automated Statutory Submission** 確認申請図書作成の自動化
6. **Scientific analysis of different environmental aspects** 様々な環境解析
7. **Supply Chain Integration with the manufacturing and production** サプライヤとの連携
8. **Complex Geometry** 複雑な形状を実現可能

Use of Building Information Modeling



- 1. Design visualization** 設計の可視化
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 the manufacturing and production
8. Complex Geometry

Virtual Building Prototype – Site Context



Views from: 140m

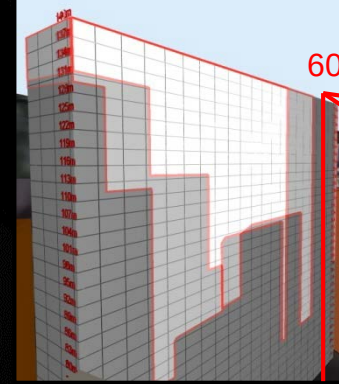
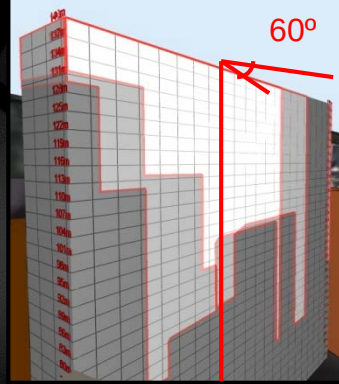
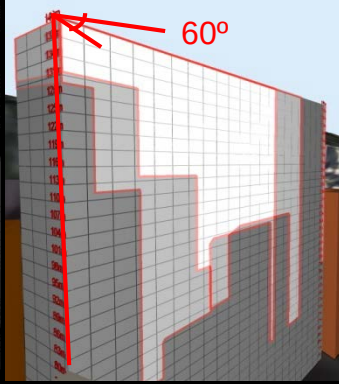
NCIC

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

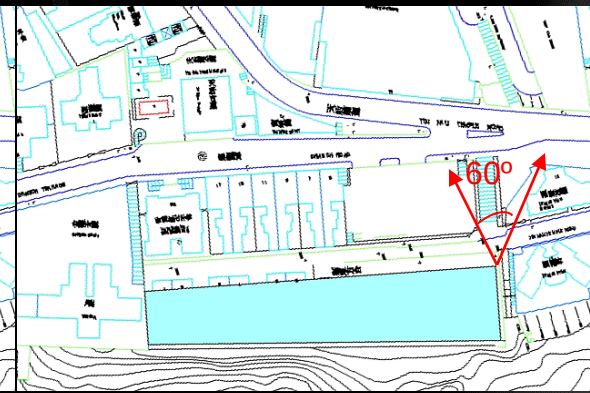
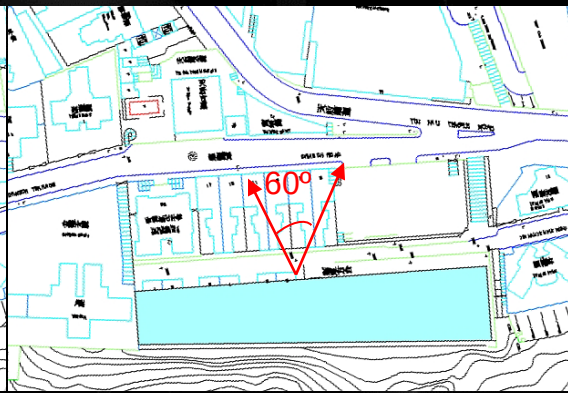
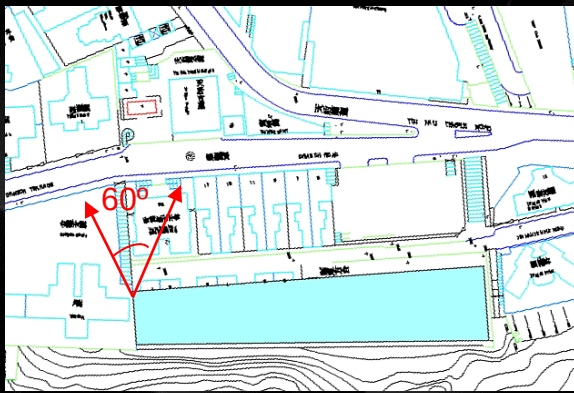
100m

95m

90m

85m

80m



Views from: 135m

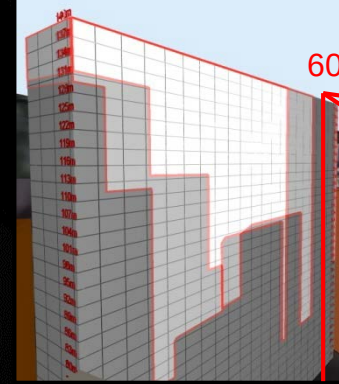
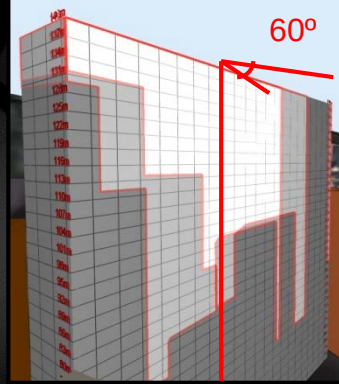
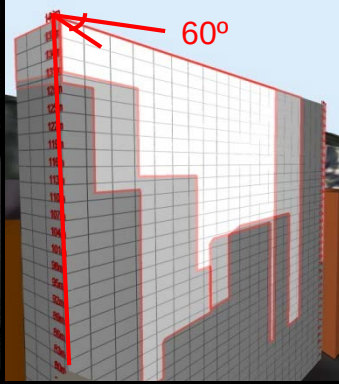
NCIC

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

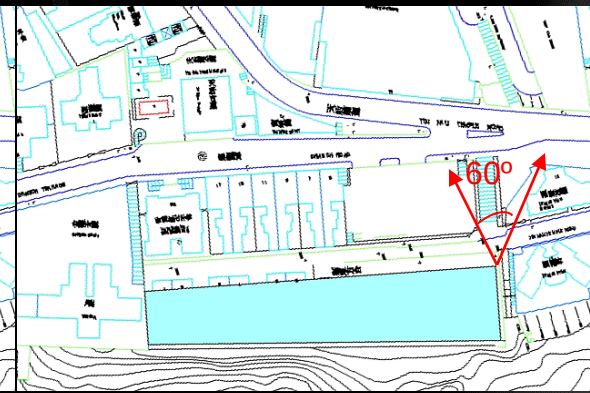
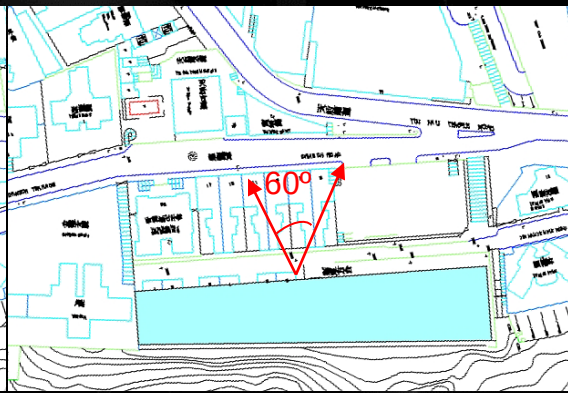
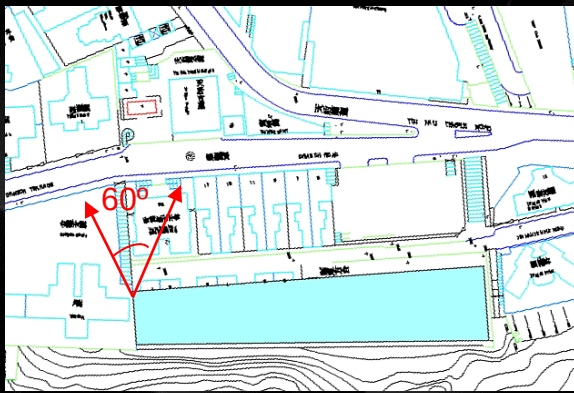
100m

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85m

80m



Views from: 130m

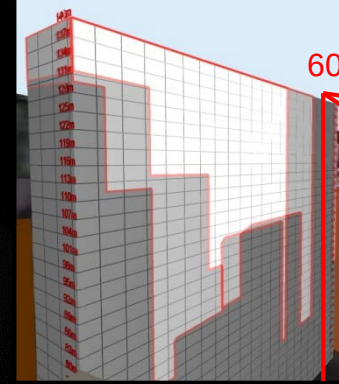
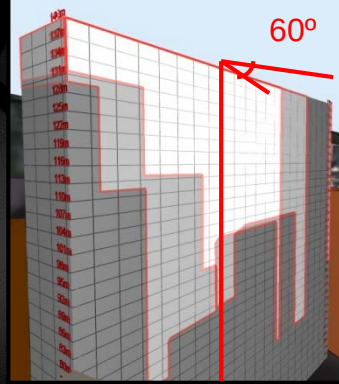
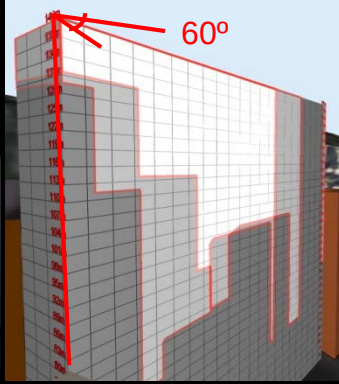
NCIC

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

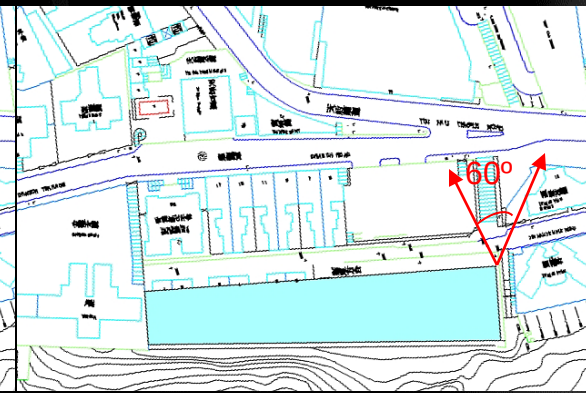
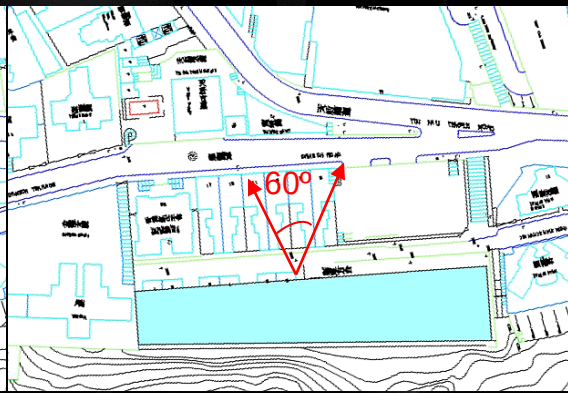
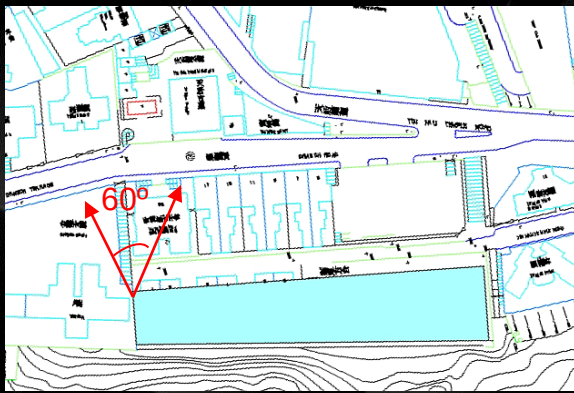
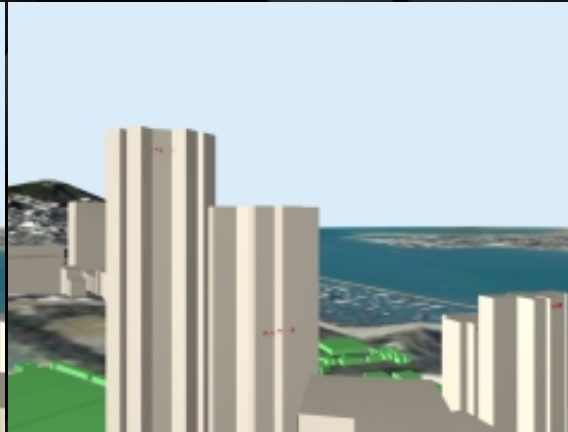
100m

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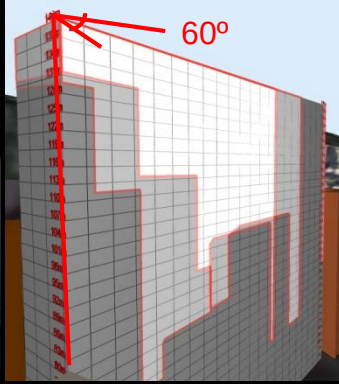


Views from: 125m

NCIC

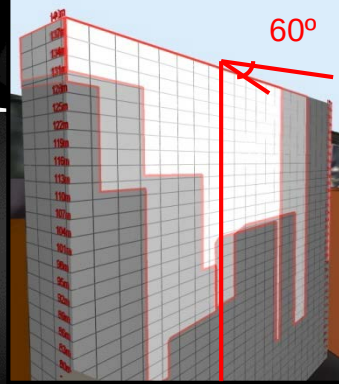
Tin Hau Temple Road No.1

125m



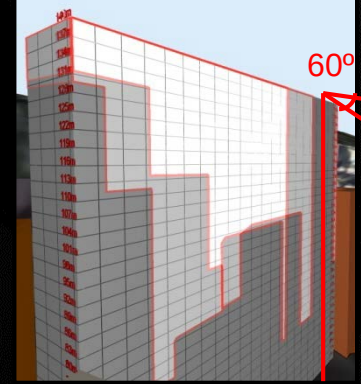
Tin Hau Temple Road No.1

1



Tin Hau Temple Road No.1

60°



140m

135m

130m

125m

120m

115m

110m

105m

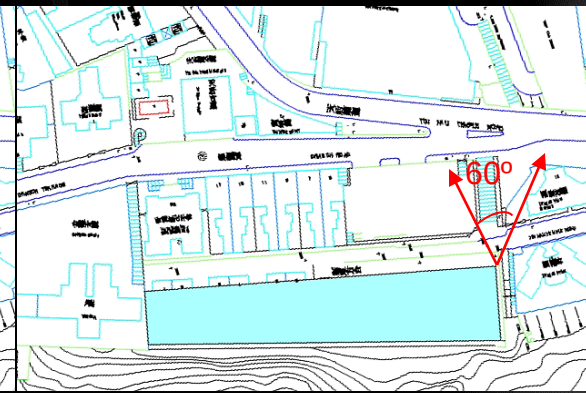
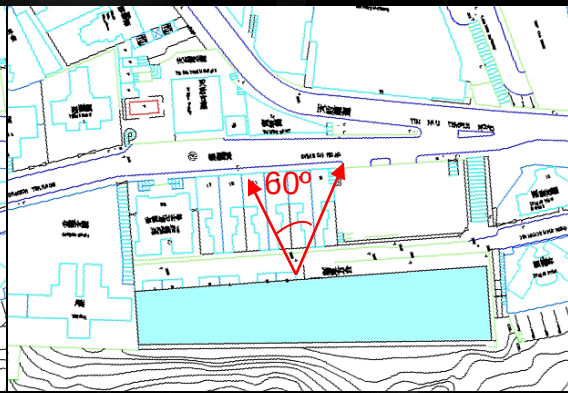
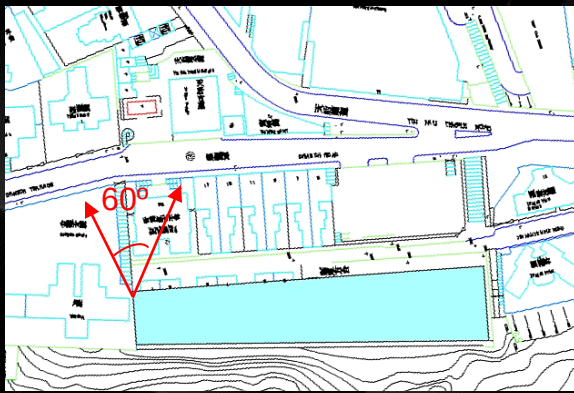
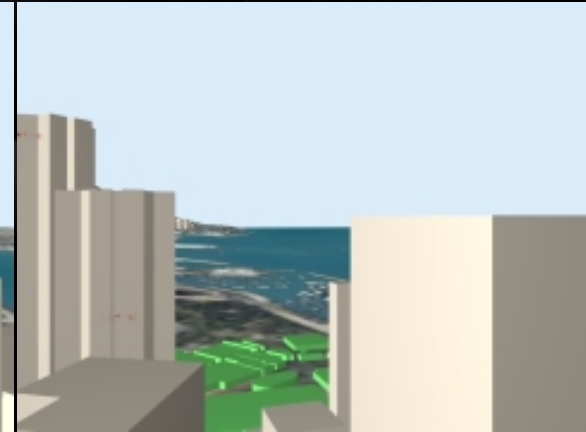
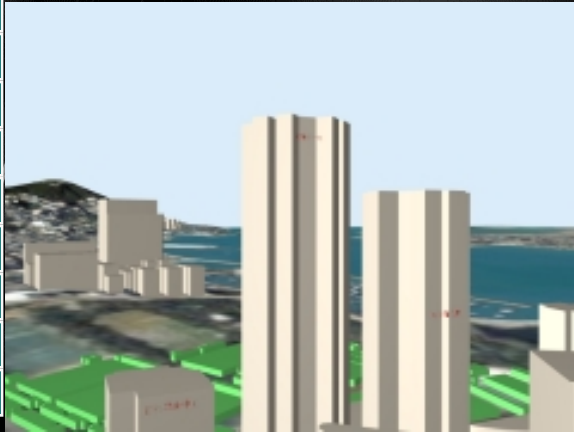
100m

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90m

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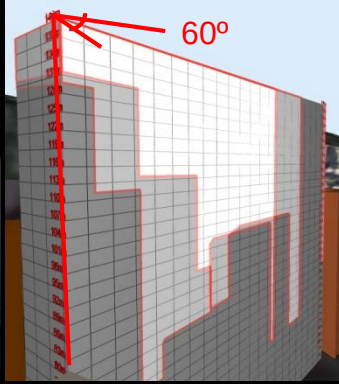


Views from: 120m

NCIC

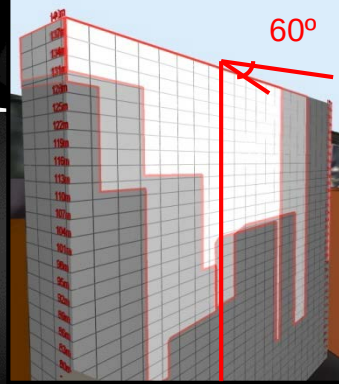
Tin Hau Temple Road No.1

120m



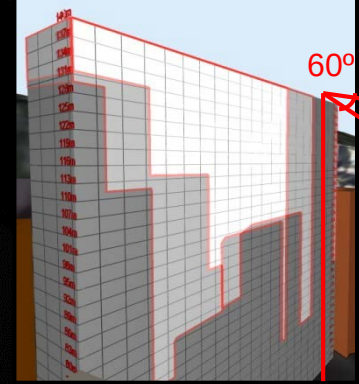
Tin Hau Temple Road No.1

1



Tin Hau Temple Road No.1

60°



140m

135m

130m

125m

120m

115m

110m

105m

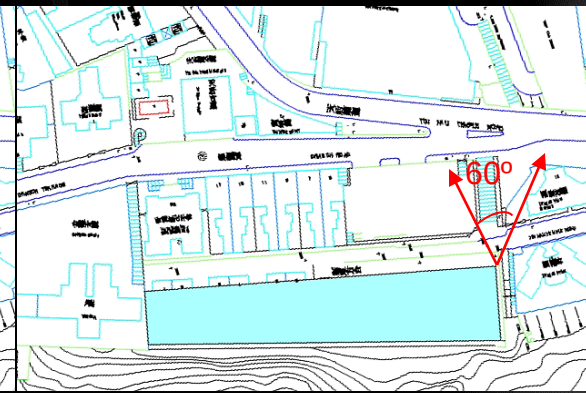
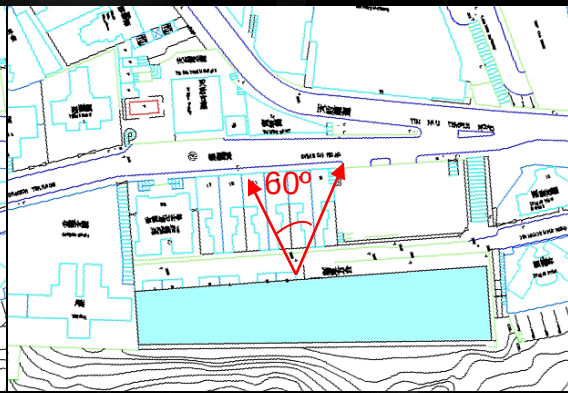
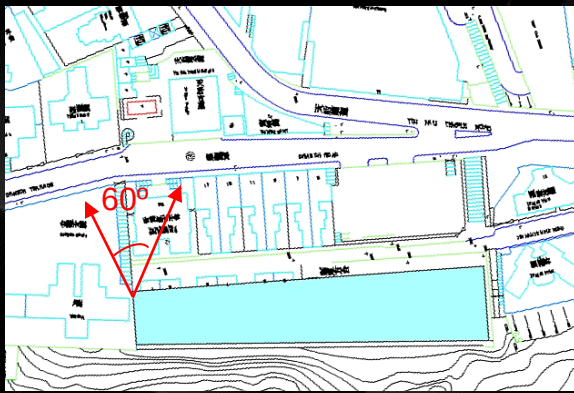
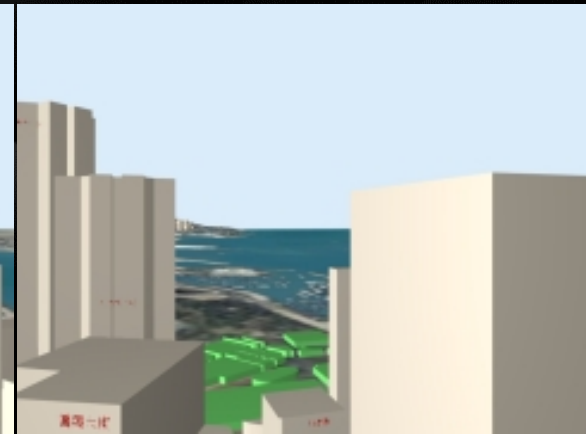
100m

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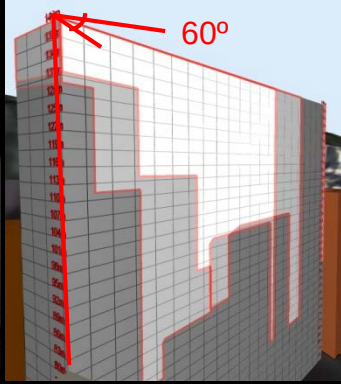


Views from: 115m

NCIC

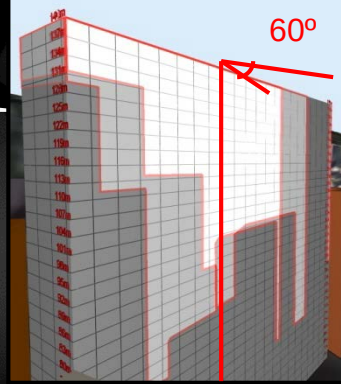
Tin Hau Temple Road No.1

115m



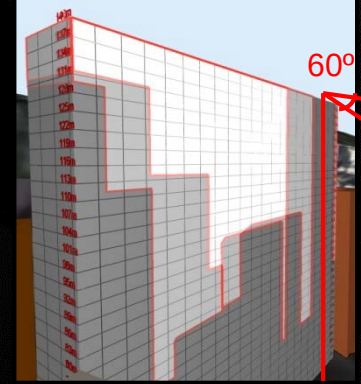
Tin Hau Temple Road No.1

1



Tin Hau Temple Road No.1

60°



140m

135m

130m

125m

120m

115m

110m

105m

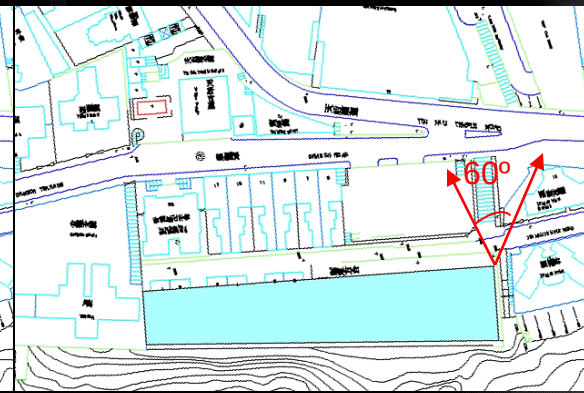
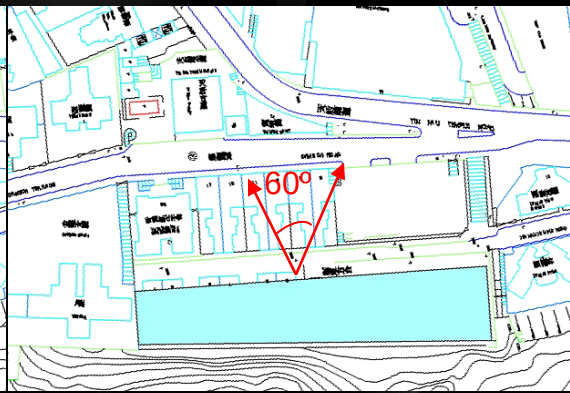
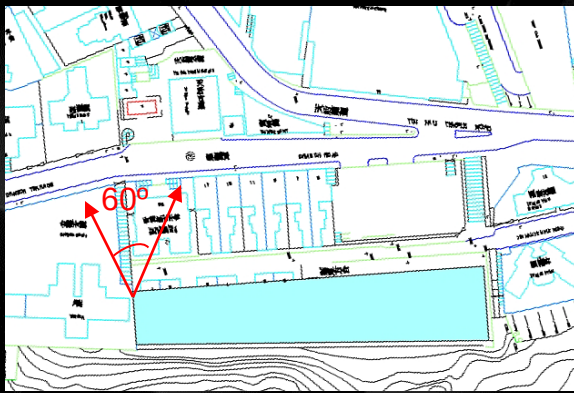
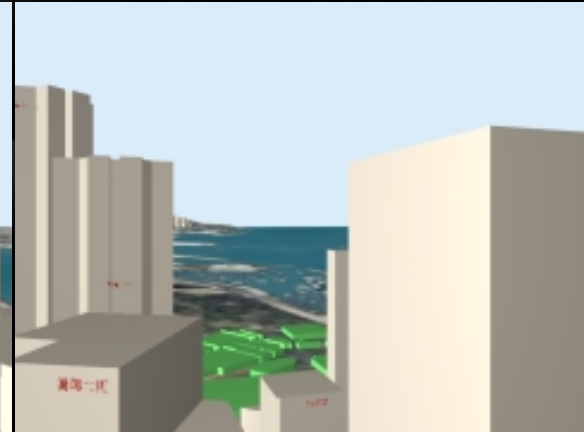
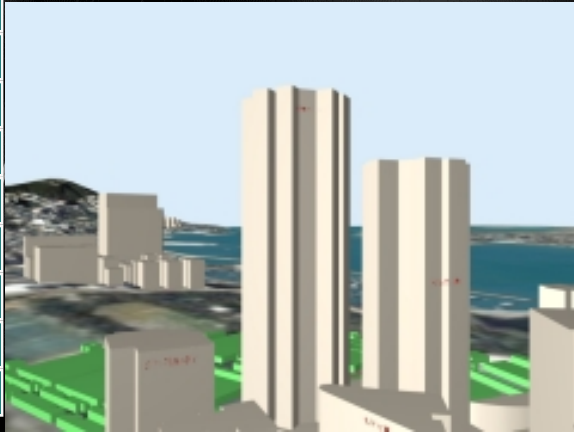
100m

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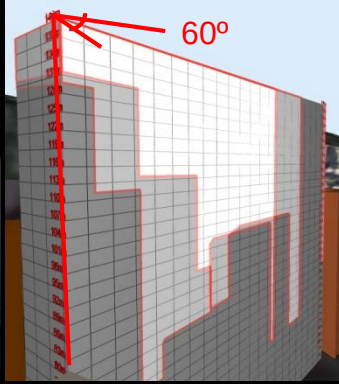


Views from: 110m

NCIC

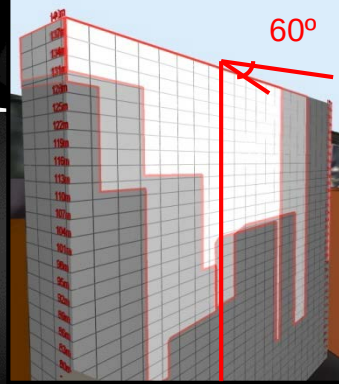
Tin Hau Temple Road No.1

110m



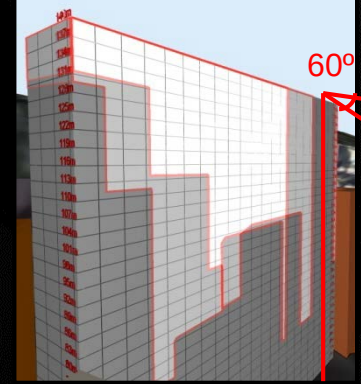
Tin Hau Temple Road No.1

1



Tin Hau Temple Road No.1

60°



140m

135m

130m

125m

120m

115m

110m

105m

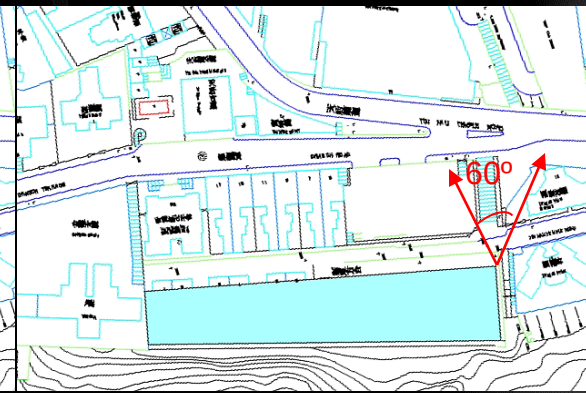
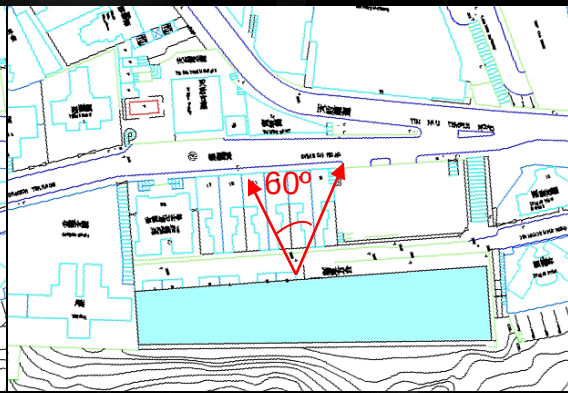
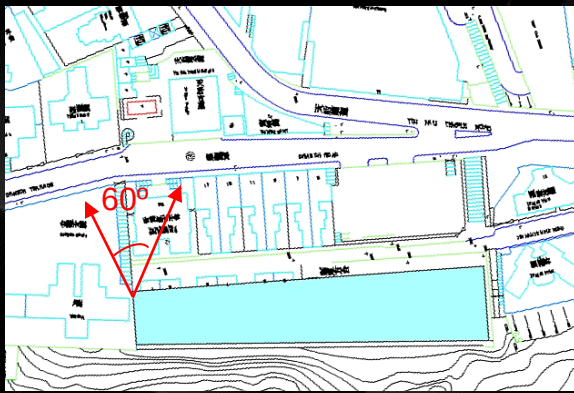
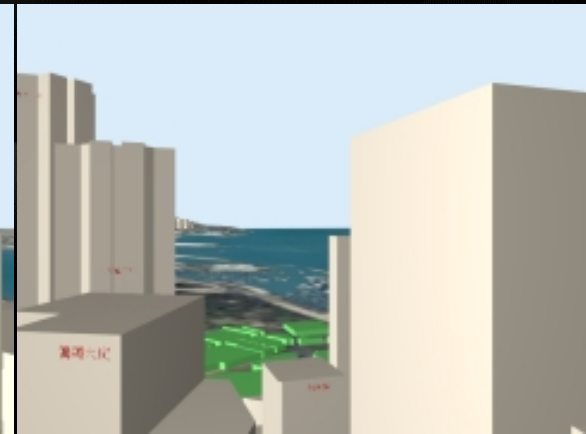
100m

95m

90m

85m

80m

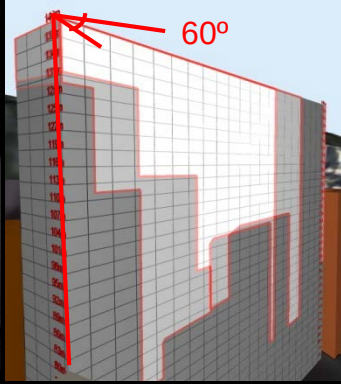


Views from: 105m

NCI

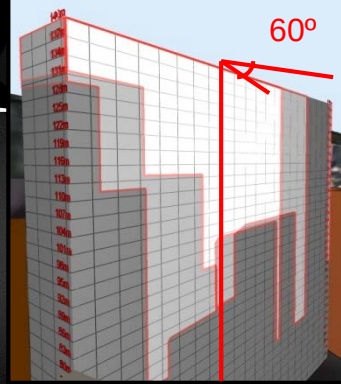
Tin Hau Temple Road No.1

105m

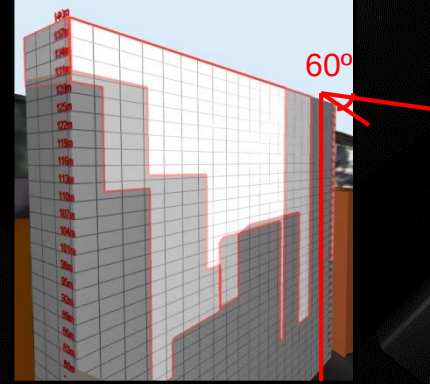


Tin Hau Temple Road No.1

1



Tin Hau Temple Road No.1



140m

135m

130m

125m

120m

115m

110m

105m

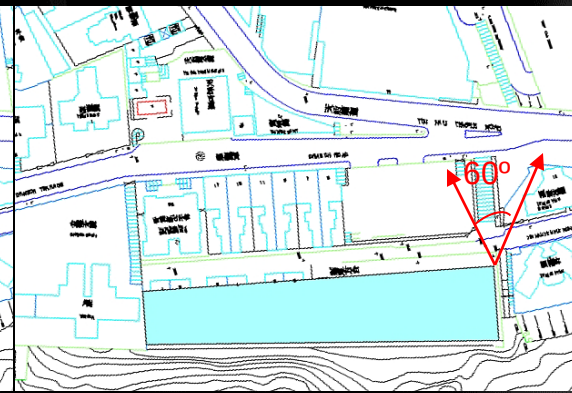
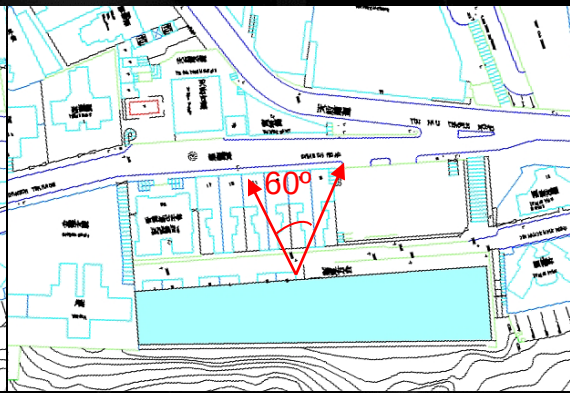
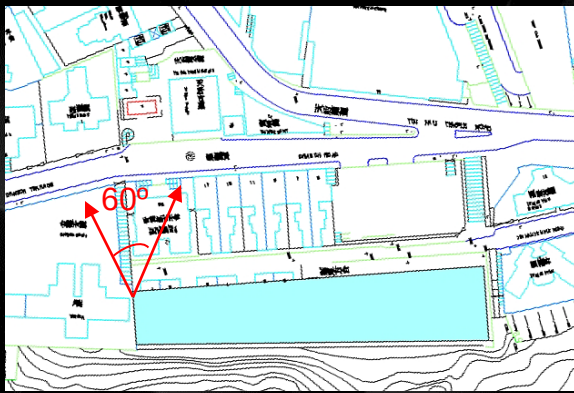
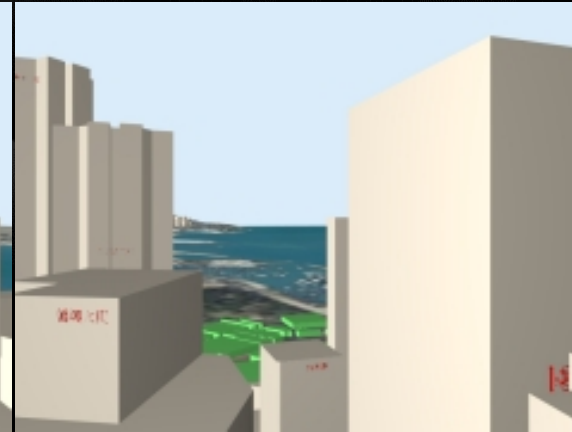
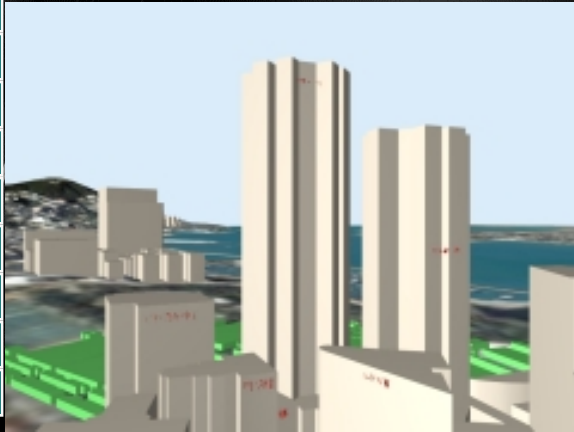
100m

95m

90m

85m

80m

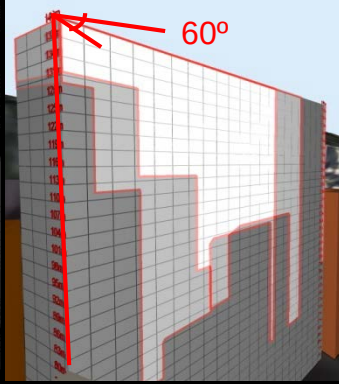


Views from: 100m

NCI

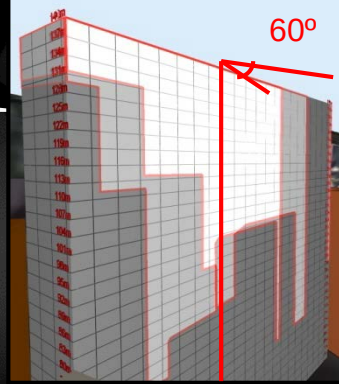
Tin Hau Temple Road No.1

100m



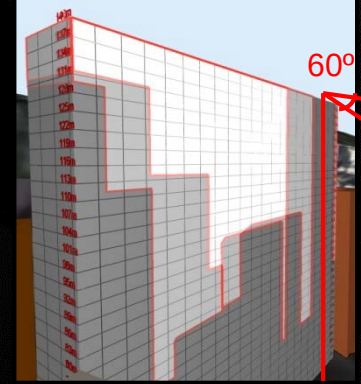
Tin Hau Temple Road No.1

1



Tin Hau Temple Road No.1

60°



140m

135m

130m

125m

120m

115m

110m

105m

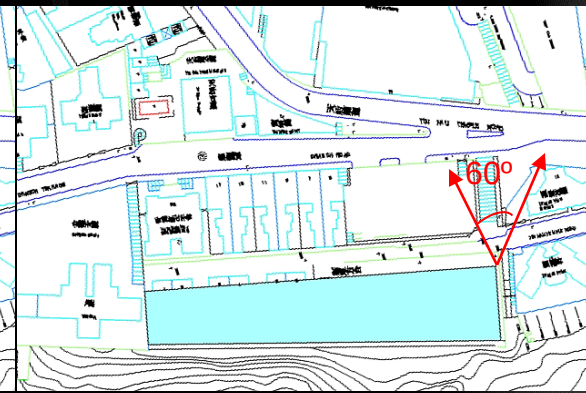
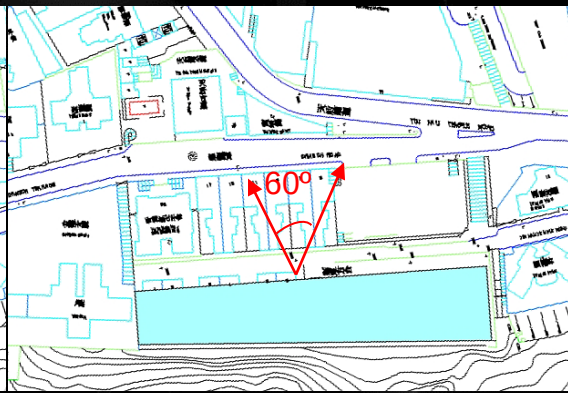
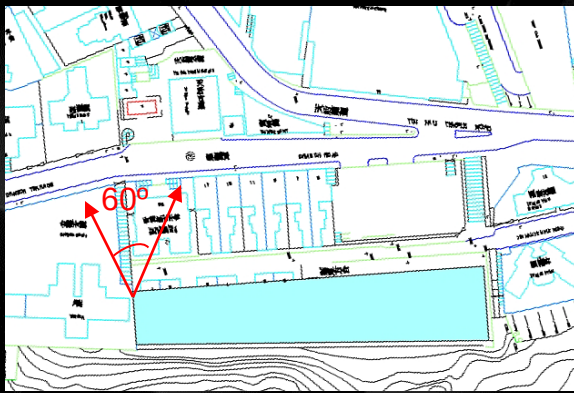
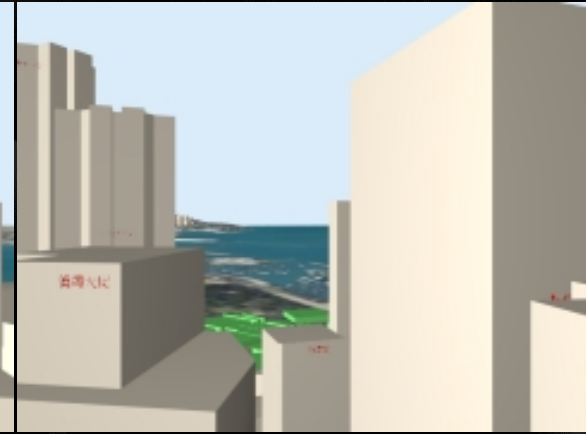
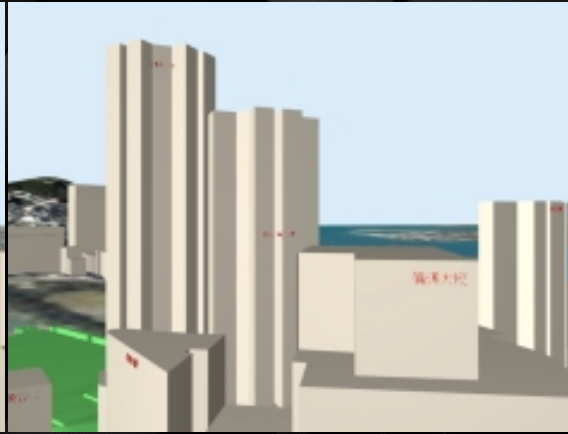
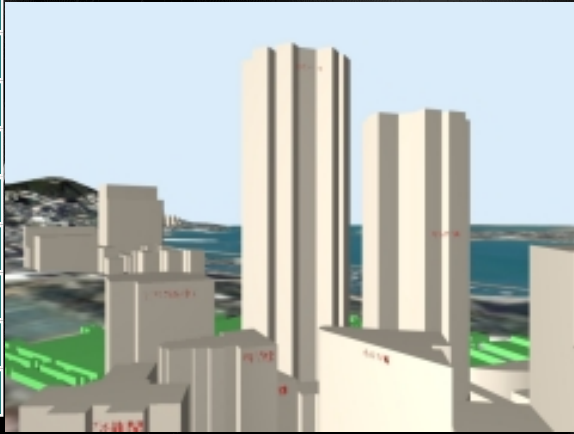
100m

95m

90m

85m

80m

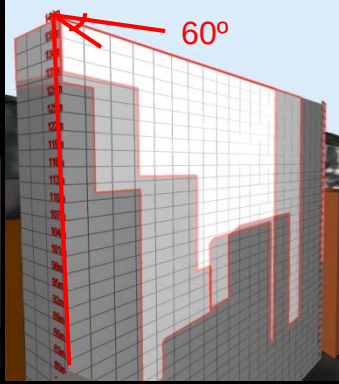


Views from: 95m

NCIC

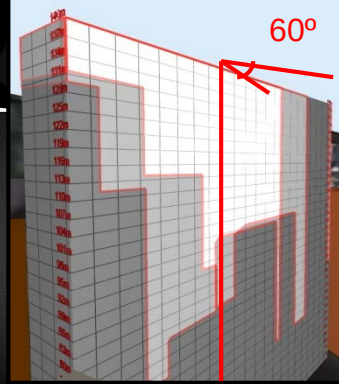
95m

Tin Hau Temple Road No.1

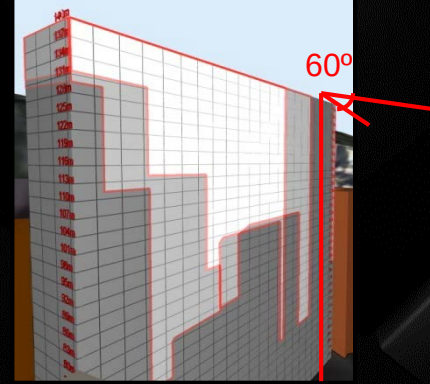


Tin Hau Temple Road No.1

1



Tin Hau Temple Road No.1



140m

135m

130m

125m

120m

115m

110m

105m

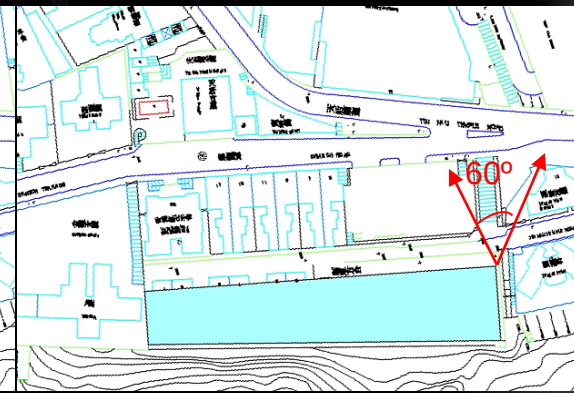
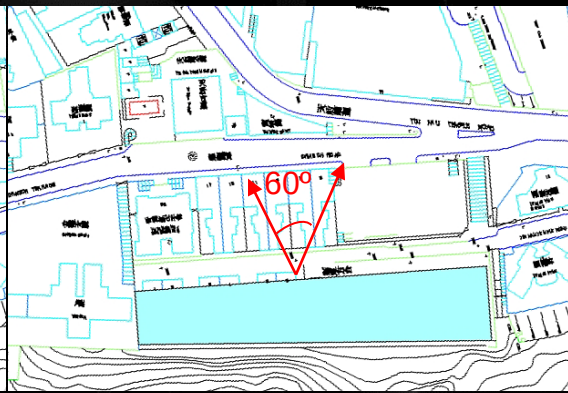
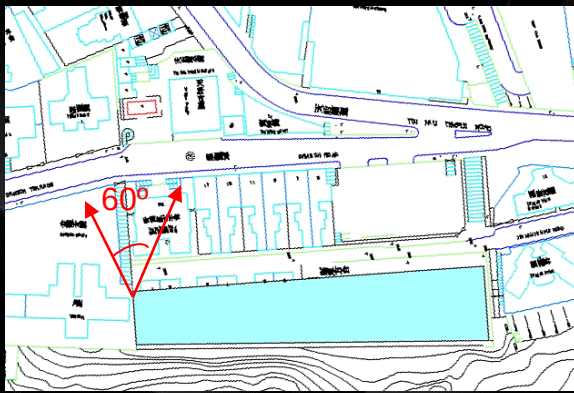
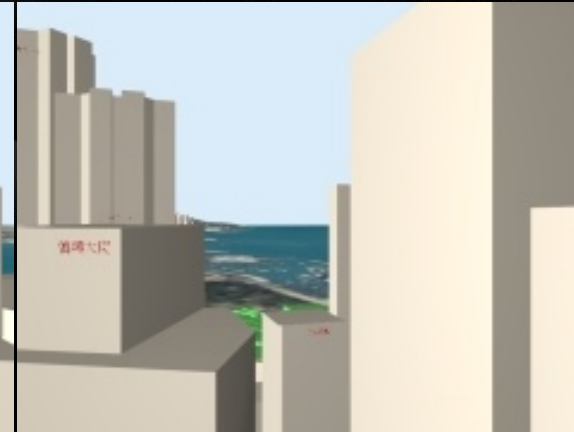
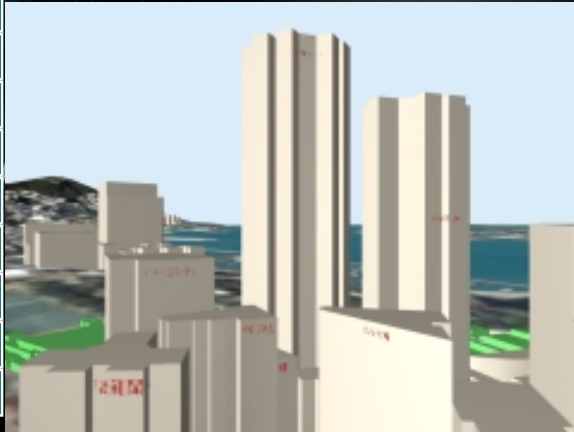
100m

95m

90m

85m

80m

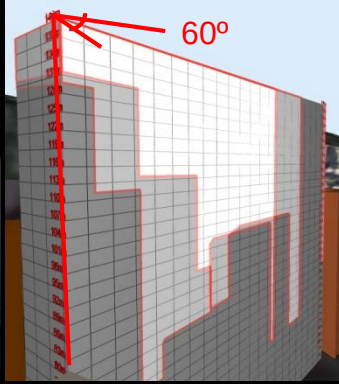


Views from: 90m

NCI

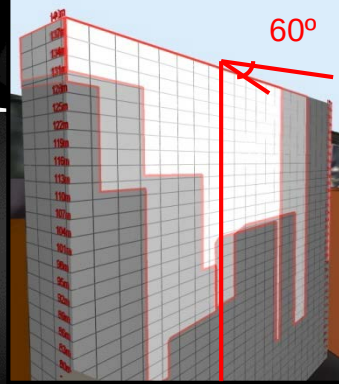
90m

Tin Hau Temple Road No.1

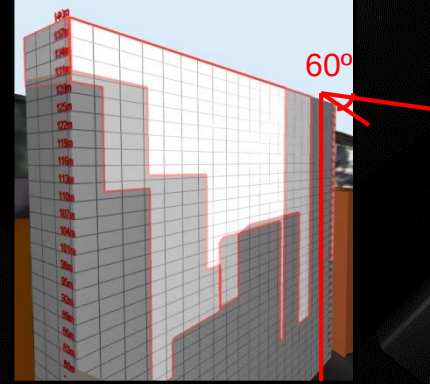


Tin Hau Temple Road No.1

1



Tin Hau Temple Road No.1



140m

135m

130m

125m

120m

115m

110m

105m

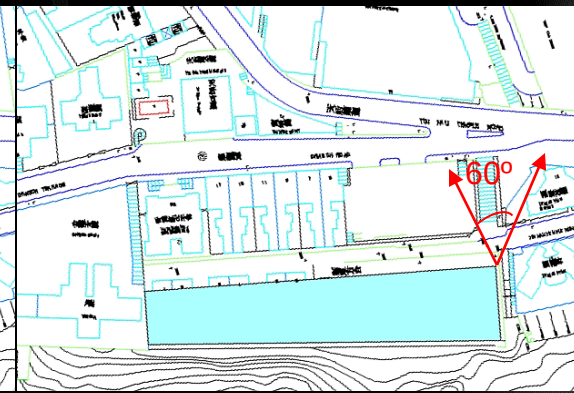
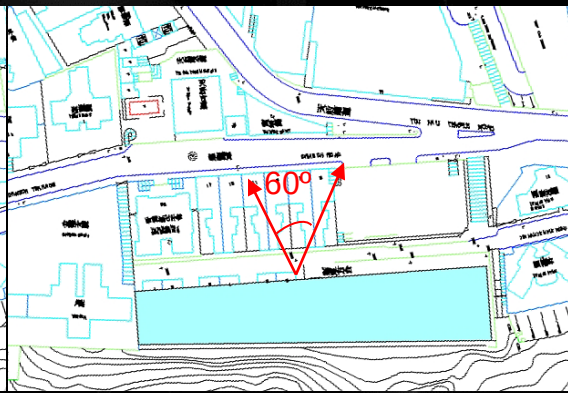
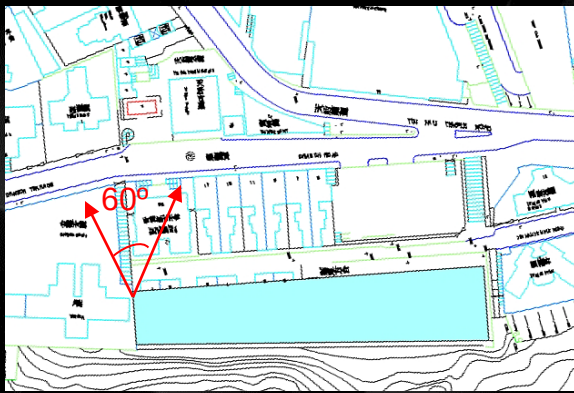
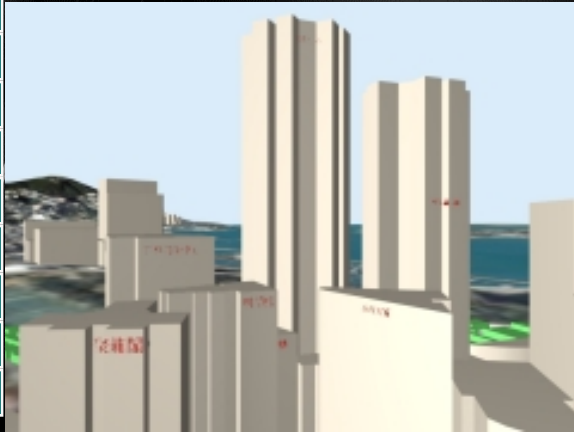
100m

95m

90m

85m

80m

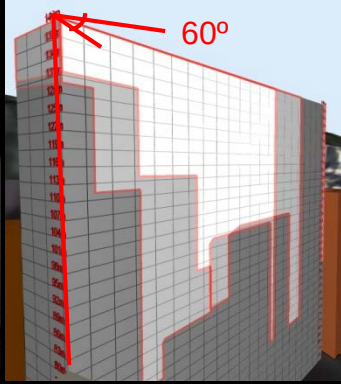


Views from: 85m

NCIC

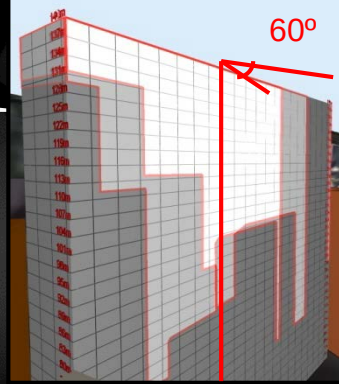
Tin Hau Temple Road No.1

85m

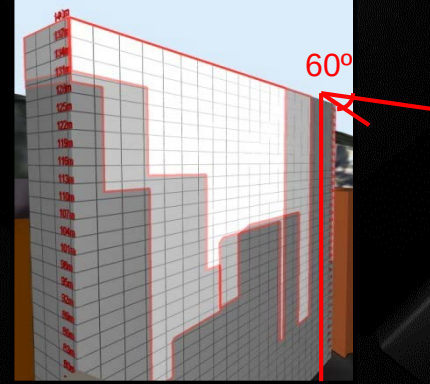


Tin Hau Temple Road No.1

1



Tin Hau Temple Road No.1



140m

135m

130m

125m

120m

115m

110m

105m

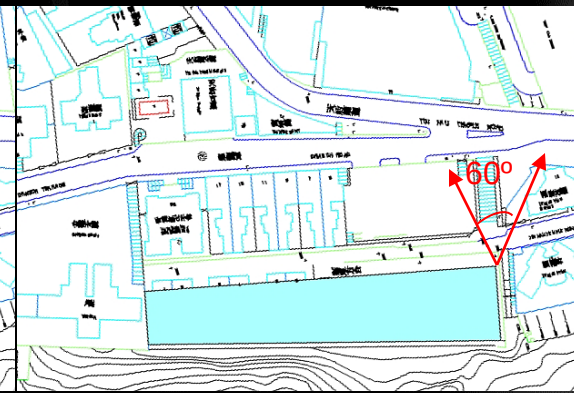
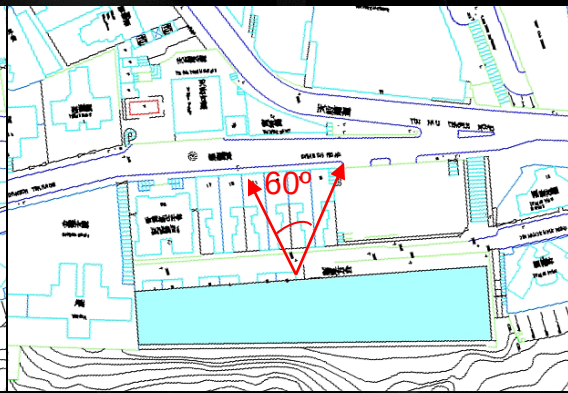
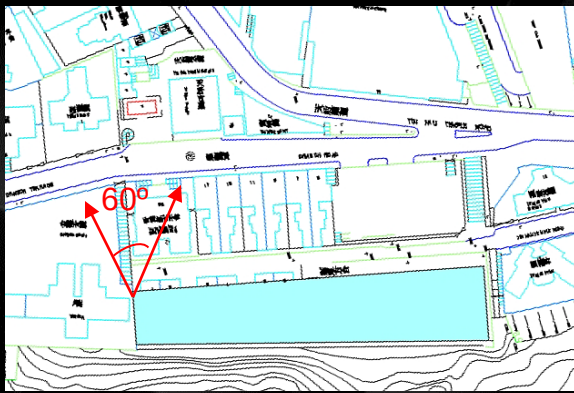
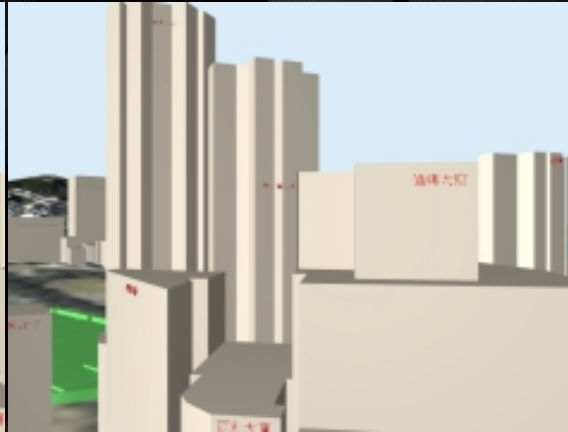
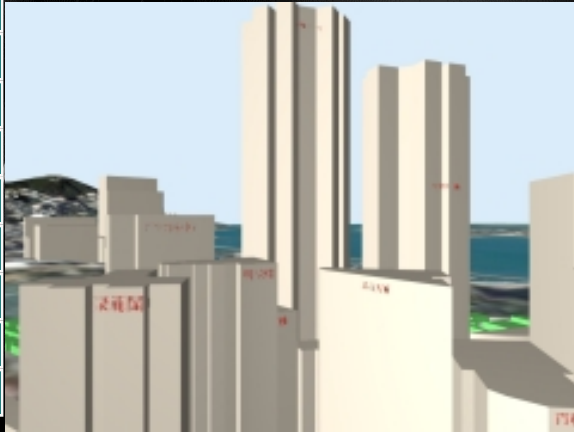
100m

95m

90m

85m

80m

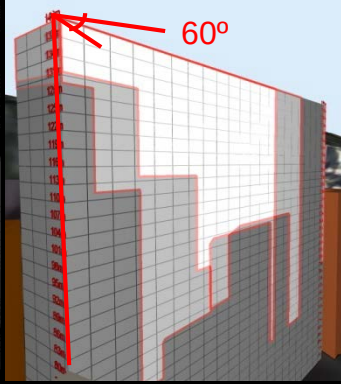


Views from: 80m

NCIC

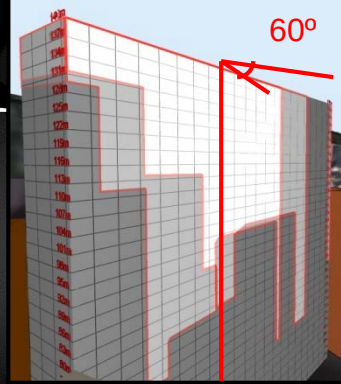
Tin Hau Temple Road No.1

80m

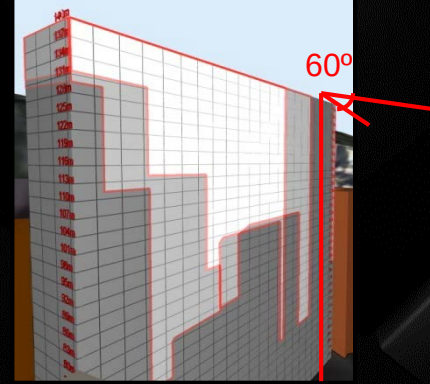


Tin Hau Temple Road No.1

1



Tin Hau Temple Road No.1



140m

135m

130m

125m

120m

115m

110m

105m

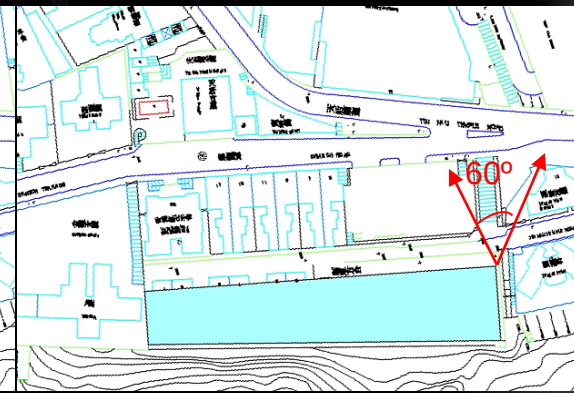
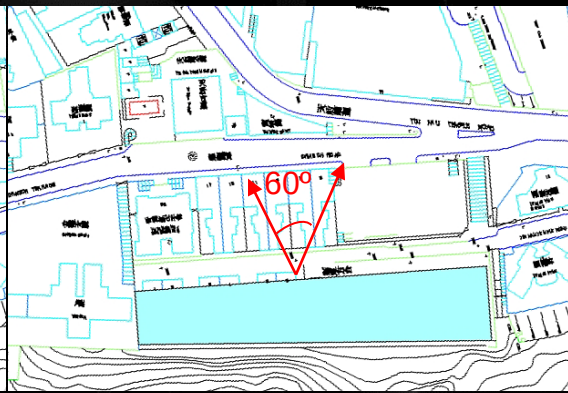
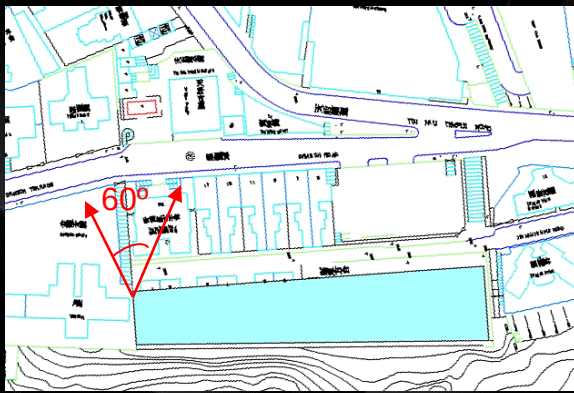
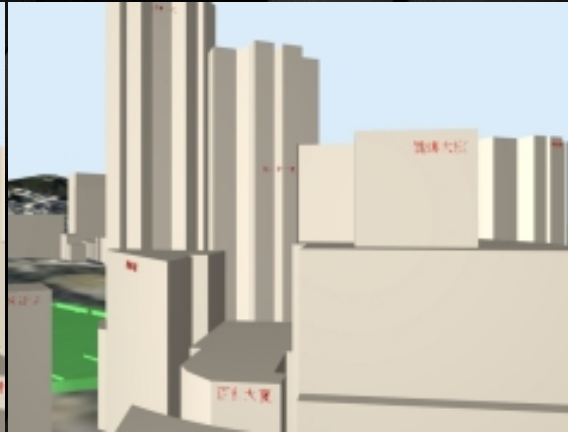
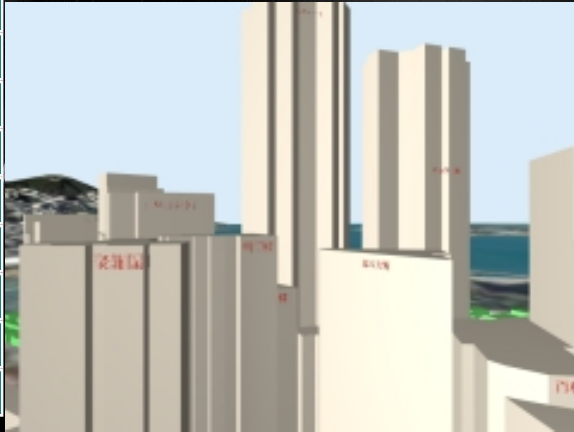
100m

95m

90m

85m

80m





Form A :



Form B :

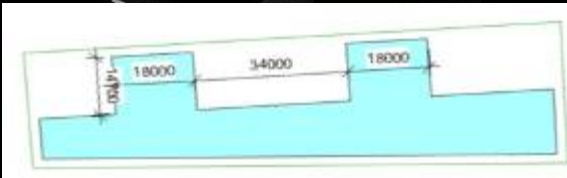
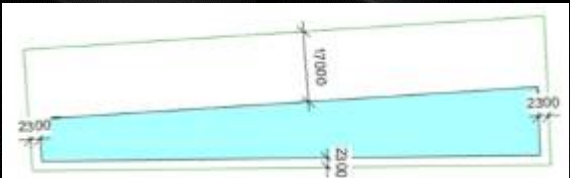
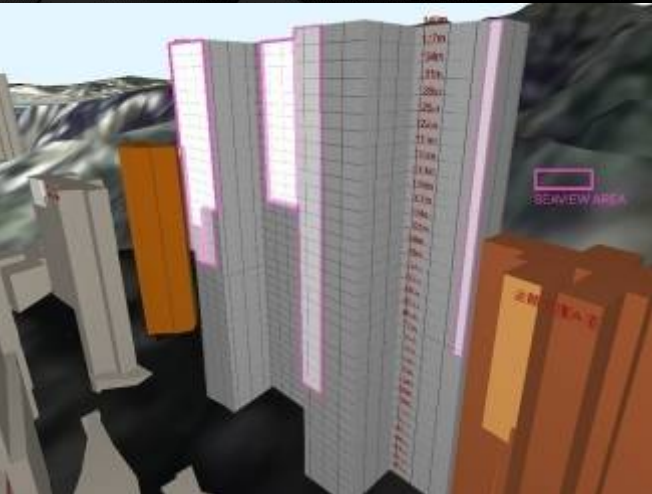
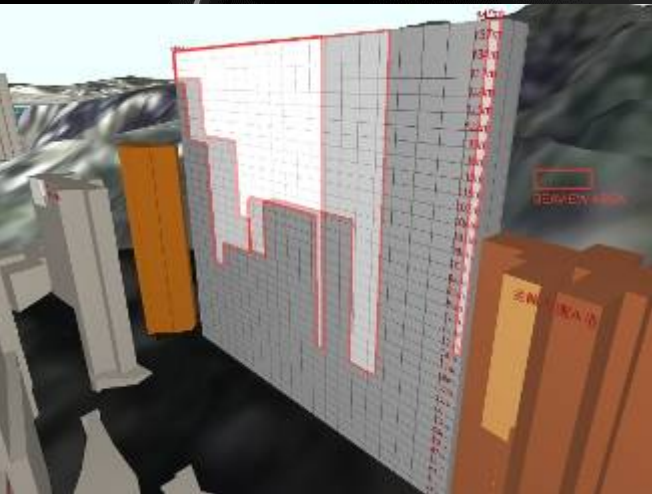


Form A

Sea View Area

Form B

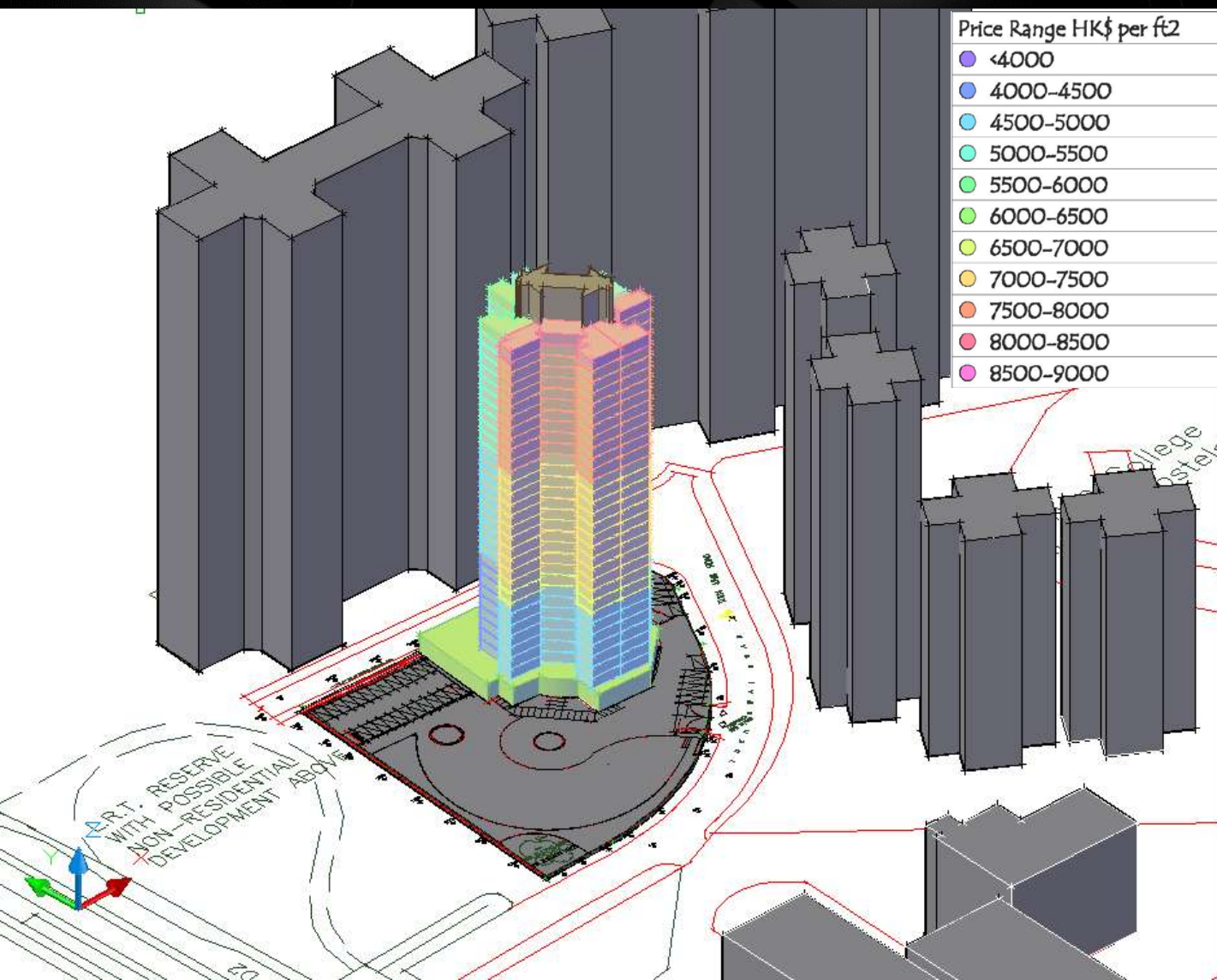
Sea View Area



可研通設計平台

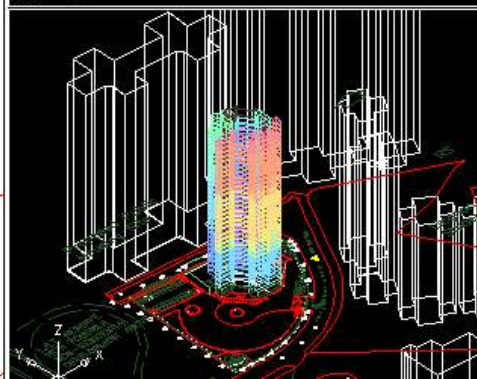
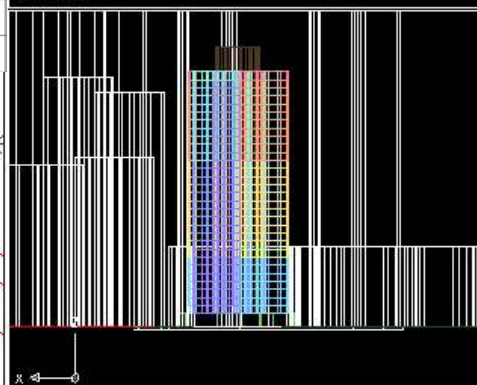
網上整合佈置,收益,景觀,成本,等等數據

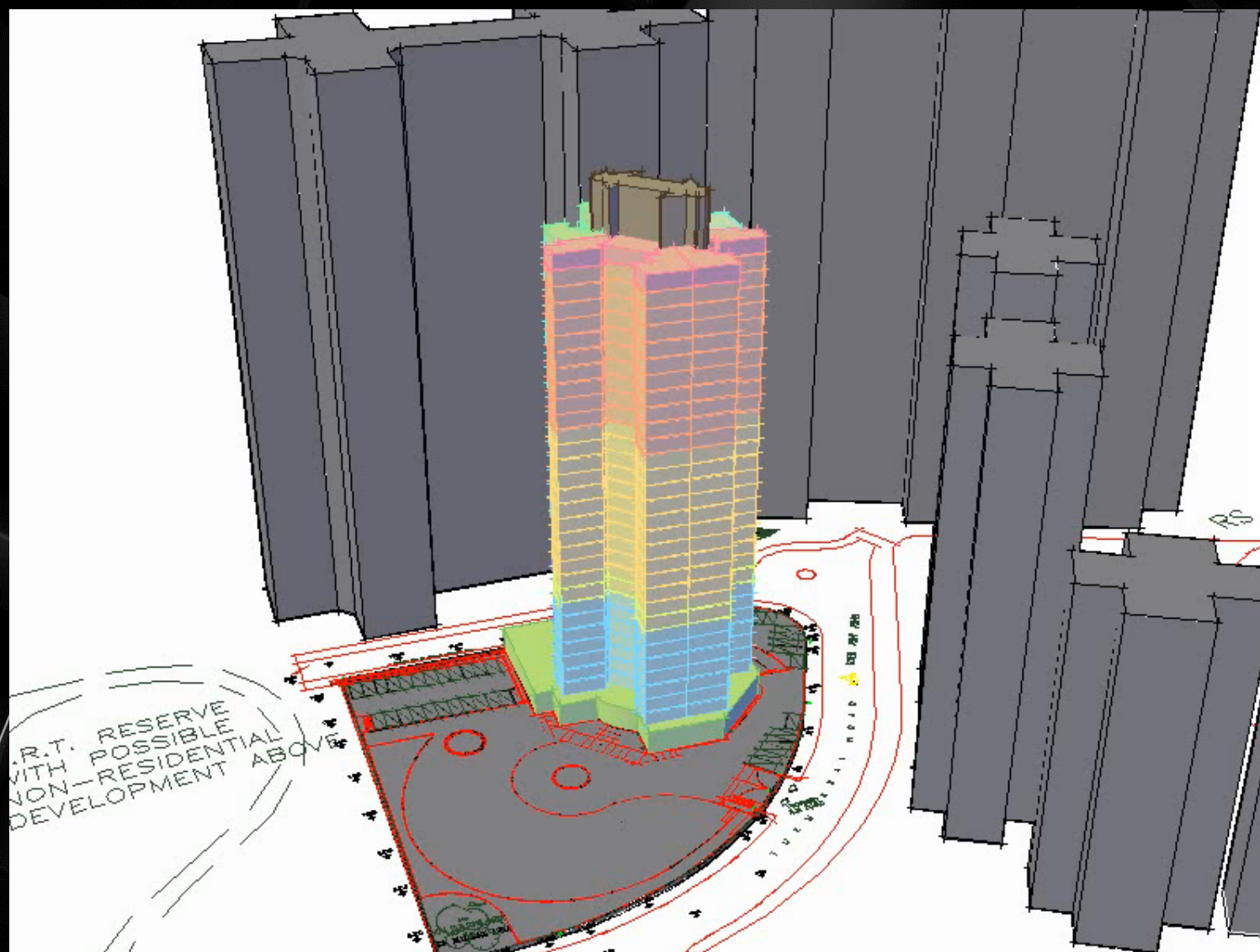
NCIC



Analysis

Area	Price / Flat
66	\$3,256,000
50	\$2,198,000
15780	\$967,386,000

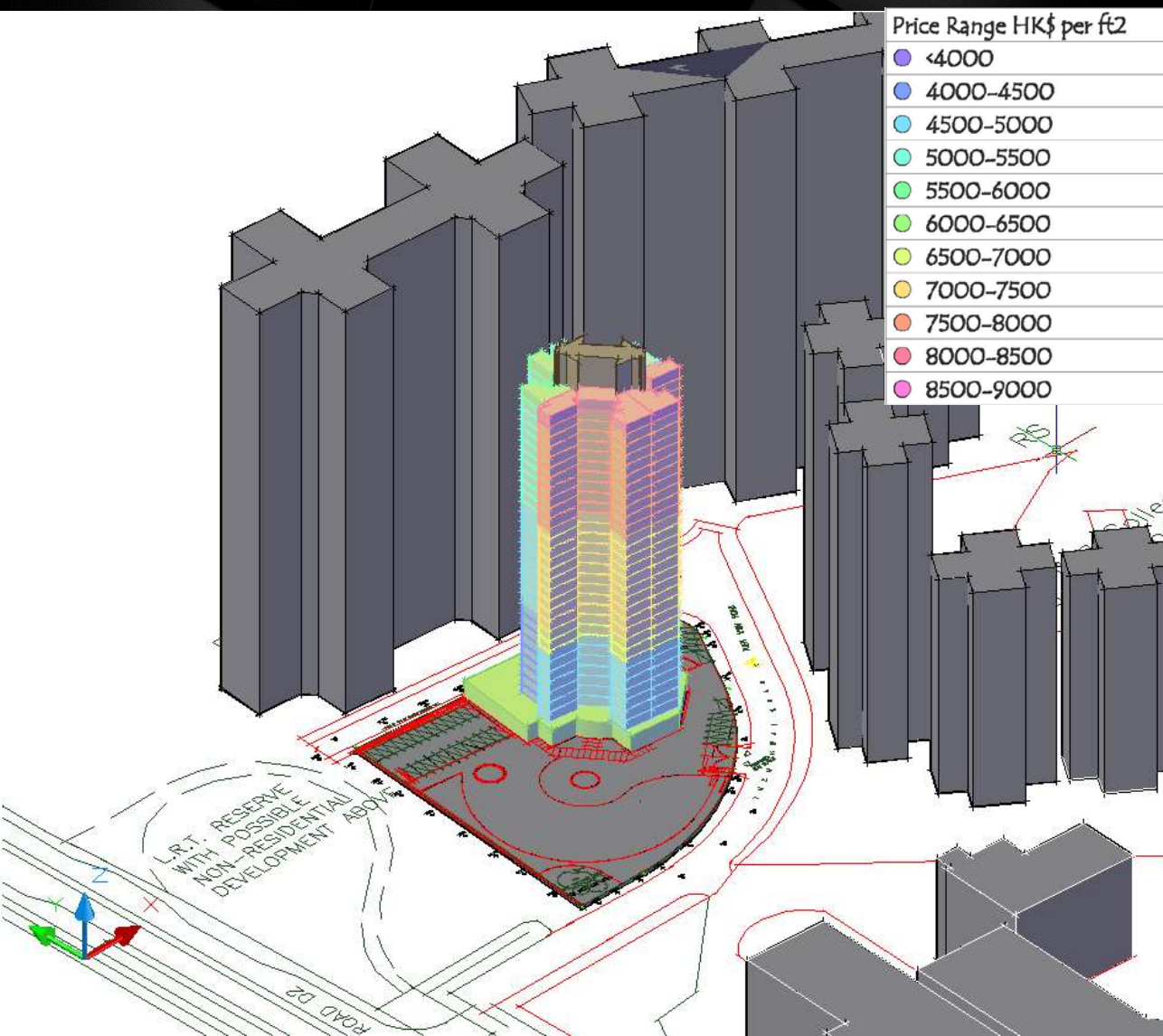




Price Range HK\$ per ft2

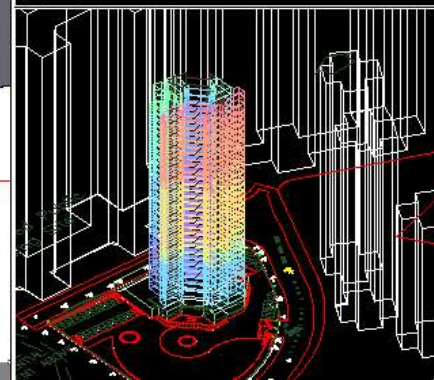
- <4000
- 4000-4500
- 4500-5000
- 5000-5500
- 5500-6000
- 6000-6500
- 6500-7000
- 7000-7500
- 7500-8000
- 8000-8500
- 8500-9000

可研通設計平台
網上整合佈置,收益,景觀,成本,等等數據

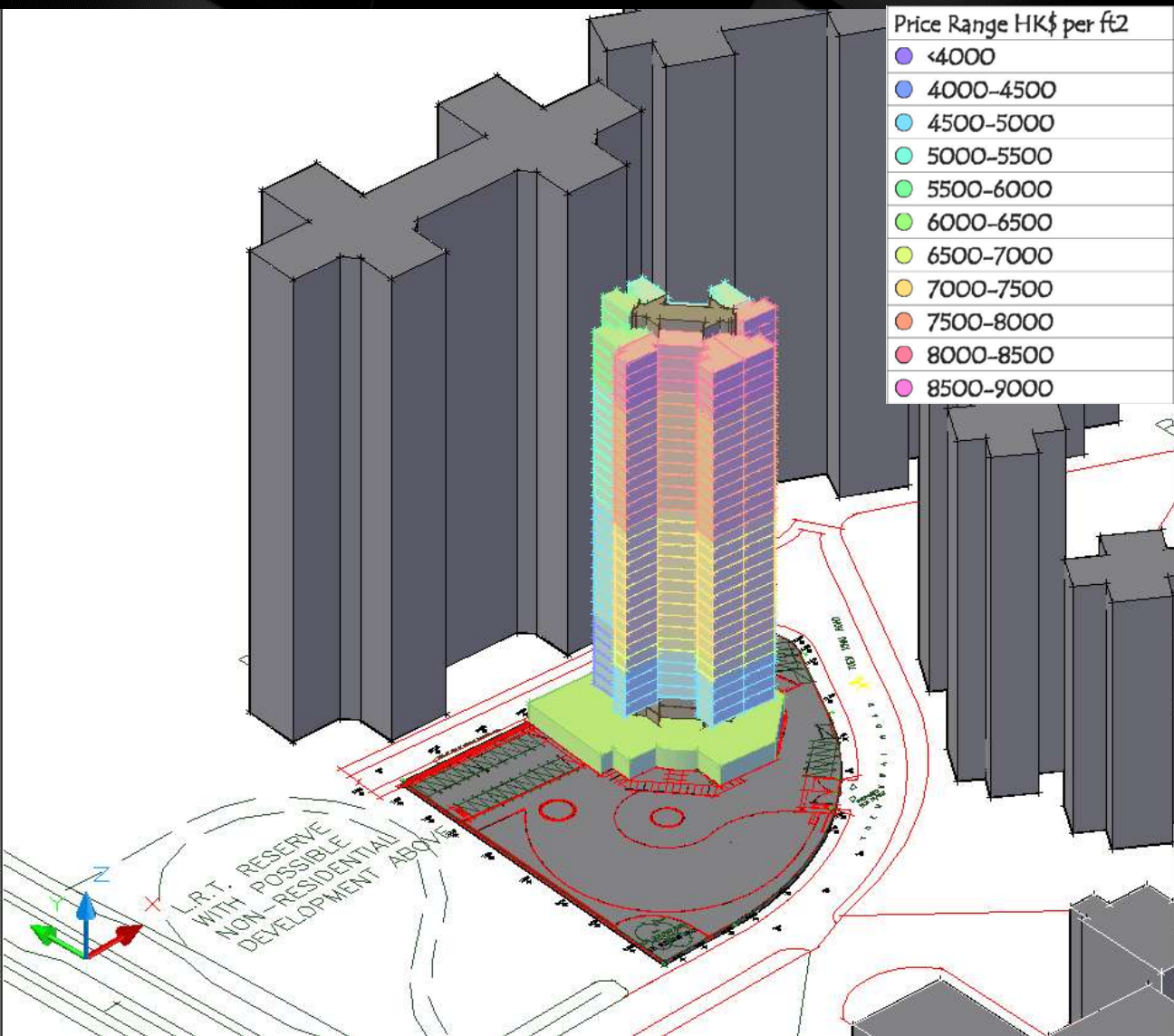


Analysis

Area	Price / Flat
66	\$3,256,000
50	\$2,198,000
15780	\$967,386,000

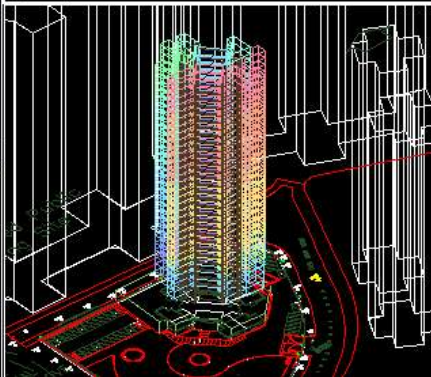
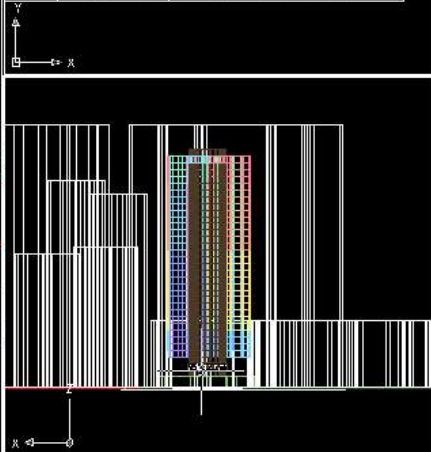


可研通設計平台
網上整合佈置,收益,景觀,成本,等等數據

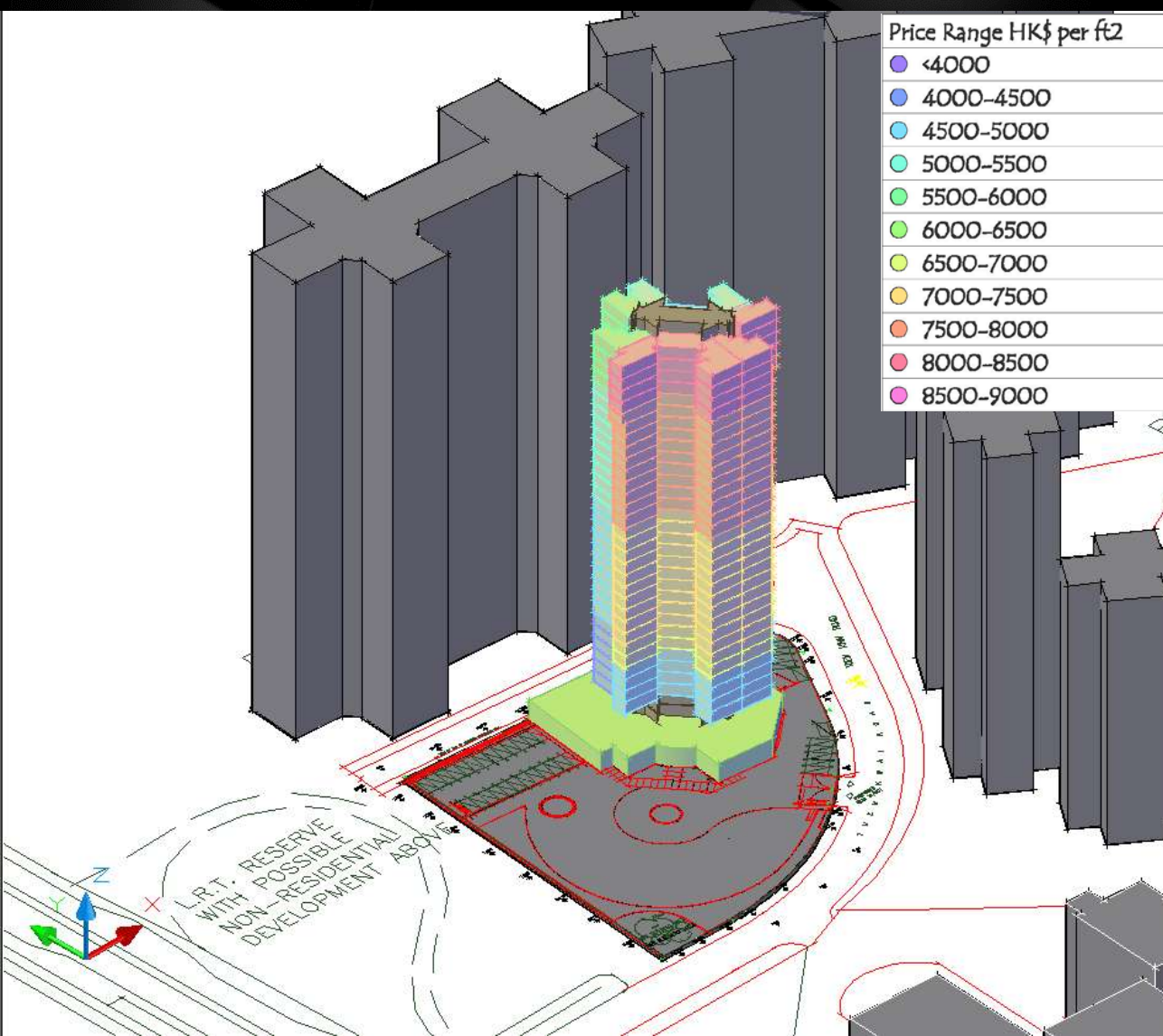


Value Analysis

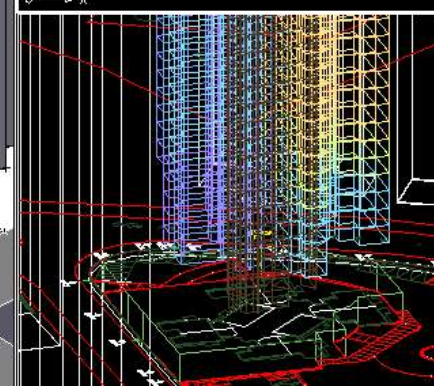
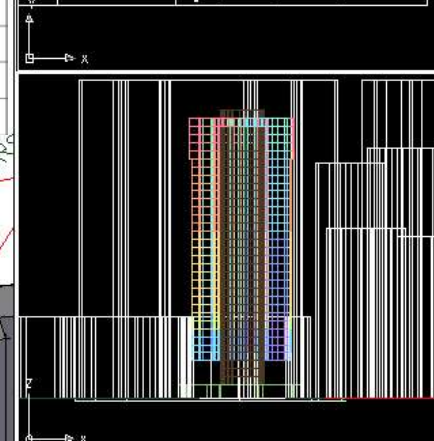
ft2	Area	Price / Flat
3	66	\$3,363,000
3	50	\$2,279,000
	15780	\$1,010,820,000

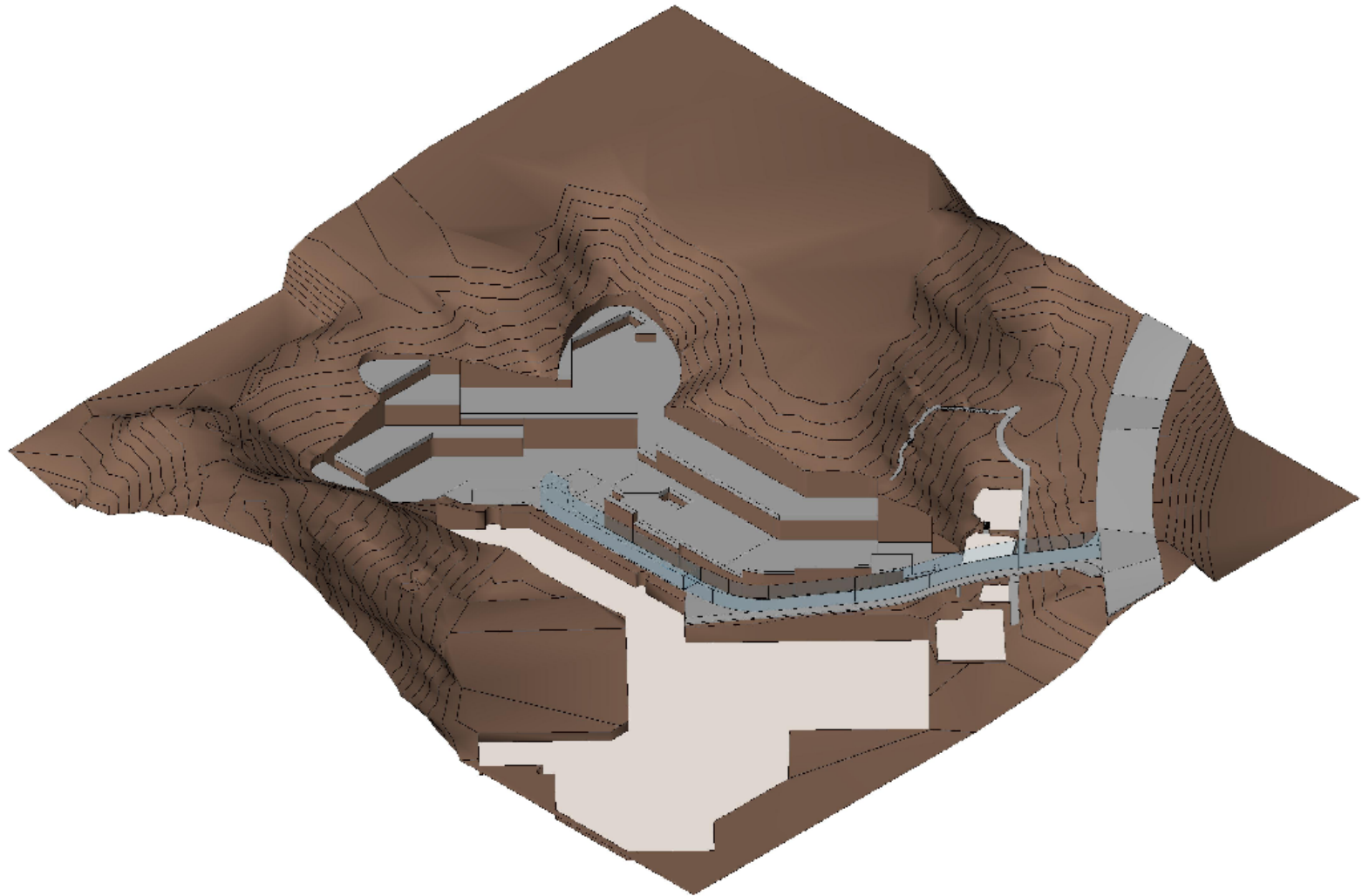


可研通設計平台
網上整合佈置,收益,景觀,成本,等等數據

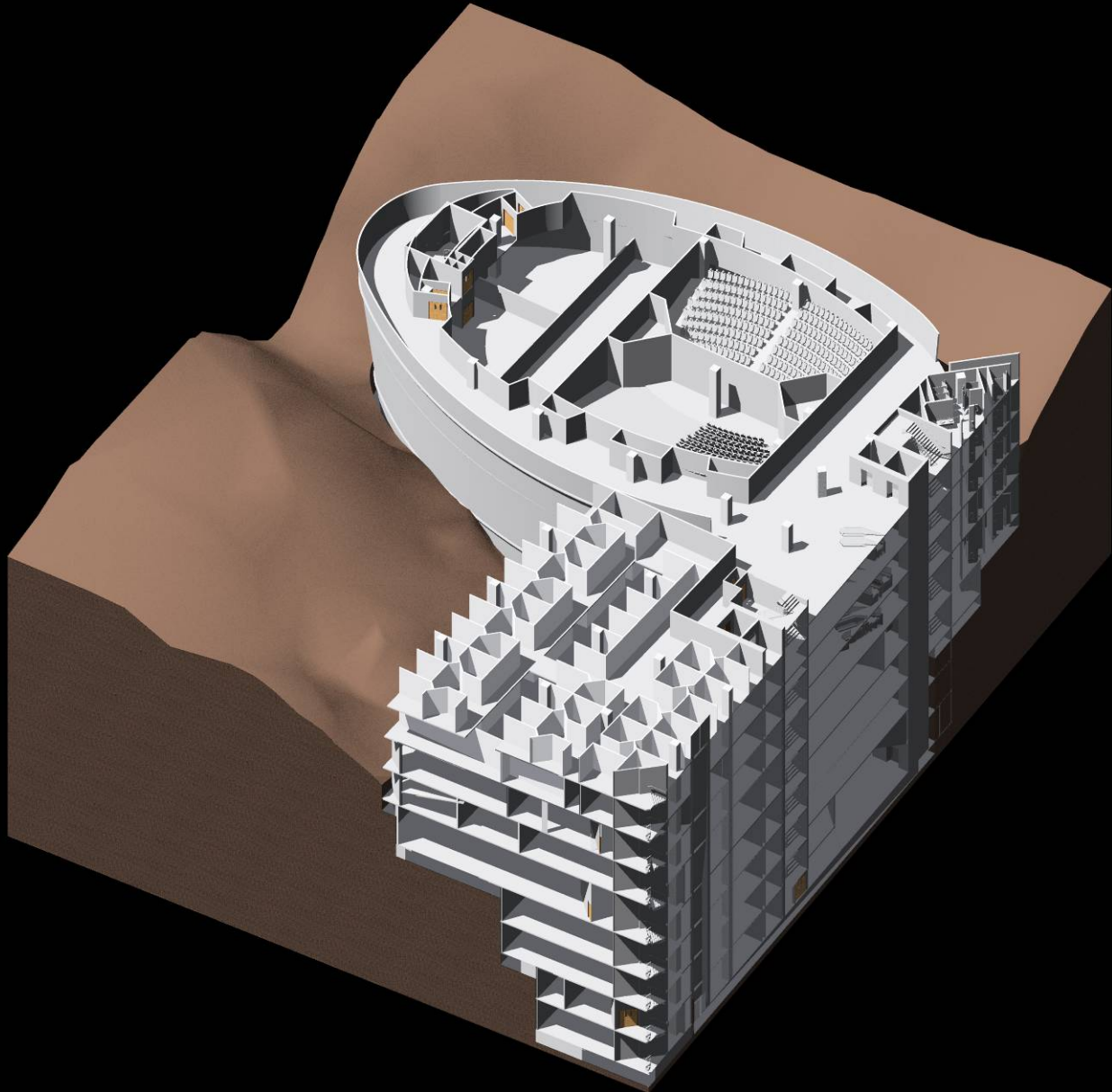


45	\$2,051,000
50	\$2,010,000
65	\$3,312,000
66	\$3,363,000
46	\$1,849,000
50	\$2,279,000
15780	\$1,012,542,000





TOPOGRAPHY HANDLING



BUILDING IN SITE CONTEXT



VISUALIZATION & PRODUCTION

0515



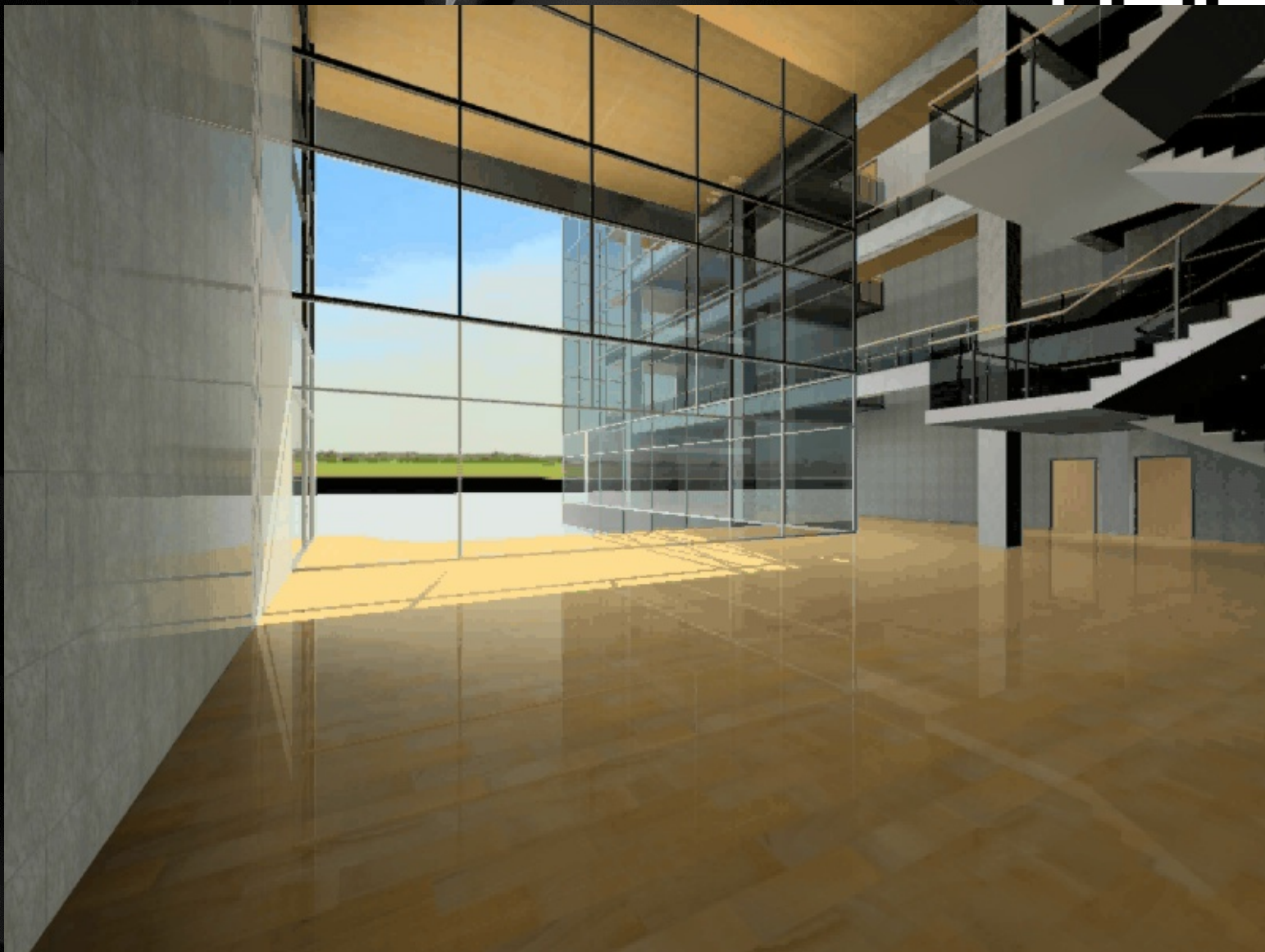


PERSPECTIVE



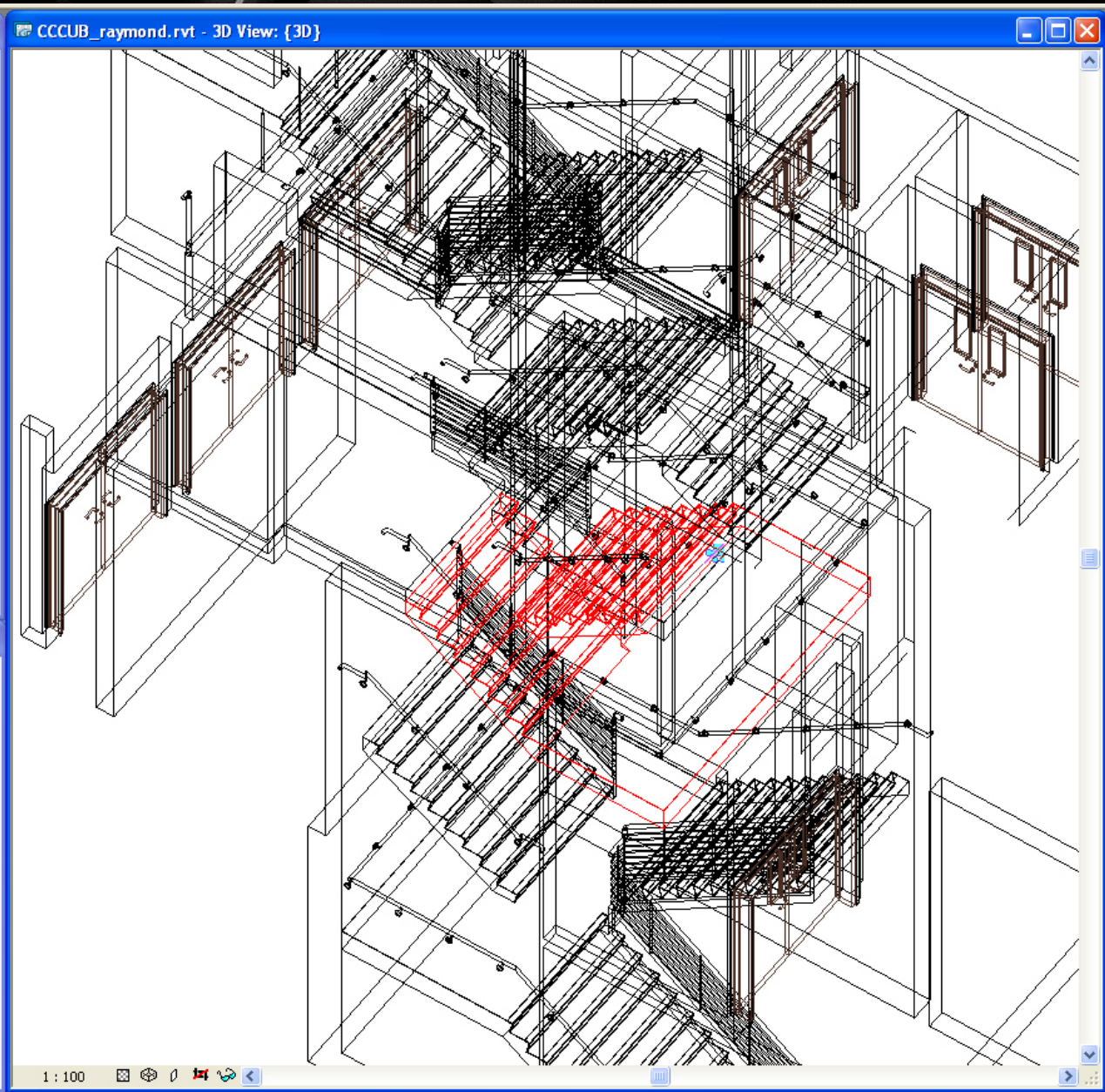
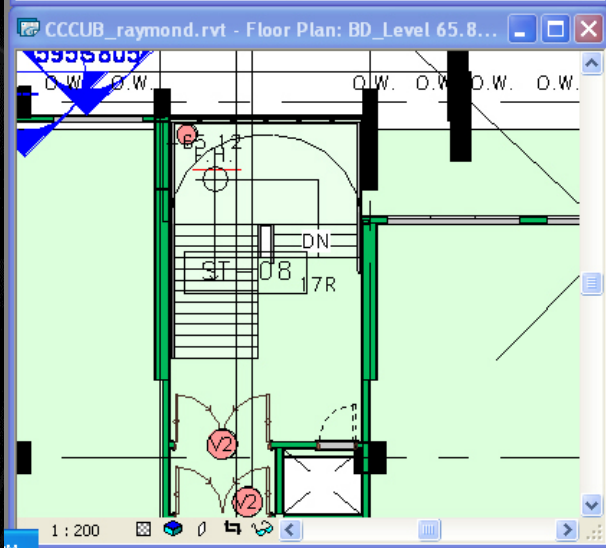
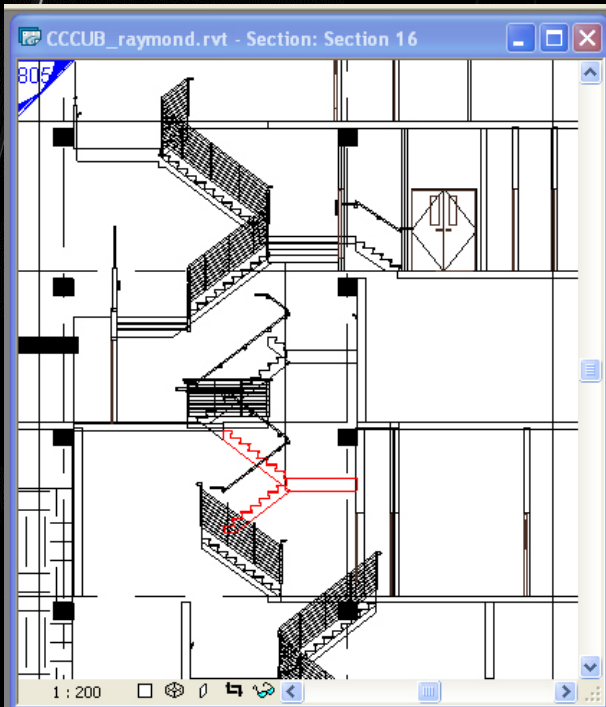








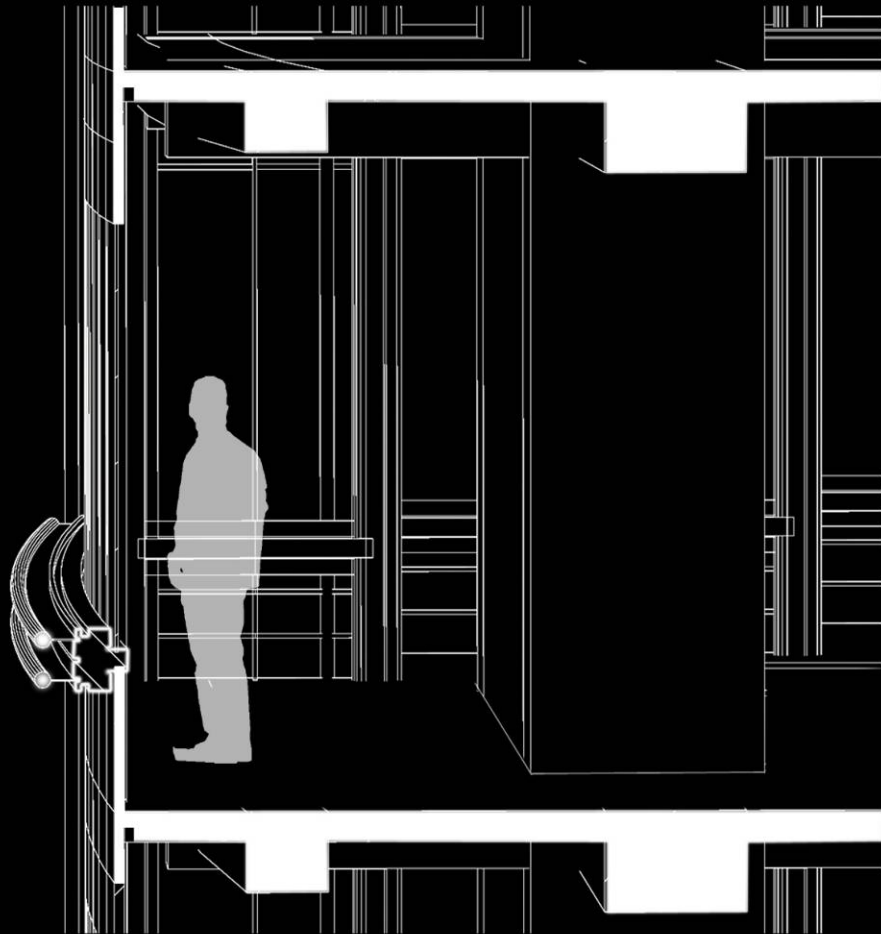
FAÇADE PANEL DESIGN



VERTICAL CO-ORDINATION



FAÇADE DESIGN and CO-ORDINATION



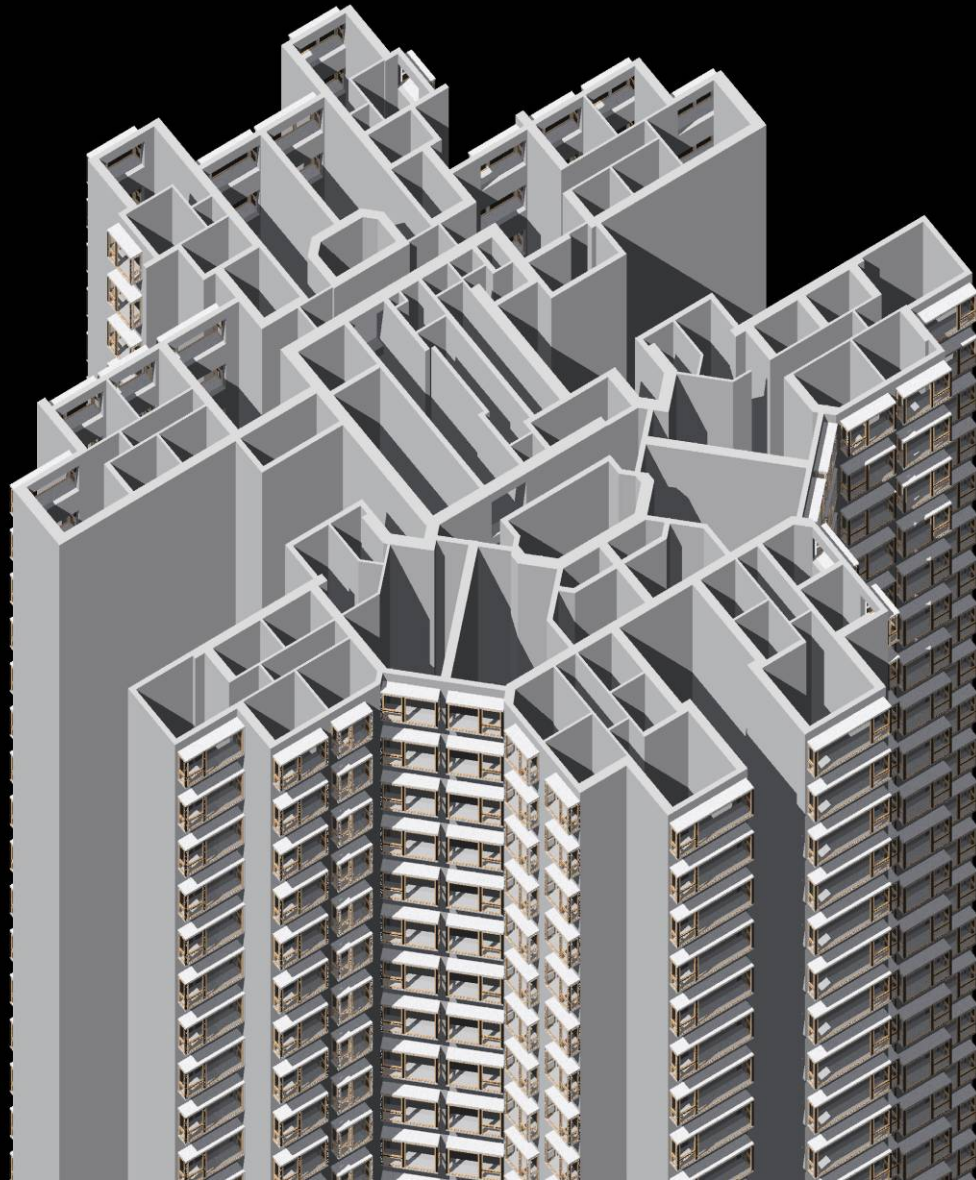
FAÇADE DESIGN and CO-ORDINATION

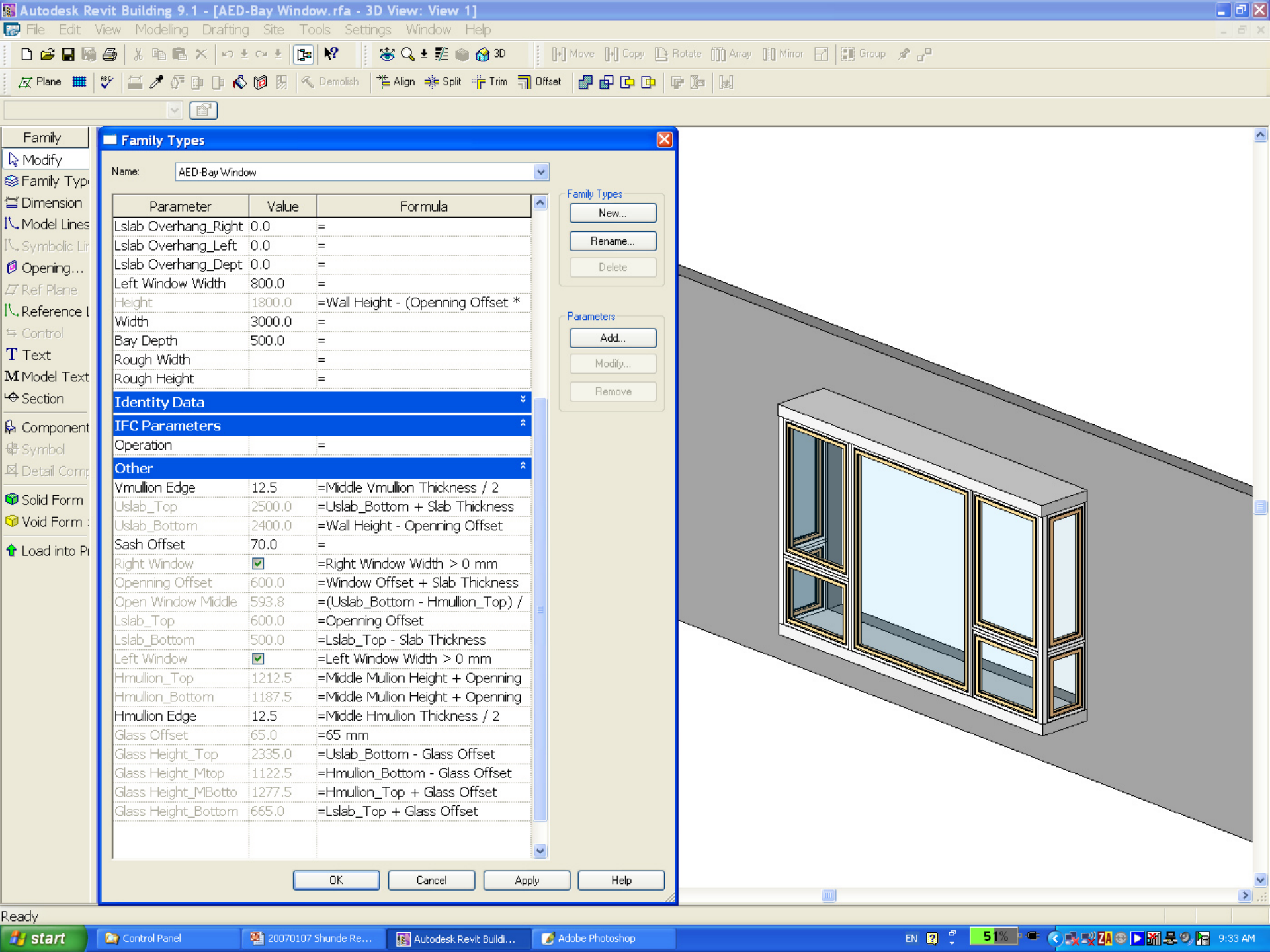


REPETITIONS vs VARIATIONS

PARAMETRIC MODELLING

NCI





- Modify
- Family Type
- Dimension
- Model Lines
- Symbolic Link
- Opening...
- Ref Plane
- Reference Line
- Control
- Text
- Model Text
- Section
- Component
- Symbol
- Detail Component
- Solid Form
- Void Form
- Load into

Name: AED-Bay Window

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 - (Opening 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 - Opening Offset
Sash Offset	70.0	=
Right Window	☒	=Right Window Width > 0 mm
Opening Offset	600.0	=Window Offset + Slab Thickness
Open Window Middle	593.8	=(Uslab_Bottom - Hmullion_Top) /
Lslab_Top	600.0	=Opening Offset
Lslab_Bottom	500.0	=Lslab_Top - Slab Thickness
Left Window	☒	=Left Window Width > 0 mm
Hmullion_Top	1212.5	=Middle Mullion Height + Opening
Hmullion_Bottom	1187.5	=Middle Mullion Height + Opening
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

OK

Cancel

Apply

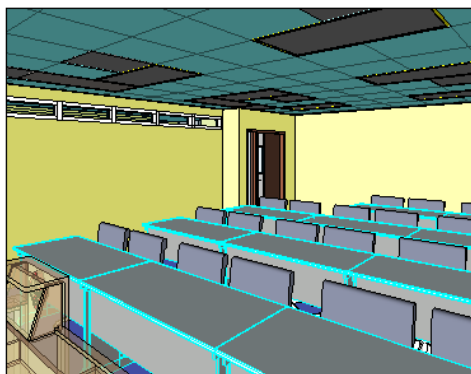
[Help](#)



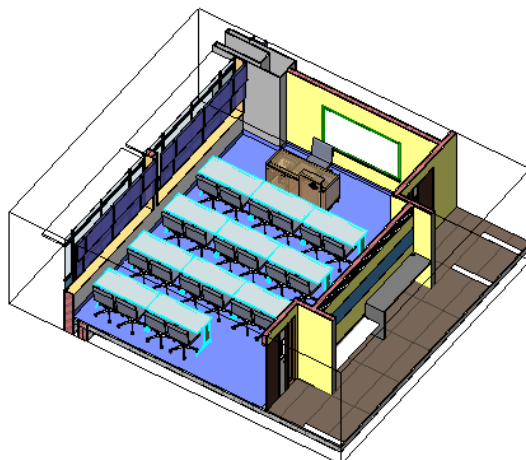
Use of Building Information Modeling



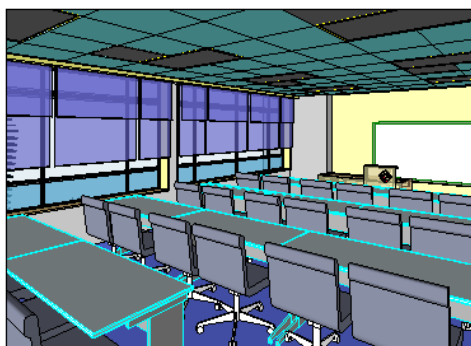
1. Design visualization
- 2. Drawing Productions 図面製作**
3. Services Co-ordination and Clash detection with other disciplines
4. Quantity taking and preparation of Tender Document
5. Automated Statutory Submission
6. Scientific analysis of different environmental aspects
7. Supply Chain Integration with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



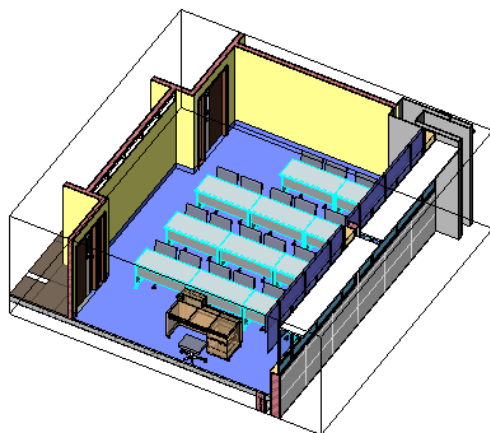
6 行政人员培训室立体示意图2



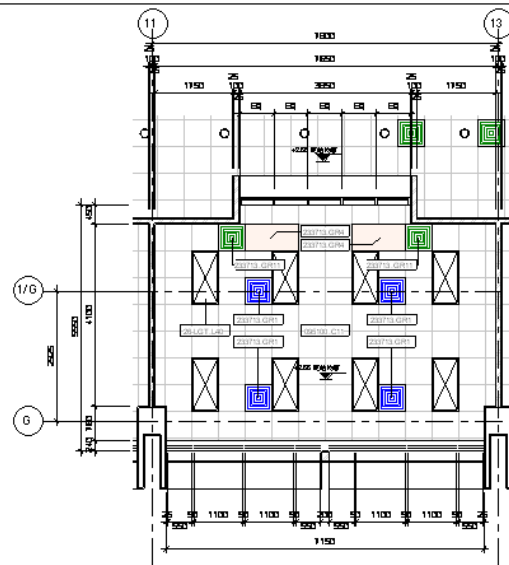
4 行政人员培训室立体剖面示意图2



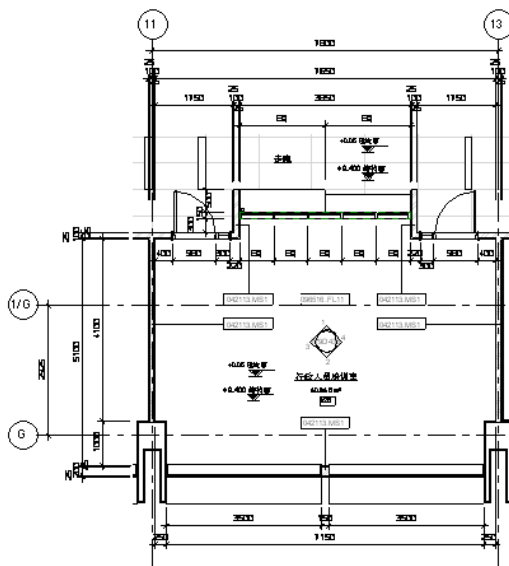
5 行政人员培训室立体示意图1



3 行政人员培训室立体剖面示意图1

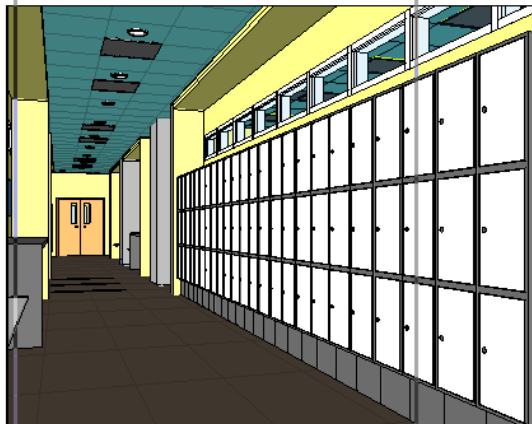


2 行政人员培训室天花平面图(高楼三层)1
1:50

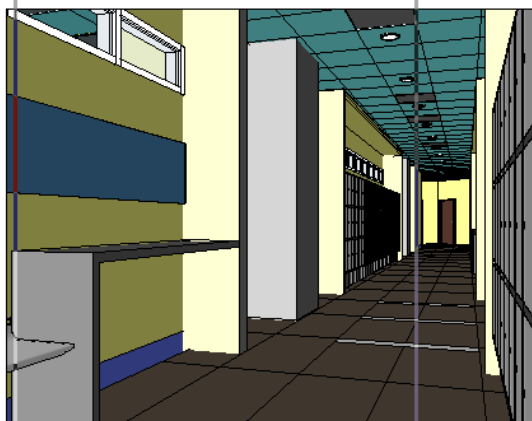


1 行政人员培训室平面图(高楼三层)1
1:50

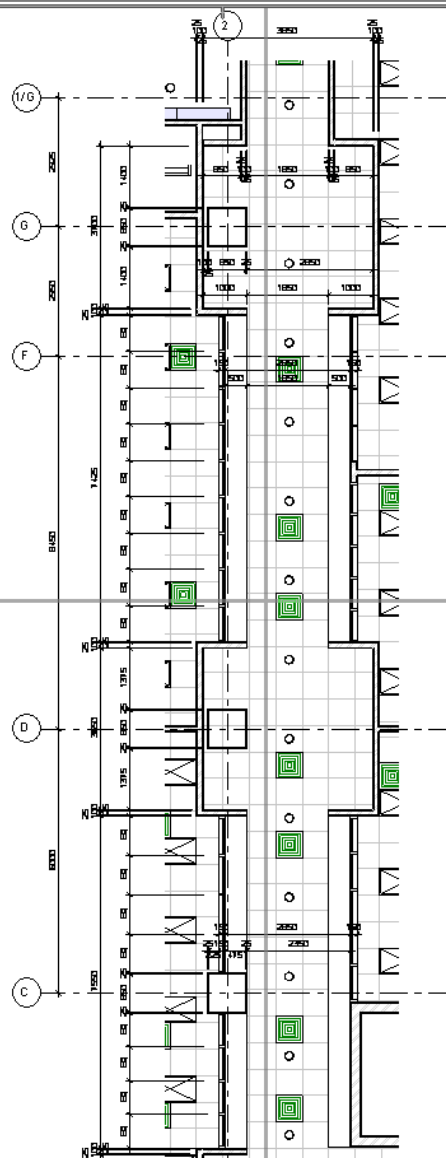
Drawing Type		S.D. SUBMISSION	
S.D. Submission No.	GOVERNMENT REFERENCE NO.		
F-221 Submission No.	GOVERNMENT REFERENCE NO.		
Author's Name			
AUTHORIZE PERSONS TO SIGN AREA			
Notes			



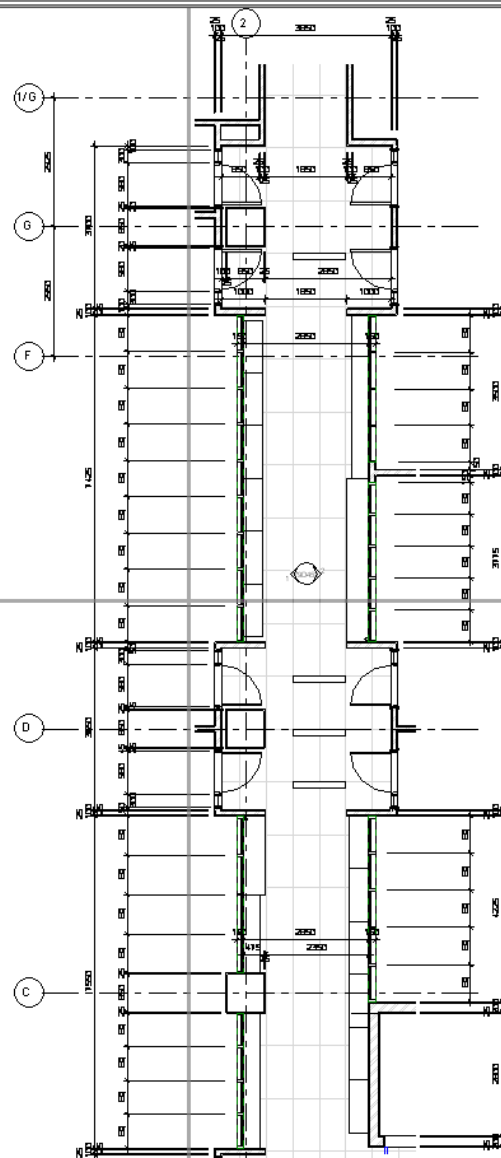
4 走廊立体示意图(低楼三至四层)2



3 走廊立体示意图(低楼三至四层)1

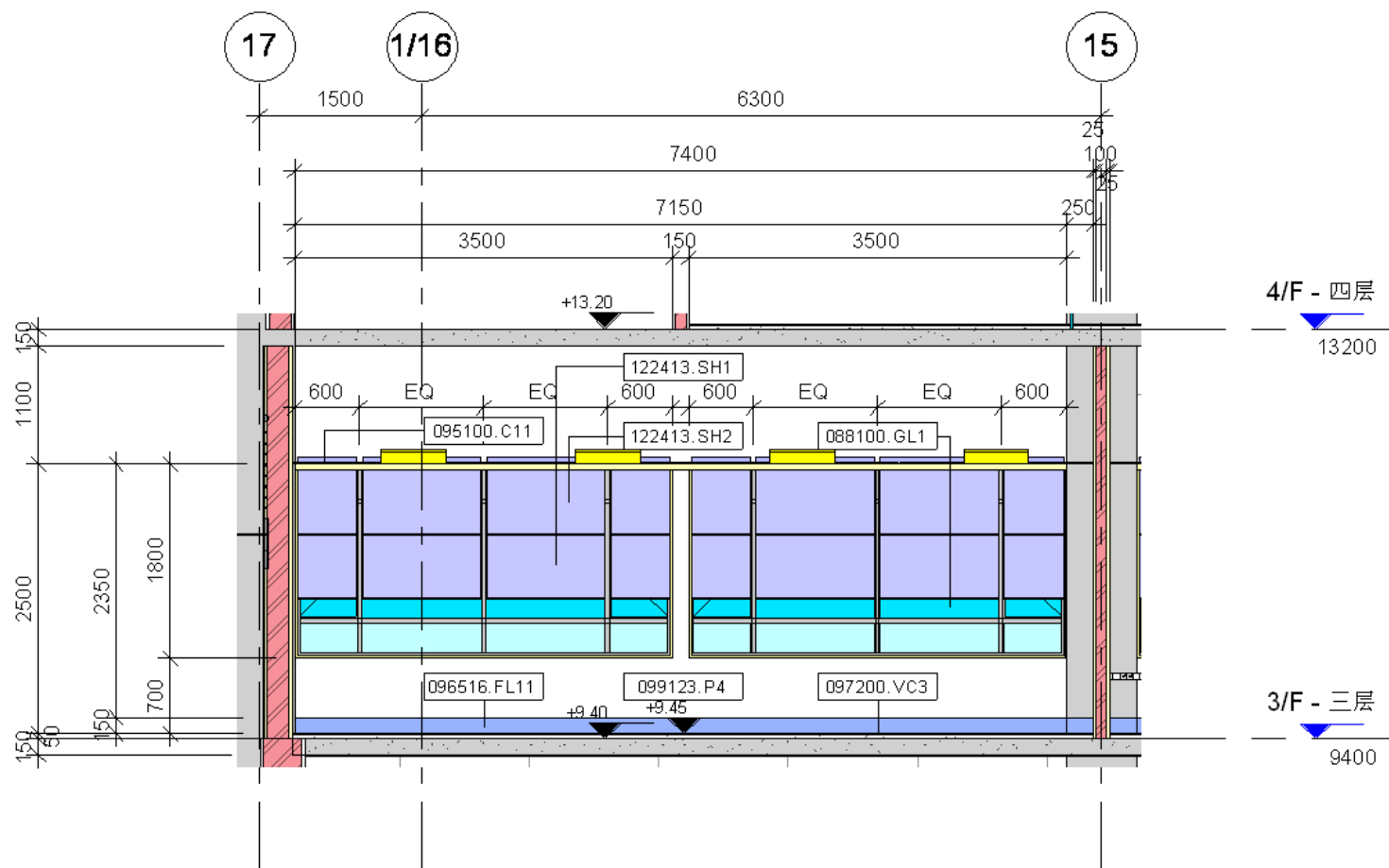


2 走廊天花平面图(低楼三至四层)



1 走廊平面图(低楼三至四层)

[illegible]



2

行政人员培训室立面图(高楼三层)6

1:50

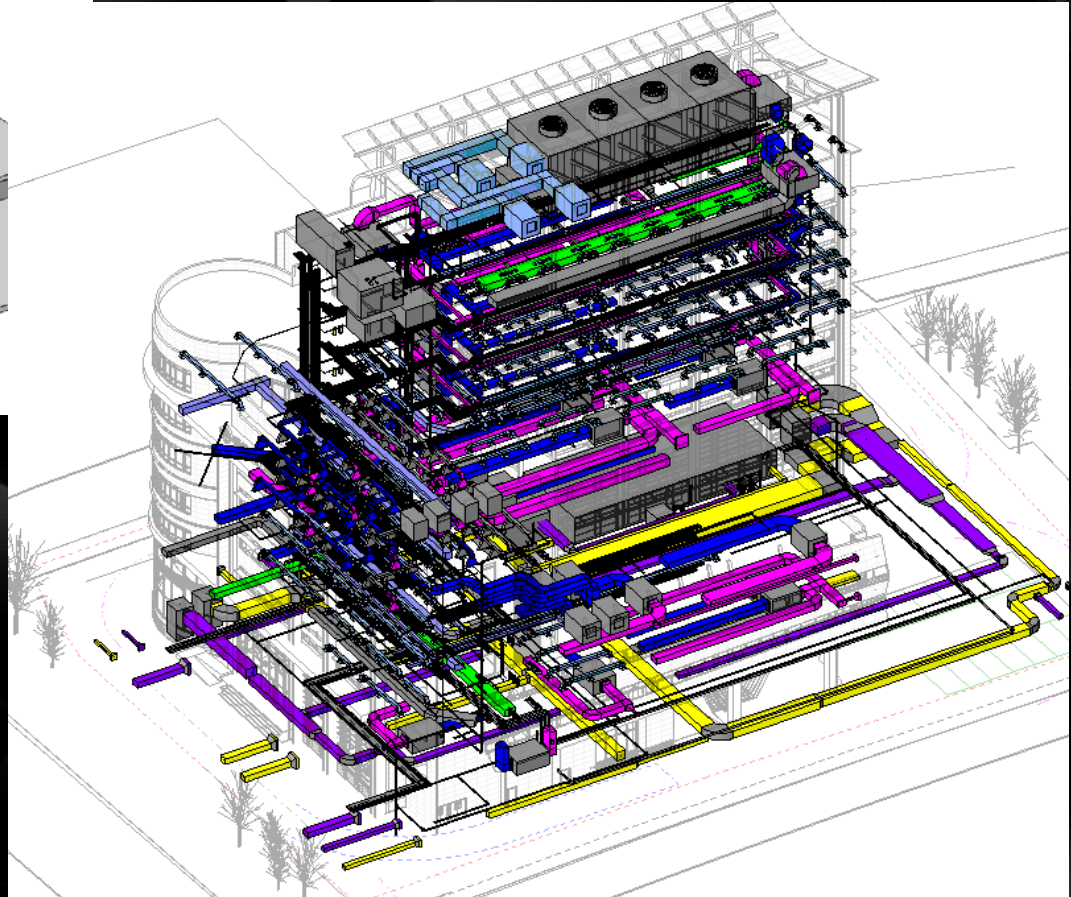
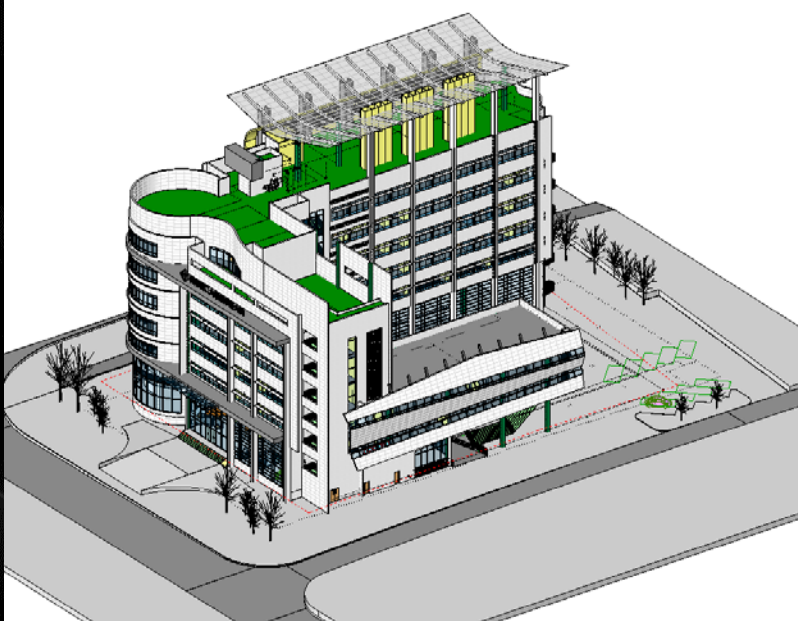
Use of Building Information Modeling



1. Design visualization
2. Drawing Productions
- 3. Services Co-ordination and Clash detection with other disciplines**
多部門との連携と干渉チェック
4. Quantity taking and preparation of Tender Document
5. Automated Statutory Submission
6. Scientific analysis of different environmental aspects
7. Supply Chain Integration with the manufacturing and production
8. Complex Geometry

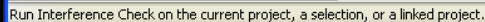
CO-ORDINATION / COLLABORATION

Work Flow – Establish BIM Models



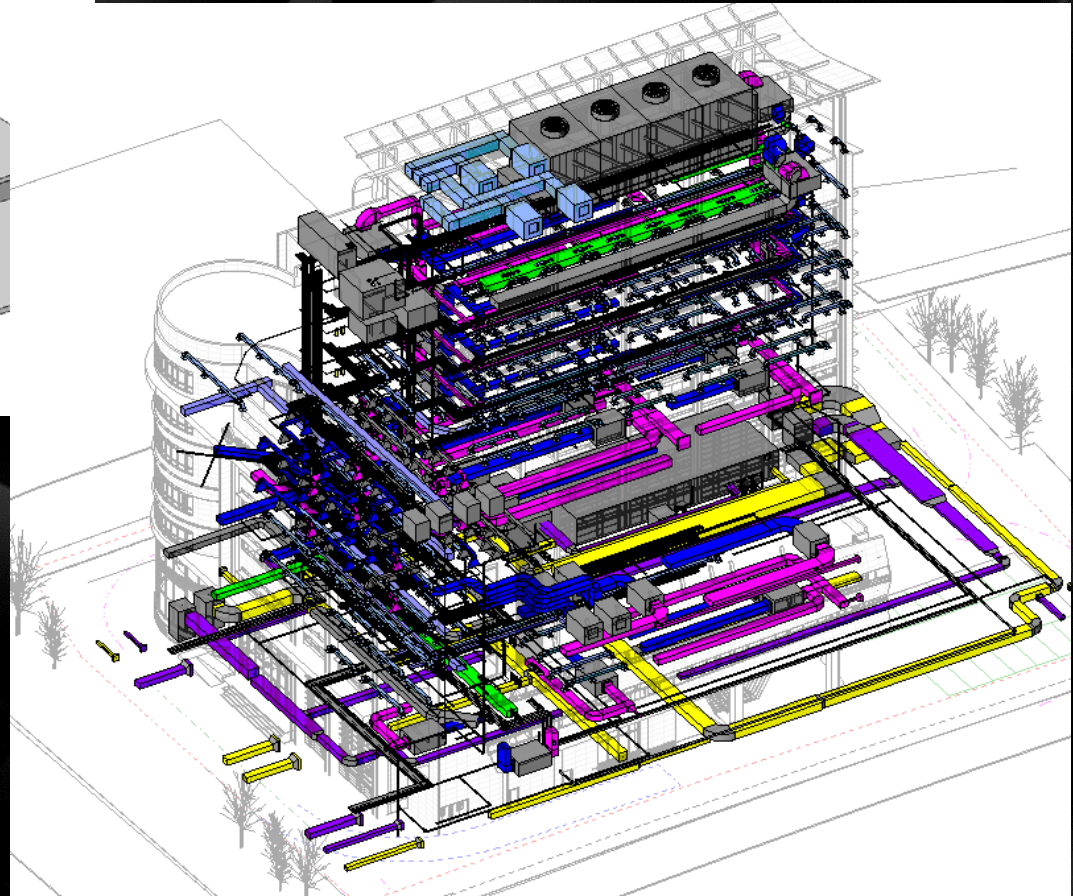
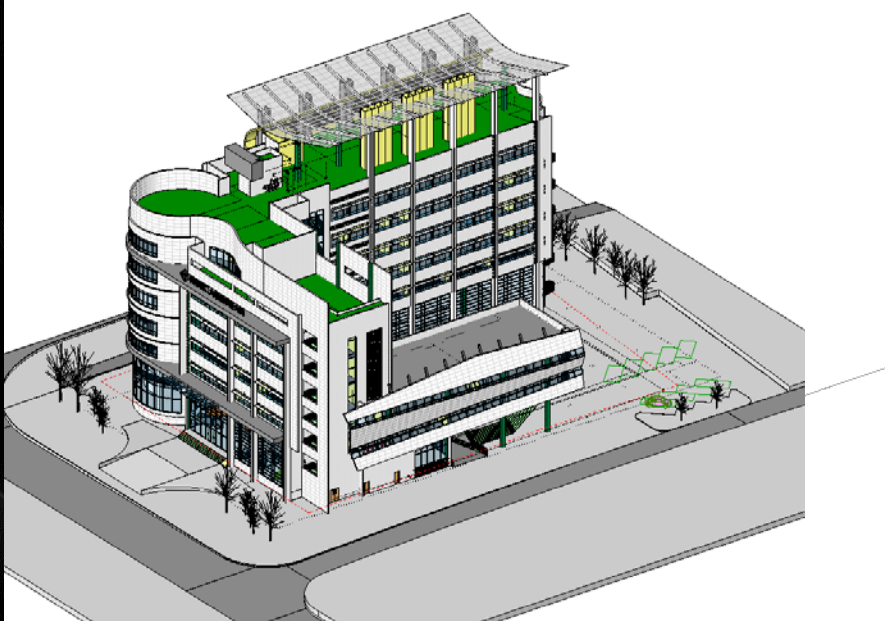


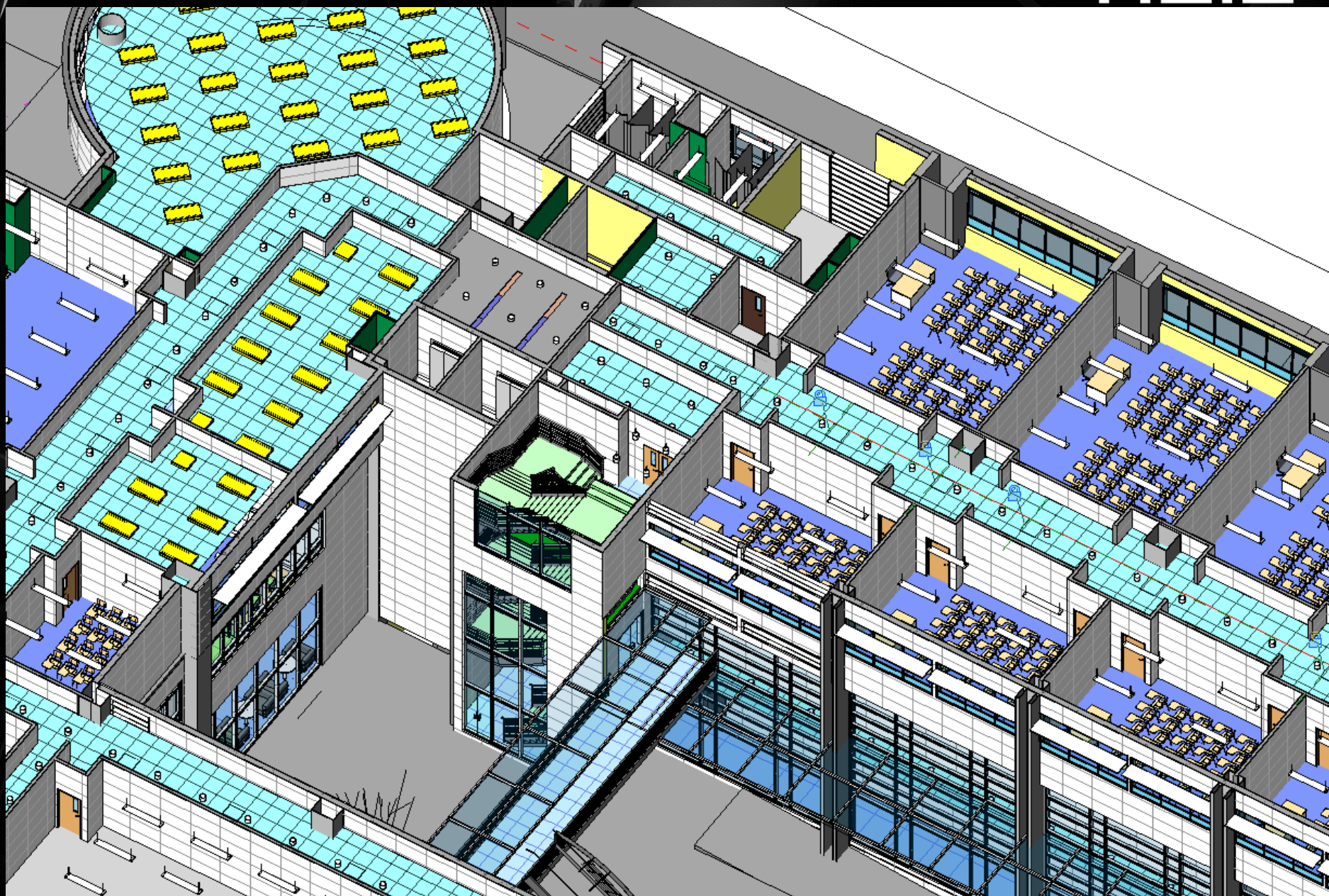
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CO-ORDINATION / COLLABORATION

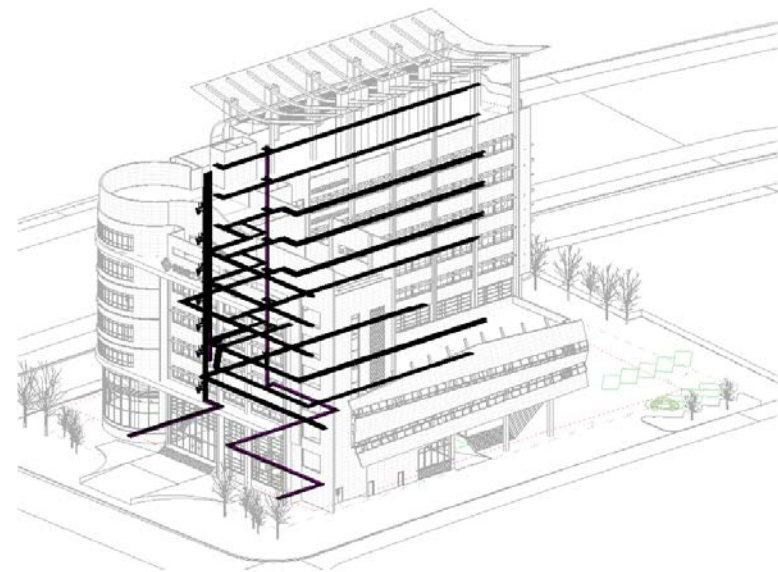
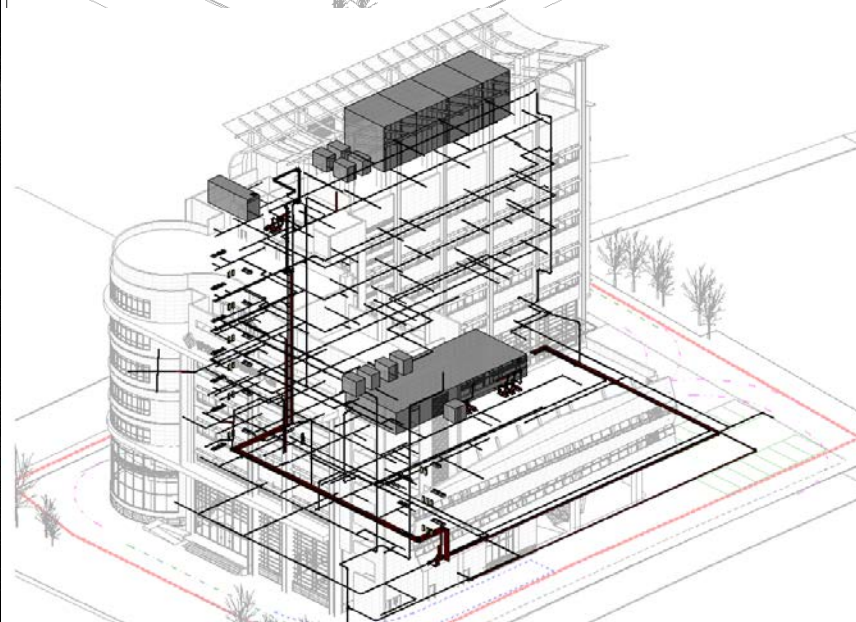
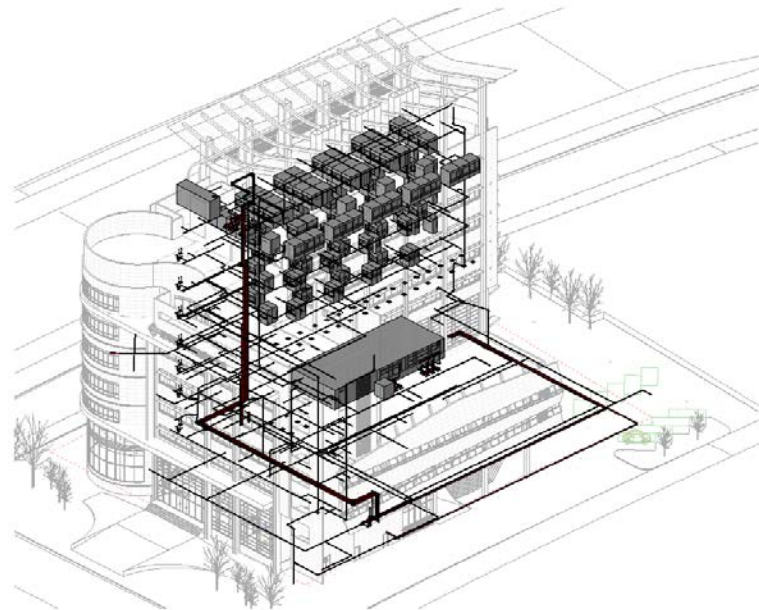
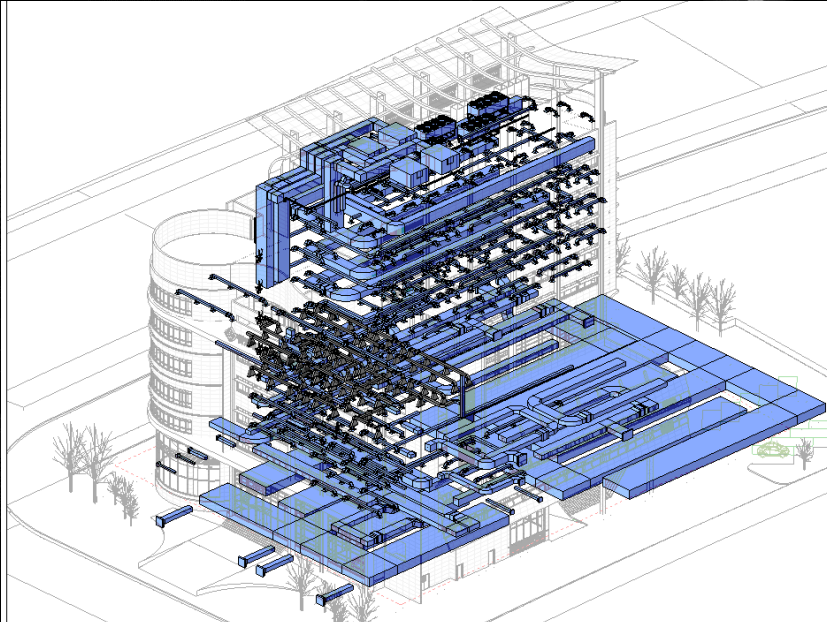
Work Flow – Establish BIM Models





HVAC Installation

Fire Services Installation



P/D Installation

Electricity Installation

Work Flow – Clashes Report



Autodesk Revit Systems 2

File Edit View Modeling Drafting Site Tools Settings Window Help

Plane, Press + Drag, Editable Only

PolyU Shenzhen Campus AC_andy.rvt - 3D View: {3D}

Interference Report

Group by: Category 1, Category 2

Message
Pipes
Pipes
Pipes
Pipes
Pipes
Pipes
Pipes
Pipes
Pipes
Pipes
Pipes
Pipes
Pipes
Pipes

Created: Tuesday, May 29, 2007 6:13:54 PM
Last Update:

Note: Refresh updates interferences listed above.

Show Export... Refresh Close

Duct Schedule
Pipe Schedule
Room Schedule
Wall Schedule

Sheets (all)
E&M-1 - Baseme
E&M-2 - Level 1.
E&M-3 - Level 2.
E&M-4 - Level 3.
E&M-5 - Level 4.
E&M-6 - Level 5.
E&M-7 - Level 6.
E&M-8 - Level 7.
E&M-9 - Level 8.
E&M-10 - ROOF
E&M-11 - A/C Se

Families
Air Terminals
Annotation Synt
Ceilings
Basic Ceilin
Generic
Plaster E

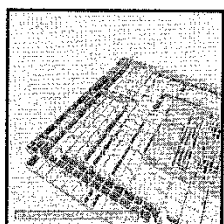
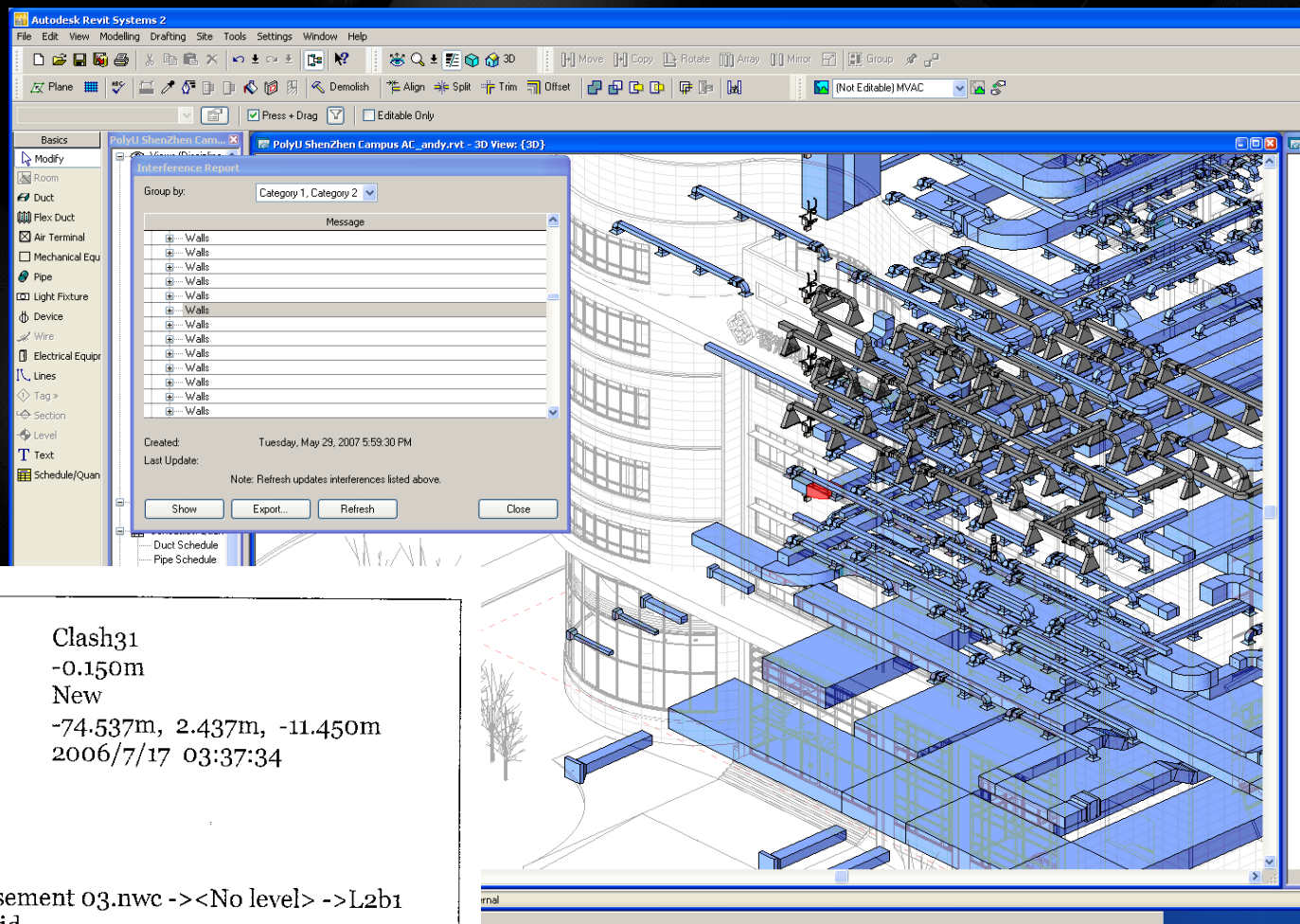
View
Architectural
Drafting
Mechanical
Piping
Plumbing

1 : 150

MVAC : Mechanical Equipment : M_Fan Coil Unit - Horizontal Basic Concealed with Plenum : M_02

Page 4 Sec 1 4/4 At 3.1cm Ln 2 Col 2 REC TRK EXT OVR English (U.S)

Work Flow – Clashes Report



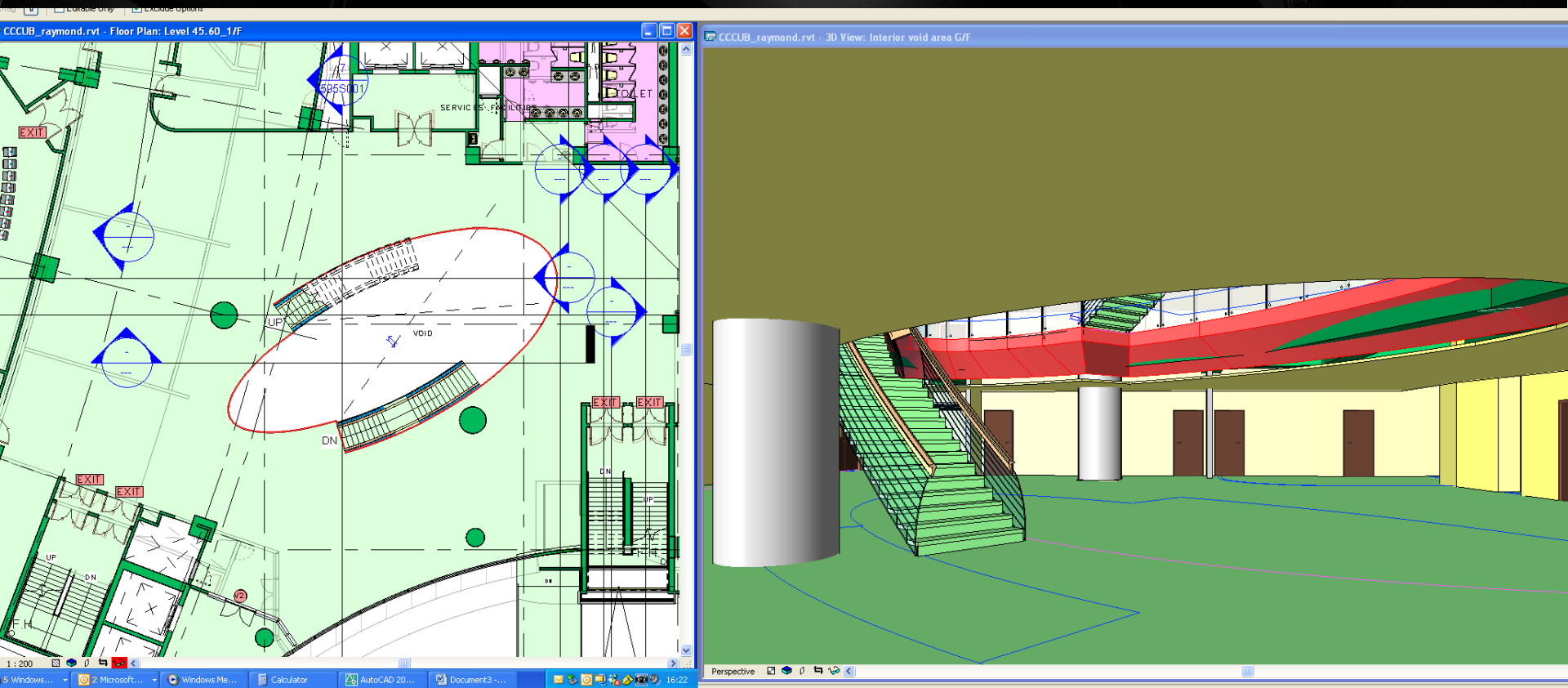
Name Clash31
 Distance -0.150m
 Status New
 Clash Point -74.537m, 2.437m, -11.450m
 Date Created 2006/7/17 03:37:34
 Approved By

Item 1

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

Item 2

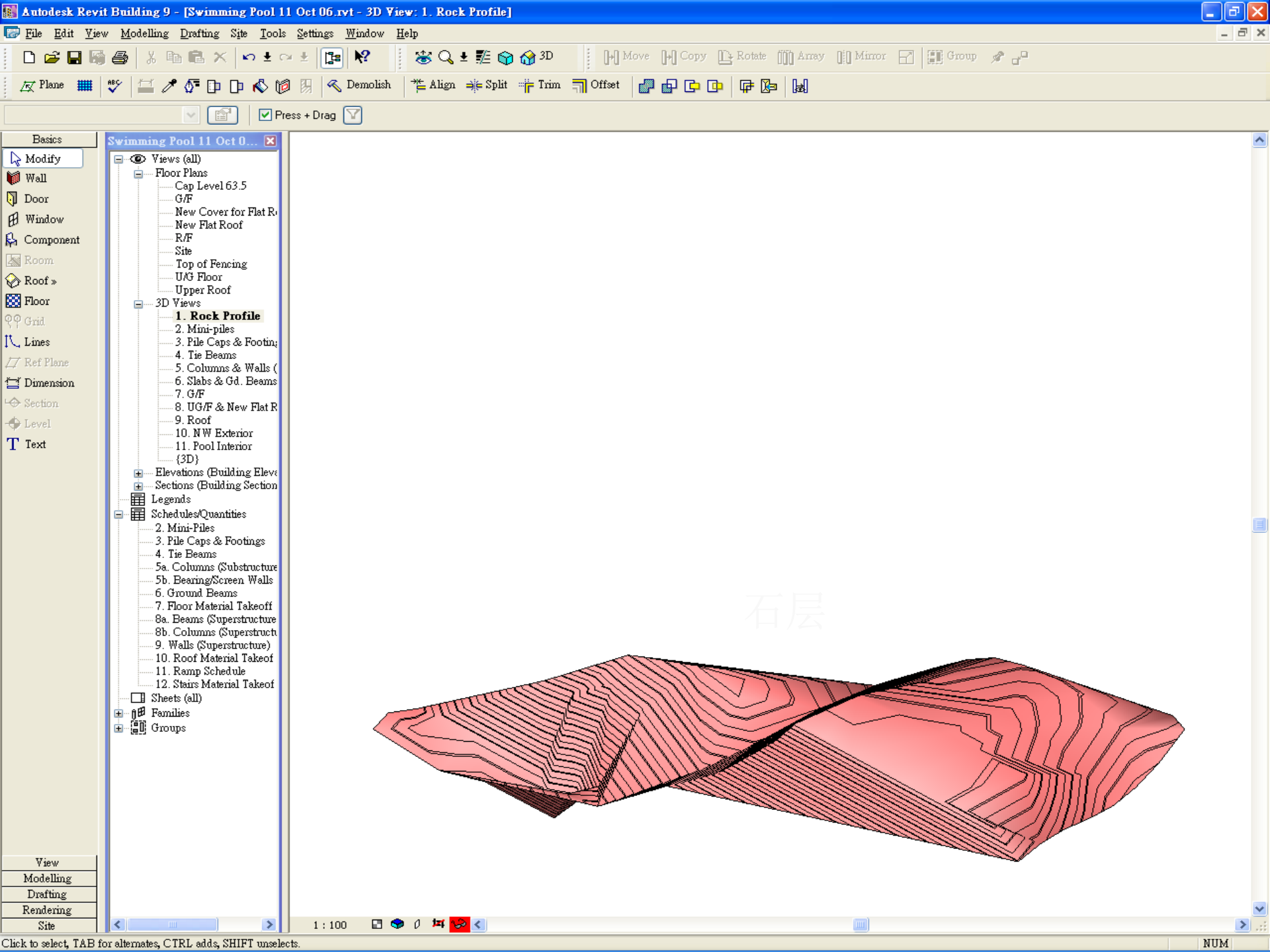
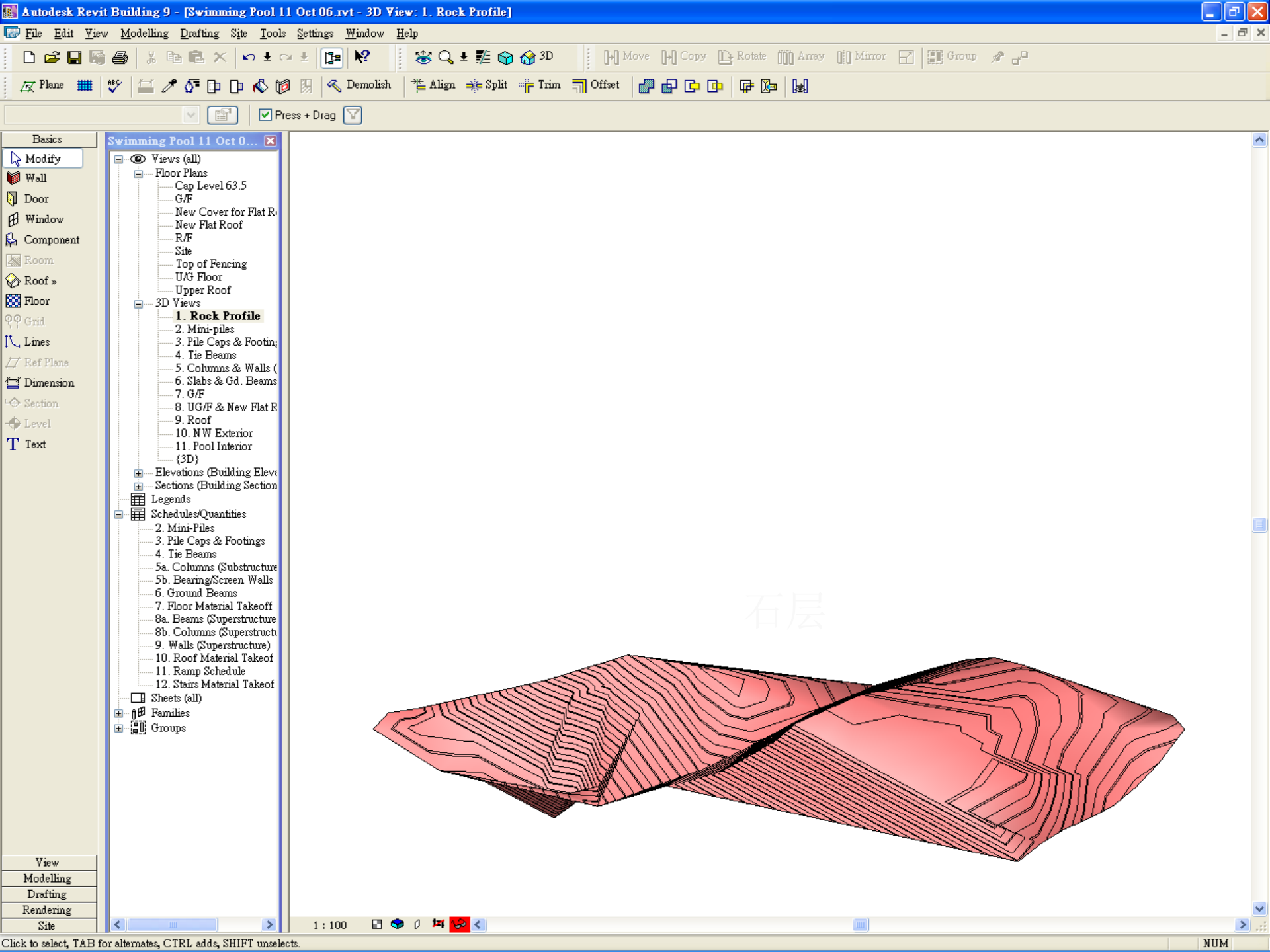
Entity Handle 2AD6
 Path File ->File ->B3HVAC_Duct.nwd ->H-Ductwork-G -
 >Duct

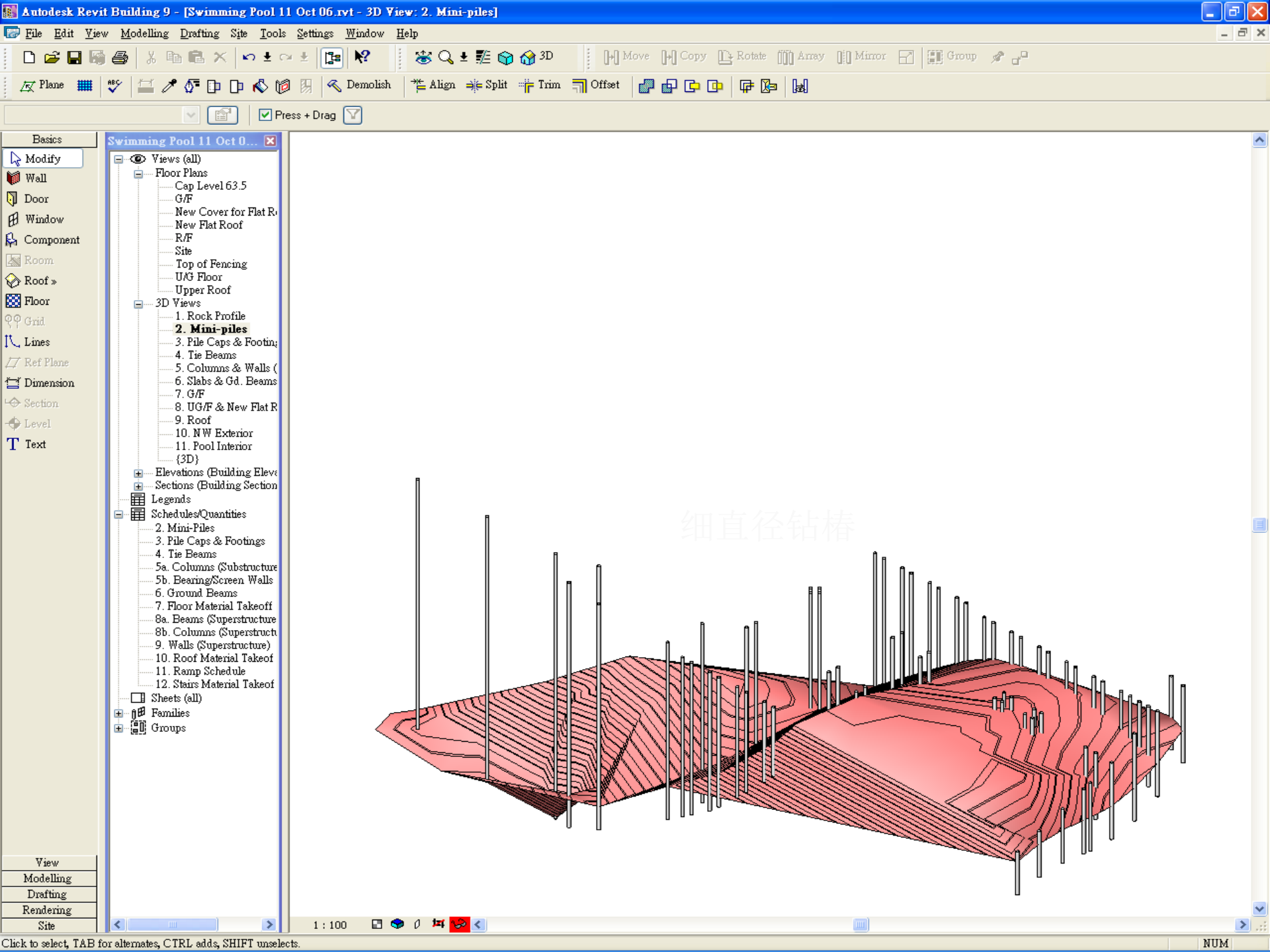


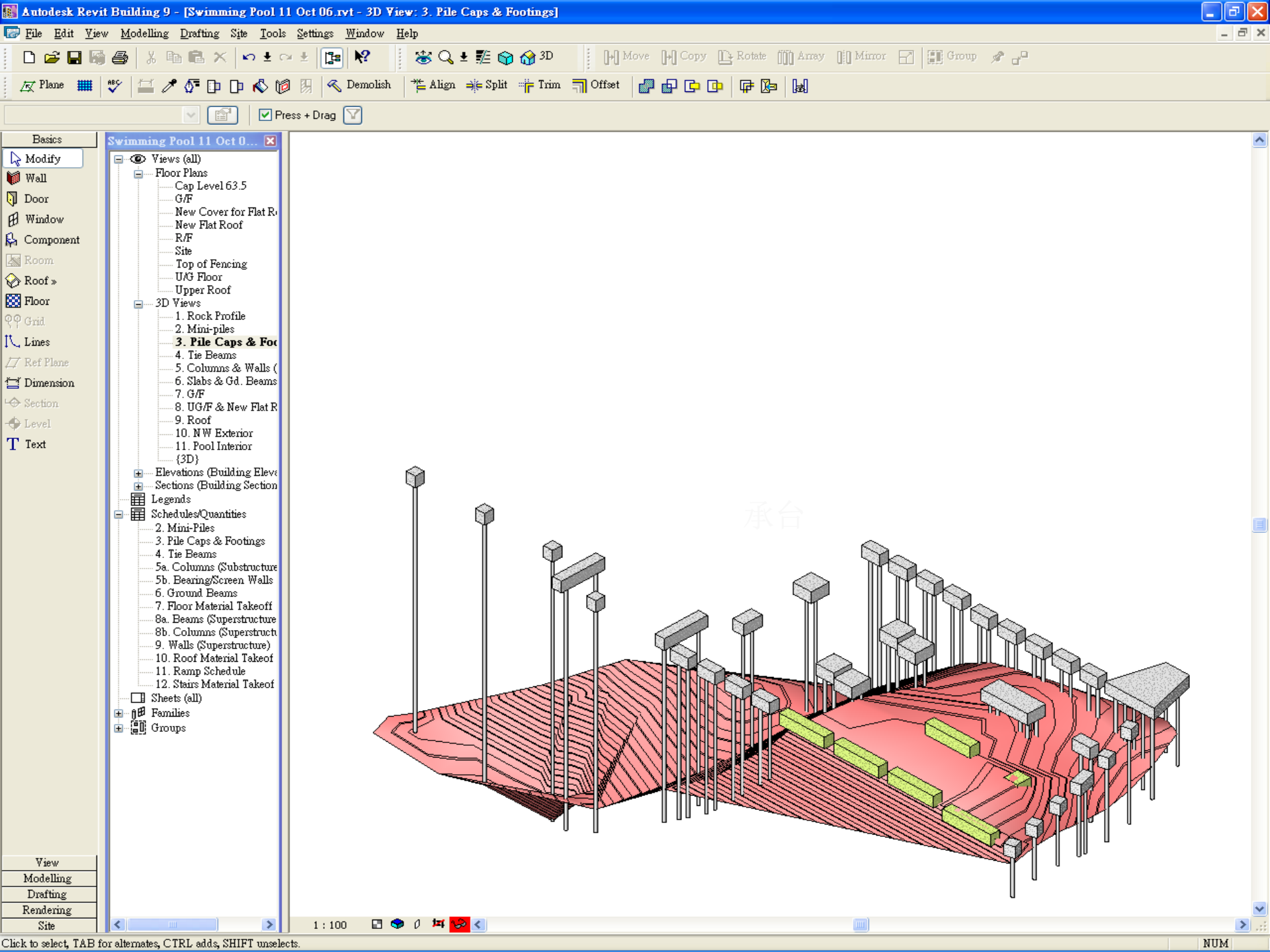
Use of Building Information Modeling (BIM)

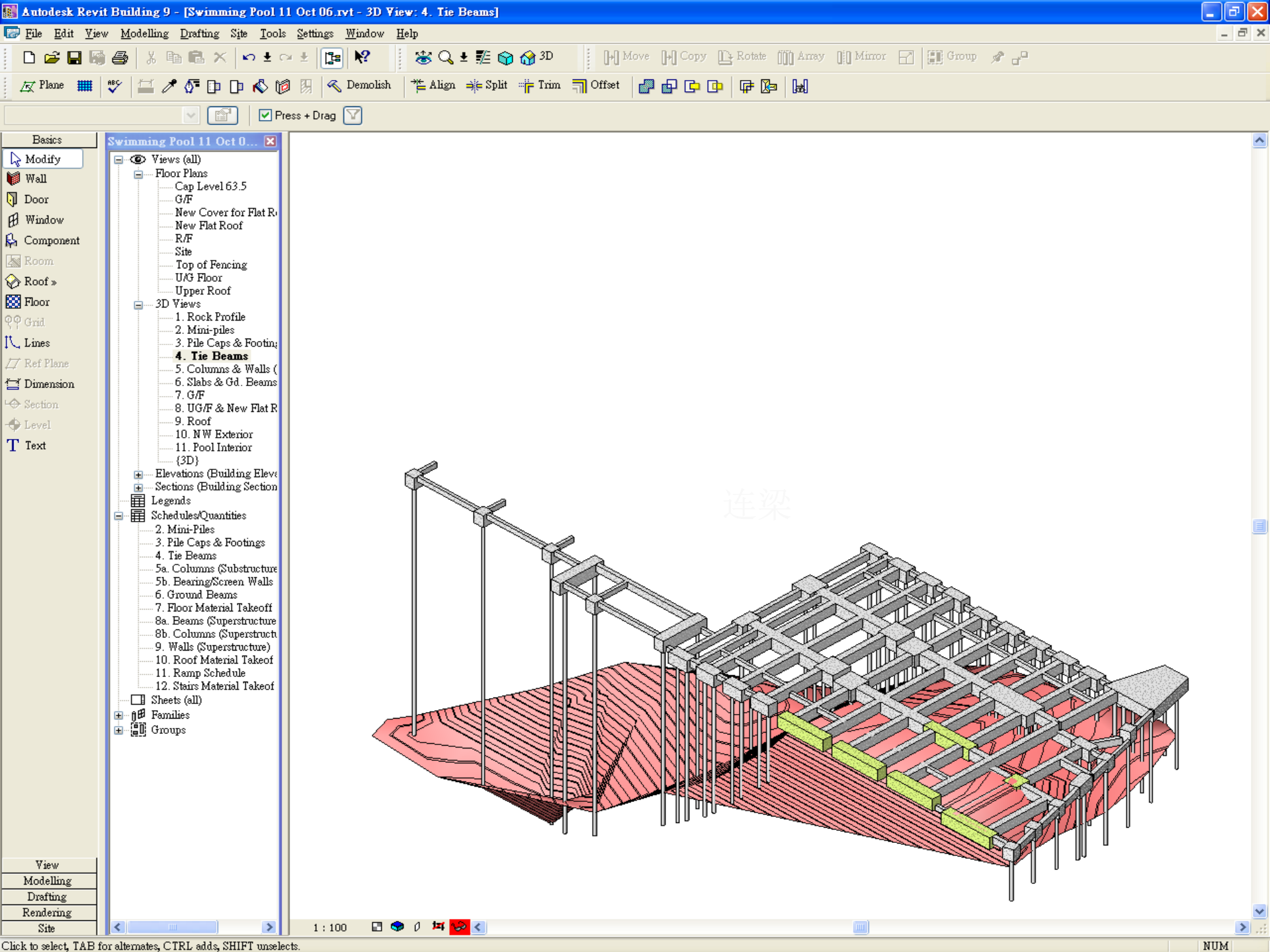


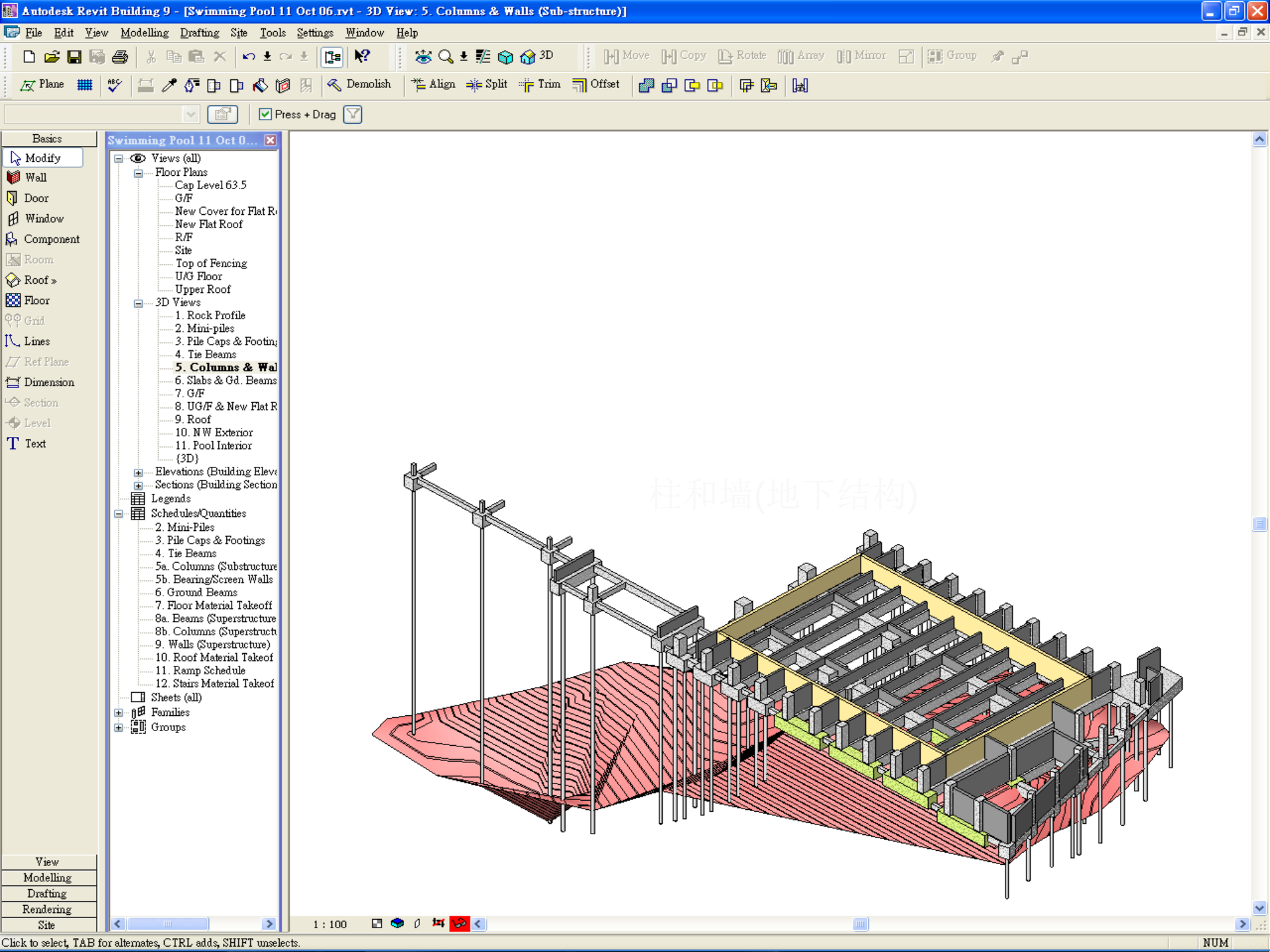
1. Design visualization
2. Drawing Productions
3. Services Co-ordination and Clash detection with other disciplines
- 4. Quantity taking and preparation of Tender Document** 数量拾い及び入札書類の作成
5. Automated Statutory Submission
6. Scientific analysis of different environmental aspects
7. Supply Chain Integration with the manufacturing and production
8. Complex Geometry

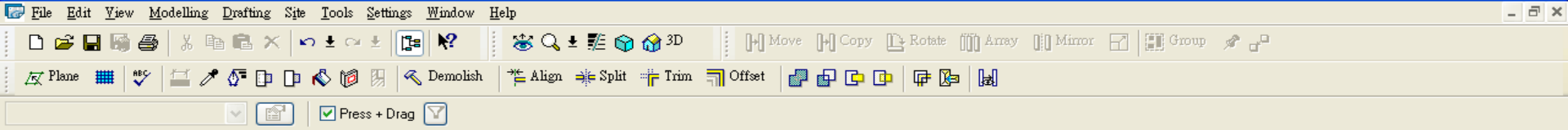












Basics

Modify

Wall

Door

Window

Component

Room

Roof »

Floor

Grid

Lines

Ref Plane

Dimension

Section

Level

Text

View

Modelling

Drafting

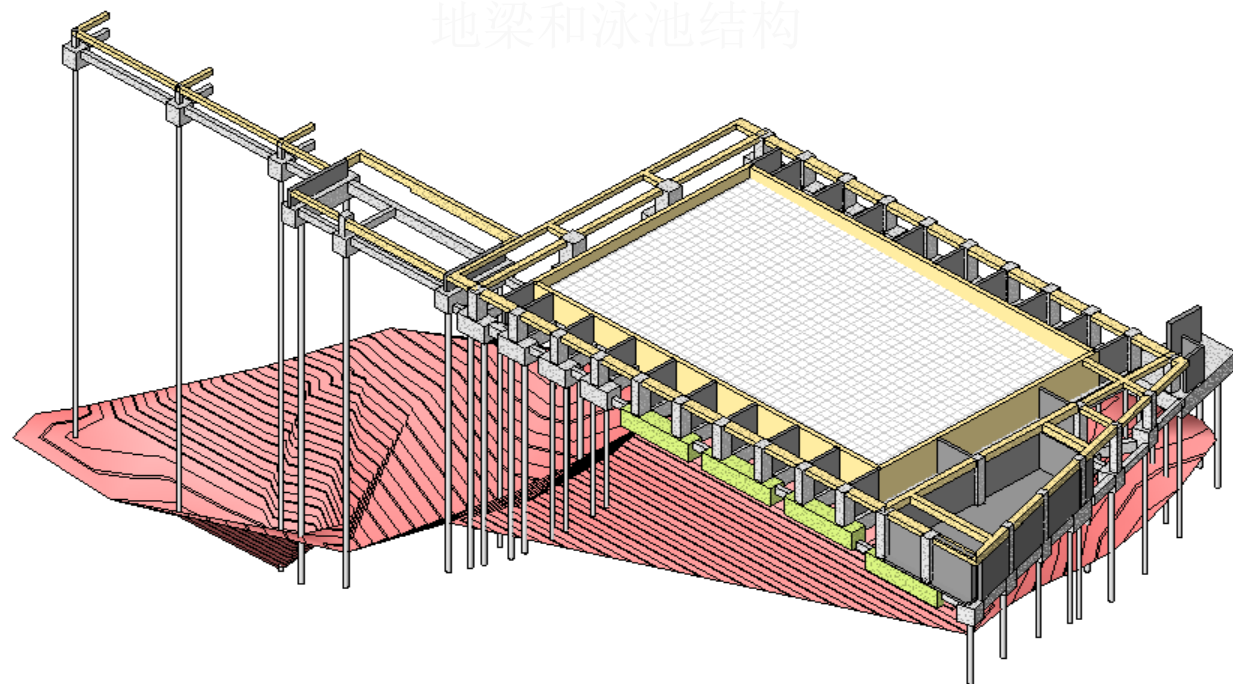
Rendering

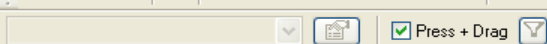
Site

Swimming Pool 11 Oct 06.rvt - 3D View: 6. Slabs & Gd. Beams (Sub-structure)

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 & Footings
 - 4. Tie Beams
 - 5. Columns & Walls (Substructure)
 - 6. Slabs & Gd. Beams (Superstructure)**
 - 7. G/F
 - 8. UG/F & New Flat R
 - 9. Roof
 - 10. NW Exterior
 - 11. Pool Interior (3D)
- Elevations (Building Elevations)
- Sections (Building Sections)
- 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 (Superstructure)
 - 9. Walls (Superstructure)
 - 10. Roof Material Takeoff
 - 11. Ramp Schedule
 - 12. Stairs Material Takeoff
- Sheets (all)
- Families
- Groups





Basics

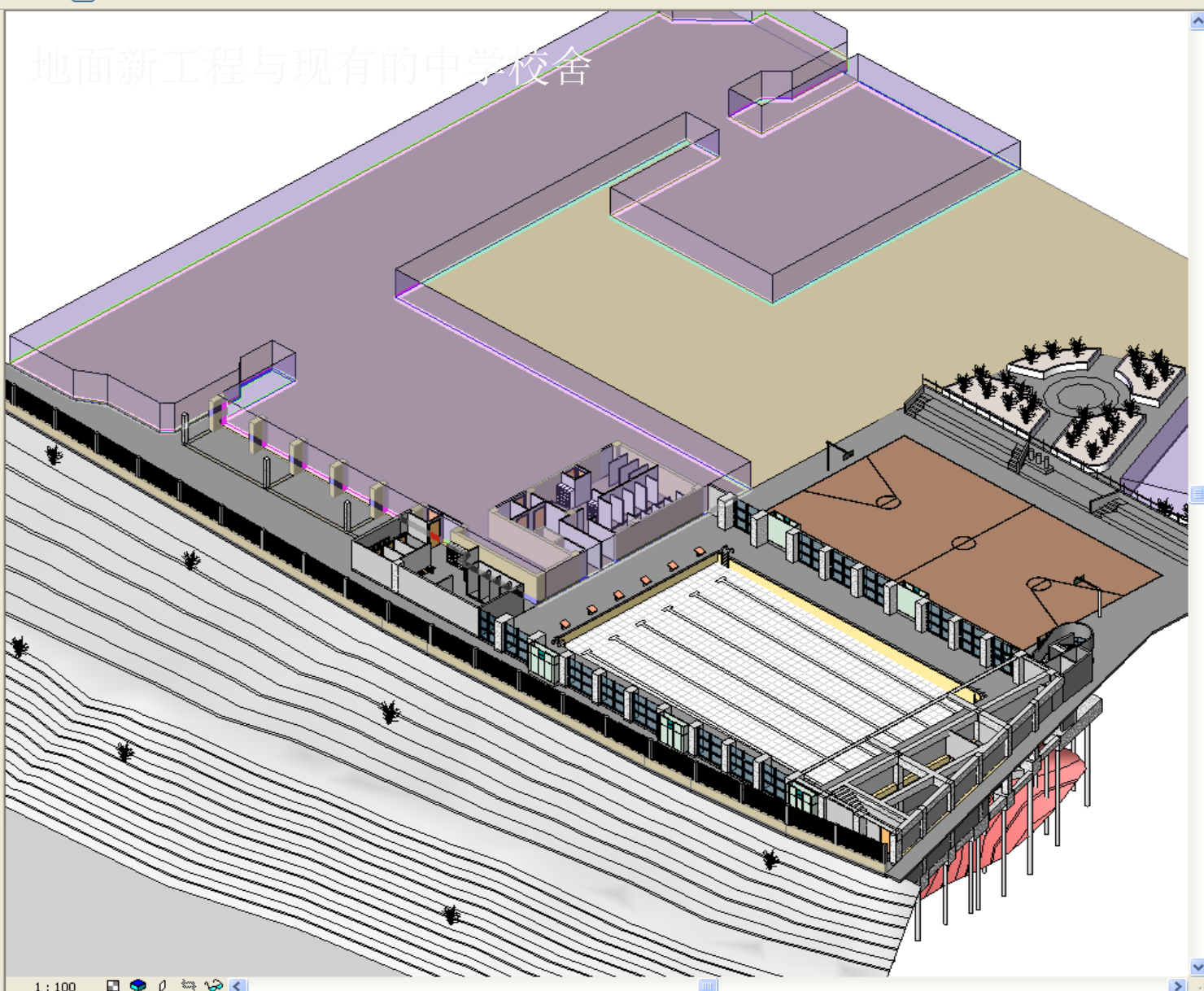
- Modify
- Wall
- Door
- Window
- Component
- Room
- Roof
- Floor
- Grid
- Lines
- Ref Plane
- Dimension
- Section
- Level
- Text

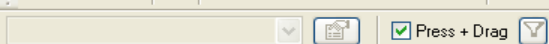
Swimming Pool 11 Oct 06.rvt - 3D View: 7. G/F

- 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
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 - 5. Columns & Walls (
 - 6. Slabs & Gd. Beams
 - 7. G/F**
 - 8. UG/F & New Flat R
 - 9. Roof
 - 10. NW Exterior
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 - Elevations (Building Elevations)
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 - 8a. Beams (Superstructure)
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 - 9. Walls (Superstructure)
 - 10. Roof Material Takeoff
 - 11. Ramp Schedule
 - 12. Stairs Material Takeoff
 - Sheets (all)
 - Families
 - Groups

View

- Modelling
- Drafting
- Rendering
- Site





Basics

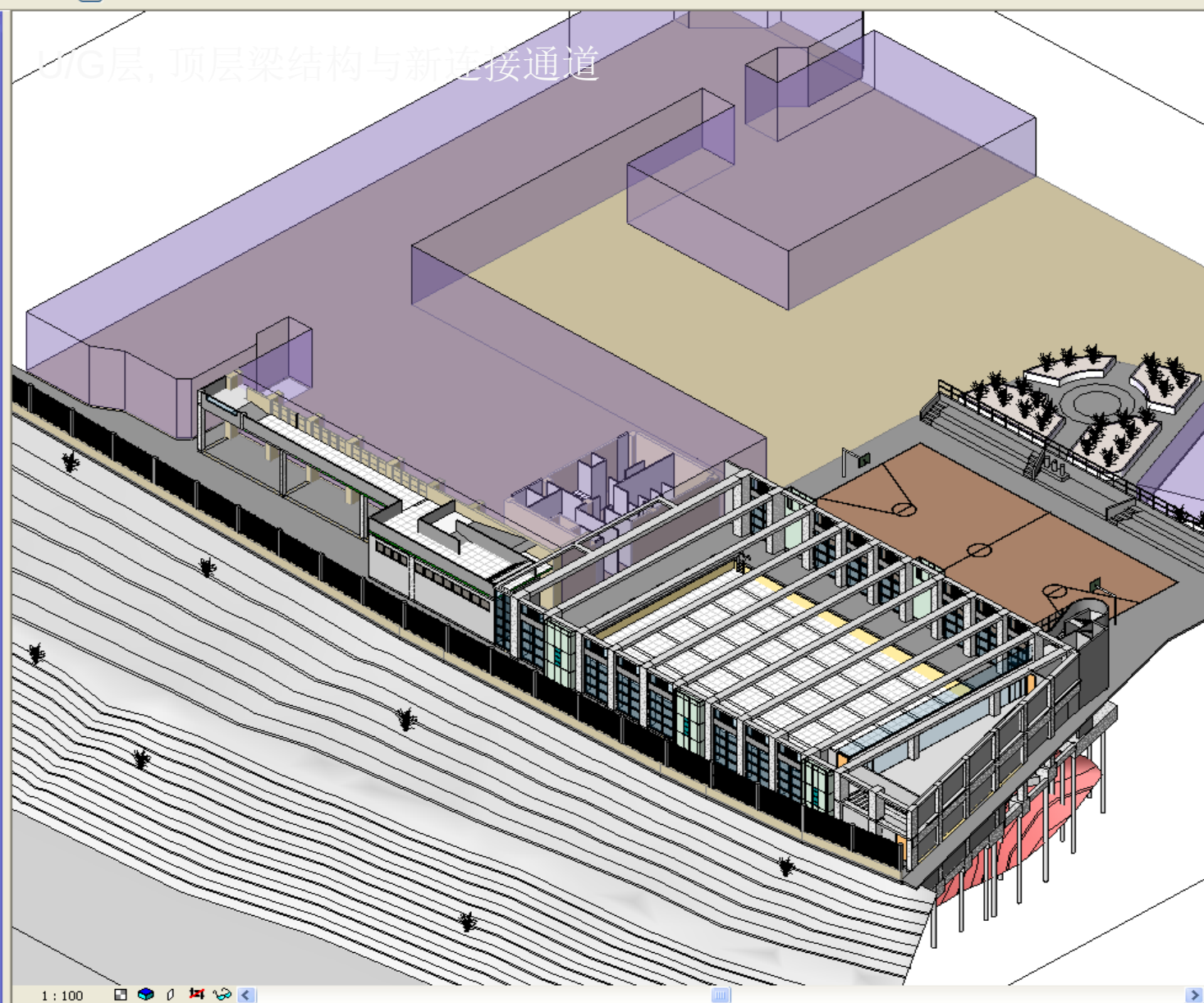
- Modify
- Wall
- Door
- Window
- Component
- Room
- Roof >
- Floor
- Grid
- Lines
- Ref Plane
- Dimension
- Section
- Level
- Text

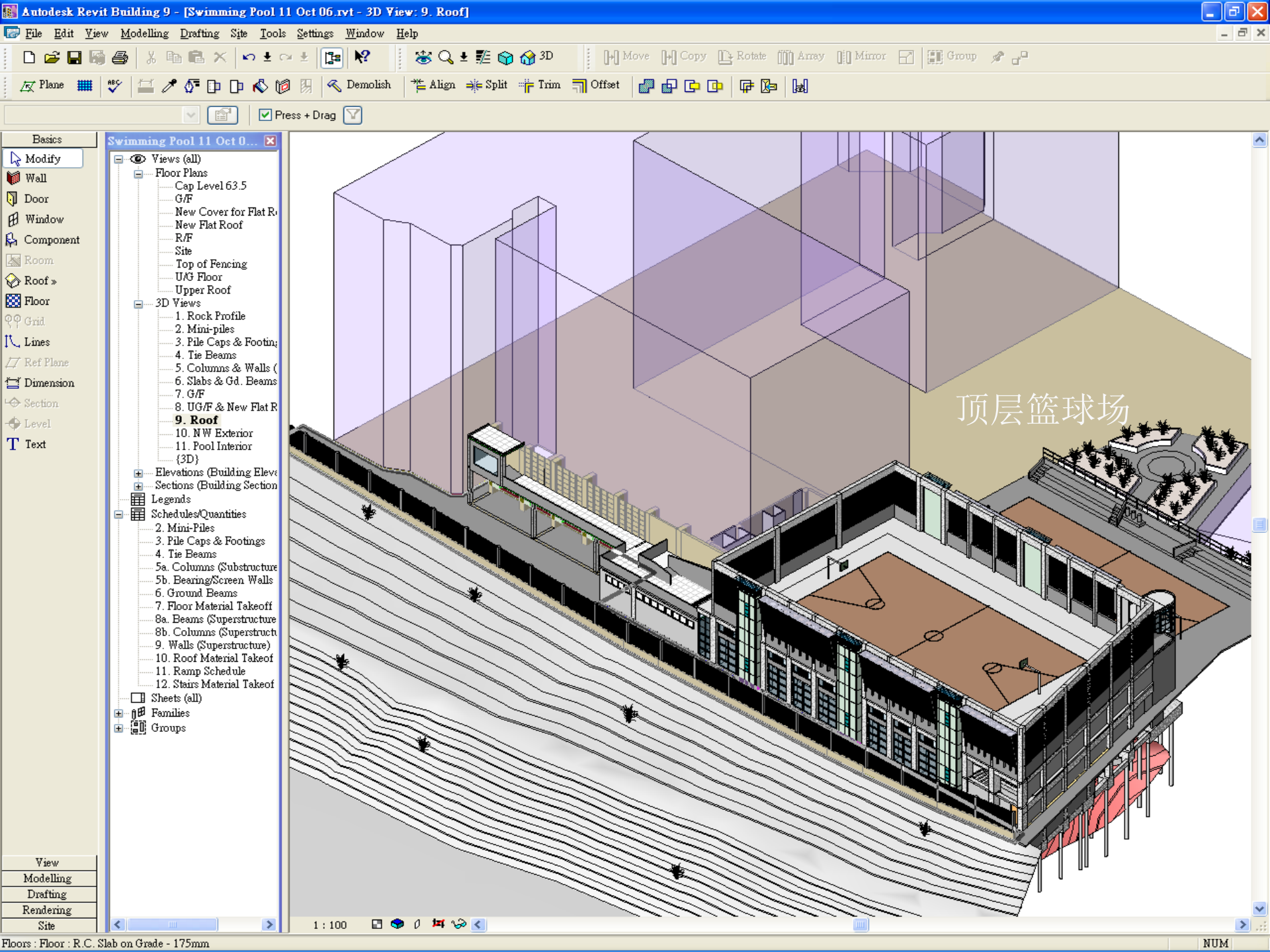
Swimming Pool 11 Oct 0...

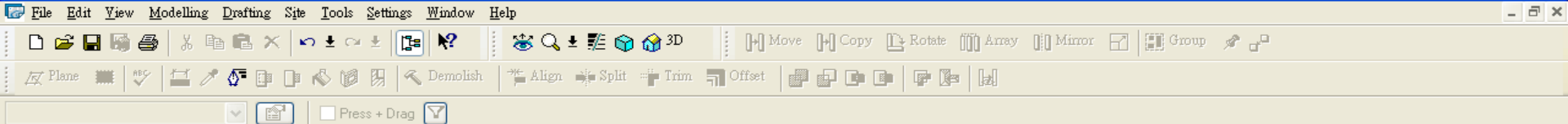
- Views (all)
 - Floor Plans
 - Cap Level 63.5
 - G/F
 - New Cover for Flat R
 - New Flat Roof
 - R/F
 - Site
 - Top of Fencing
 - UG Floor
 - Upper Roof
 - 3D Views
 - 1. Rock Profile
 - 2. Mini-piles
 - 3. Pile Caps & Footing
 - 4. Tie Beams
 - 5. Columns & Walls (
 - 6. Slabs & Gd. Beams
 - 7. G/F
 - 8. UG/F & New Fl**
 - 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
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 - 5a. Columns (Substructure
 - 5b. Bearing/Screen Walls
 - 6. Ground Beams
 - 7. Floor Material Takeoff
 - 8a. Beams (Superstructure
 - 8b. Columns (Superstruct
 - 9. Walls (Superstructure)
 - 10. Roof Material Takeof
 - 11. Ramp Schedule
 - 12. Stairs Material Takeof
 - Sheets (all)
 - Families
 - Groups

View

- Modelling
- Drafting
- Rendering
- Site







Basics

Modify

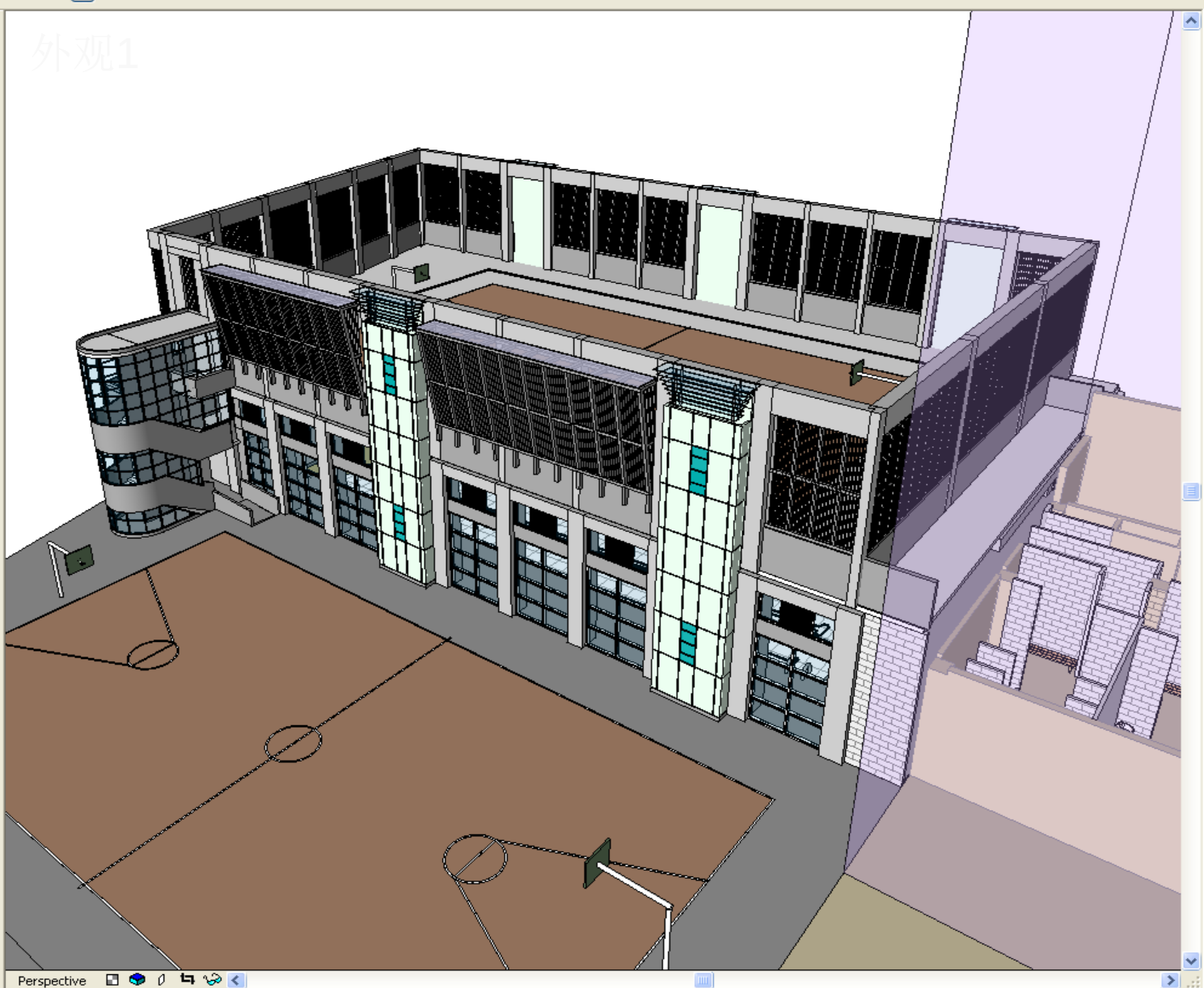
- Wall
- Door
- Window
- Component
- Room
- Roof
- Floor
- Grid
- Lines
- Ref Plane
- Dimension
- Section
- Level
- Text

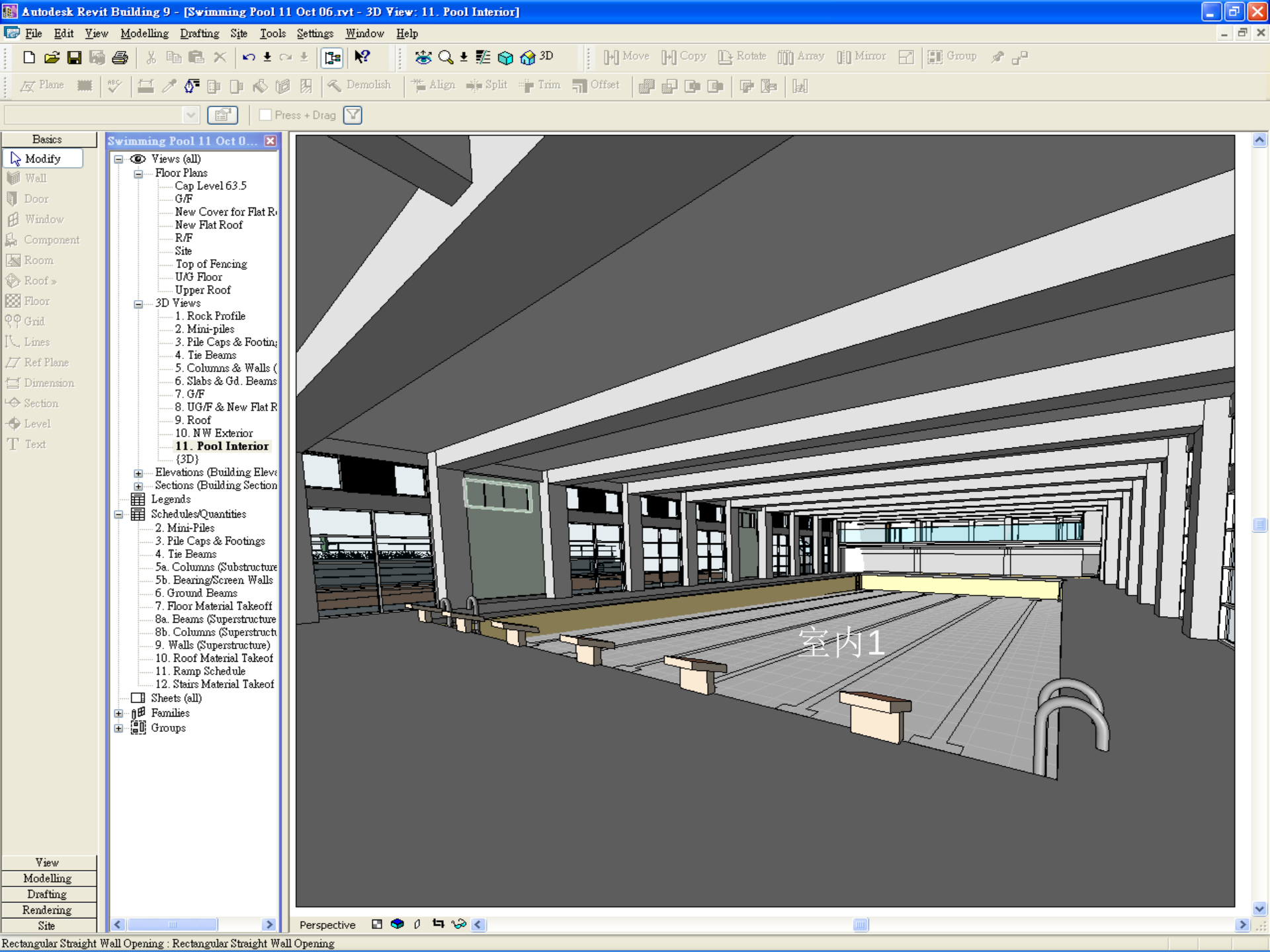
Swimming Pool 11 Oct 06.rvt - 3D View: 10. NW Exterior

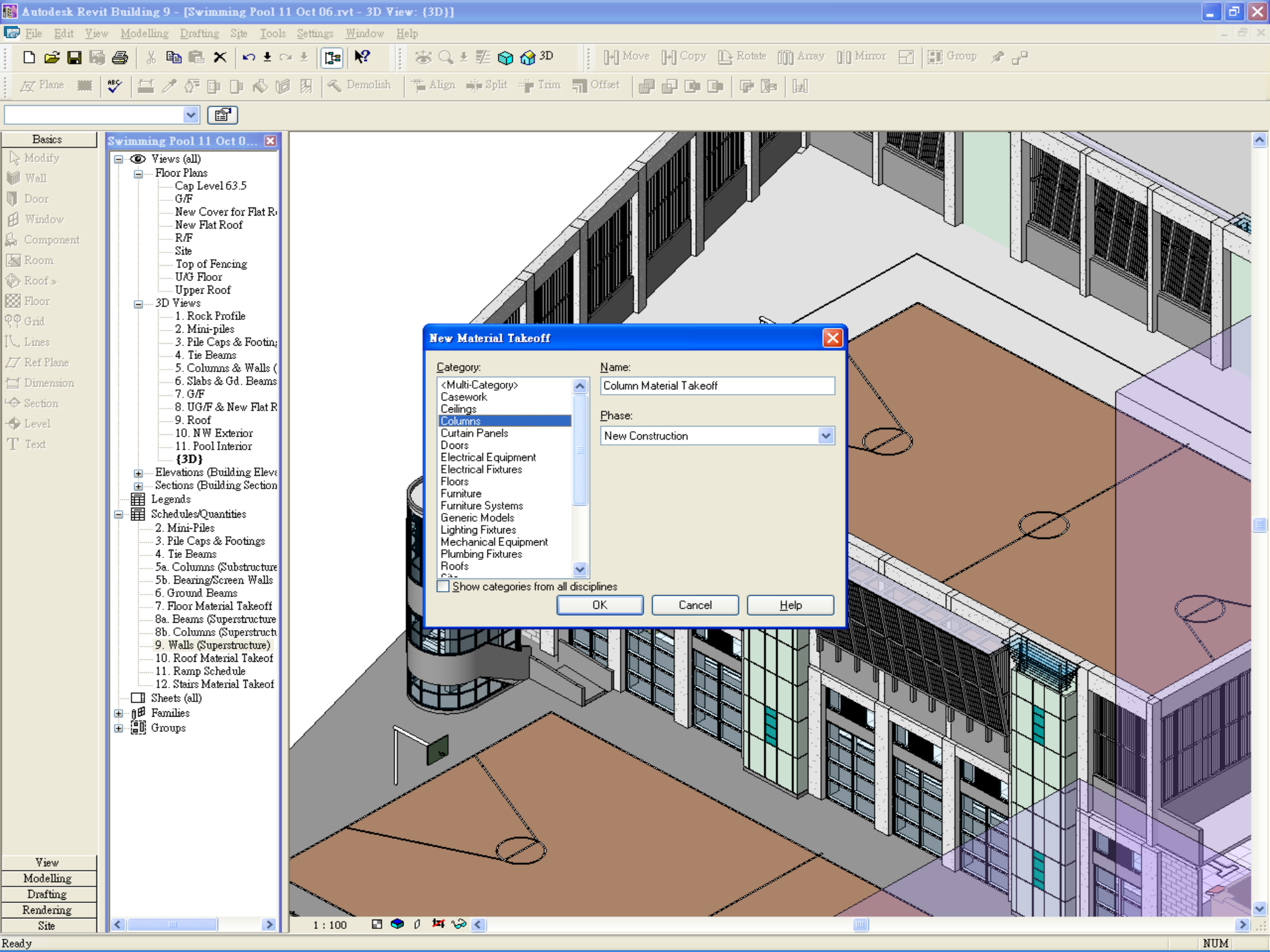
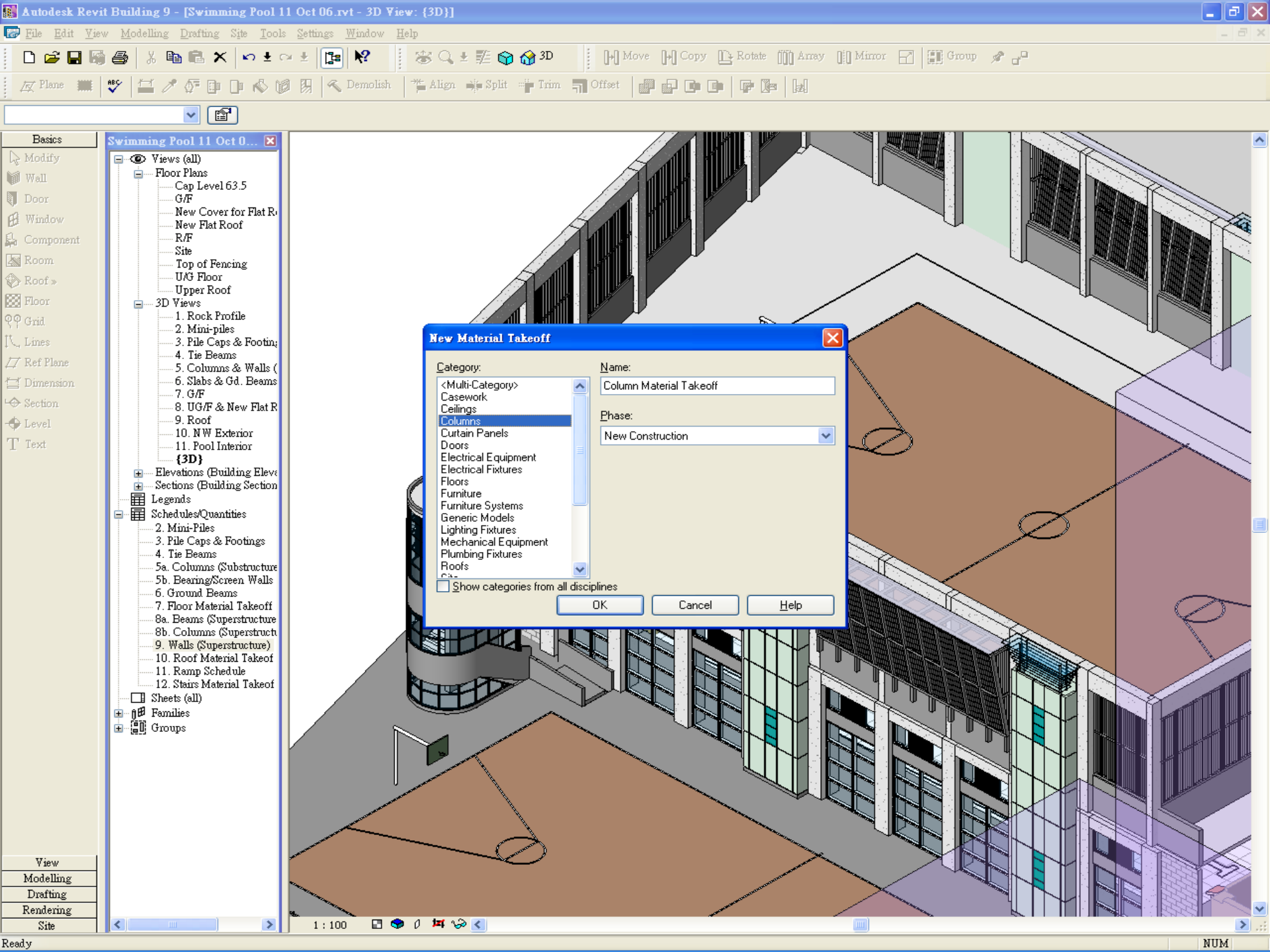
- Views (all)
 - Floor Plans
 - Cap Level 63.5
 - G/F
 - New Cover for Flat R
 - New Flat Roof
 - R/F
 - Site
 - Top of Fencing
 - UG Floor
 - Upper Roof
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 - 1. Rock Profile
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 - 6. Slabs & Gd. Beams
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 - 9. Roof
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 - 11. Pool Interior (3D)
 - Elevations (Building Elevations)
 - Sections (Building Sections)
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 - 9. Walls (Superstructure)
 - 10. Roof Material Takeoff
 - 11. Ramp Schedule
 - 12. Stairs Material Takeoff
 - Sheets (all)
 - Families
 - Groups

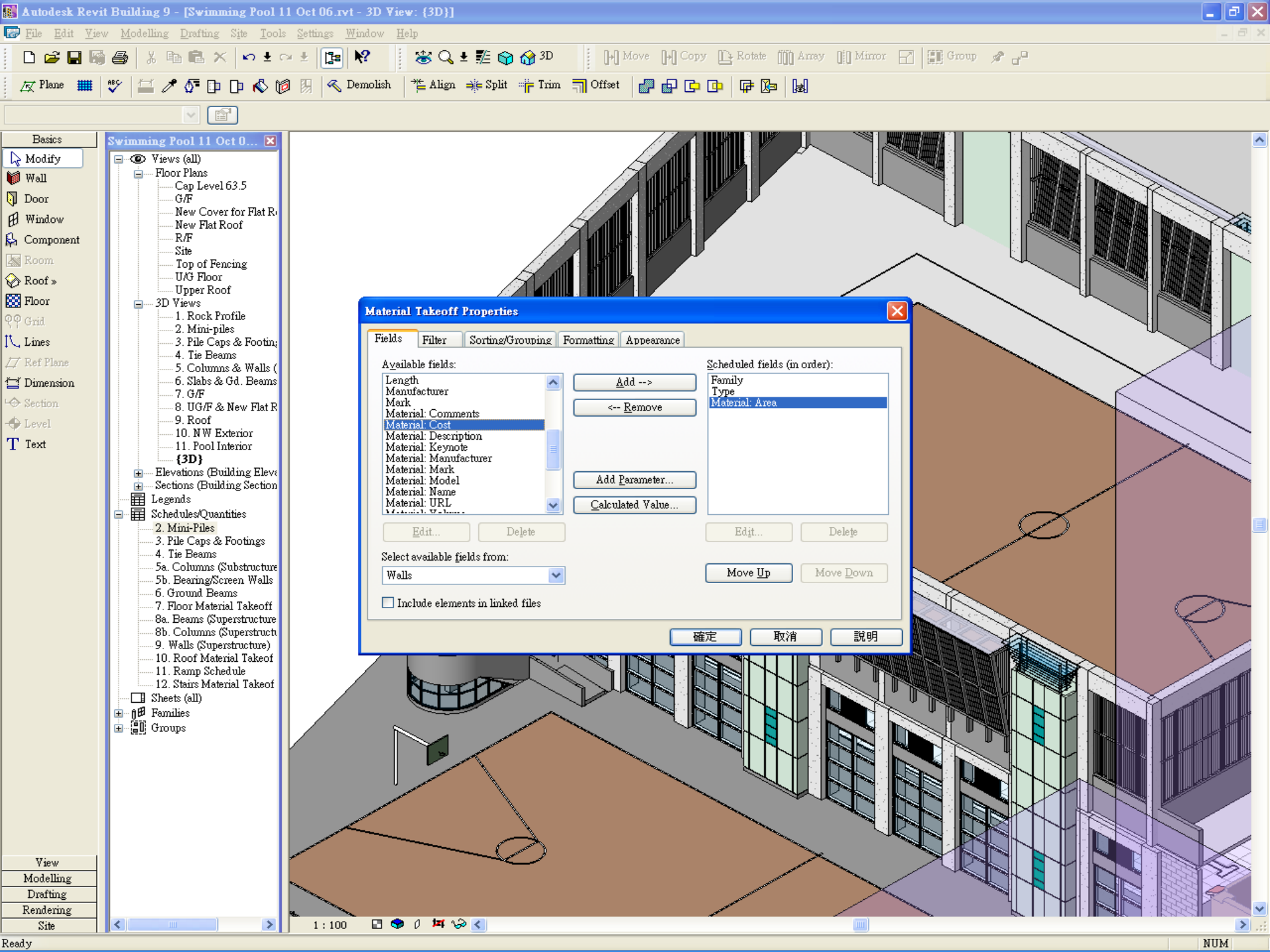
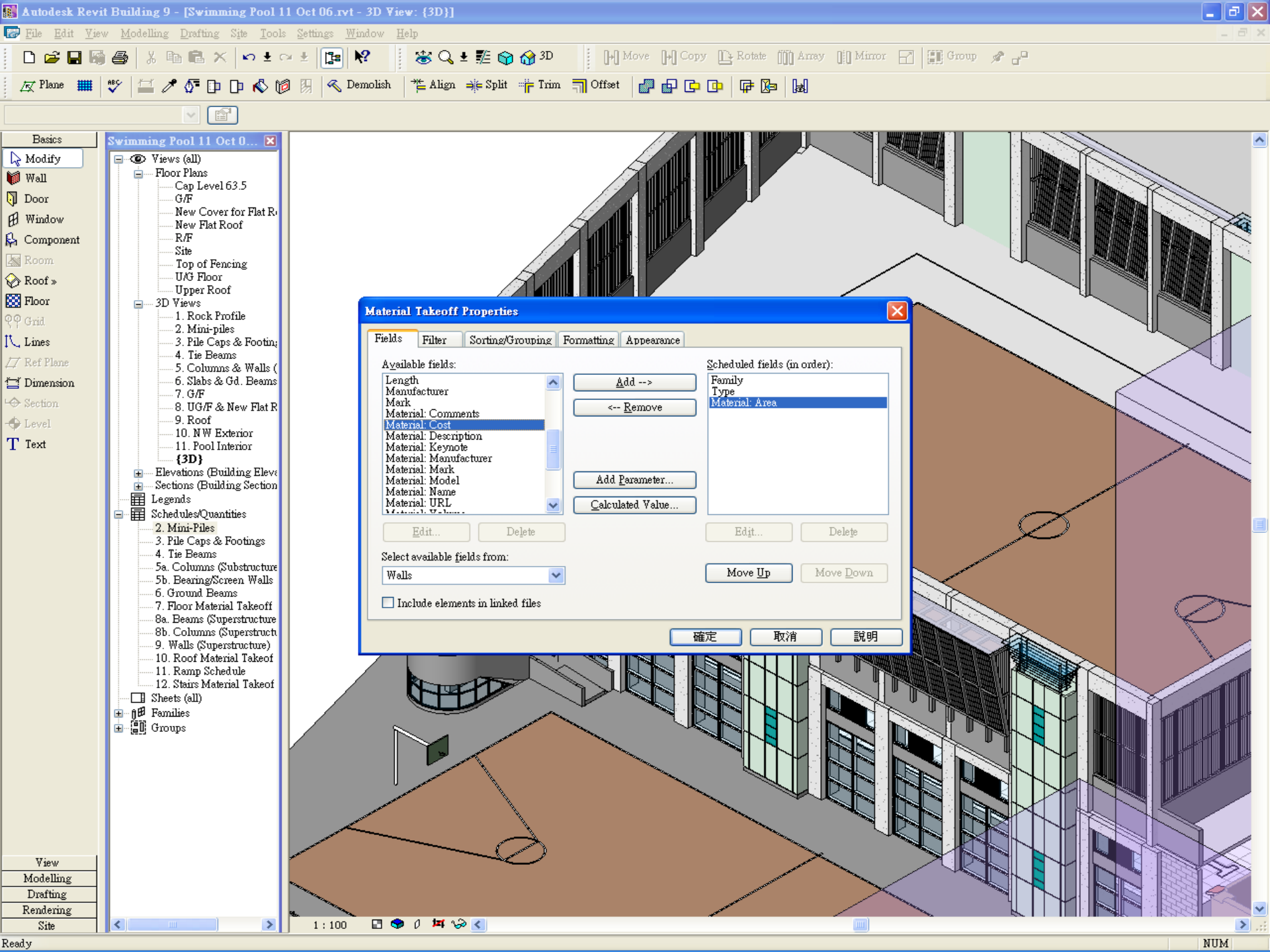
View

- Modelling
- Drafting
- Rendering
- Site









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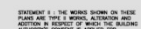
WAIVED – MasterSpec-Revit

Use of Building Information Modeling



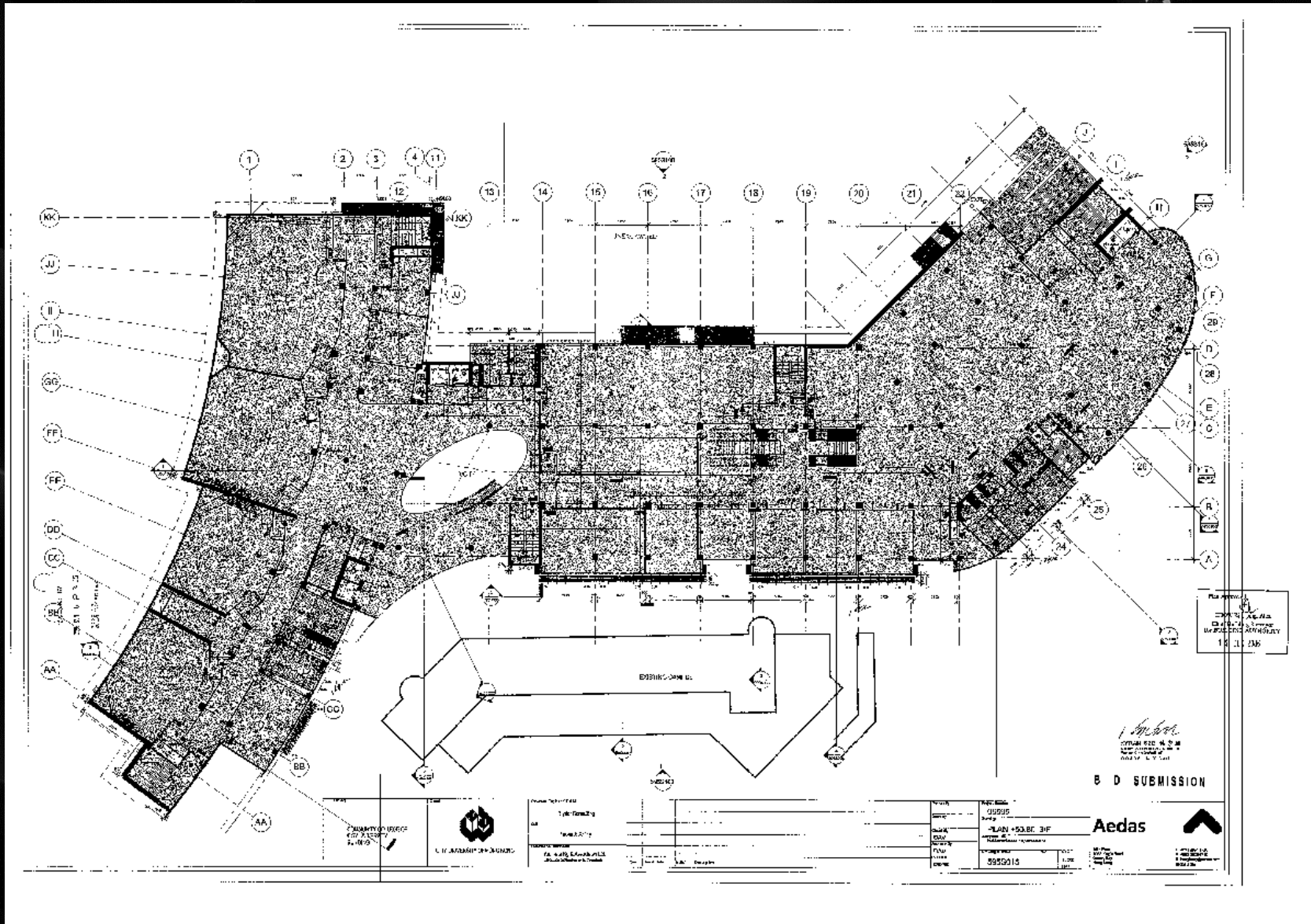
1. Design visualization
2. Drawing Productions
3. Services Co-ordination and Clash detection with other disciplines
4. Quantity taking and preparation of Tender Document
- 5. Automated Statutory Submission** 確認申請図書作成の自動化
6. Scientific analysis of different environmental aspects
7. Supply Chain Integration with the manufacturing and production
8. Complex Geometry

NCIO



STATUTORY SUBMISSION

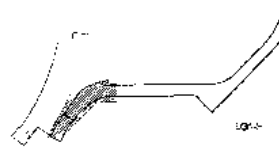
NCIC



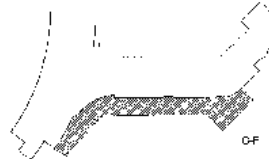
STATUTORY SUBMISSION



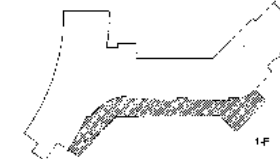
① EVA of Level 34.00_LG2/F
1:1000



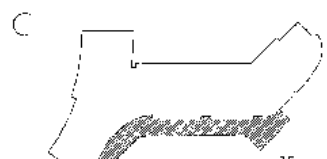
② EVA of Level 37.80_LG1/F
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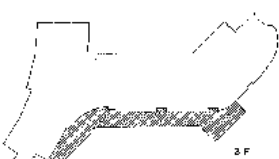
③ EVA of Level 41.60_GF
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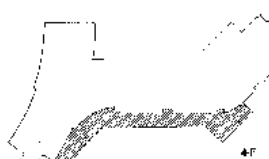
④ EVA of Level 45.60_1/F
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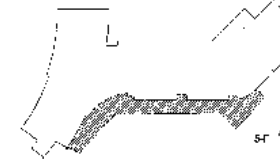
⑤ EVA of Level 49.60_2/F
1:1000



⑥ EVA of Level 53.80_3/F
1:1000

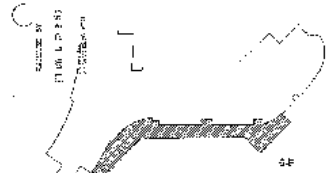


⑦ EVA of Level 58.20_4/F
1:1000



⑧ EVA of Level 62.00_5/F
1:1000

B D SUBMISSION



⑨ EVA of Level 65.80_6/F
1:1000

*Hatch area represents the total length of the building facade served by the EVA

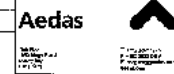
CALCULATION ON TOTAL LENGTH OF BUILDING FACADE TO BE SERVED BY EVA AND PERCENTAGE OF SUCH LENGTH OVER THE TOTAL LENGTH OF ALL THE PERIMETER WALLS OF THE BUILDING

LEVEL	LEVEL NO.	LEVEL DESCRIPTION	LEVEL AREA (SQ. M)	LEVEL PERIMETER (M)	LEVEL FACADE LENGTH (M)	PERCENTAGE (%)
LG2	34.00	LG2/F	1000	100	10	10%
LG1	37.80	LG1/F	1000	100	10	10%
GF	41.60	GF	1000	100	10	10%
1/F	45.60	1/F	1000	100	10	10%
2/F	49.60	2/F	1000	100	10	10%
3/F	53.80	3/F	1000	100	10	10%
4/F	58.20	4/F	1000	100	10	10%
5/F	62.00	5/F	1000	100	10	10%
6/F	65.80	6/F	1000	100	10	10%

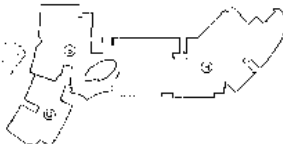
LEVEL	LEVEL NO.	LEVEL DESCRIPTION	LEVEL AREA (SQ. M)	LEVEL PERIMETER (M)	LEVEL FACADE LENGTH (M)	PERCENTAGE (%)
LG2	34.00	LG2/F	1000	100	10	10%
LG1	37.80	LG1/F	1000	100	10	10%
GF	41.60	GF	1000	100	10	10%
1/F	45.60	1/F	1000	100	10	10%
2/F	49.60	2/F	1000	100	10	10%
3/F	53.80	3/F	1000	100	10	10%
4/F	58.20	4/F	1000	100	10	10%
5/F	62.00	5/F	1000	100	10	10%
6/F	65.80	6/F	1000	100	10	10%

The Applicant
CITY OF KOWLOON
KOWLOON DISTRICT
KOWLOON DISTRICT
KOWLOON DISTRICT

DESIGNED BY CHONG YU-KUO DATE	APPROVED BY CHONG YU-KUO DATE	REVIEWED BY CHONG YU-KUO DATE	DATE 10/10/2020	PROJECT 10/10/2020	DATE 10/10/2020	DATE 10/10/2020	DATE 10/10/2020
--	--	--	-------------------------------	----------------------------------	-------------------------------	-------------------------------	-------------------------------



3(E,+53.80) COMPARTMENT CALCULATION



4/F (+58.20) COMPARTMENT CALCUALTION



50F (+52.03) COMPARTMENT CALCUALTION



ST (+65.80) COMPARTMENT CALCULATION



COMPARISON OF THE LAMP					
Lamp	WPC Code	WPC No.	WPC No.	WPC No.	WPC No.
WPC No.	WPC No.	WPC No.	WPC No.	WPC No.	WPC No.
WPC No. 1	WPC No. 2	WPC No. 3	WPC No. 4	WPC No. 5	WPC No. 6
WPC No. 7	WPC No. 8	WPC No. 9	WPC No. 10	WPC No. 11	WPC No. 12
WPC No. 13	WPC No. 14	WPC No. 15	WPC No. 16	WPC No. 17	WPC No. 18
WPC No. 19	WPC No. 20	WPC No. 21	WPC No. 22	WPC No. 23	WPC No. 24
WPC No. 25	WPC No. 26	WPC No. 27	WPC No. 28	WPC No. 29	WPC No. 30
WPC No. 31	WPC No. 32	WPC No. 33	WPC No. 34	WPC No. 35	WPC No. 36
WPC No. 37	WPC No. 38	WPC No. 39	WPC No. 40	WPC No. 41	WPC No. 42
WPC No. 43	WPC No. 44	WPC No. 45	WPC No. 46	WPC No. 47	WPC No. 48
WPC No. 49	WPC No. 50	WPC No. 51	WPC No. 52	WPC No. 53	WPC No. 54
WPC No. 55	WPC No. 56	WPC No. 57	WPC No. 58	WPC No. 59	WPC No. 60
WPC No. 61	WPC No. 62	WPC No. 63	WPC No. 64	WPC No. 65	WPC No. 66
WPC No. 67	WPC No. 68	WPC No. 69	WPC No. 70	WPC No. 71	WPC No. 72
WPC No. 73	WPC No. 74	WPC No. 75	WPC No. 76	WPC No. 77	WPC No. 78
WPC No. 79	WPC No. 80	WPC No. 81	WPC No. 82	WPC No. 83	WPC No. 84
WPC No. 85	WPC No. 86	WPC No. 87	WPC No. 88	WPC No. 89	WPC No. 90
WPC No. 91	WPC No. 92	WPC No. 93	WPC No. 94	WPC No. 95	WPC No. 96
WPC No. 97	WPC No. 98	WPC No. 99	WPC No. 100	WPC No. 101	WPC No. 102
WPC No. 103	WPC No. 104	WPC No. 105	WPC No. 106	WPC No. 107	WPC No. 108
WPC No. 109	WPC No. 110	WPC No. 111	WPC No. 112	WPC No. 113	WPC No. 114
WPC No. 115	WPC No. 116	WPC No. 117	WPC No. 118	WPC No. 119	WPC No. 120
WPC No. 121	WPC No. 122	WPC No. 123	WPC No. 124	WPC No. 125	WPC No. 126
WPC No. 127	WPC No. 128	WPC No. 129	WPC No. 130	WPC No. 131	WPC No. 132
WPC No. 133	WPC No. 134	WPC No. 135	WPC No. 136	WPC No. 137	WPC No. 138
WPC No. 139	WPC No. 140	WPC No. 141	WPC No. 142	WPC No. 143	WPC No. 144
WPC No. 145	WPC No. 146	WPC No. 147	WPC No. 148	WPC No. 149	WPC No. 150
WPC No. 151	WPC No. 152	WPC No. 153	WPC No. 154	WPC No. 155	WPC No. 156
WPC No. 157	WPC No. 158	WPC No. 159	WPC No. 160	WPC No. 161	WPC No. 162
WPC No. 163	WPC No. 164	WPC No. 165	WPC No. 166	WPC No. 167	WPC No. 168
WPC No. 169	WPC No. 170	WPC No. 171	WPC No. 172	WPC No. 173	WPC No. 174
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WPC No. 247	WPC No. 248	WPC No. 249	WPC No. 250	WPC No. 251	WPC No. 252
WPC No. 253	WPC No. 254	WPC No. 255	WPC No. 256	WPC No. 257	WPC No. 258
WPC No. 259	WPC No. 260	WPC No. 261	WPC No. 262	WPC No. 263	WPC No. 264
WPC No. 265	WPC No. 266	WPC No. 267	WPC No. 268	WPC No. 269	WPC No. 270
WPC No. 271	WPC No. 272	WPC No. 273	WPC No. 274	WPC No. 275	WPC No. 276
WPC No. 277	WPC No. 278	WPC No. 279	WPC No. 280	WPC No. 281	WPC No. 282
WPC No. 283	WPC No. 284	WPC No. 285	WPC No. 286	WPC No. 287	WPC No. 288
WPC No. 289	WPC No. 290	WPC No. 291	WPC No. 292	WPC No. 293	WPC No. 294
WPC No. 295	WPC No. 296	WPC No. 297	WPC No. 298	WPC No. 299	WPC No. 300

Total Capacity of COCUB				
Location	Use	Area	Factor	Total Capacity
L/G/F	Office	275.442	9	3
G/F	Shop	54.208	3	1
G/F	Office	412.233	9	4
3/F	Restaurant	178.557	1	17
3/F	Kitchen	491.136	4.5	10
5/F	Office	212.144	9	23
6/F	Office	2031.236	9	22
6/F	Restaurant	178.557	1	17
6/F	Kitchen	186.561	4.5	4
6/F	Exhibition hall	704.233	2	35
Total number of students				600
Total				84

SCIENTIFIC METHOD: NUMBER & NATURE OF EXPLANATIONS BUT NOT THE HEURISTIC POWER

[illegible]
$$f(x) = \frac{1}{x^2} = x^{-2} \Rightarrow f'(x) = -2x^{-3} = -\frac{2}{x^3}$$

SHIP REPAIRS AND REPAIRS FOR BARGAINS OF CONSTRUCTION											
COMPACT SACRI	CLASS	TOTAL VOLUME CUBIC FEET	R.C. WALL 2" - 5" C.I.		R.C. BEAM		R.C. EXTERIOR		R.C. SLOPE		R.C. STAIR & ELEV.
			THK.	FEET	THK.	FEET	THK.	FEET	THK.	FEET	
A	NON-FIRE	1592.503	1	75	15	100	12	200	25	50	20
B	7" PLATE OF ASSEMBLY	98110.020	2	110	20	100	40	300	50	25	20
C	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
D	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
E	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
F	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
G	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
H	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
I	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
J	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
K	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
L	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
M	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
N	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
O	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
P	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
Q	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
R	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
S	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
T	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
U	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
V	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
W	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
X	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
Y	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20
Z	7" PLATE OF ASSEMBLY	144181.002	2	110	20	100	40	300	50	25	20

FI - approved
of
CHOWHUNG-ANG, ALAN
Chief Executive Officer
NEW HONG KONG AIRPORTS
13 JUL 2015

□ SUBMISSION



OTIS UNIVERSITY
1111 UNIVERSITY
BIRMINGHAM

317 UNB3:3FV 641093P7MG

741000 1-800-455-2891

[illegible][illegible]

Page 1 of 1

Table 1

* 2000/00/01
 * 2000/00/01
 * 2000/00/01

T 493 341 1708
* info@vda.vda.de
Fakultät für Wirtschaftswissenschaften

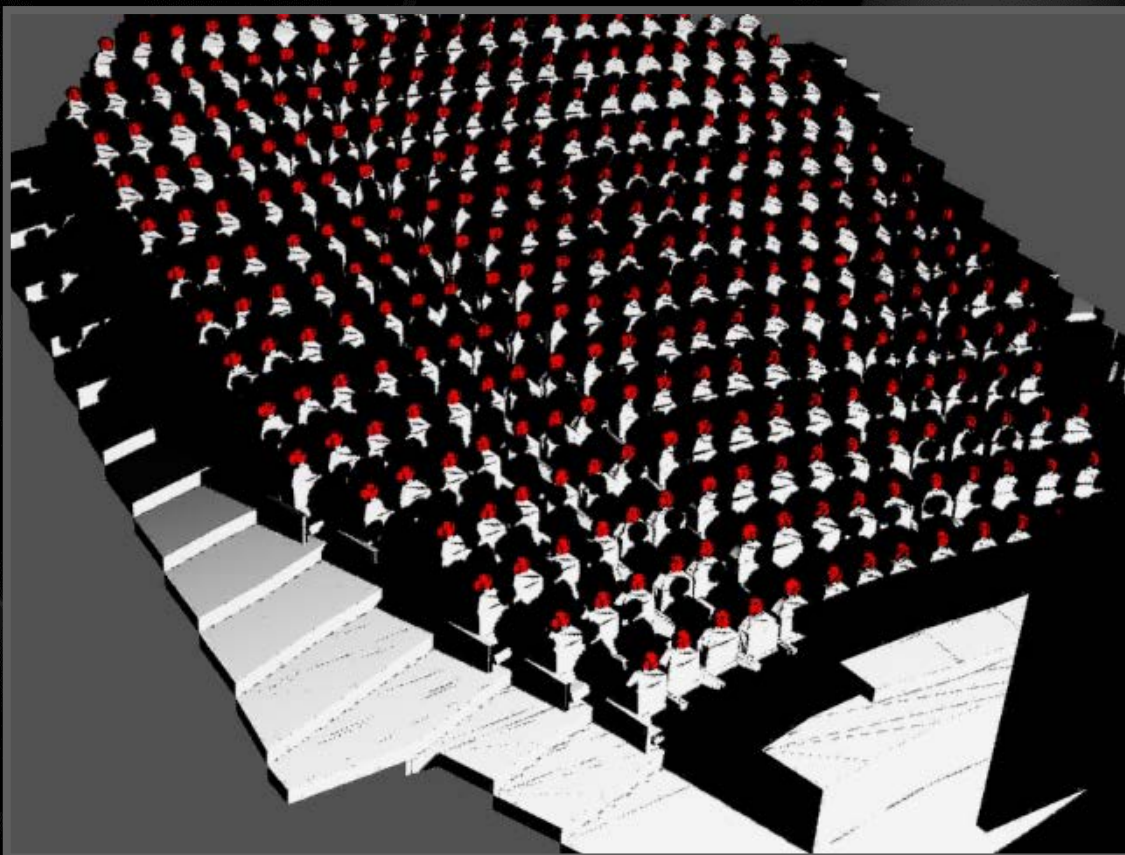
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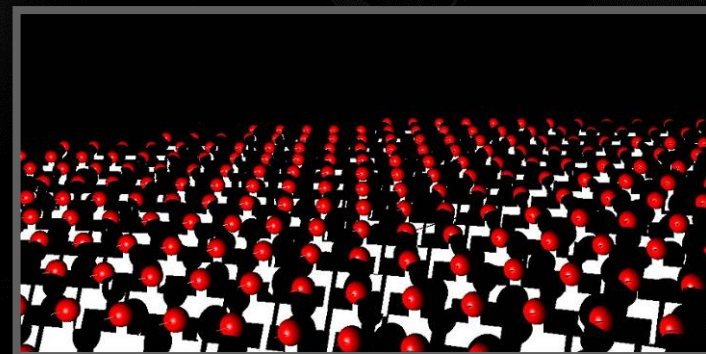
Use of Building Information Modeling



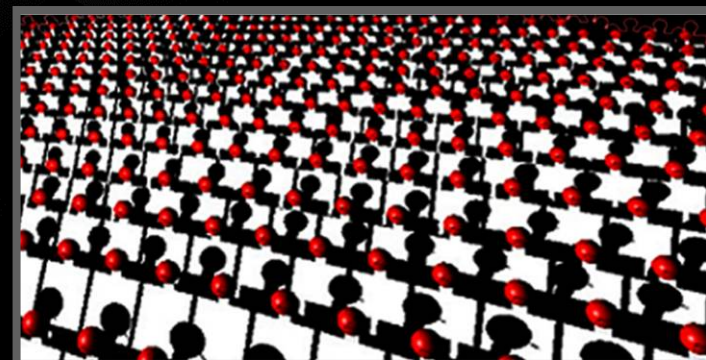
1. Design visualization
2. Drawing Productions
3. Services Co-ordination and Clash detection with other disciplines
4. Quantity taking and preparation of Tender Document
5. Automated Statutory Submission
- 6. Scientific analysis of different environmental aspects** 様々な環境
解析
7. Supply Chain Integration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



Radiating Light Method



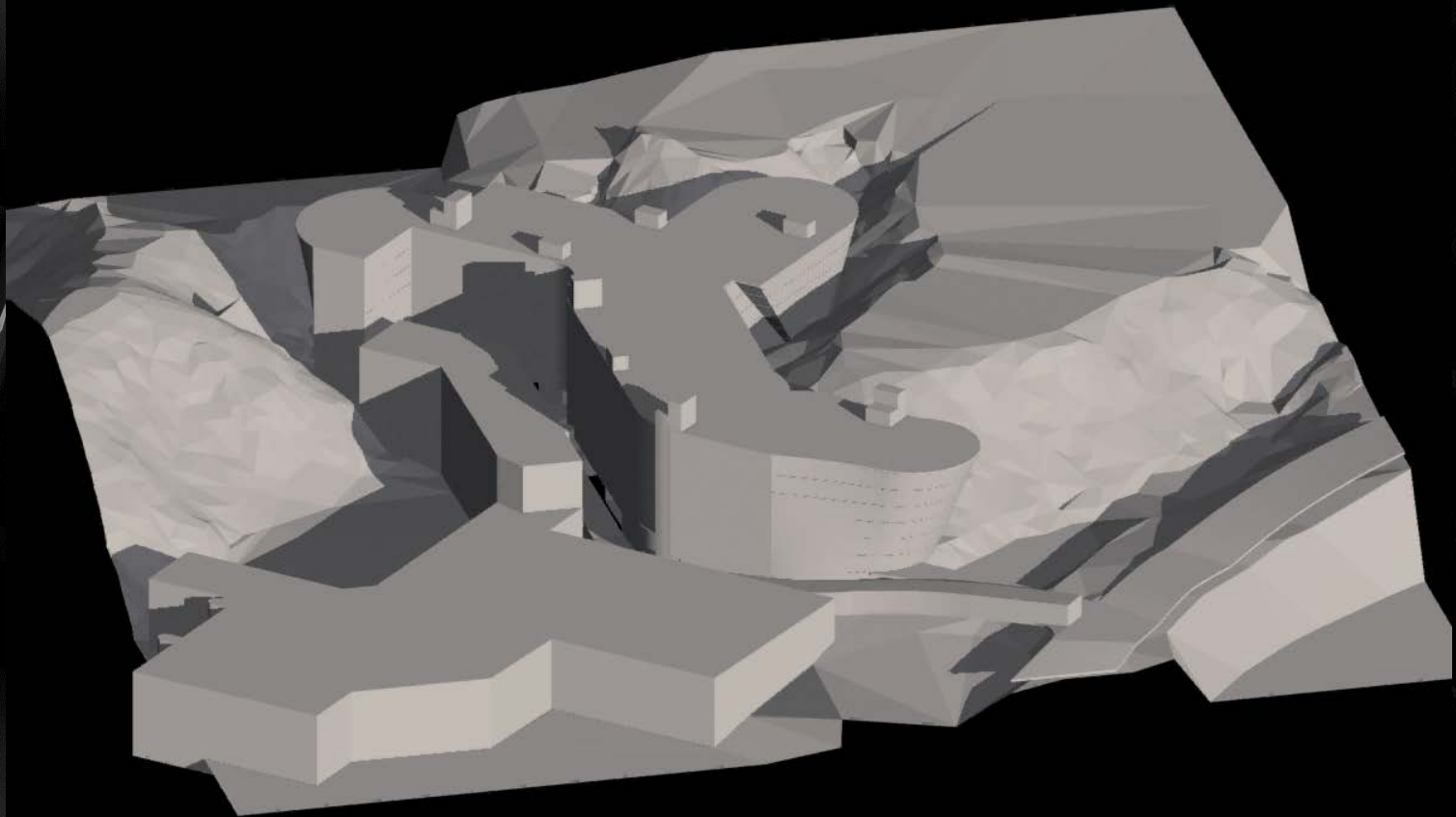
Unsatisfactory sightlines



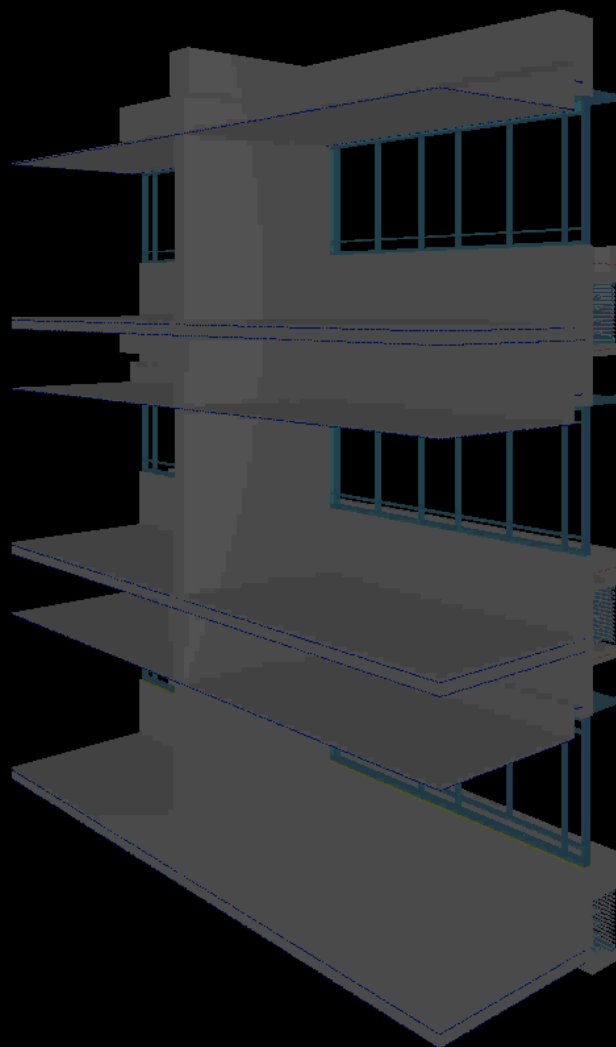
Satisfactory sightlines

ANALYSIS

NCIO



SUN STUDY



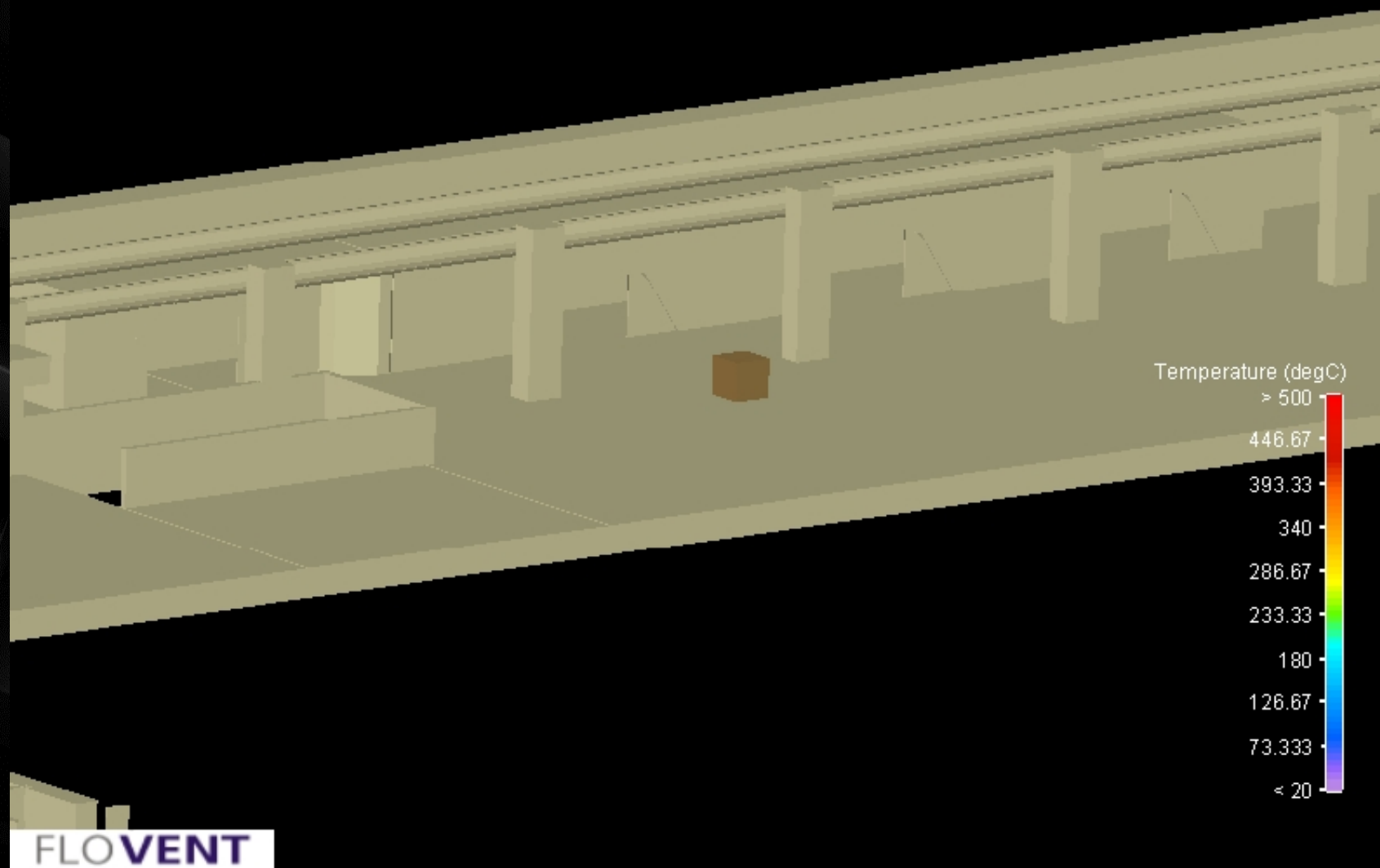
FAÇADE SOLAR STUDY

21/12/2006 7:00am – 6:00pm

ANALYSIS

NCIO

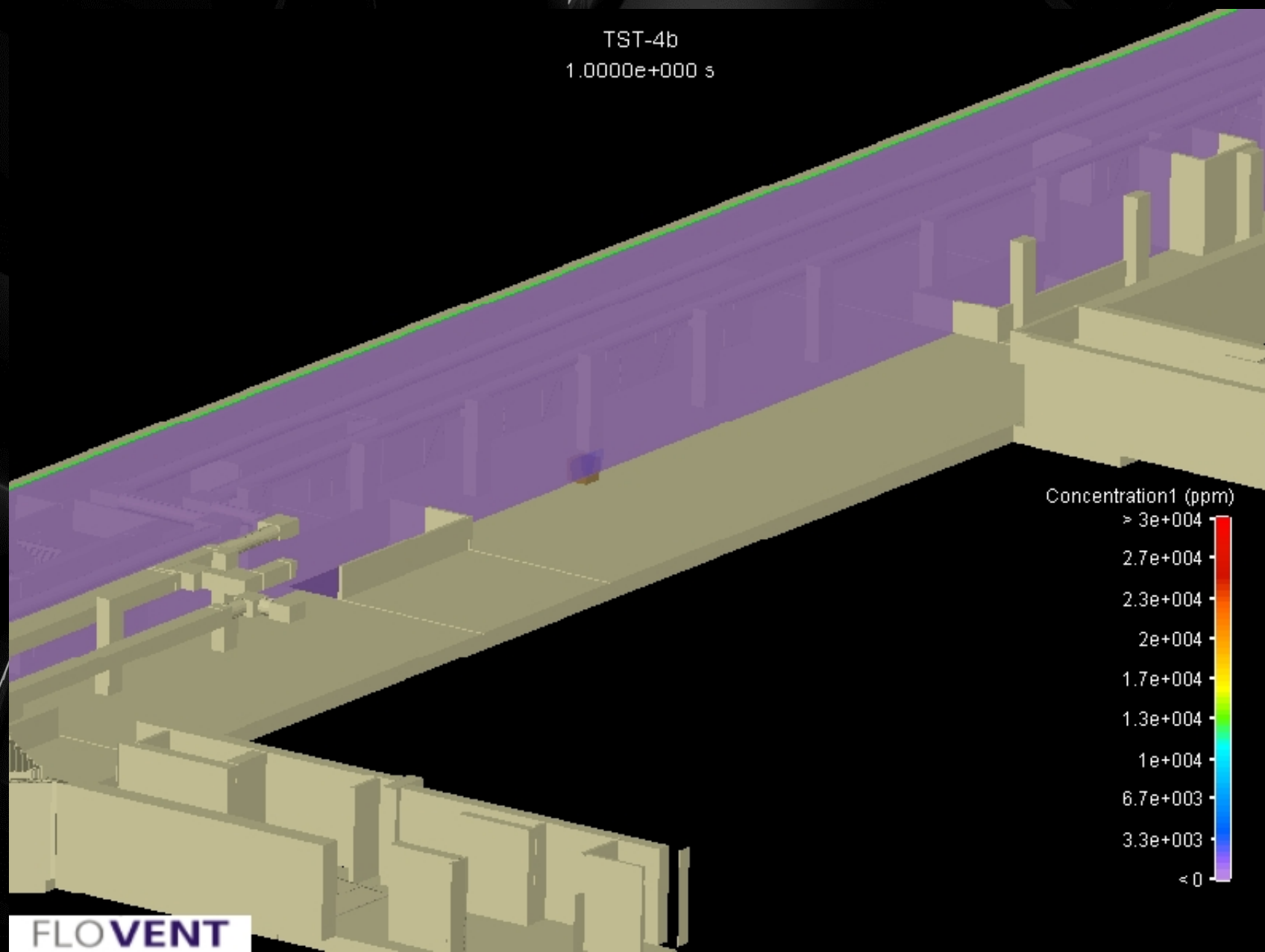
TST-4c
1.0000e+000 s



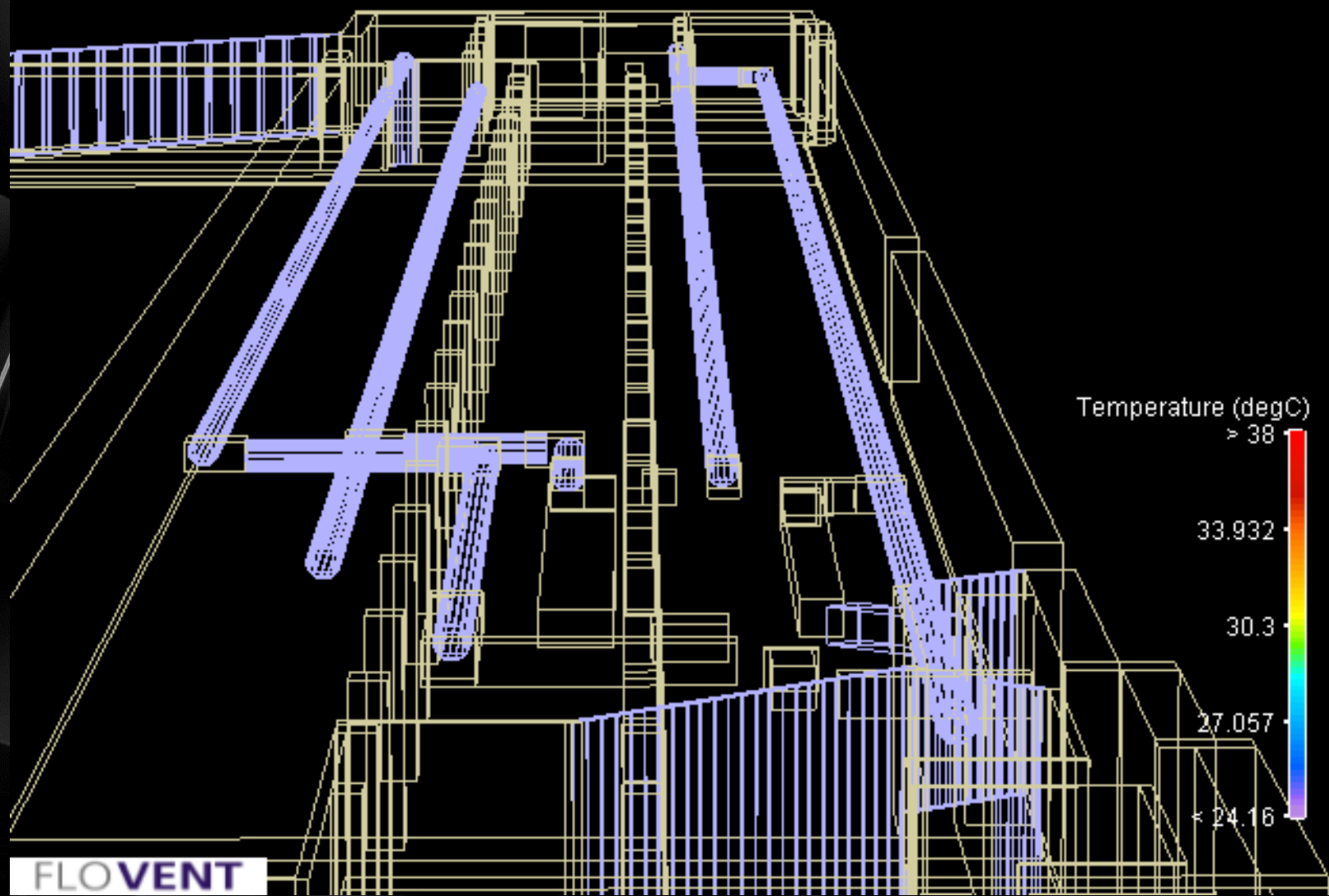
ANALYSIS

NCIO

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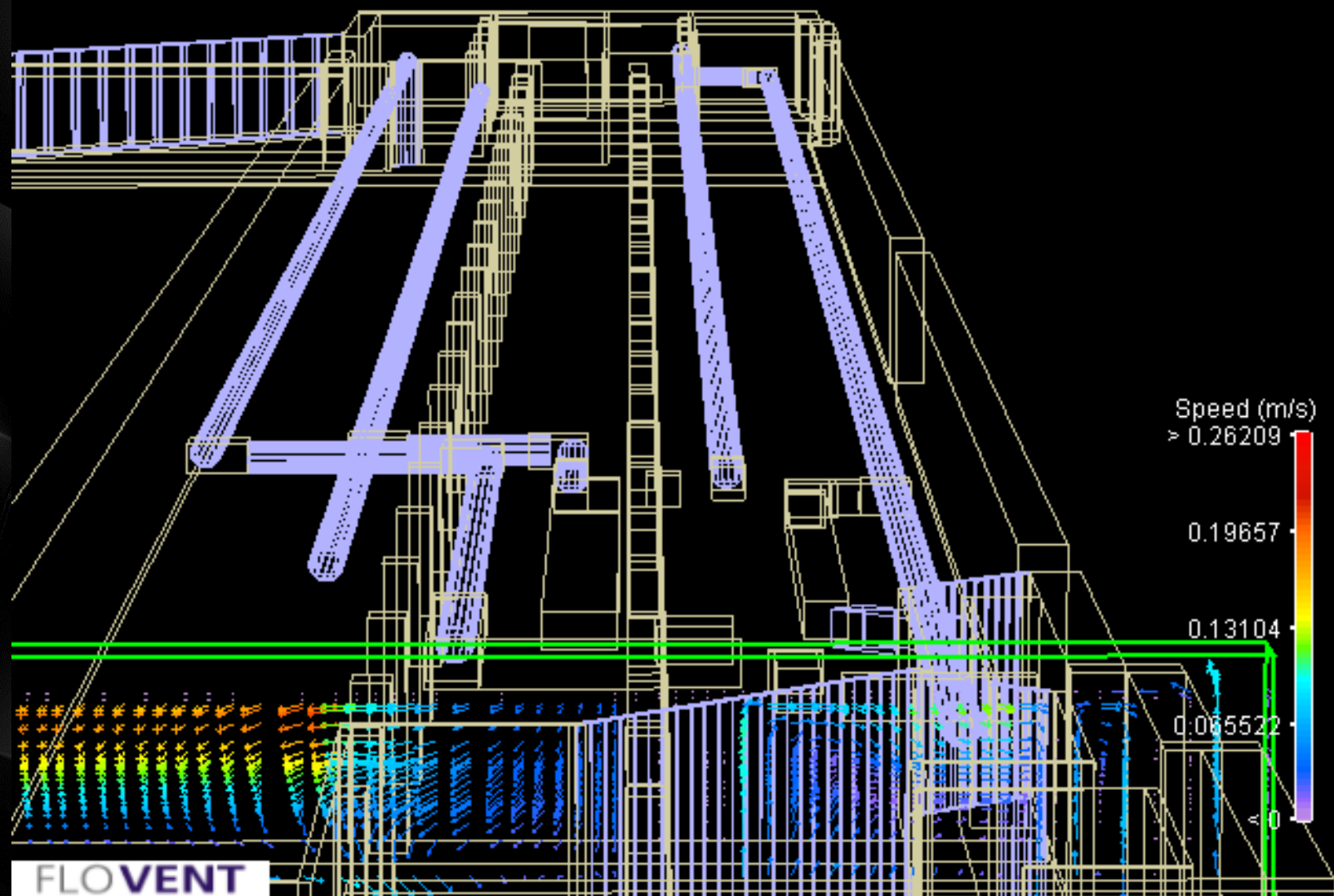


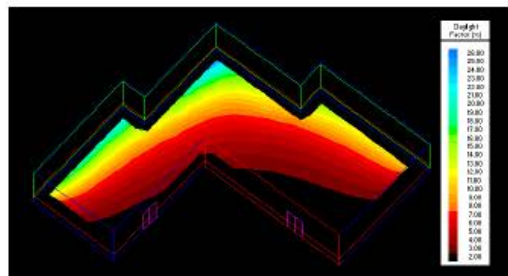
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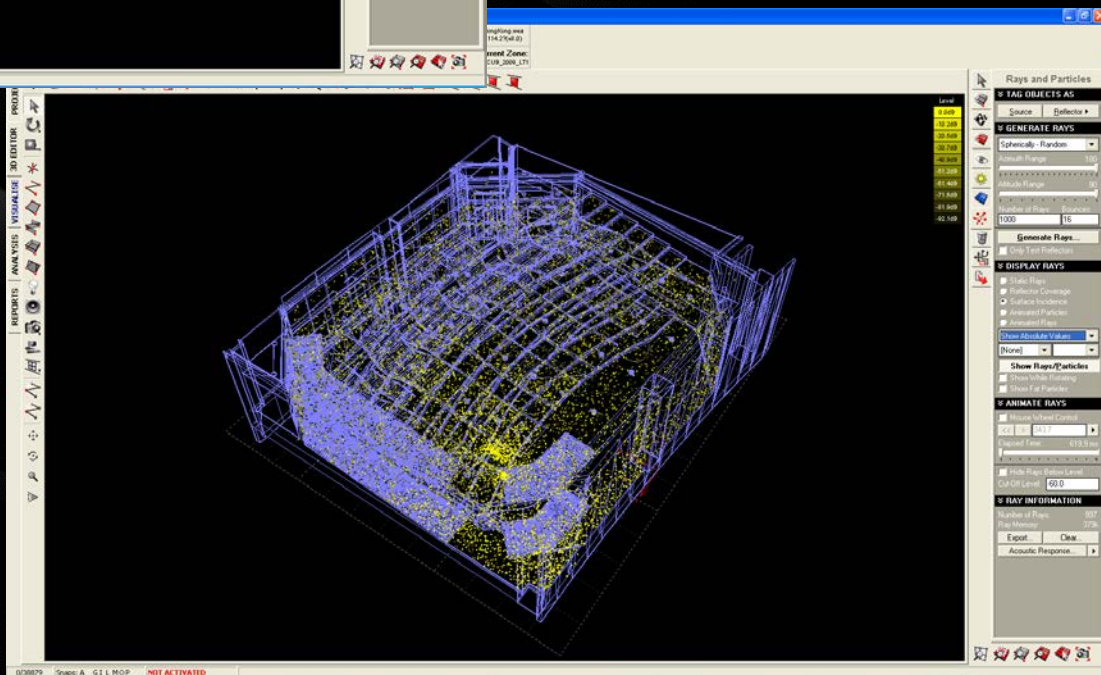
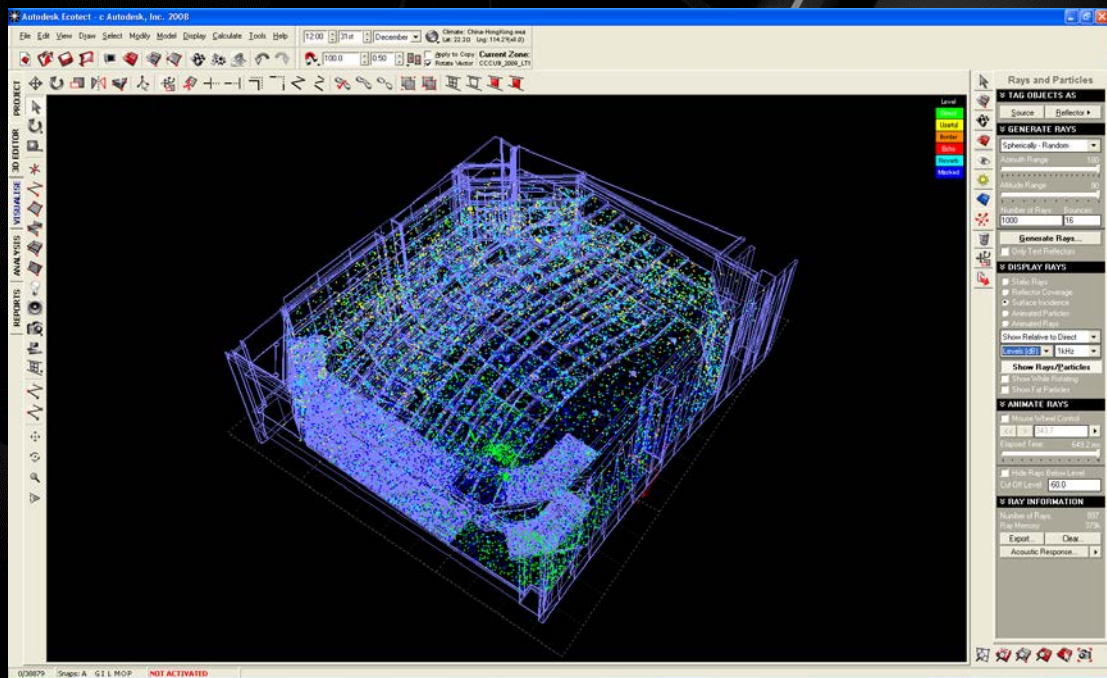


ANALYSIS

NCIO







Use of Building Information Modeling (BIM)

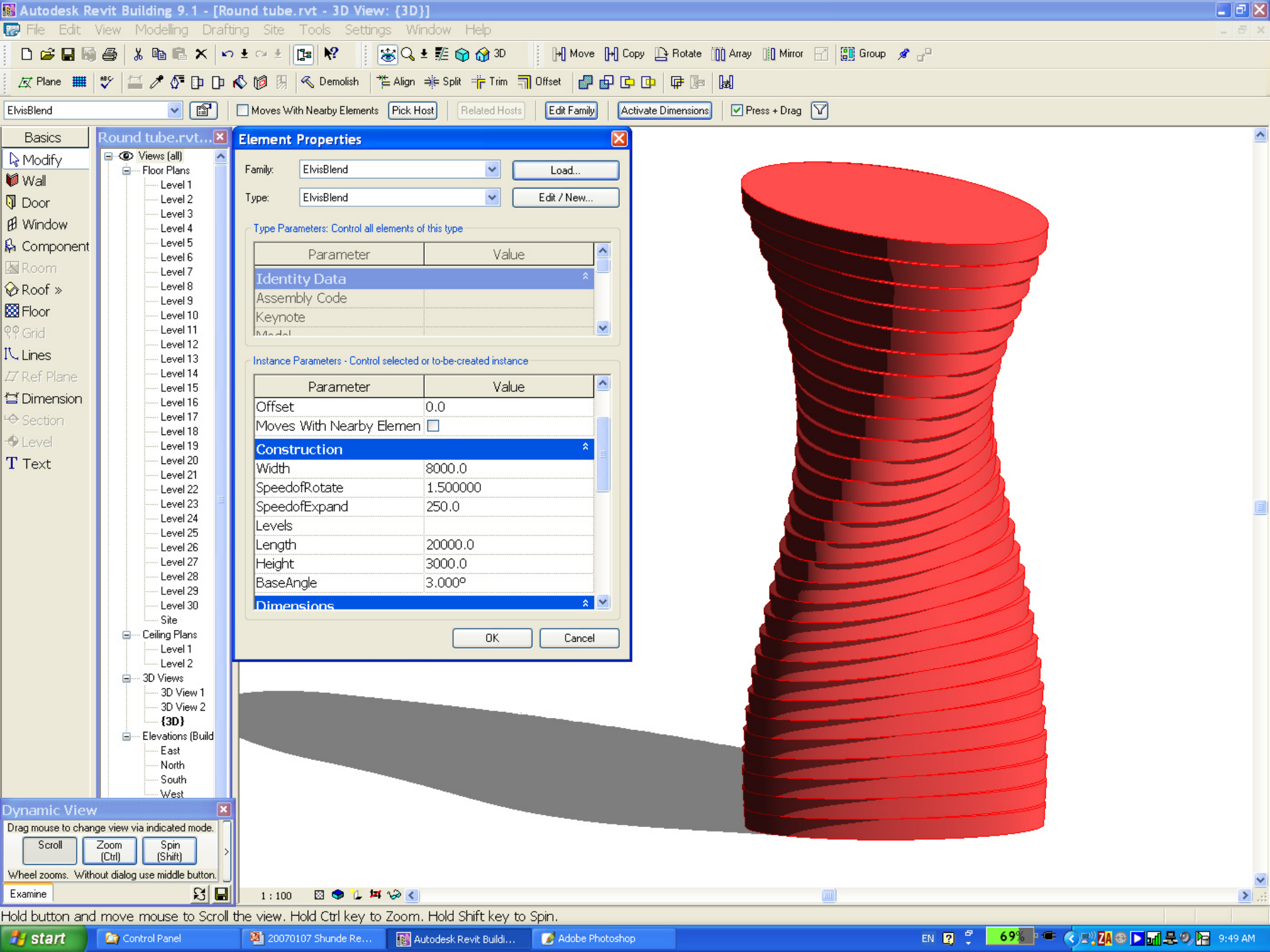
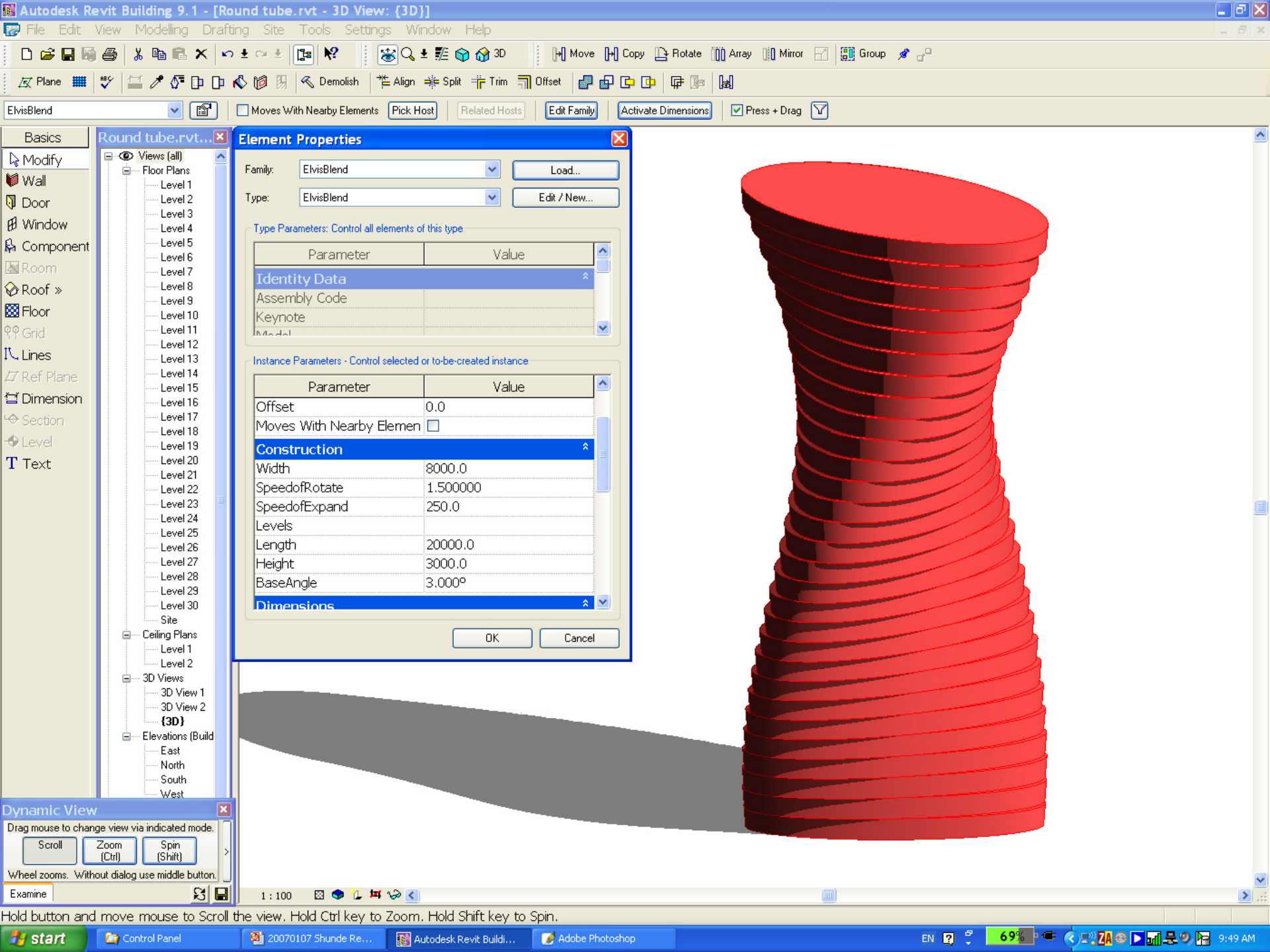


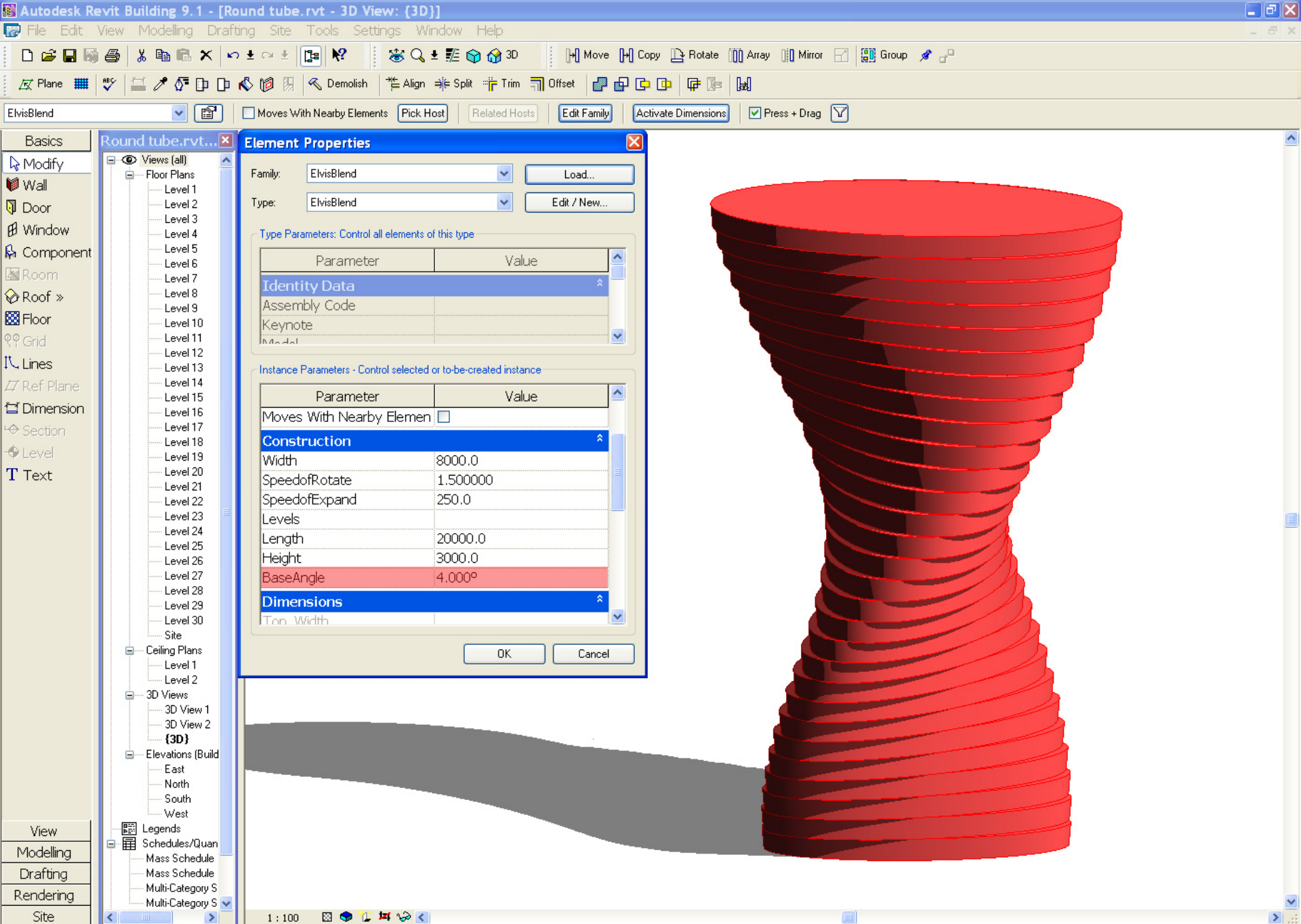
1. Design visualization
2. Drawing Productions
3. Services Co-ordination and Clash detection with other disciplines
4. Quantity taking and preparation of Tender Document
5. Automated Statutory Submission
6. Scientific analysis of different environmental aspects
- 7. Supply Chain Integration with the manufacturing and production**
サプライヤとの連携
8. Complex Geometry

Use of Building Information Modeling (BIM)



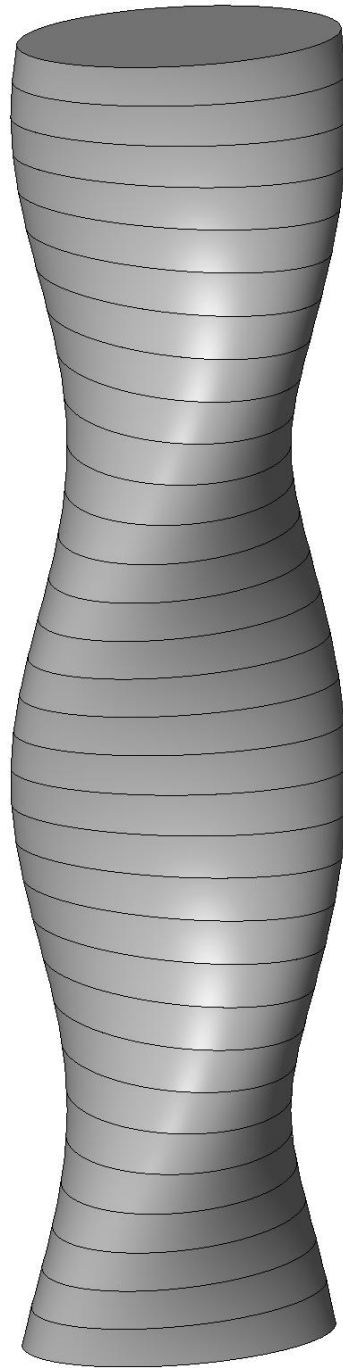
1. Design visualization
2. Drawing Productions
3. Services Co-ordination and Clash detection with other disciplines
4. Quantity taking and preparation of Tender Document
5. Automated Statutory Submission
6. Scientific analysis of different environmental aspects
7. Supply Chain Integration with the manufacturing and production
8. **Complex Geometry** 複雑な形状を実現可能





Click to select, TAB for alternates, CTRL adds, SHIFT unselects.

כוח



absolute world

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.

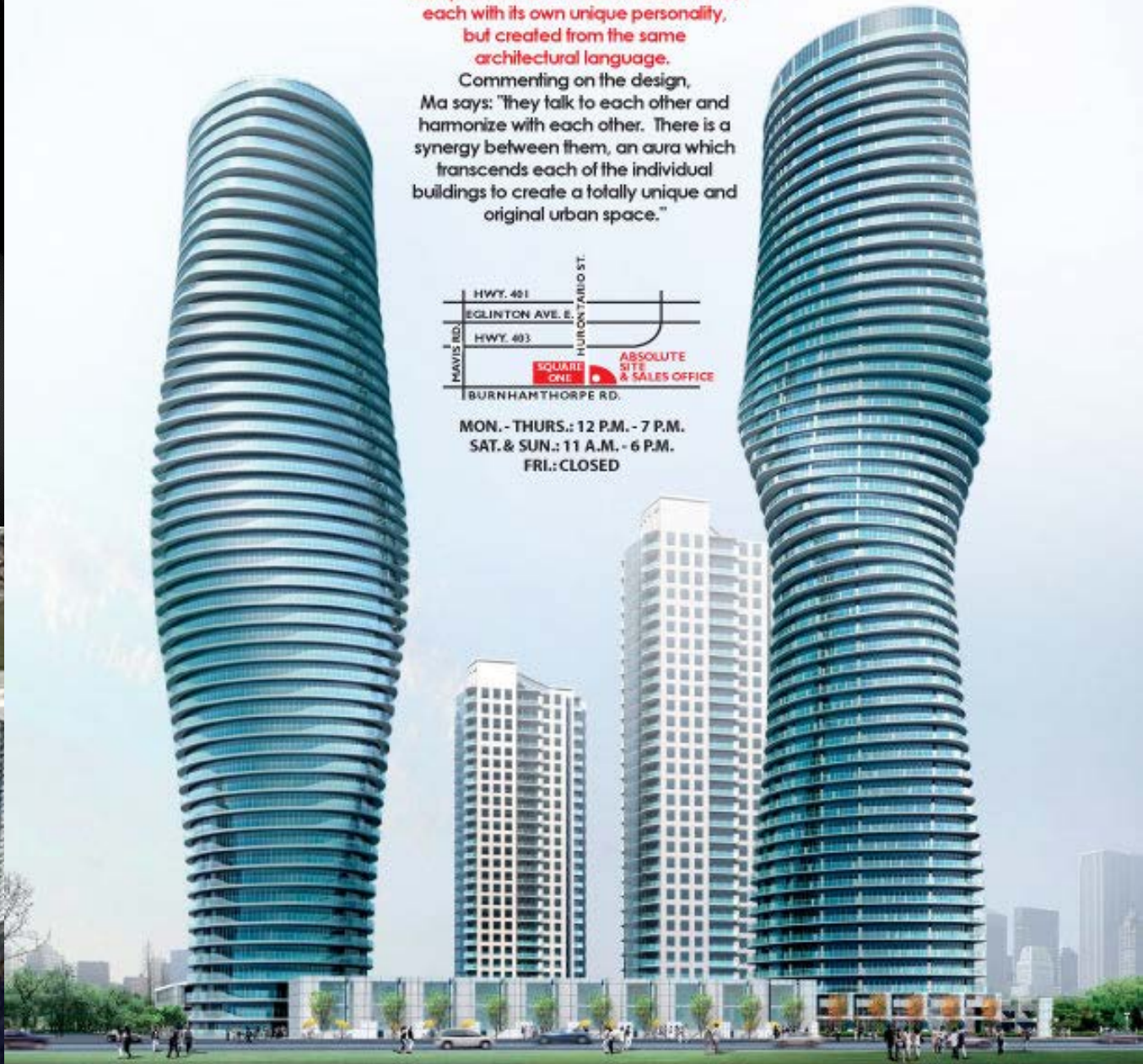
Commenting on the design, Ma says: "They talk to each other and harmonize with each other. There is a synergy between them, an aura which transcends each of the individual buildings to create a totally unique and original urban space."



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

absolute world

BUILDING 1

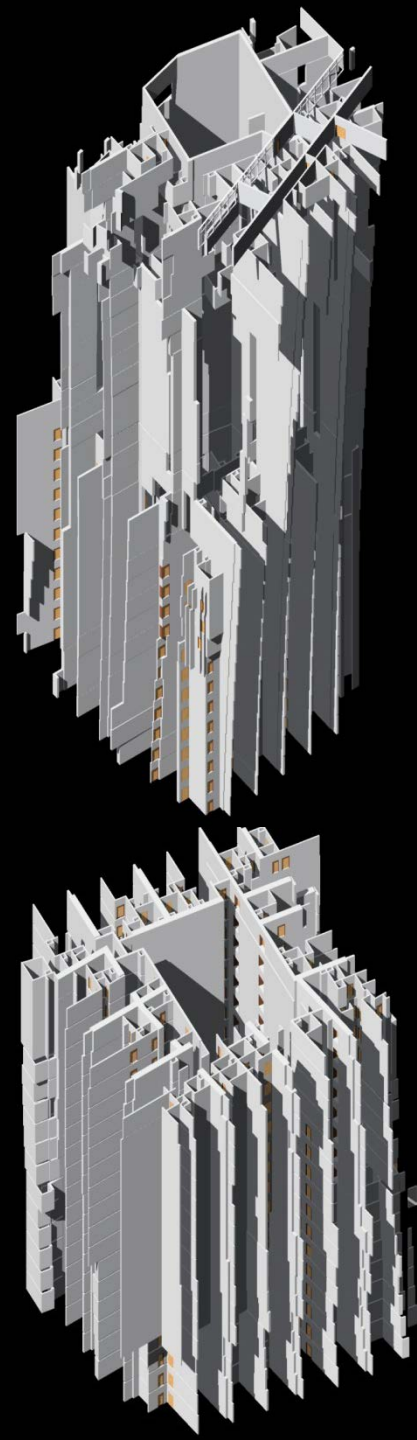
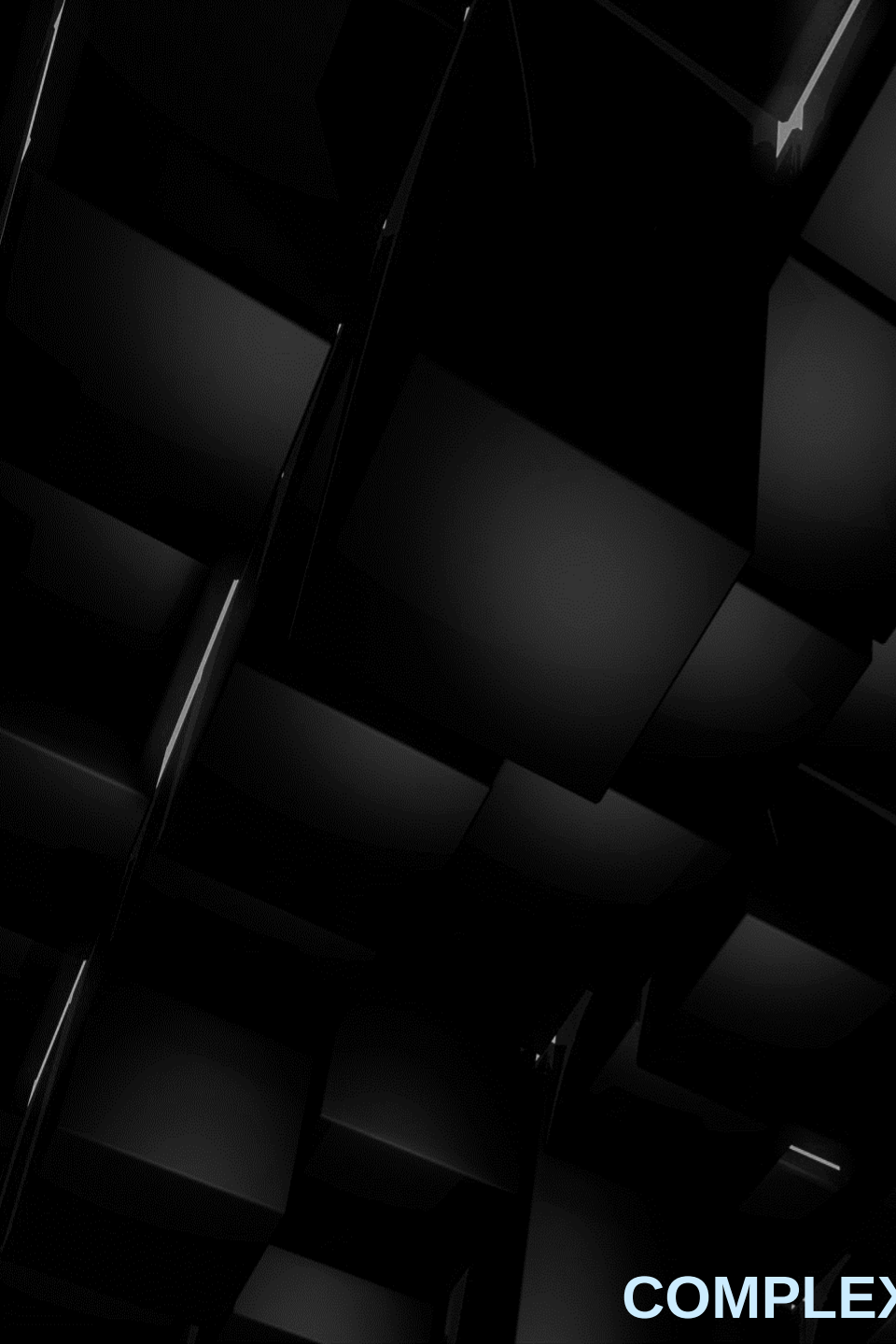


Program Residential Site Area 3,746 sqm
Floor Area 659,659 sqm Building Height 345 m

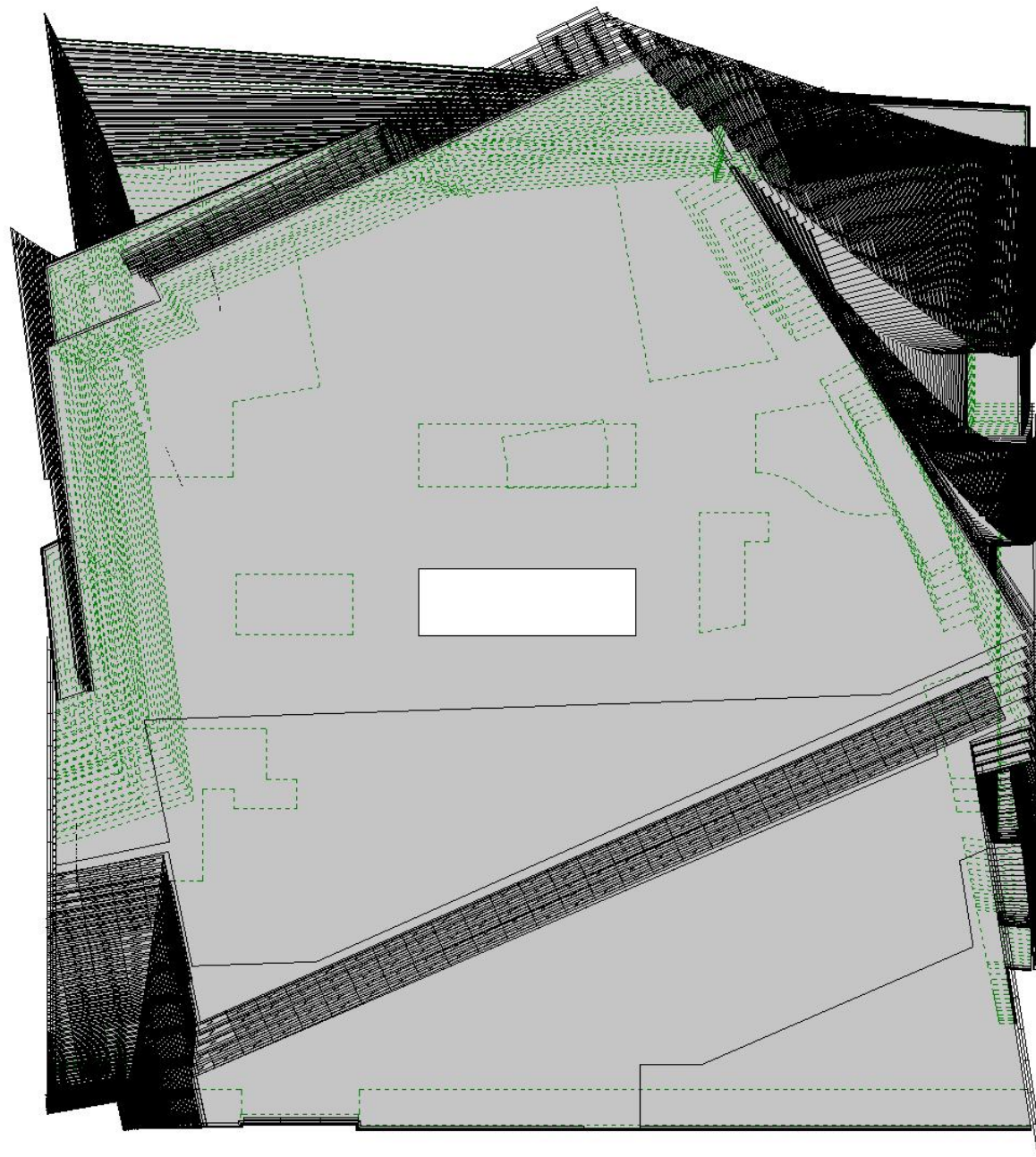


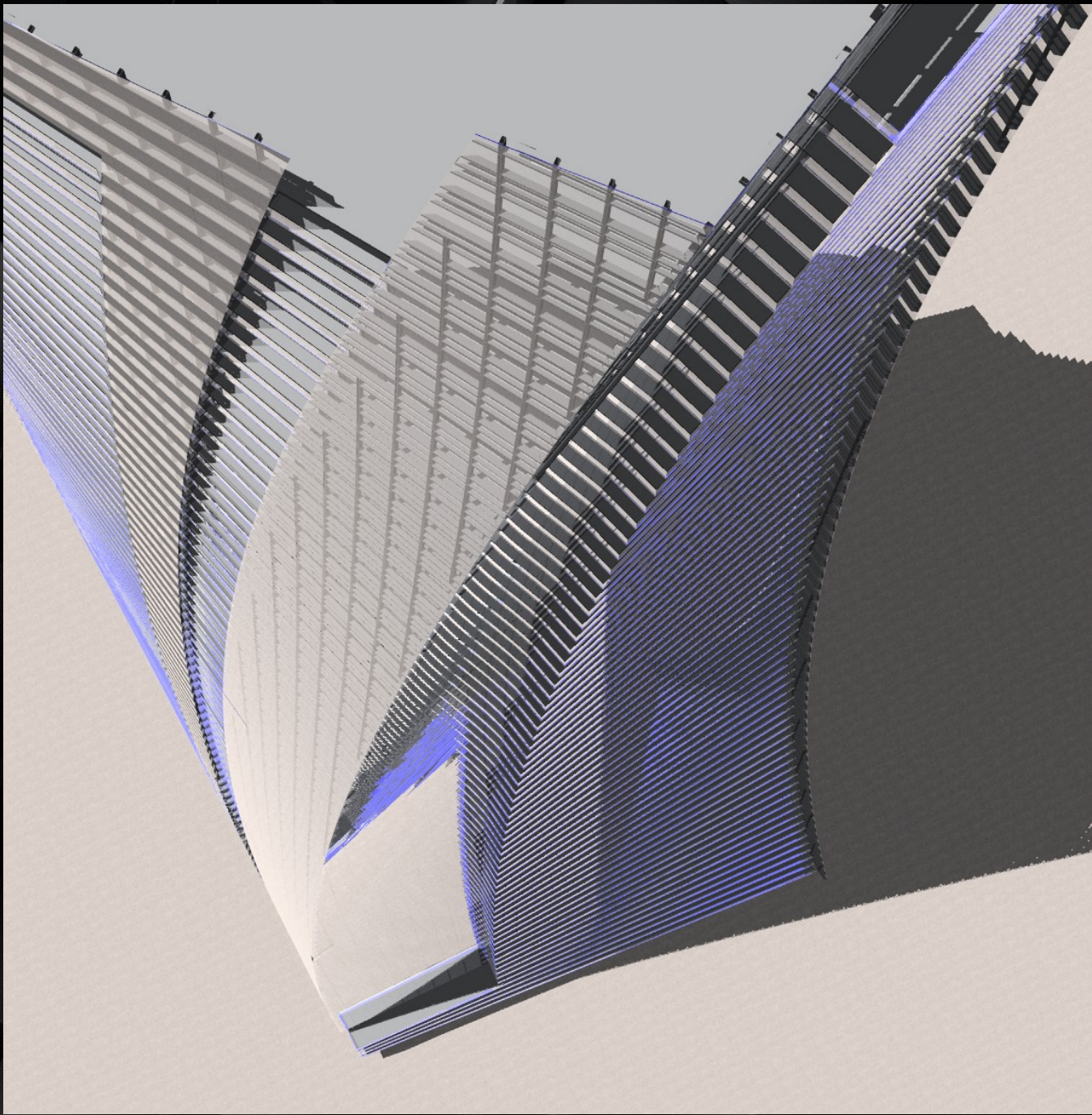
Dubai Ocean Heights One

NCI

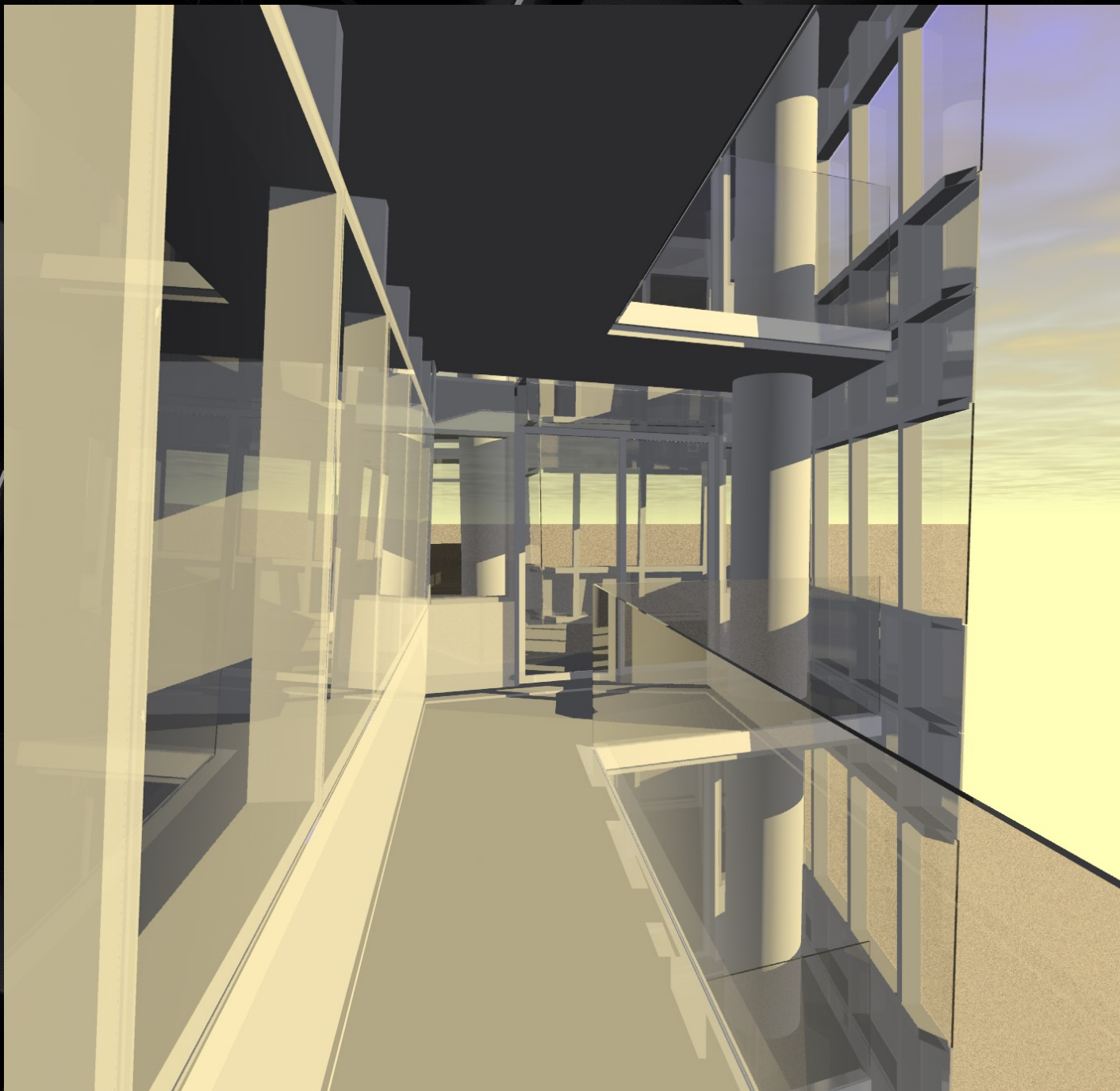


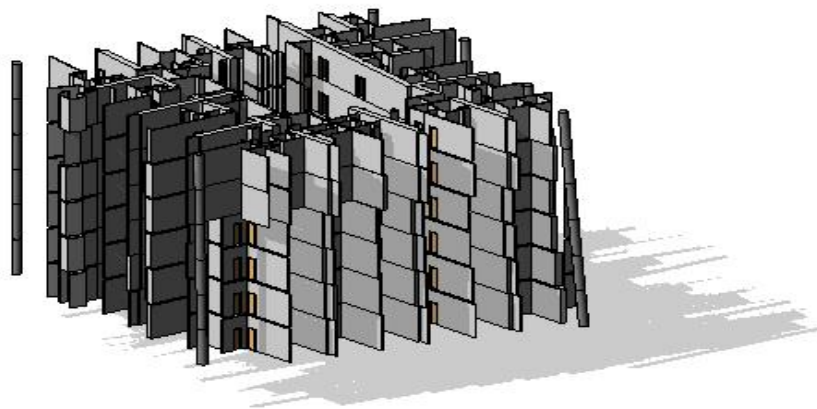
COMPLEX GEOMETRY

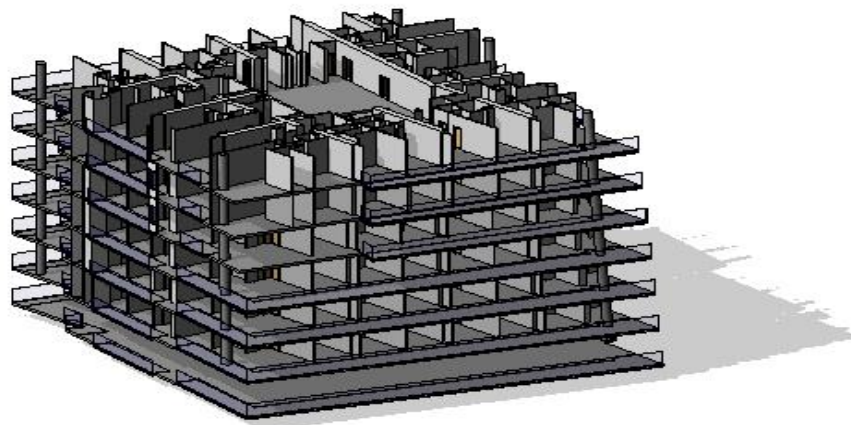




ICID





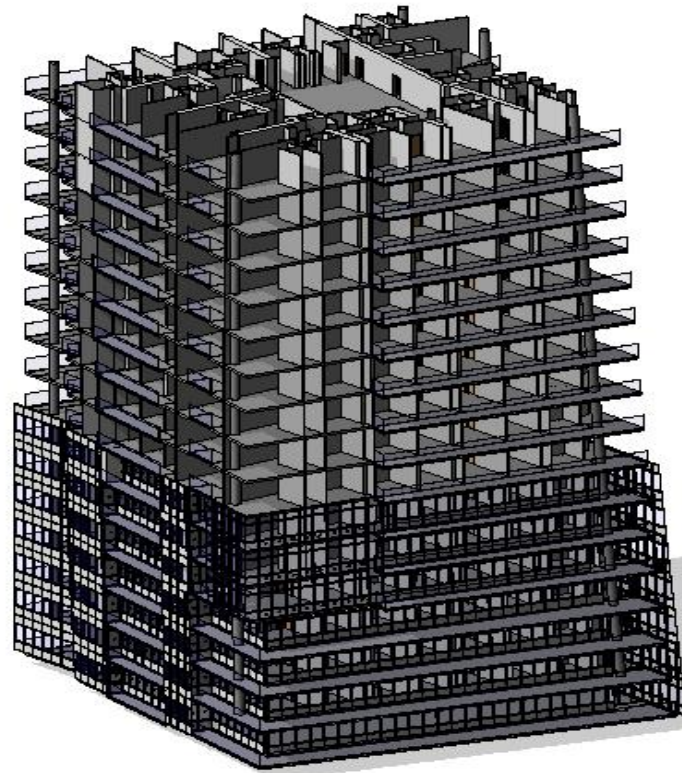






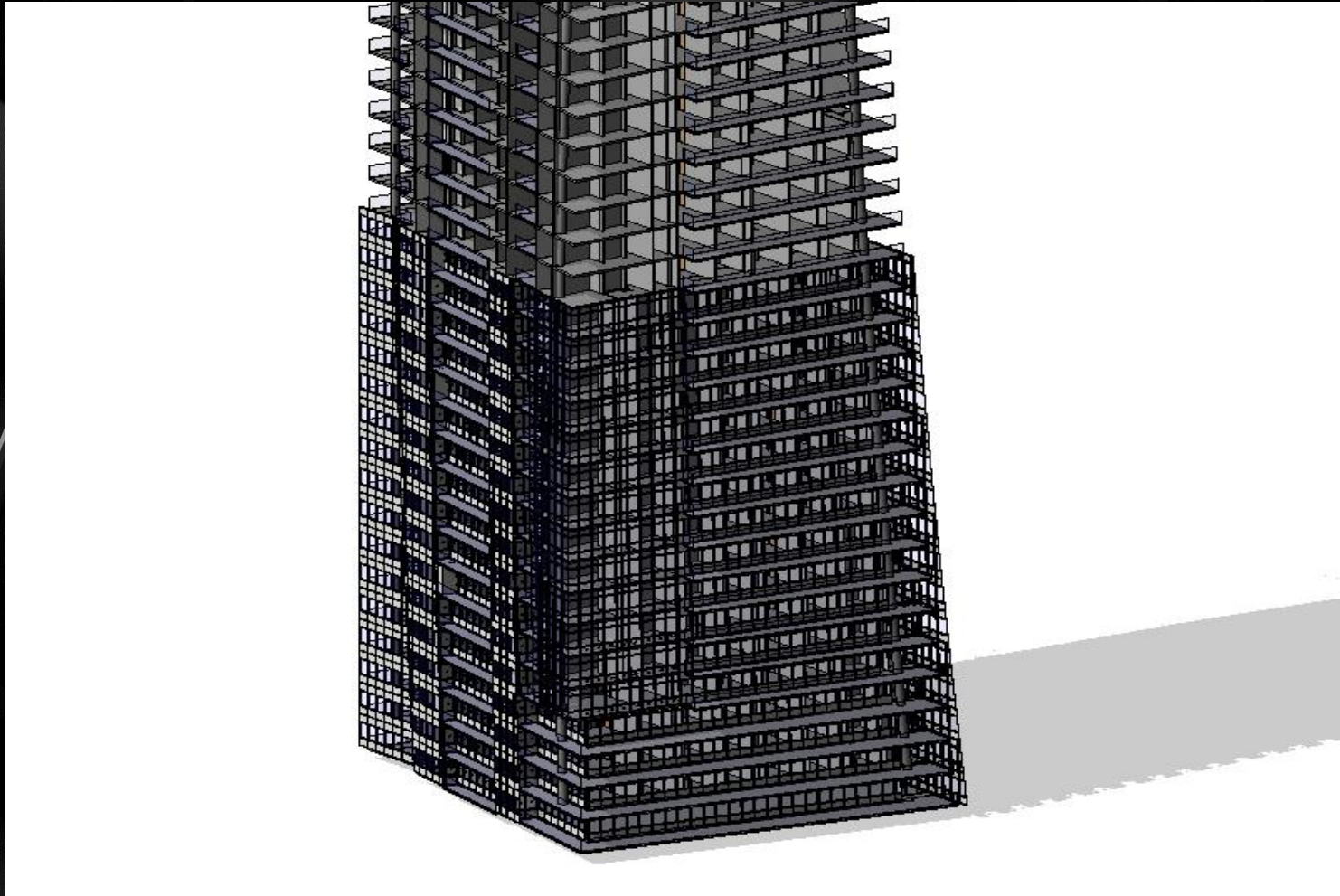




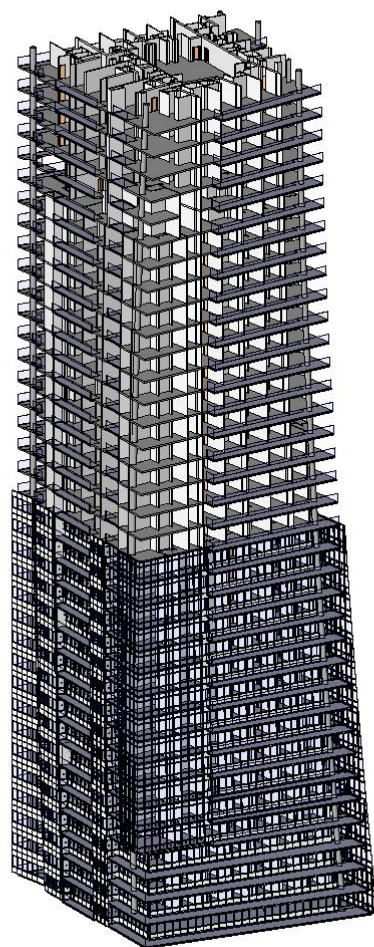


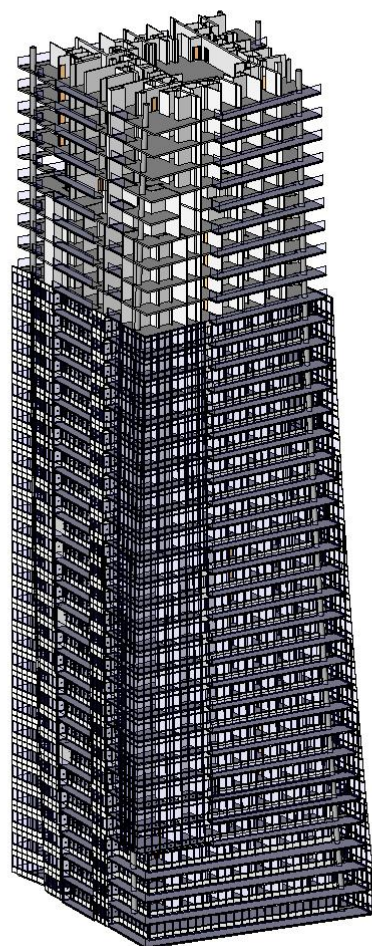


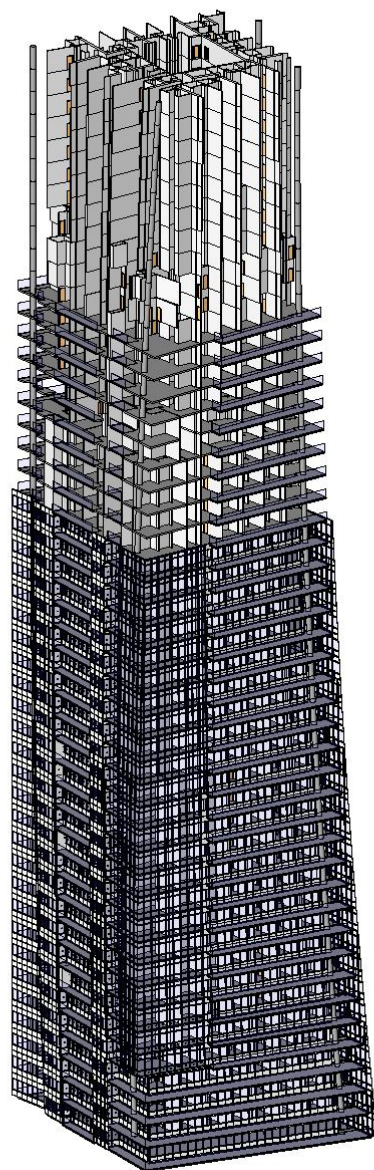


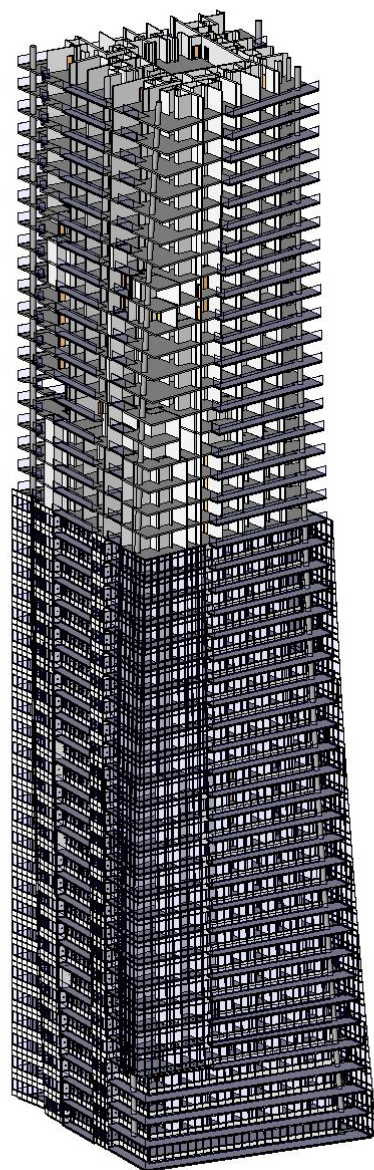


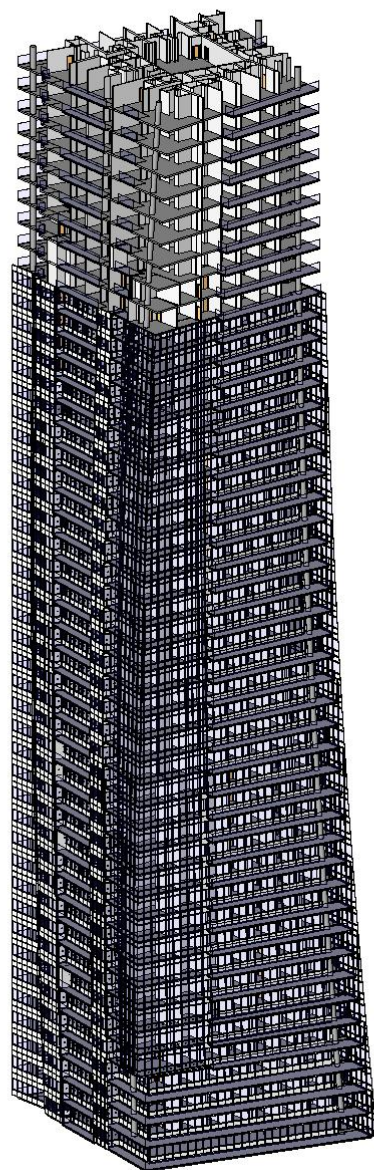




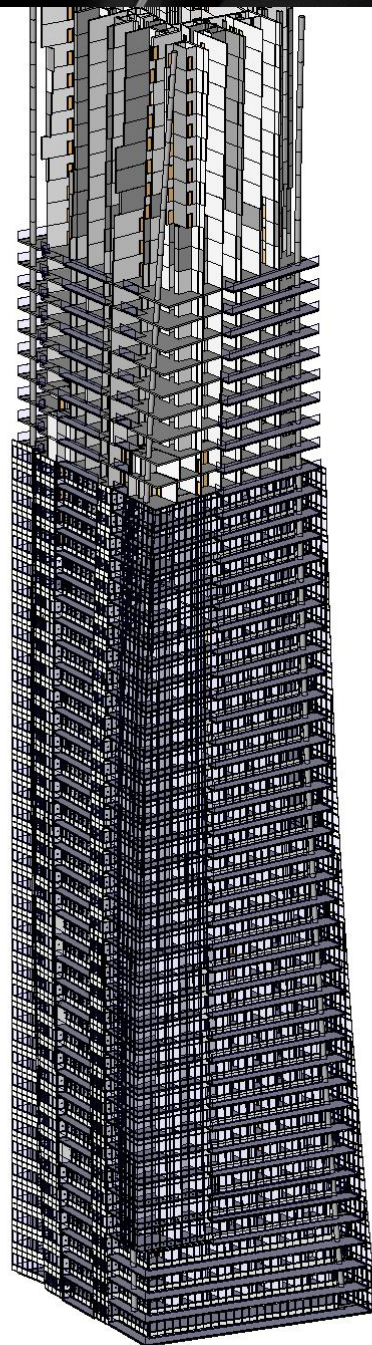




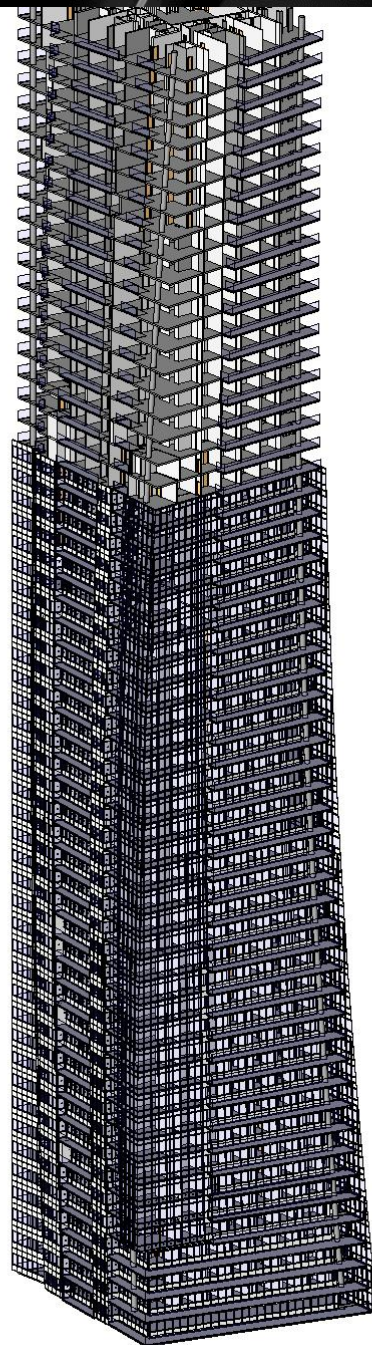




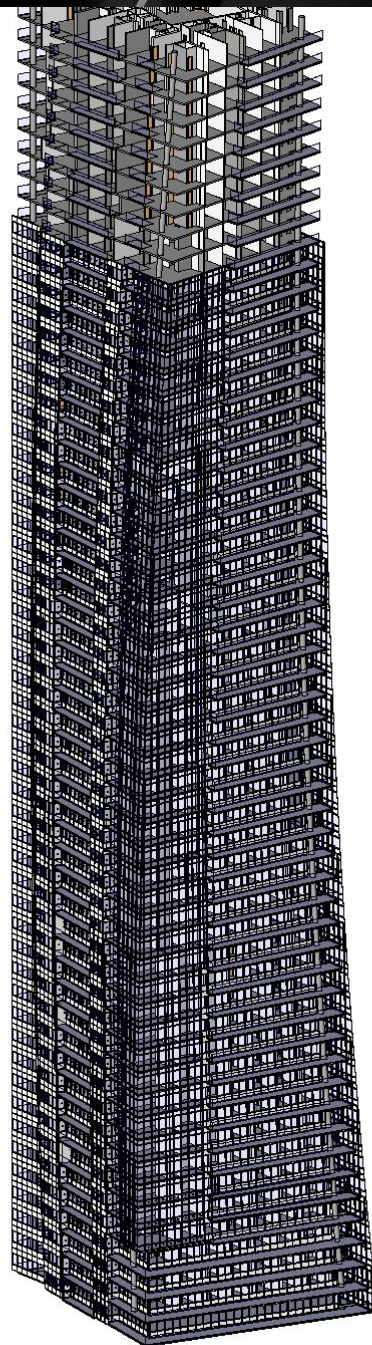
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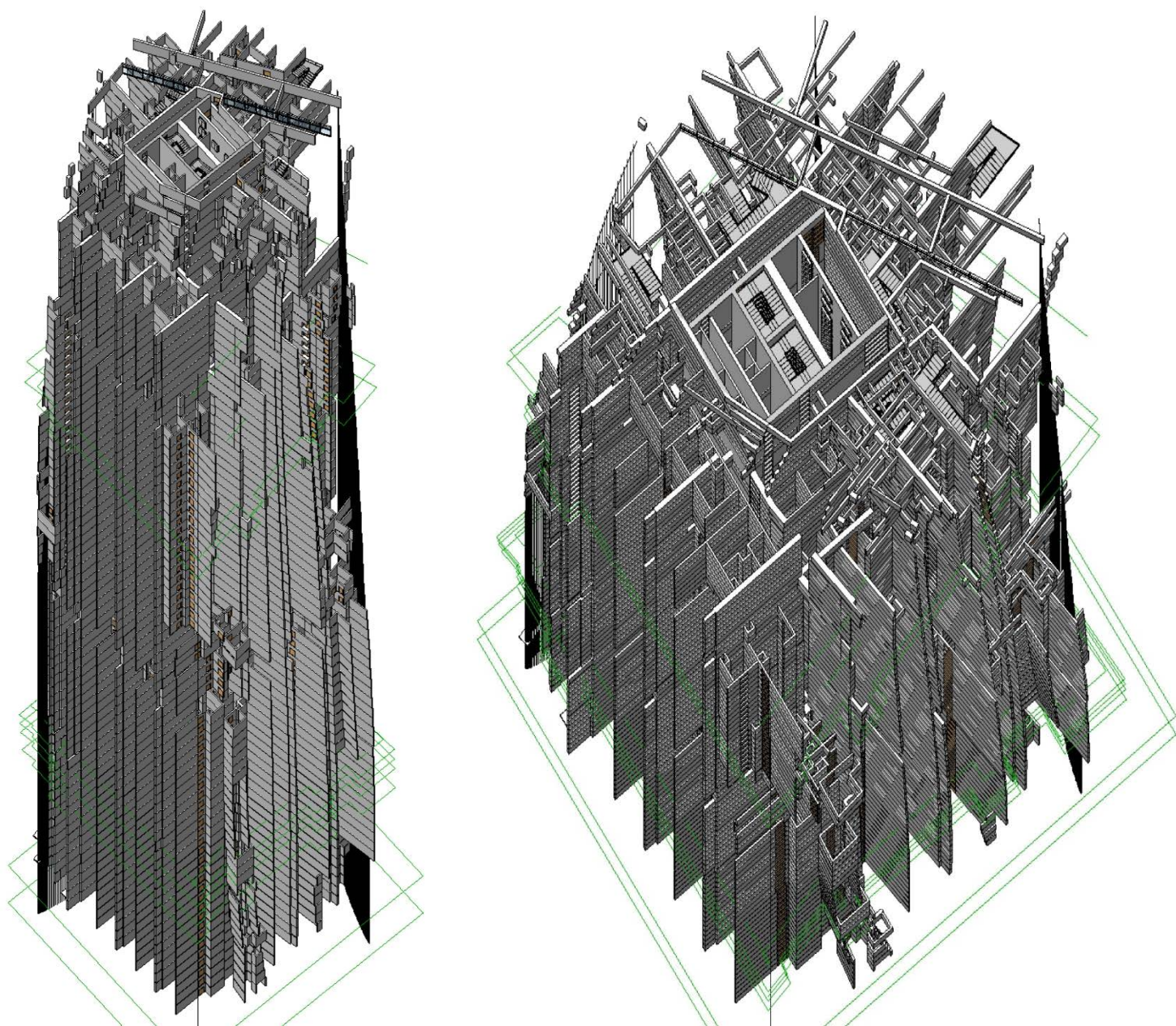


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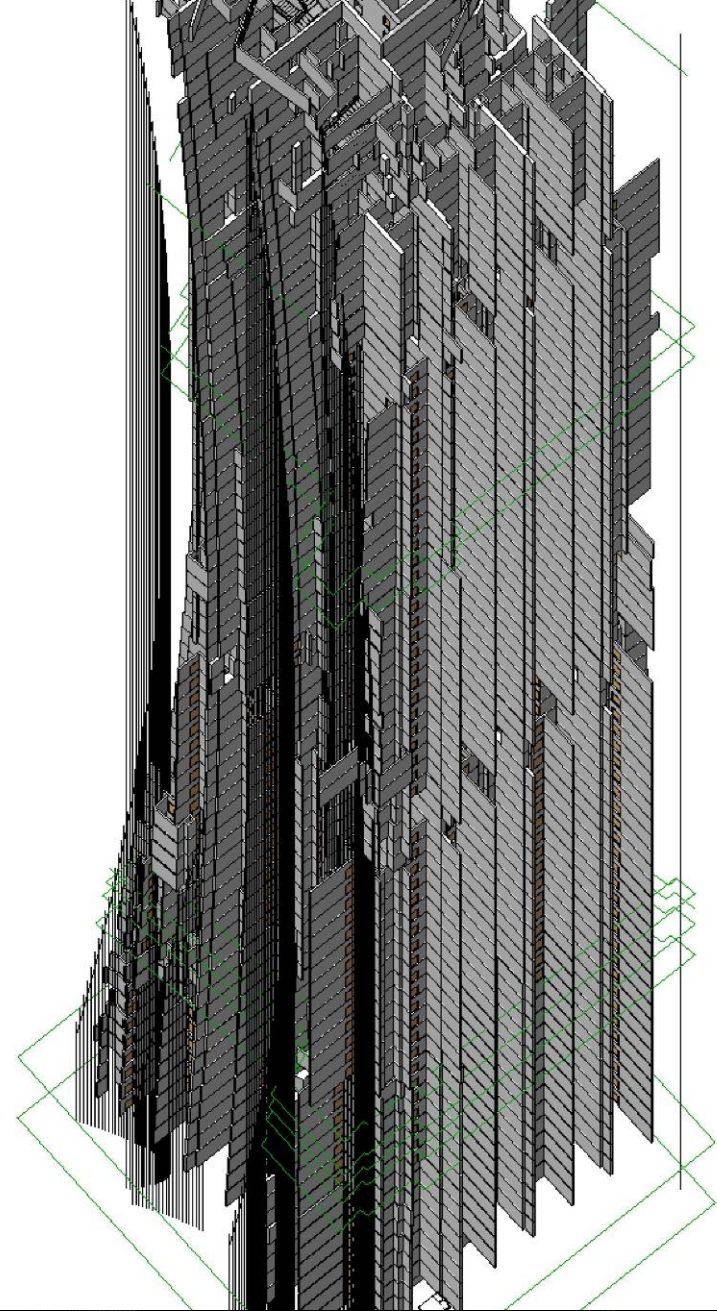
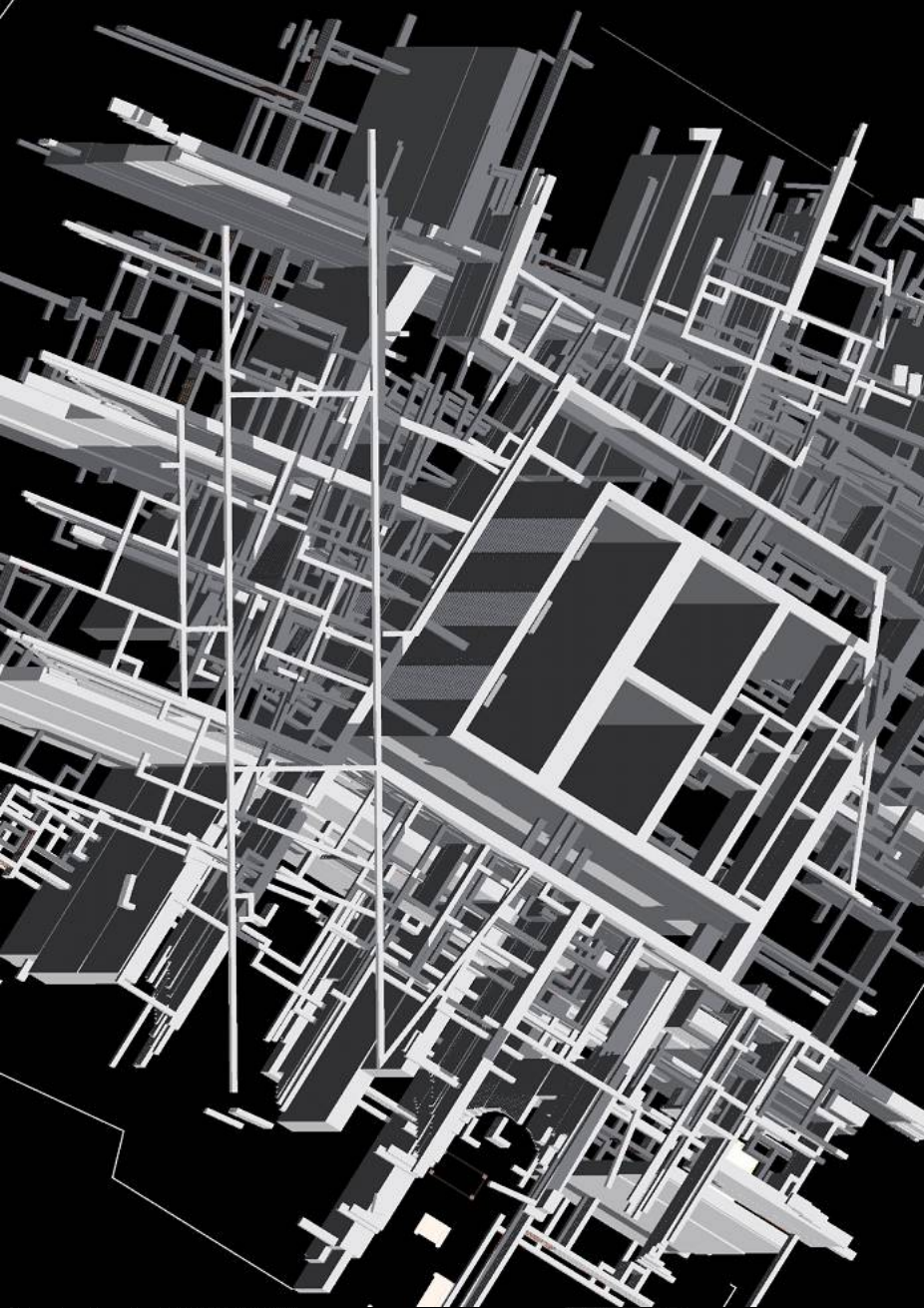


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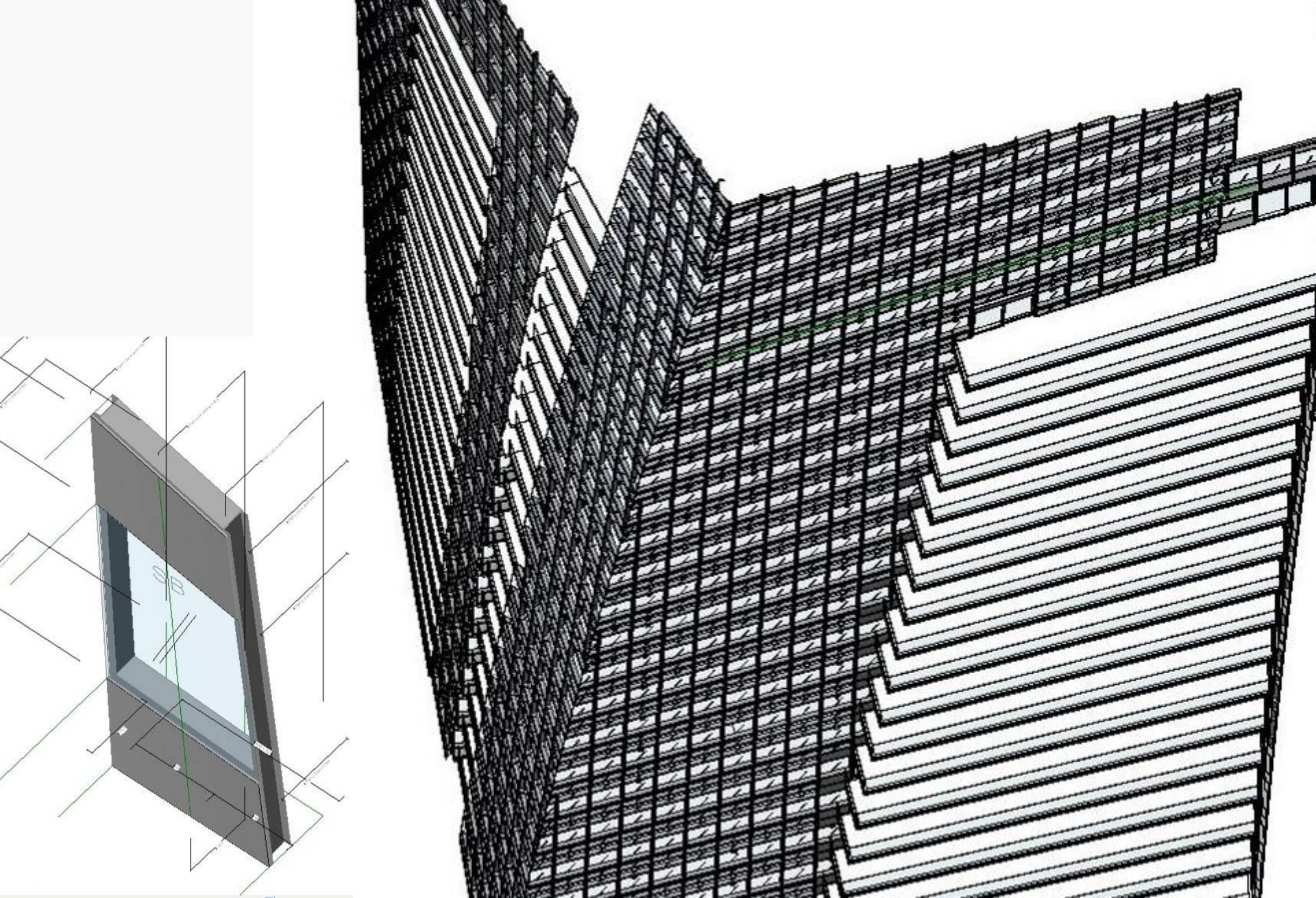




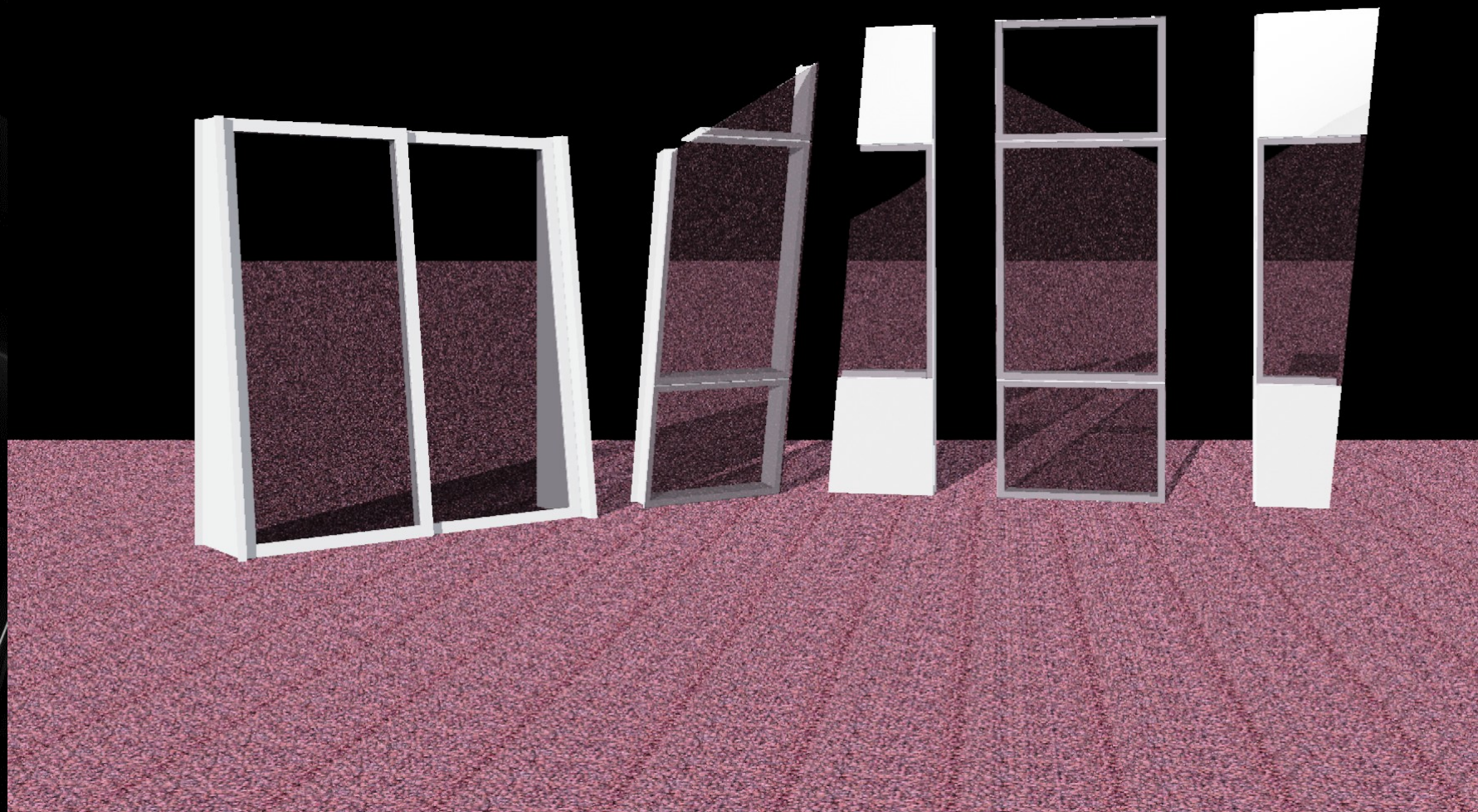
VERTICAL CO-ORDINATION

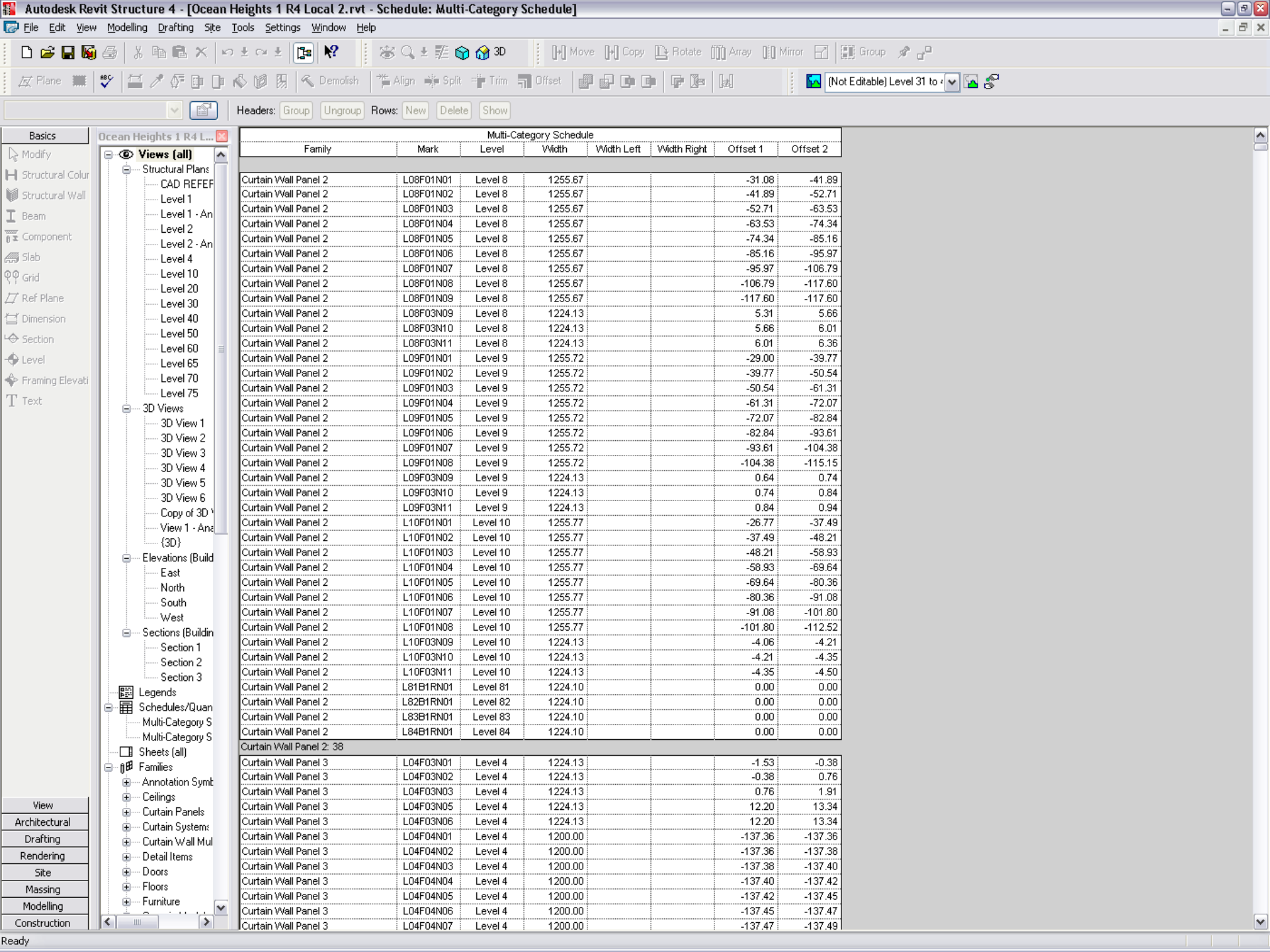


INTERNAL vs EXTERNAL



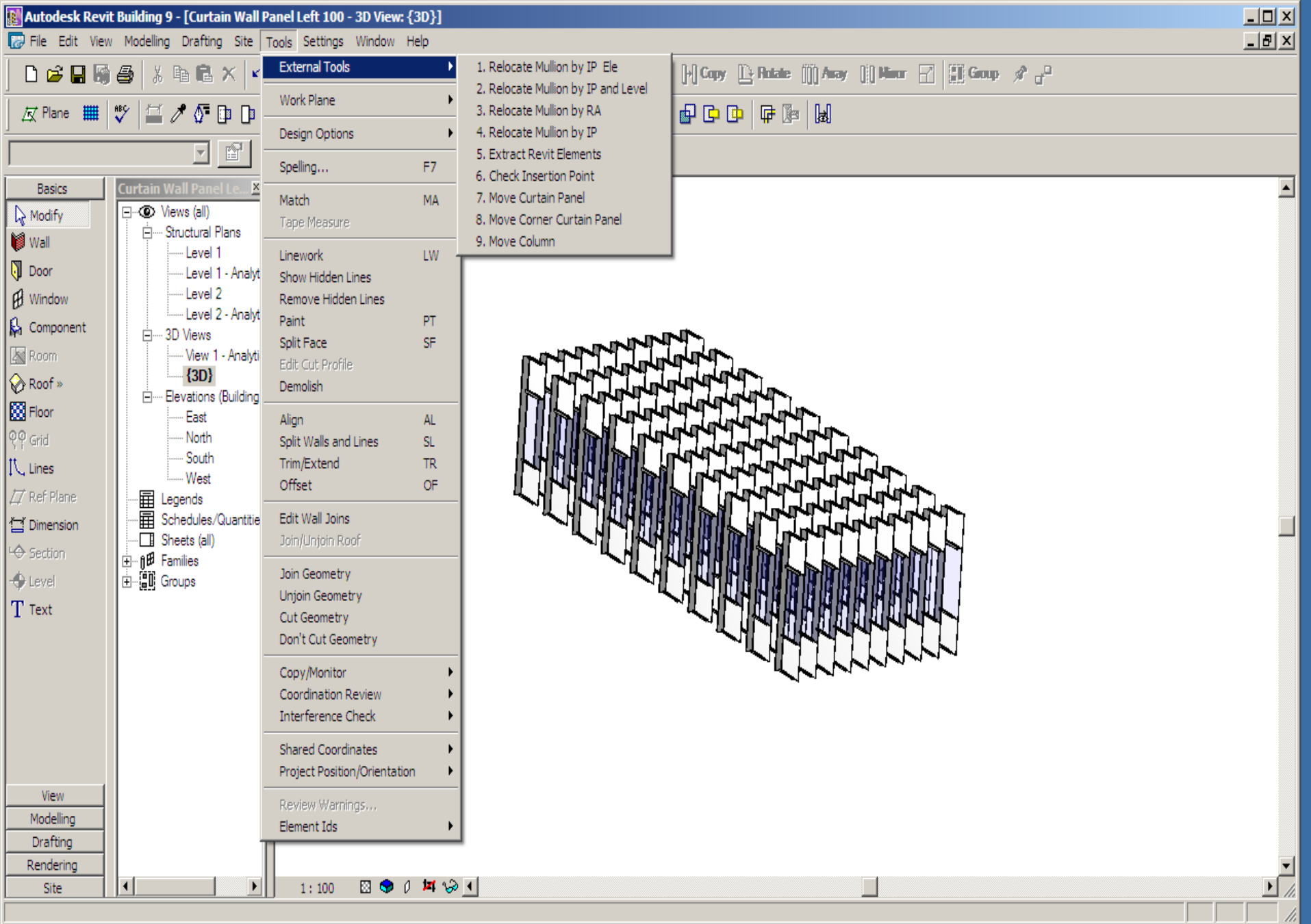
COMPLICATED CURTAIN WALL

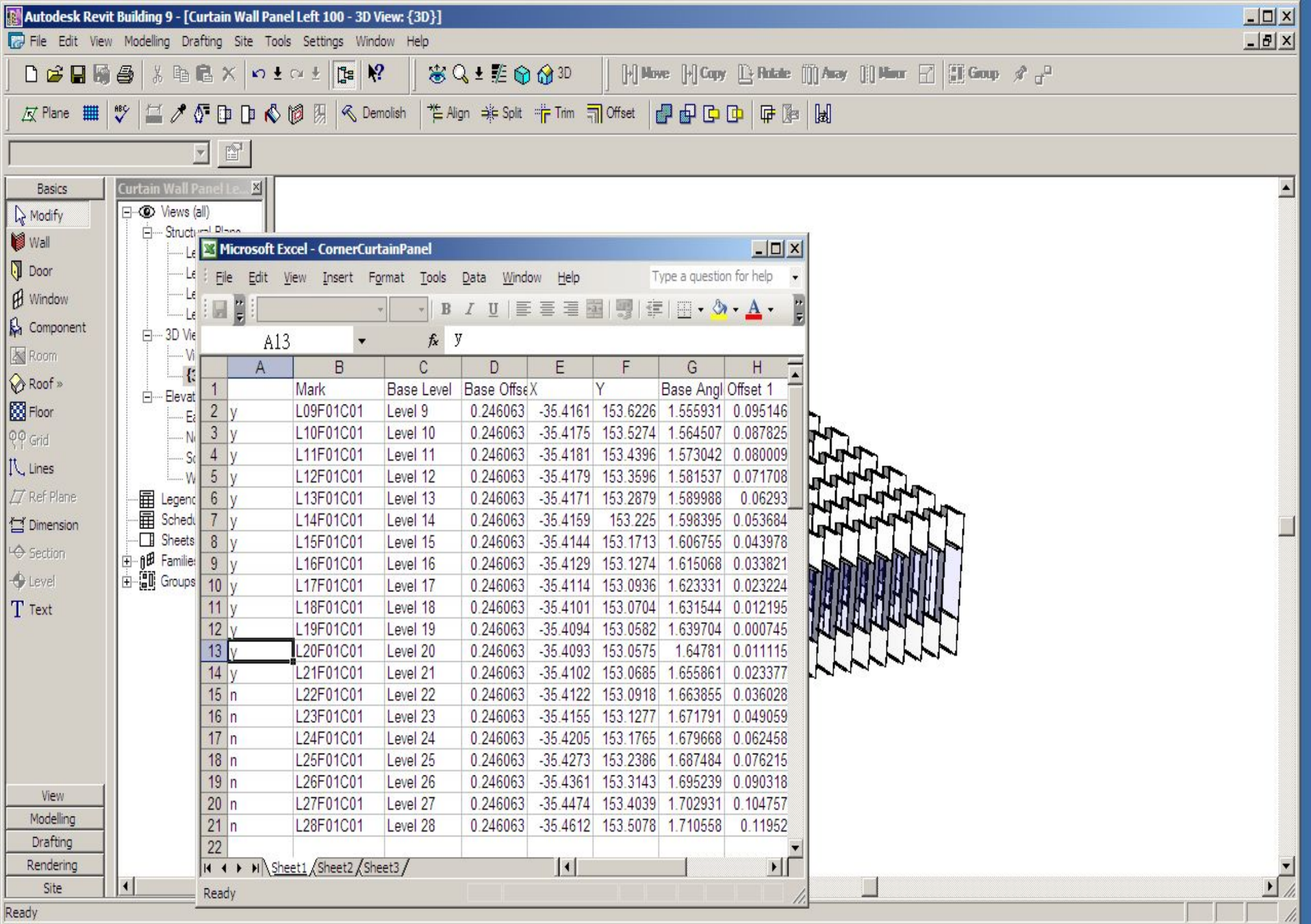


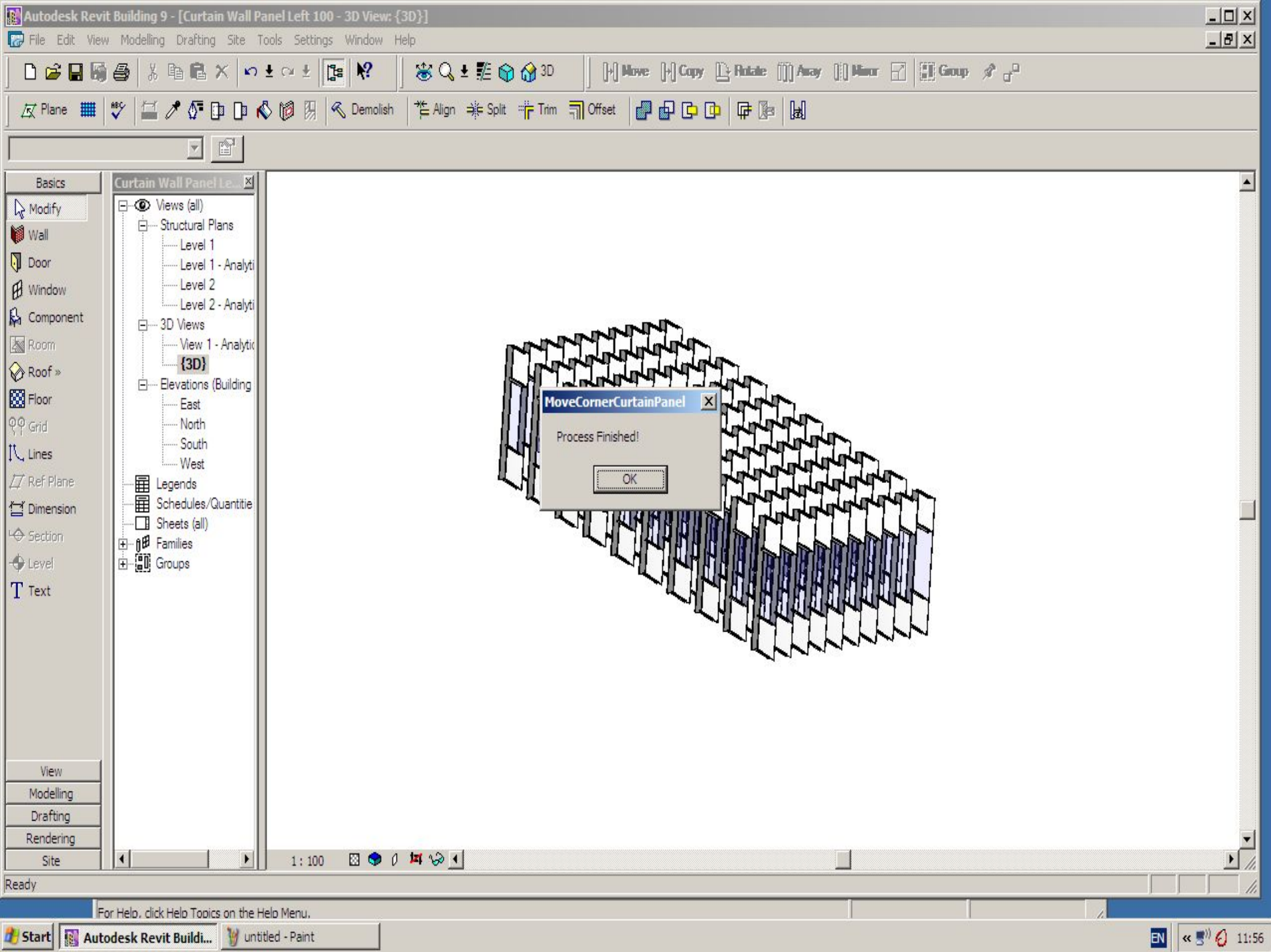


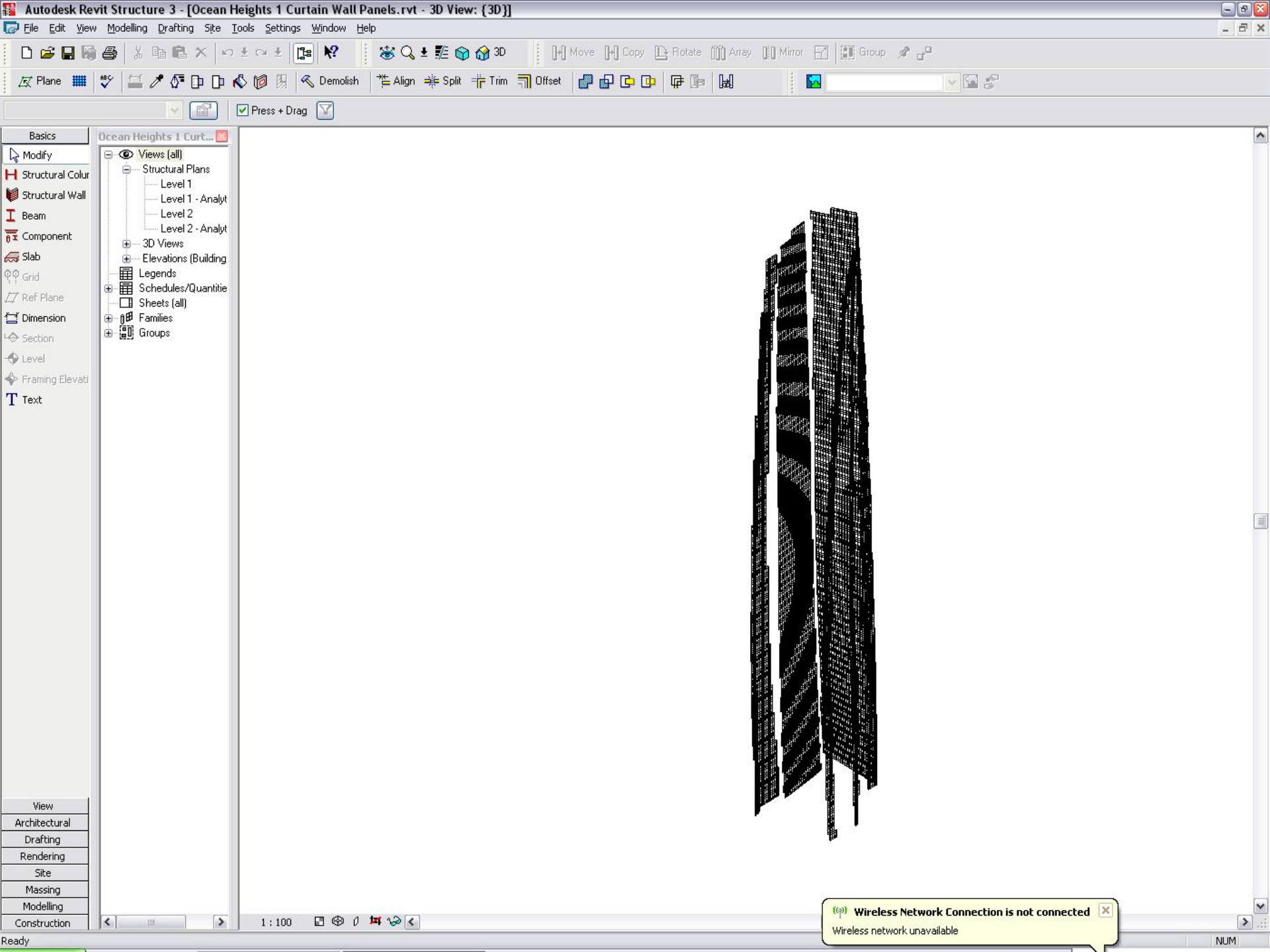
Multi-Category Schedule							
Family	Mark	Level	Width	Width Left	Width Right	Offset 1	Offset 2
Curtain Wall Panel 2	L08F01N01	Level 8	1255.67			-31.08	-41.89
Curtain Wall Panel 2	L08F01N02	Level 8	1255.67			-41.89	-52.71
Curtain Wall Panel 2	L08F01N03	Level 8	1255.67			-52.71	-63.53
Curtain Wall Panel 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

Ref Plane	Level 20	Sliding Door	L71B05D12	Level 71	2550.00		0.00
Dimension	Level 30	Sliding Door	L71B05D15	Level 71	2550.00		0.00
Section	Level 40	Sliding Door	L72B01D02	Level 72	2400.00		0.00
Level	Level 50	Sliding Door	L72B02D02	Level 72	2500.00		0.00
Framing Elevati	Level 60	Sliding Door	L72B04D01	Level 72	1800.00		0.00
Text	Level 65	Sliding Door	L72B05D03	Level 72	2550.00		0.00
	Level 70	Sliding Door	L72B05D05	Level 72	2550.00		0.00
	Level 75	Sliding Door	L72B05D08	Level 72	2550.00		0.00
	3D Views	Sliding Door	L72B05D10	Level 72	2550.00		0.00
	3D View 1	Sliding Door	L72B05D12	Level 72	2550.00		0.00
	3D View 2	Sliding Door	L72B05D15	Level 72	2550.00		0.00
	3D View 3	Sliding Door	L73B01D02	Level 73	2400.00		0.00
	3D View 4	Sliding Door	L73B02D02	Level 73	2500.00		0.00
	3D View 5	Sliding Door	L73B04D01	Level 73	1700.00		0.00
	3D View 6	Sliding Door	L73B05D03	Level 73	2550.00		0.00
	Copy of 3D V	Sliding Door	L73B05D05	Level 73	2550.00		0.00
	View 1 - Ana	Sliding Door	L73B05D08	Level 73	2550.00		0.00
	{3D}	Sliding Door	L73B05D10	Level 73	2550.00		0.00
	Elevations (Build	Sliding Door	L73B05D12	Level 73	2550.00		0.00
	East	Sliding Door	L73B05D15	Level 73	2550.00		0.00
	North	Sliding Door	L74B01D02	Level 74	2400.00		0.00
	South	Sliding Door	L74B02D02	Level 74	2500.00		0.00
	West	Sliding Door	L74B04D01	Level 74	1600.00		0.00
	Sections (Building	Sliding Door	L74B05D03	Level 74	2550.00		0.00
	Section 1	Sliding Door	L74B05D05	Level 74	2550.00		0.00
	Section 2	Sliding Door	L74B05D08	Level 74	2550.00		0.00
	Section 3	Sliding Door	L74B05D10	Level 74	2550.00		0.00
	Legends	Sliding Door	L74B05D12	Level 74	2550.00		0.00
	Schedules/Quan	Sliding Door	L74B05D15	Level 74	2550.00		0.00
	Multi-Category S	Sliding Door	L75B01D02	Level 75	2400.00		0.00
	Multi-Category S	Sliding Door	L75B02D02	Level 75	2500.00		0.00
	Sheets (all)	Sliding Door	L76B01D02	Level 76	2400.00		0.00
	Families	Sliding Door	L76B02D02	Level 76	2500.00		0.00
	Annotation Symb	Sliding Door	L77B01D02	Level 77	2400.00		0.00
	Ceilings	Sliding Door	L77B02D01	Level 77	2426.17		0.00
	Curtain Panels	Sliding Door	L78B01D02	Level 78	2400.00		0.00
	Curtain Systems	Sliding Door	L78B02D01	Level 78	2203.01		0.00
	Curtain Wall Mul	Sliding Door	L79B01D02	Level 79	2400.00		0.00
	Detail Items	Sliding Door	L79B02D01	Level 79	1974.15		0.00
	Doors	Sliding Door: 649					
	Floors	Sliding Door to Replace CW Pan	L10F01N10	Level 10	1255.77		-123.24
	Furniture	Sliding Door to Replace CW Panel: 1					
		Grand total: 9740					

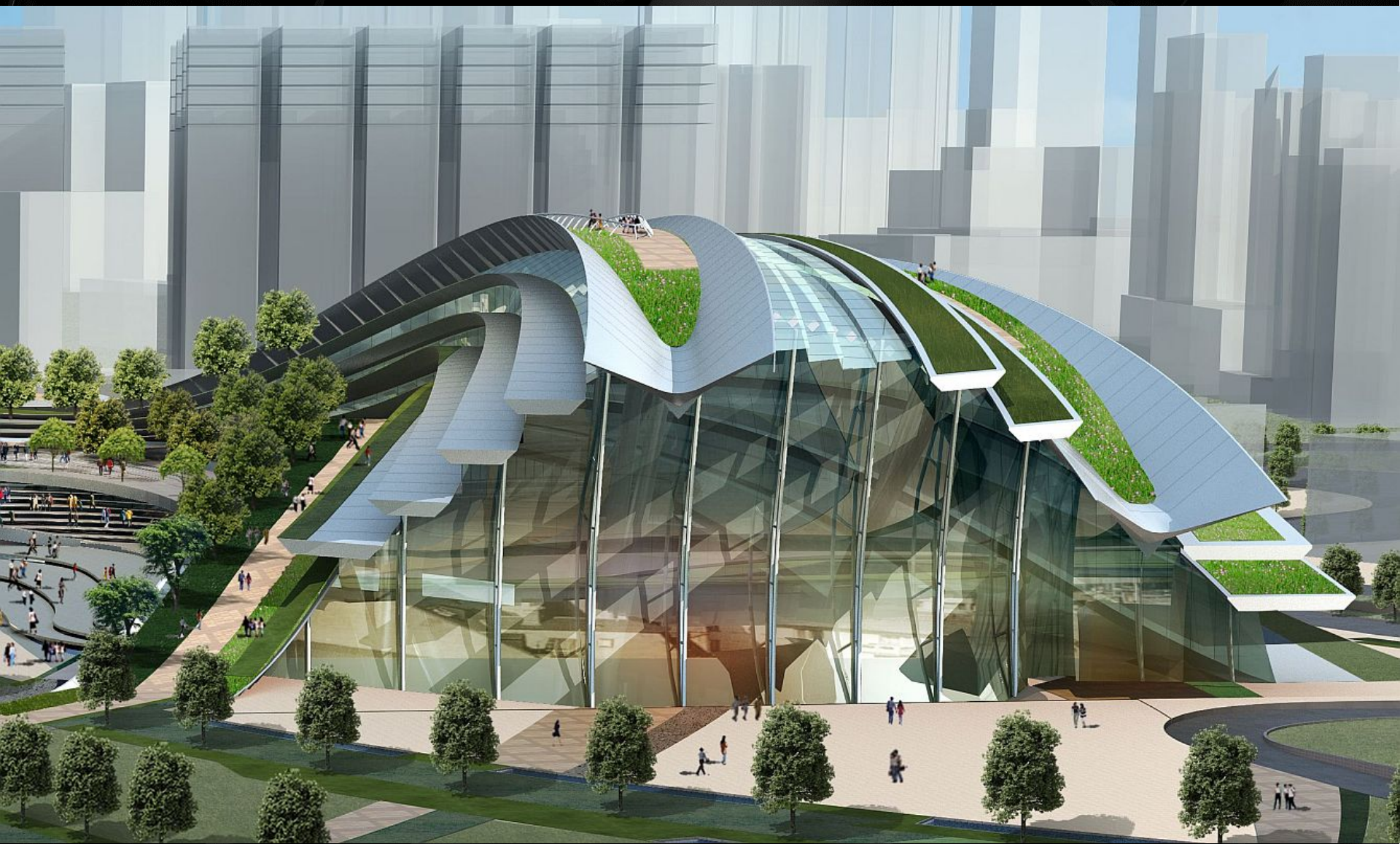


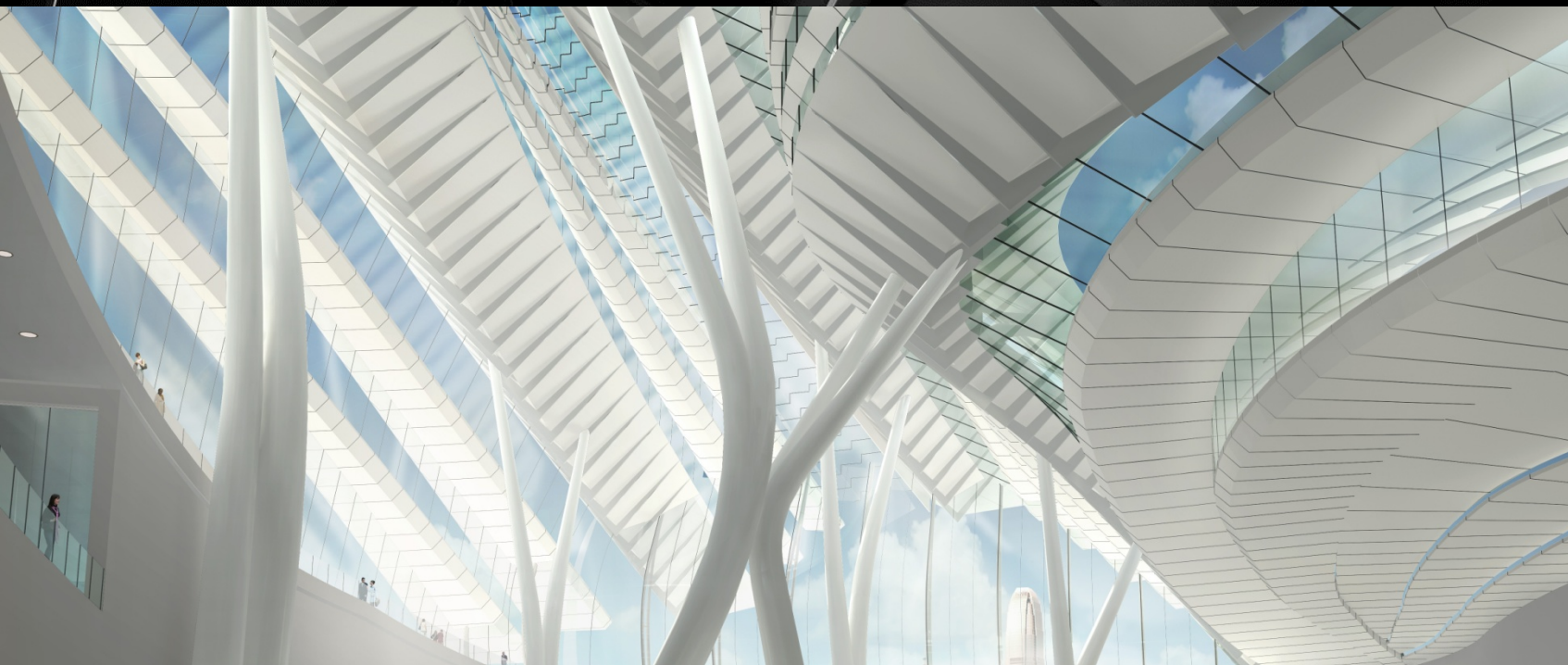




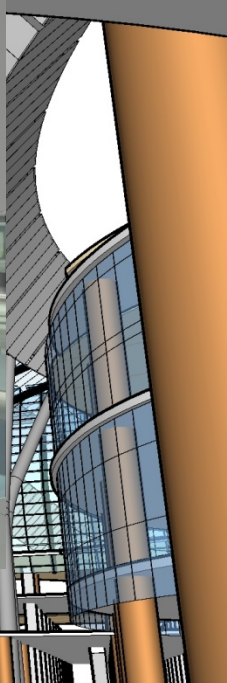
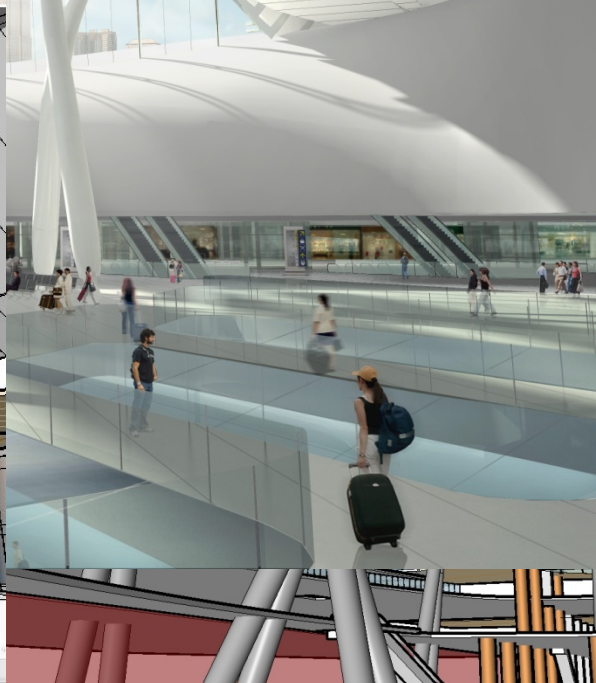
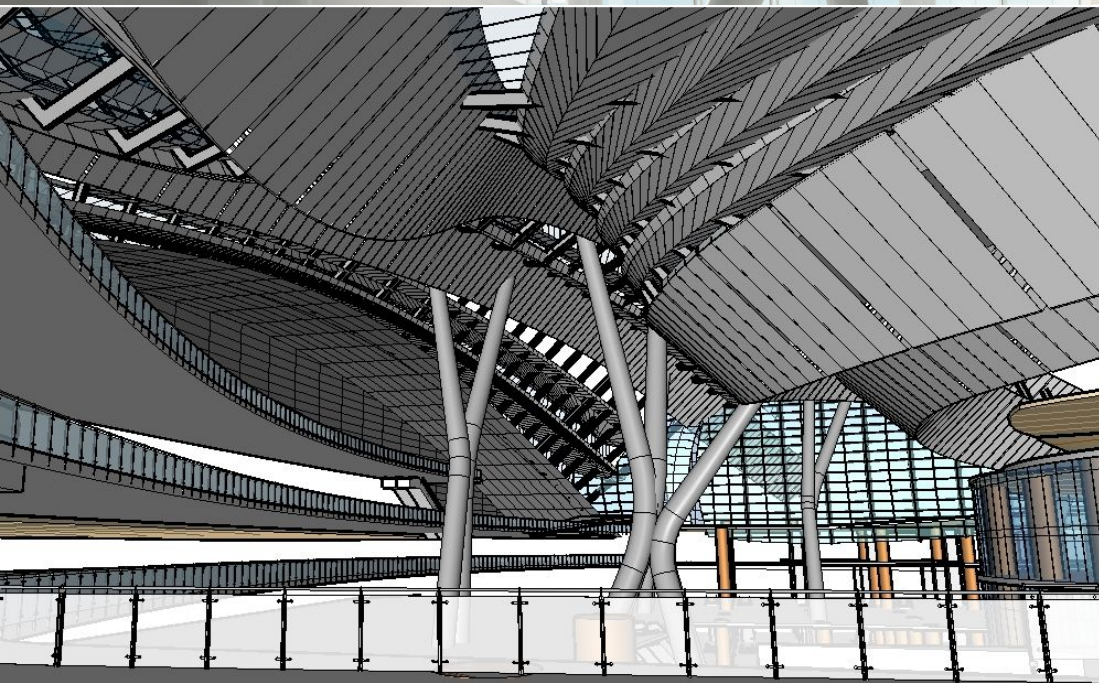


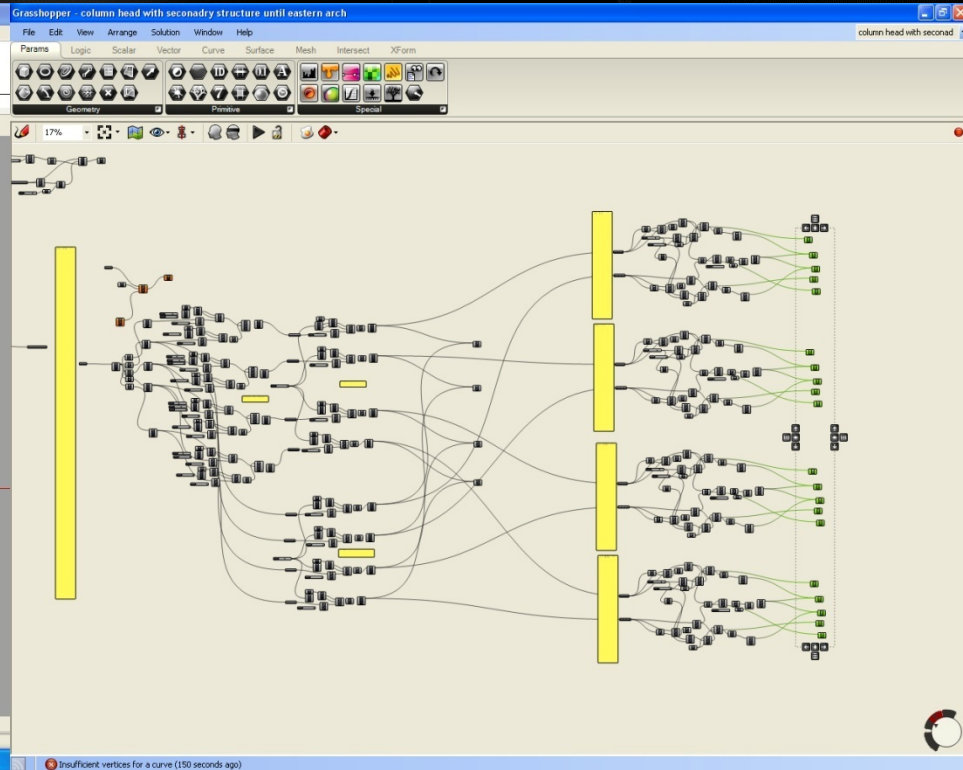
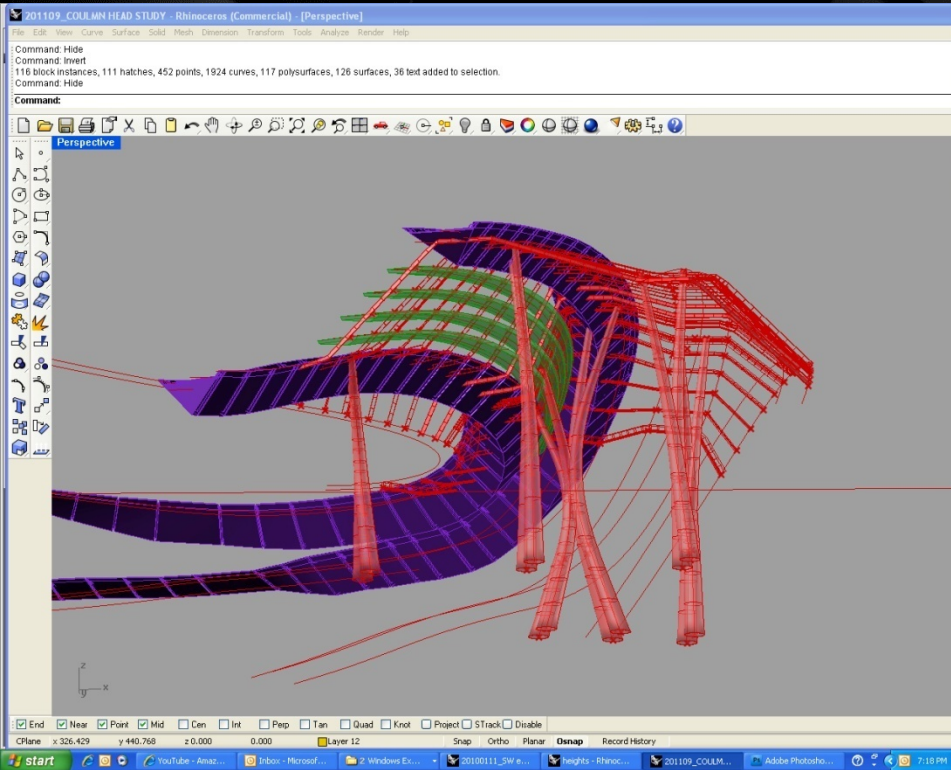


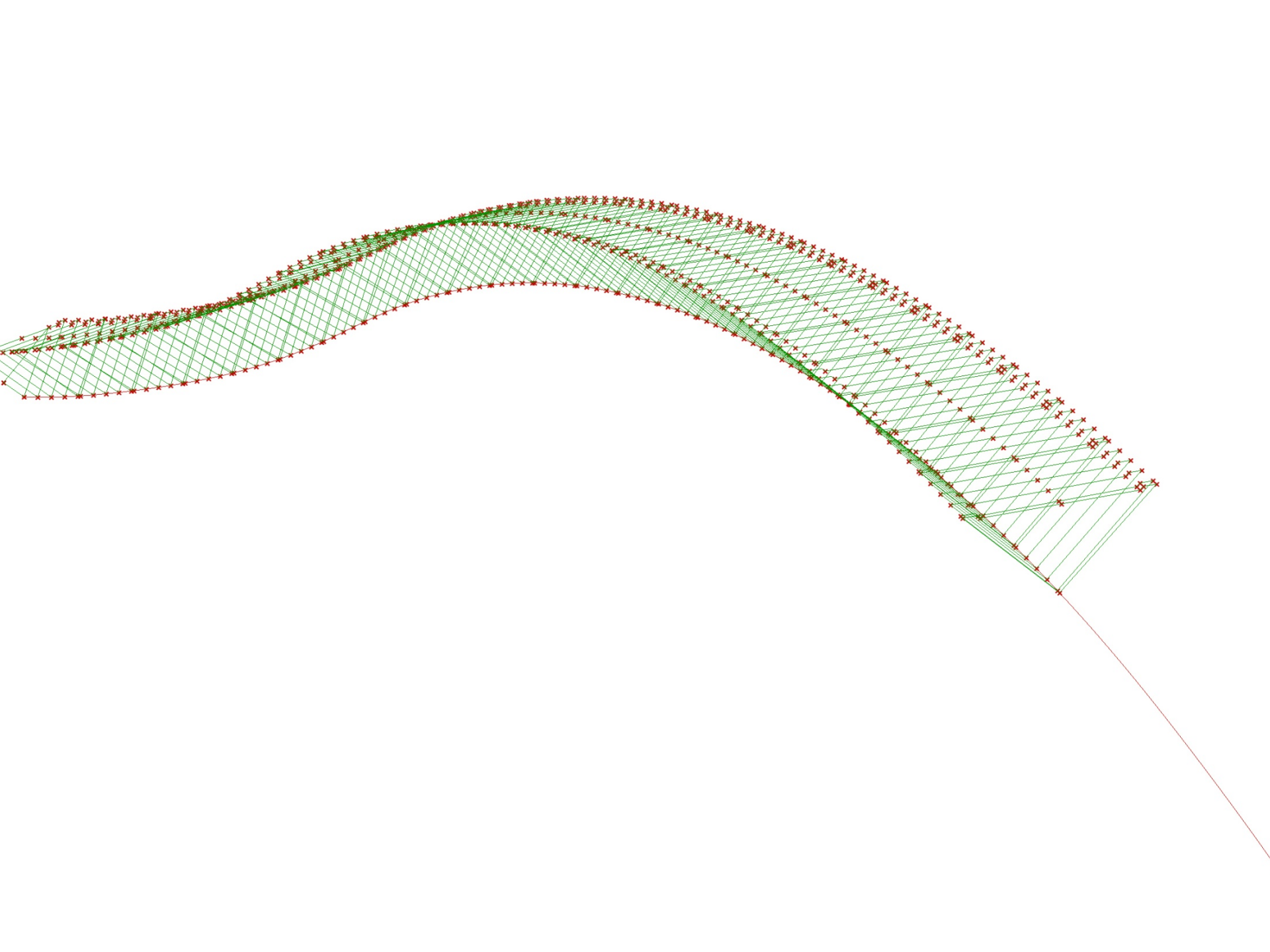


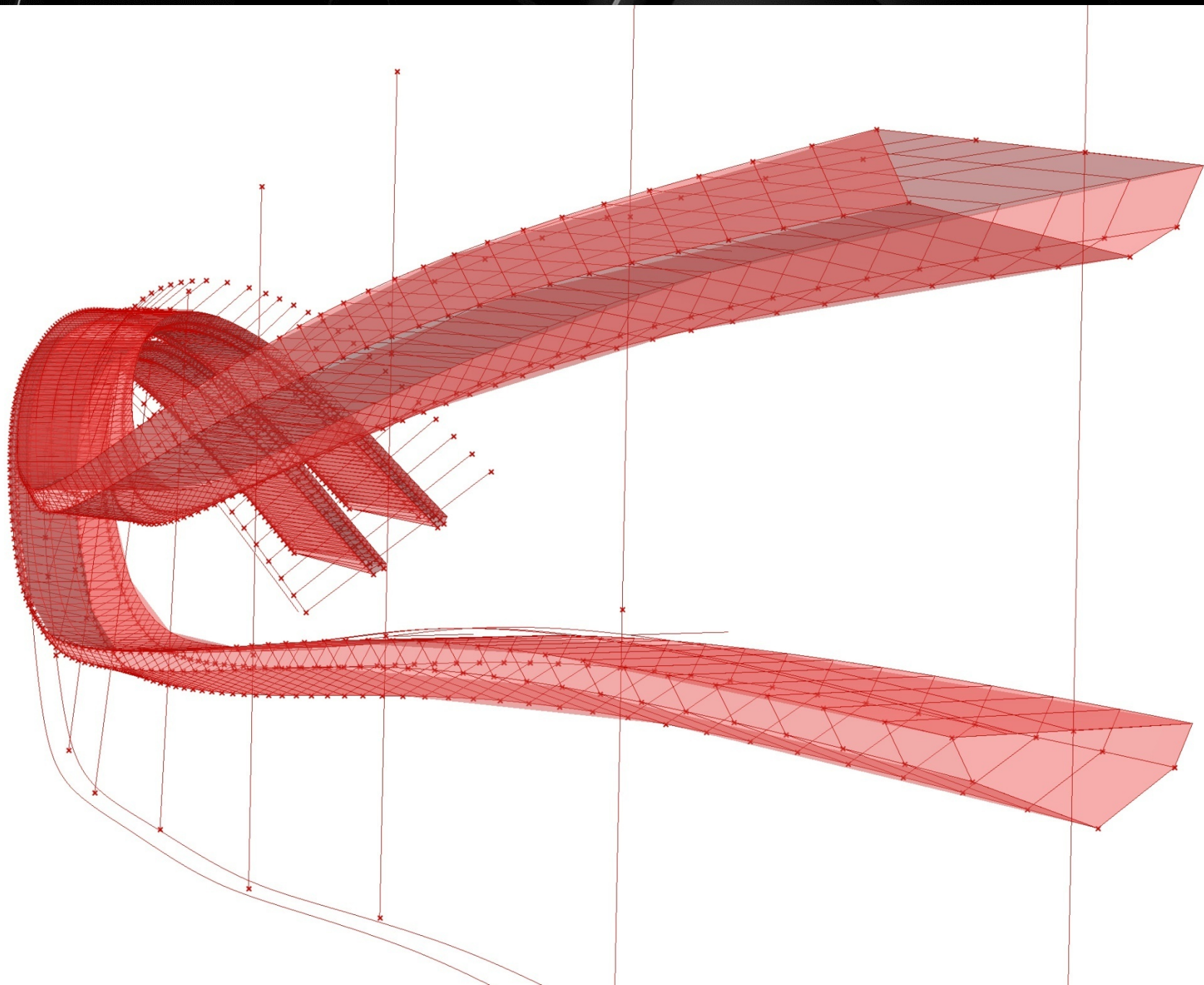


CIJ









```

    {
        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);

```


3_S6.xls

EN English (United States)

File Edit Tools Data Window Help



C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
## lengt	P01z## lengt	P02x## lengt	P02y## lengt	P02z## lengt	P03x## lengt	P03y## lengt	P03z## lengt	P04x## lengt	P04y## lengt	P04z## lengt	Panel Type##	other##		
24.1138	30997.4089	150034.096	44497.0923	31201.1007	151479.165	44220.6936	29756.4955	151017.994	42846.0425	29553.4116	P3S06P001			
97.0923	31201.1007	150490.205	45872.5015	31400.2904	151935	45597.7674	29955.086	151479.165	44220.6936	29756.4955	P3S06P002			
72.5015	31400.2904	150940.93	47250.3052	31594.9821	152385.473	46977.2334	30149.1841	151935	45597.7674	29955.086	P3S06P003			
50.3052	31594.9821	151386.267	48630.4698	31785.1616	152830.57	48359.0618	30338.7828	152385.473	46977.2334	30149.1841	P3S06P004			
30.4698	31785.1616	151474.689	48906.7825	31822.6539	152918.944	48635.7079	30376.1616	152830.57	48359.0618	30338.7828	P3S06P005			
06.7825	31822.6539	151913.575	50289.7323	32007.3872	153357.585	50020.3276	30560.3477	152918.944	48635.7079	30376.1616	P3S06P006			
89.7323	32007.3872	152347.08	51674.9657	32187.576	153790.836	51407.2369	30740.0246	153357.585	50020.3276	30560.3477	P3S06P007			
74.9657	32187.576	152775.147	53062.4739	32363.2813	154218.667	52796.4316	30915.2314	153790.836	51407.2369	30740.0246	P3S06P008			
62.4739	32363.2813	153197.744	54452.3272	32534.6167	154641.09	54188.0429	31086.0665	154218.667	52796.4316	30915.2314	P3S06P009			
52.3272	32534.6167	153281.603	54730.5766	32568.3694	154724.924	54466.654	31119.7184	154641.09	54188.0429	31086.0665	P3S06P010			
30.5766	32568.3694	153697.624	56123.188	32734.5715	155140.841	55861.1282	31285.4274	154724.924	54466.654	31119.7184	P3S06P011			
123.188	32734.5715	154108.128	57517.7498	32896.4211	155551.199	57257.4509	31446.8027	155140.841	55861.1282	31285.4274	P3S06P012			
17.7498	32896.4211	154513.02	58914.0007	33053.6684	155955.863	58655.1793	31603.5689	155551.199	57257.4509	31446.8027	P3S06P013			
14.0007	33053.6684	154912.275	60311.9726	33206.0604	156354.833	60054.3601	31755.4605	155955.863	58655.1793	31603.5689	P3S06P014			
11.9726	33206.0604	154991.455	60591.8003	33235.9403	156433.956	60334.4167	31785.2395	156354.833	60054.3601	31755.4605	P3S06P015			
91.8003	33235.9403	155384.039	61992.164	33382.3144	156826.258	61735.9125	31931.1206	156433.956	60334.4167	31785.2395	P3S06P016			
992.164	33382.3144	155771.104	63394.5402	33523.6095	157213.036	63139.4019	32071.9532	156826.258	61735.9125	31931.1206	P3S06P017			
94.5402	33523.6095	156152.641	64799.0536	33659.8994	157594.329	64545.1147	32207.8035	157213.036	63139.4019	32071.9532	P3S06P018			
99.0536	33659.8994	156528.665	66205.8406	33791.3989	157970.193	65953.318	32338.8909	157594.329	64545.1147	32207.8035	P3S06P019			
05.8406	33791.3989	156603.207	66487.4657	33817.1437	158044.711	66235.2527	32364.5566	157970.193	65953.318	32338.8909	P3S06P020			
87.4657	33817.1437	156972.591	67896.8372	33943.1573	158414.002	67646.2548	32490.1972	158044.711	66235.2527	32364.5566	P3S06P021			
96.8372	33943.1573	157336.329	69307.9002	34064.607	158777.619	69058.83	32611.2857	158414.002	67646.2548	32490.1972	P3S06P022			
07.9002	34064.607	157694.338	70720.5482	34181.3772	159135.5	70472.822	32727.6793	158777.619	69058.83	32611.2857	P3S06P023			
20.5482	34181.3772	158046.558	72134.4265	34293.1711	159487.514	71887.6646	32839.0806	159135.5	70472.822	32727.6793	P3S06P024			
34.4265	34293.1711	158116.297	72417.2914	34314.8748	159557.191	72170.6364	32860.703	159487.514	71887.6646	32839.0806	P3S06P025			
17.2914	34314.8748	158461.474	73832.0687	34419.7934	159901.955	73585.5129	32965.2043	159557.191	72170.6364	32860.703	P3S06P026			
32.0687	34419.7934	158800.798	75247.6674	34518.1928	160240.723	75000.5299	33063.172	159901.955	73585.5129	32965.2043	P3S06P027			
47.6674	34518.1928	159134.34	76664.522	34609.6099	160573.676	76416.4942	33154.1589	160240.723	75000.5299	33063.172	P3S06P028			
664.522	34609.6099	159462.105	78082.6818	34693.7628	160900.837	77833.534	33237.8995	160573.676	76416.4942	33154.1589	P3S06P029			
82.6818	34693.7628	159526.964	78366.4655	34709.6976	160965.574	78117.0662	33253.7554	160900.837	77833.534	33237.8995	P3S06P030			
66.4655	34709.6976	159847.917	79786.6698	34784.8936	161285.941	79536.0393	33328.5833	160965.574	78117.0662	33253.7554	P3S06P031			
86.6698	34784.8936	160163.369	81209.1412	34852.7734	161600.864	80957.3769	33396.1369	161285.941	79536.0393	33328.5833	P3S06P032			
09.1412	34852.7734	160473.329	82633.6703	34913.5237	161910.348	82380.8678	33456.5958	161600.864	80957.3769	33396.1369	P3S06P033			


```

public bool CompareEdgesWith(EdgeGroup otherPanel, double tolerance)
{
    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 grouped panel;
}

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

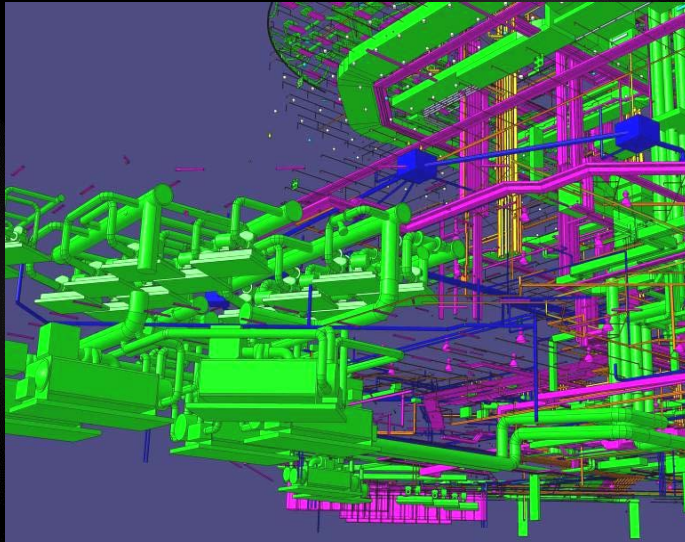
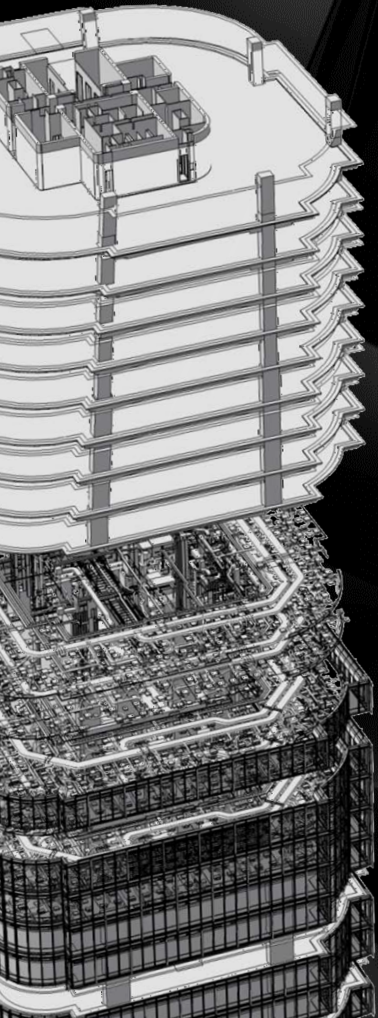
double toSqFeet(double value) //conversion of areal sizes for family instances
{

```

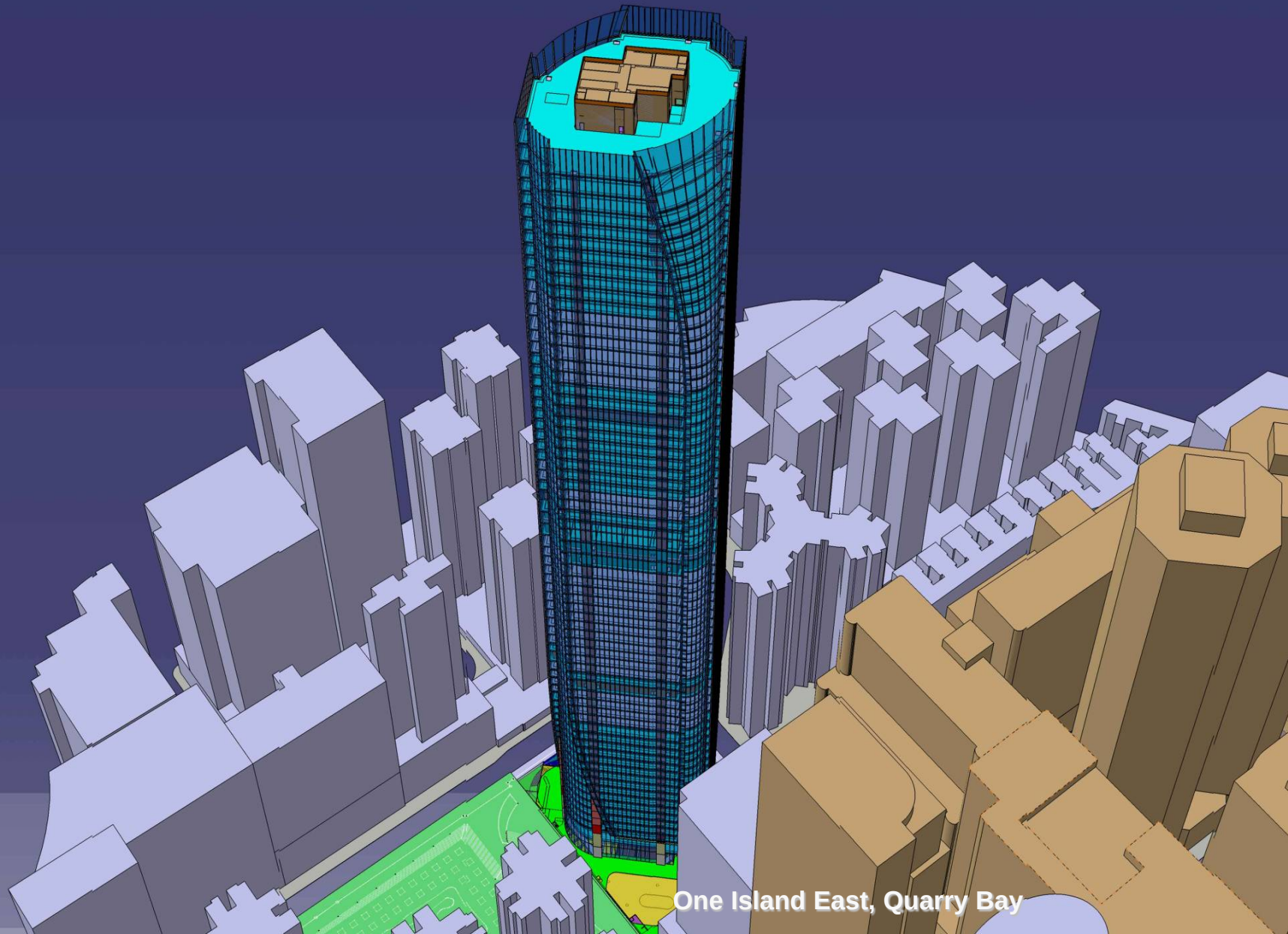
Construction

- One Island East

ncio

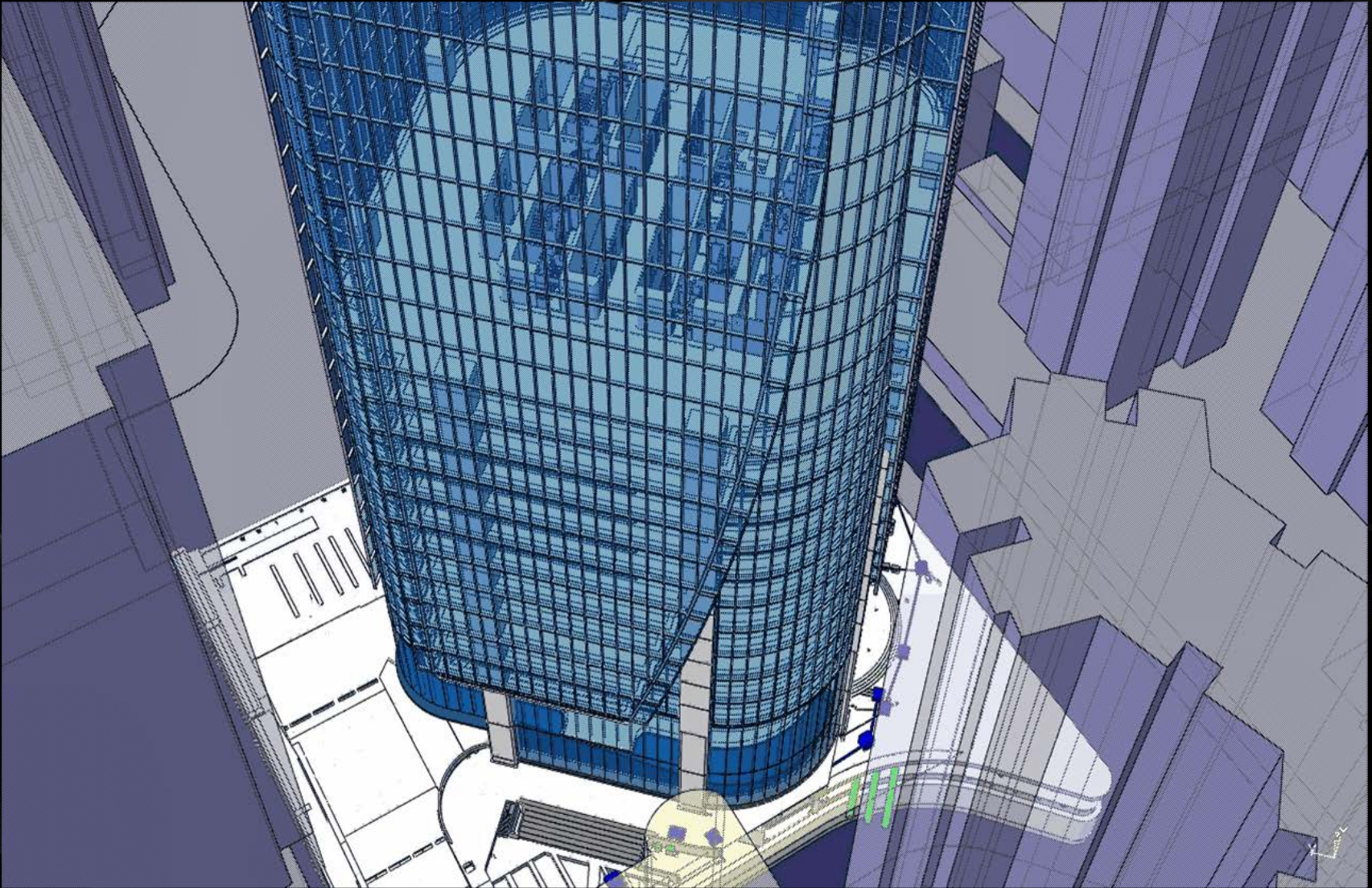


Tender Model by Consultants



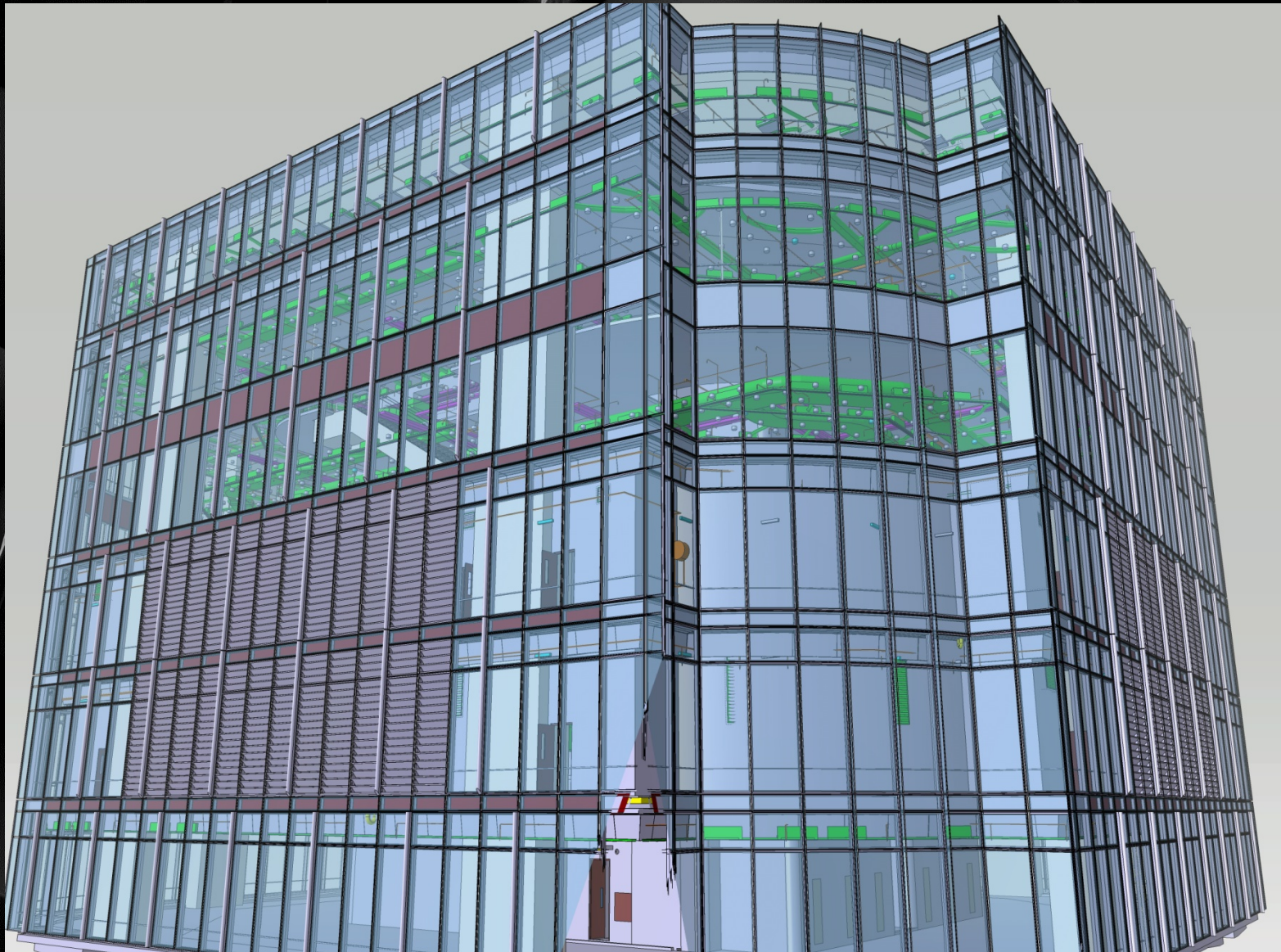
One Island East, Quarry Bay

One Island East

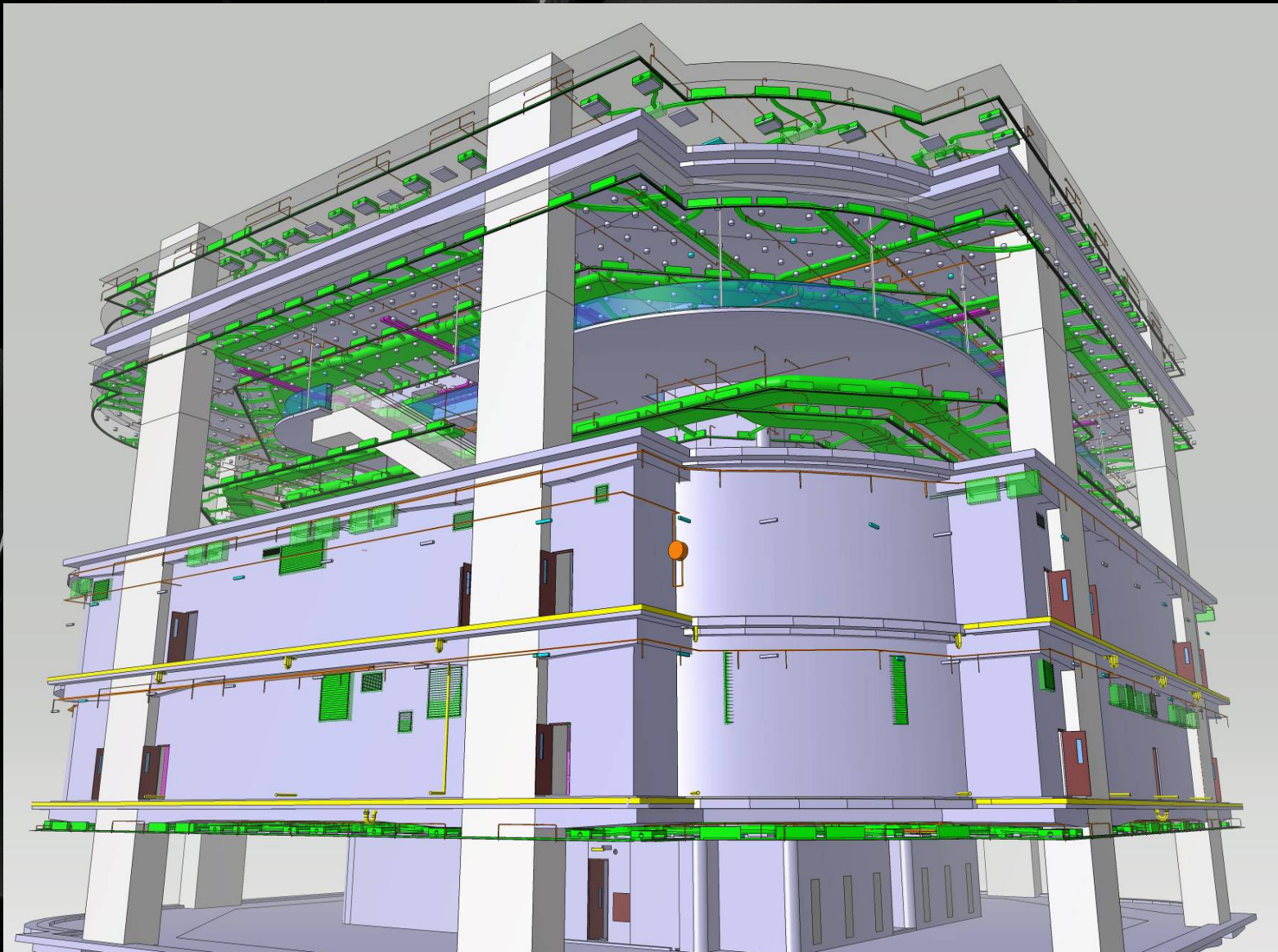


BIM Architectural Configuration

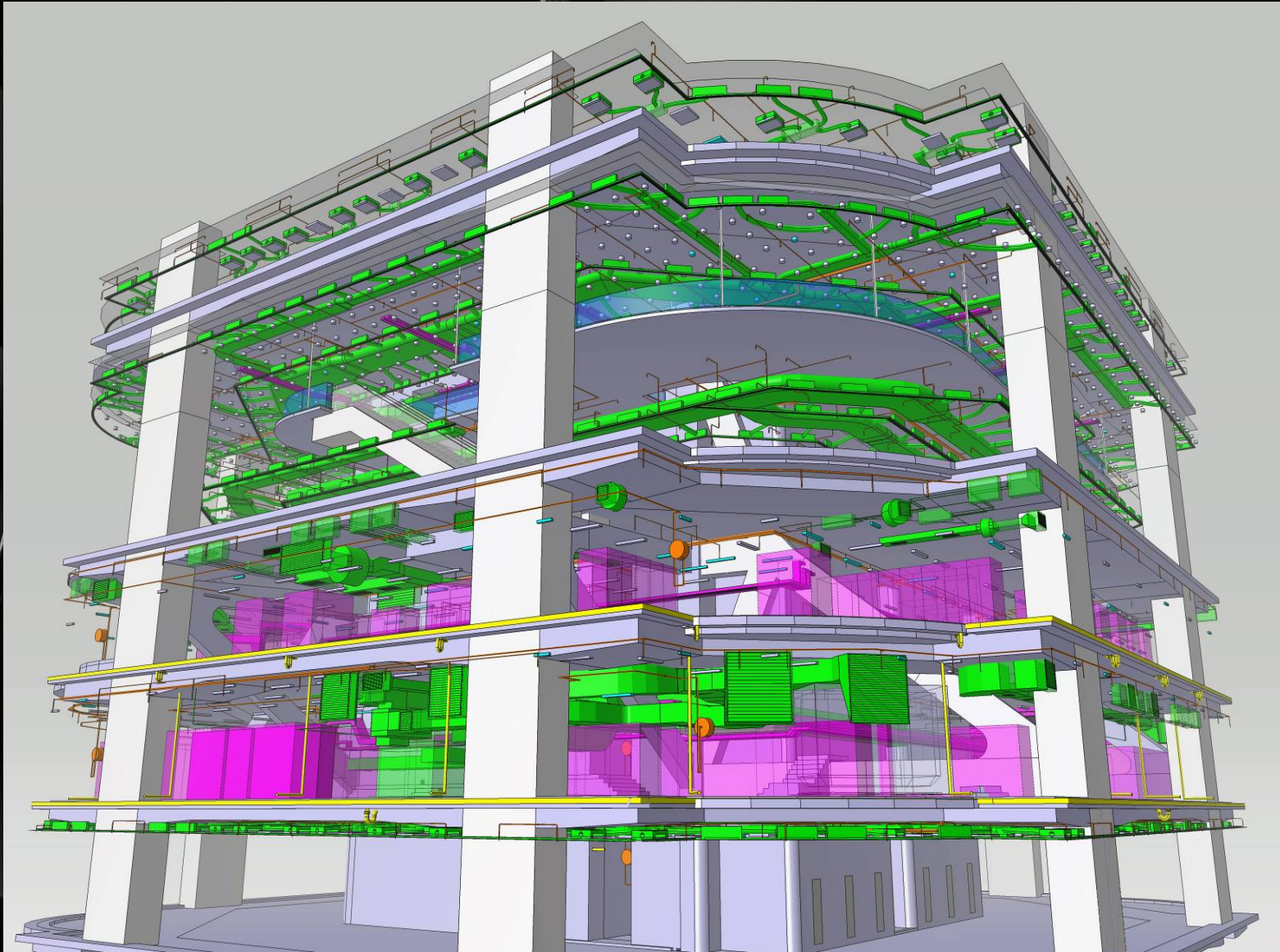
One Island East



One Island East

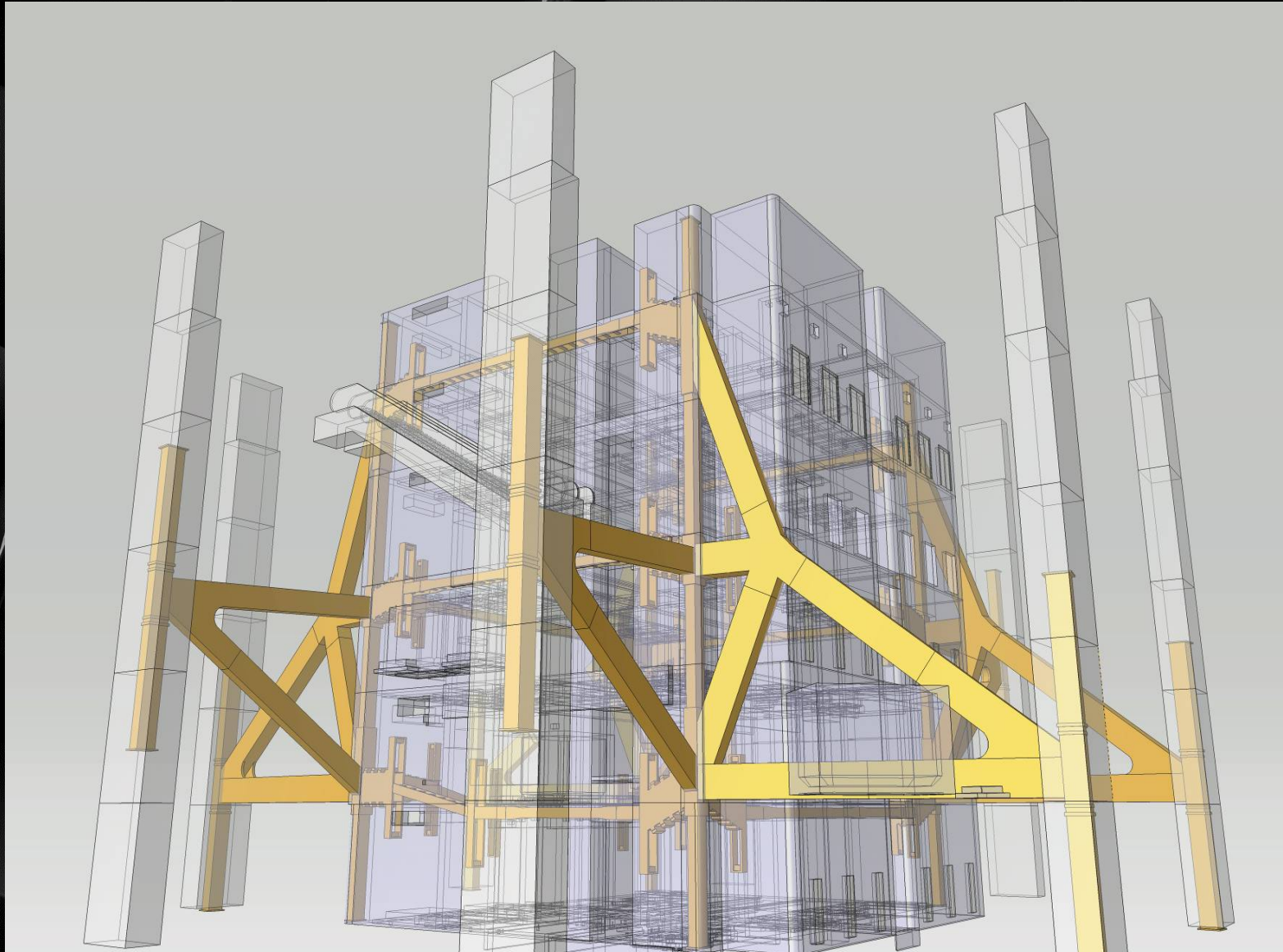


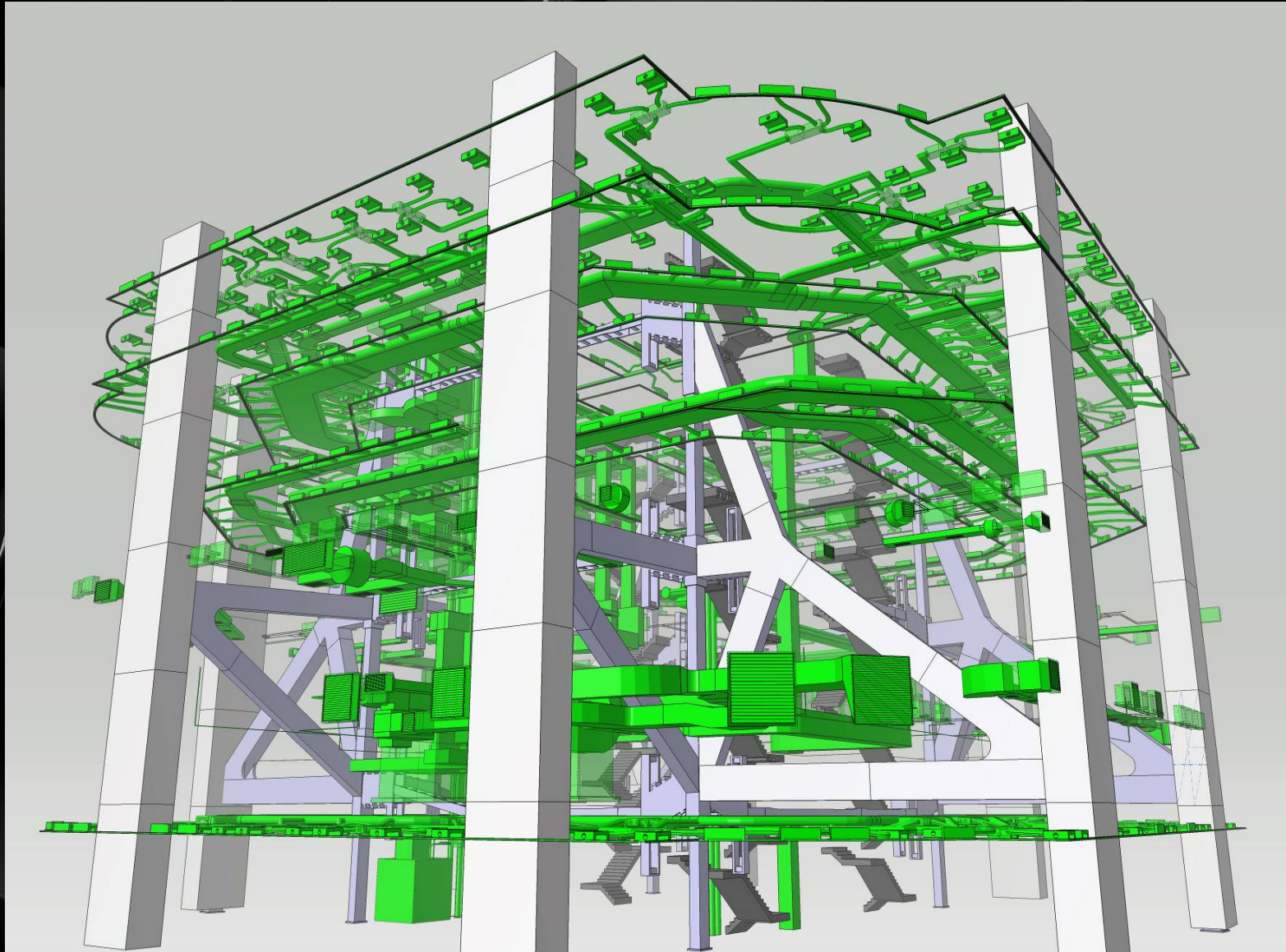
One Island East



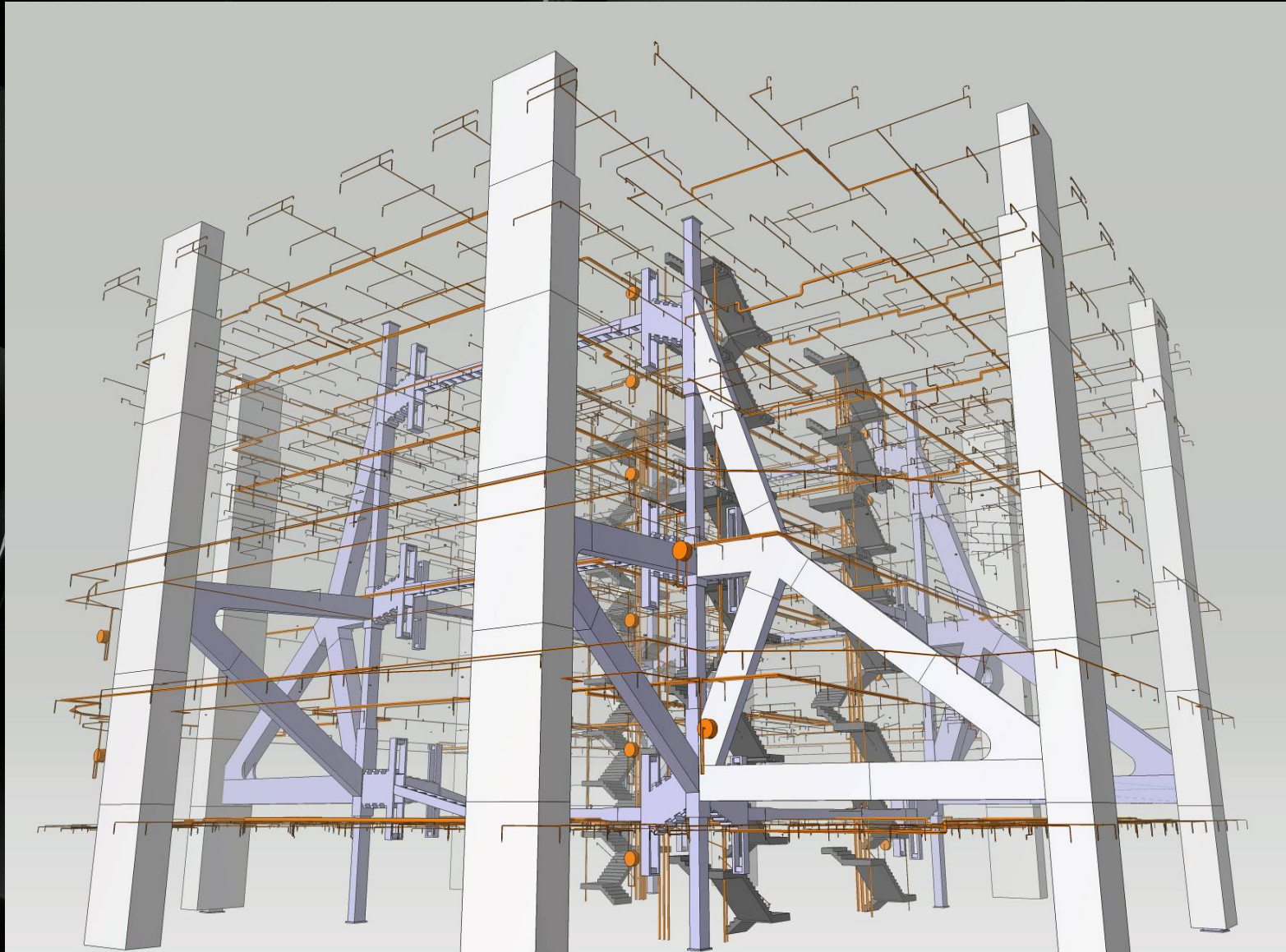
One Island East

NCI

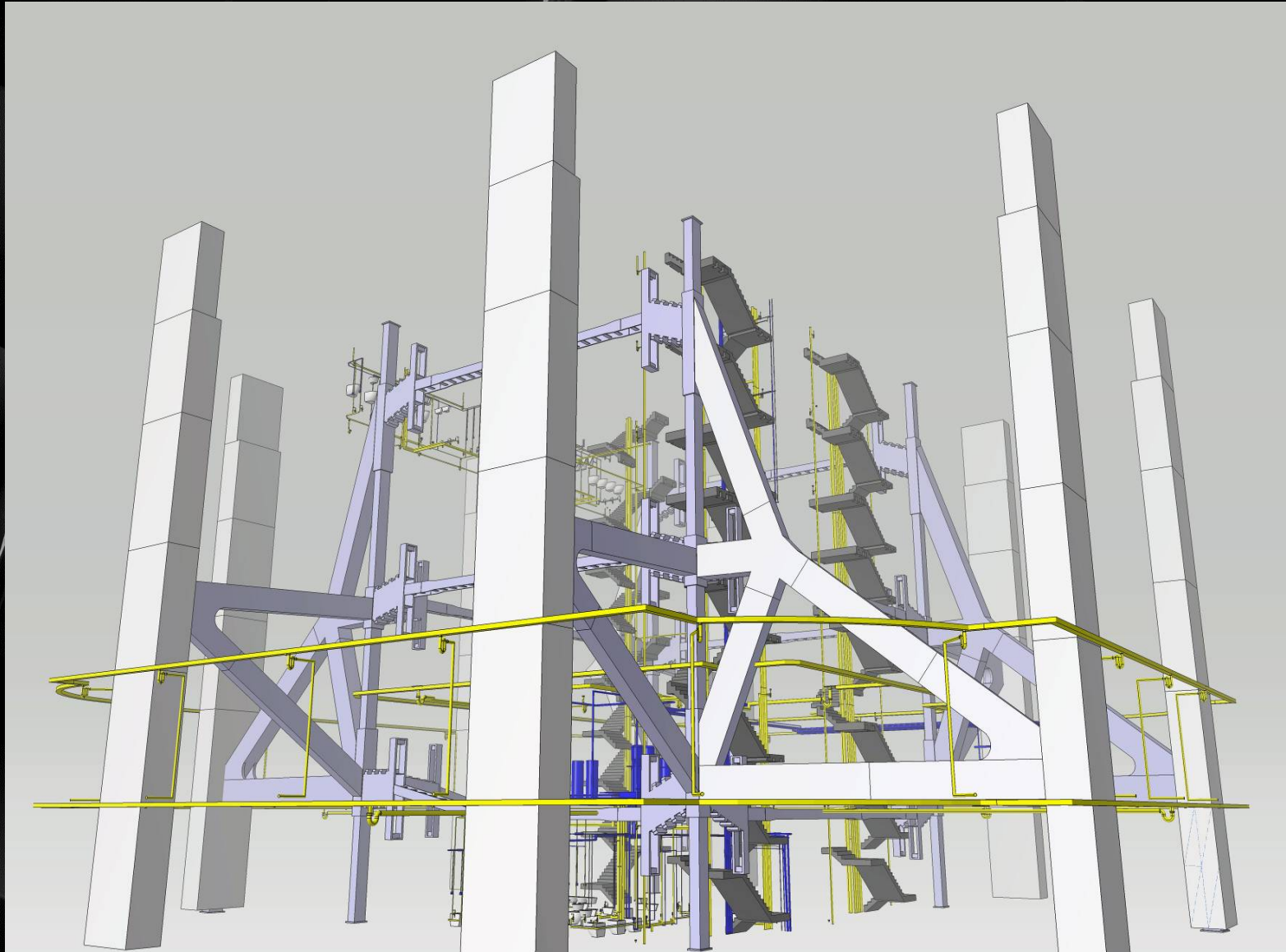




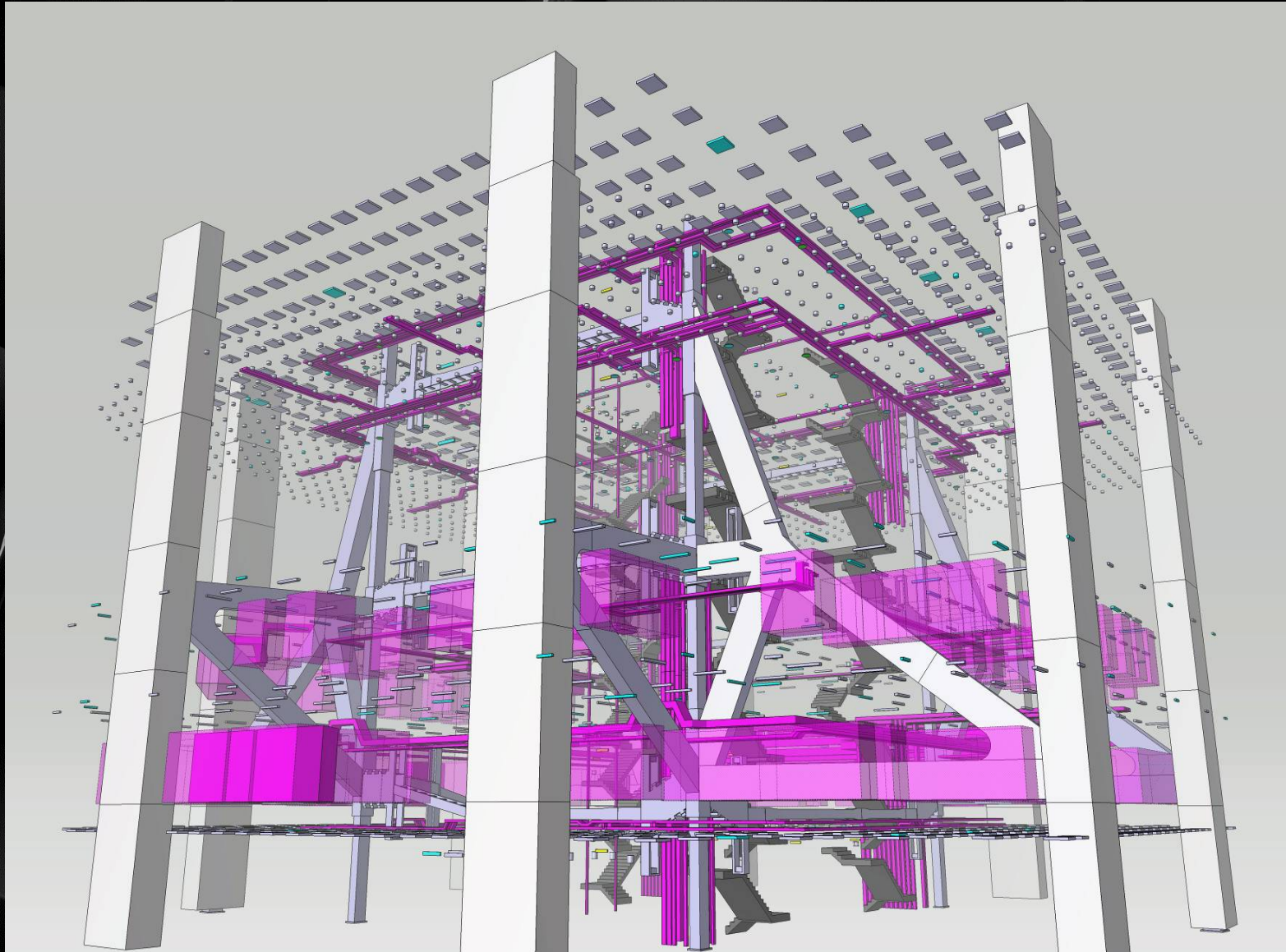
BIM HVAC Configuration



BIM FS Configuration

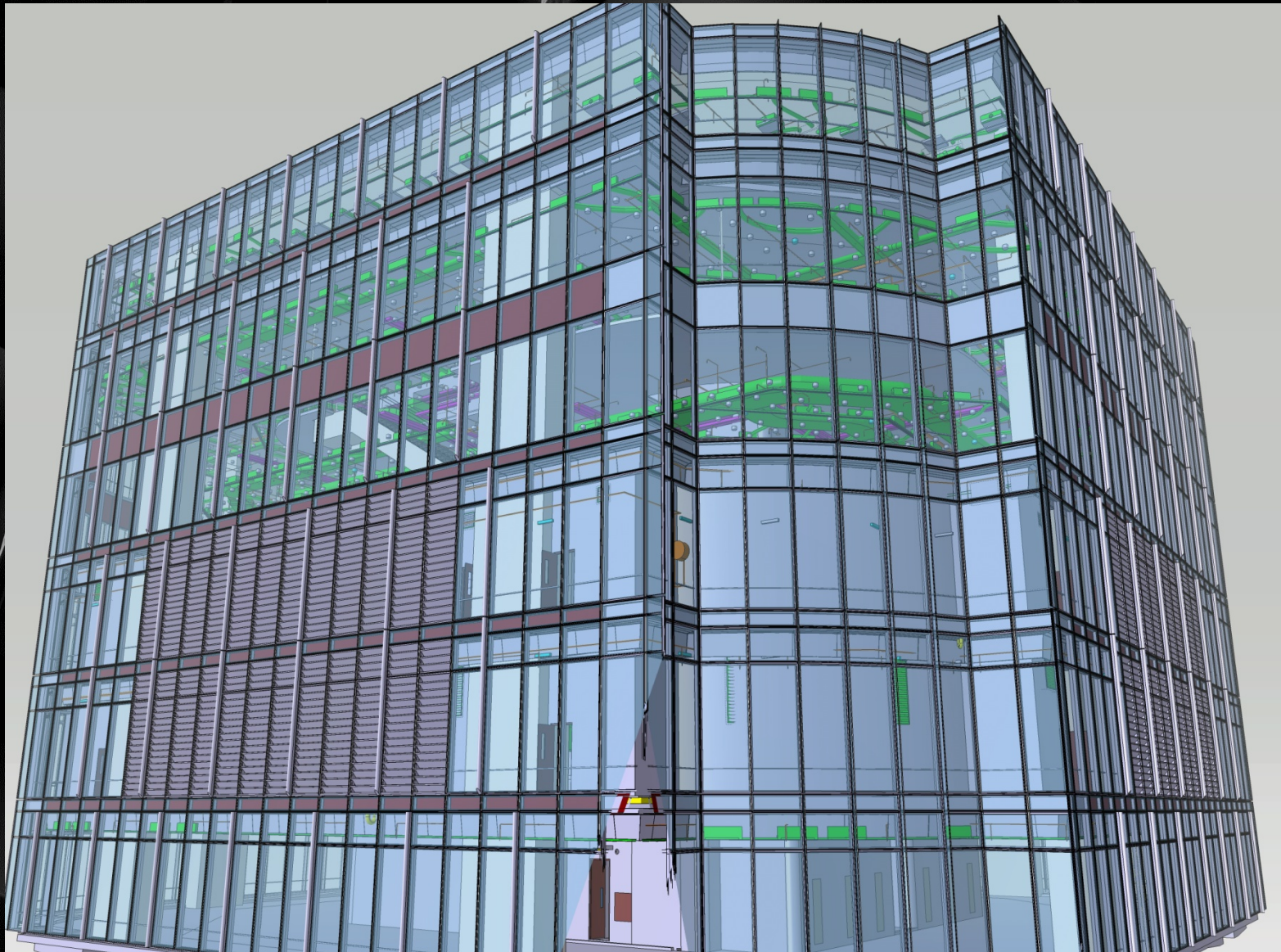


BIM Plumb & Drainage Configuration

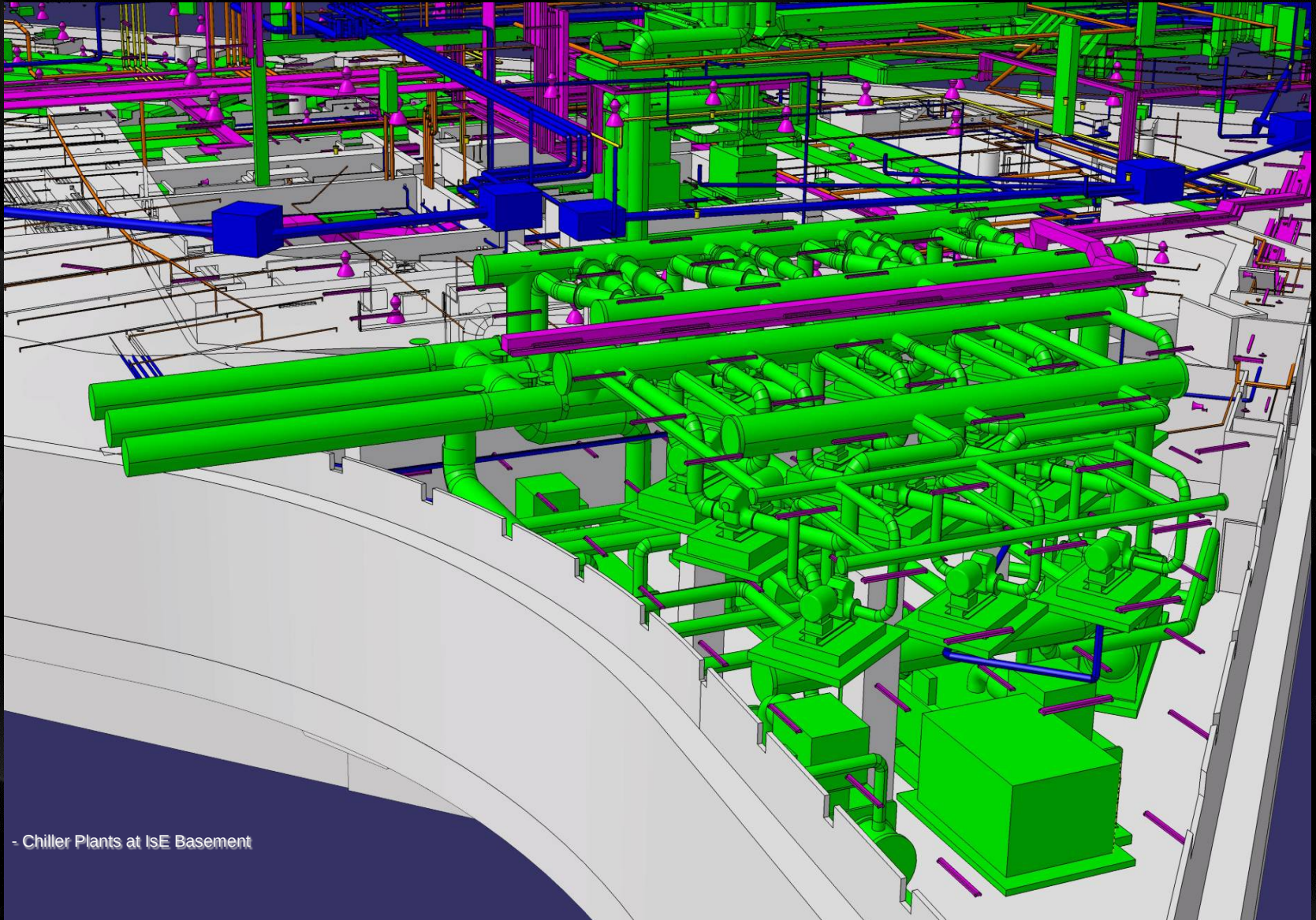


BIM ELEC Configuration

One Island East

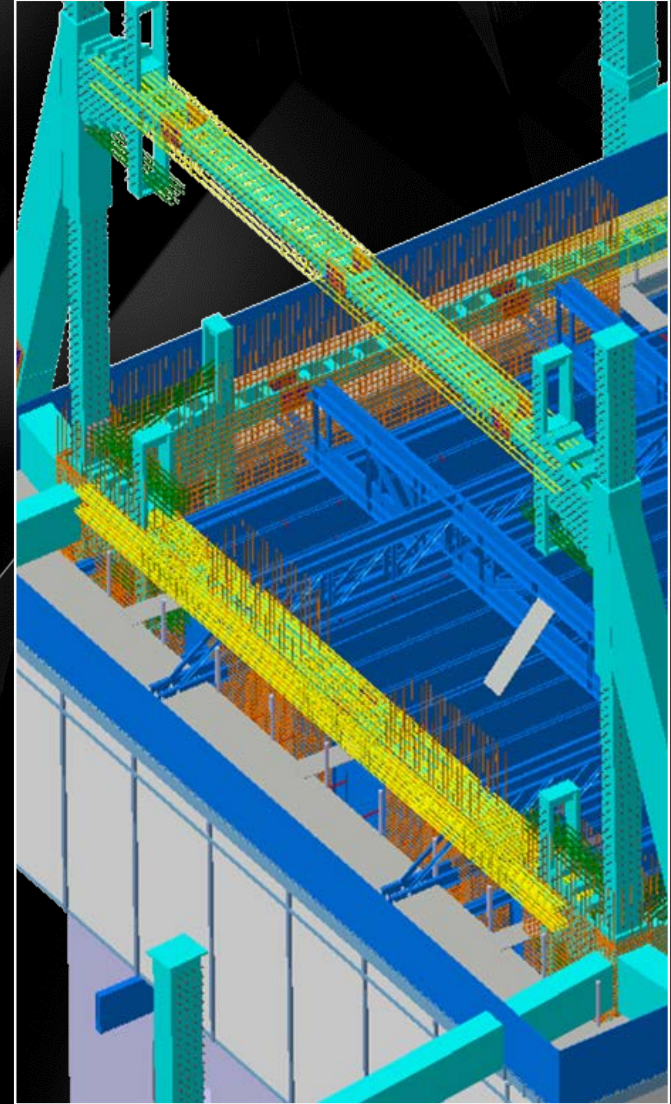
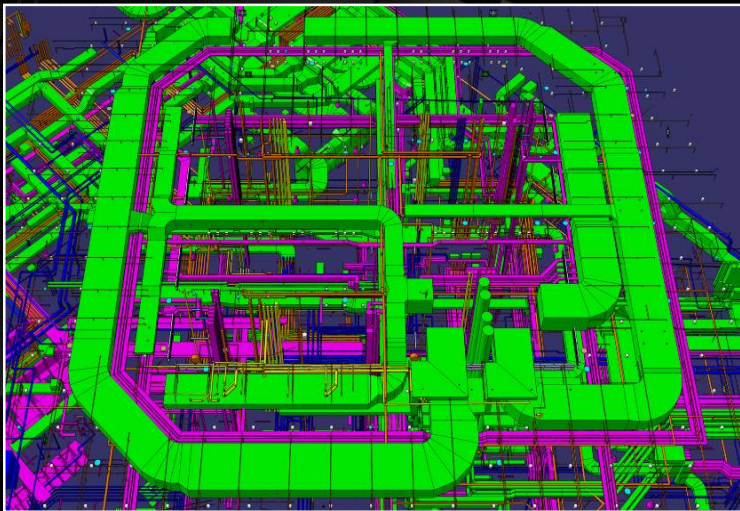
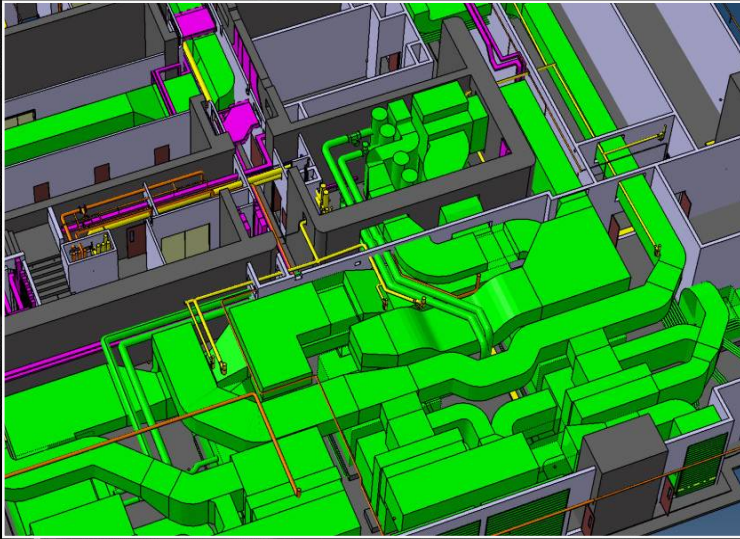


Detail Design and Coordination



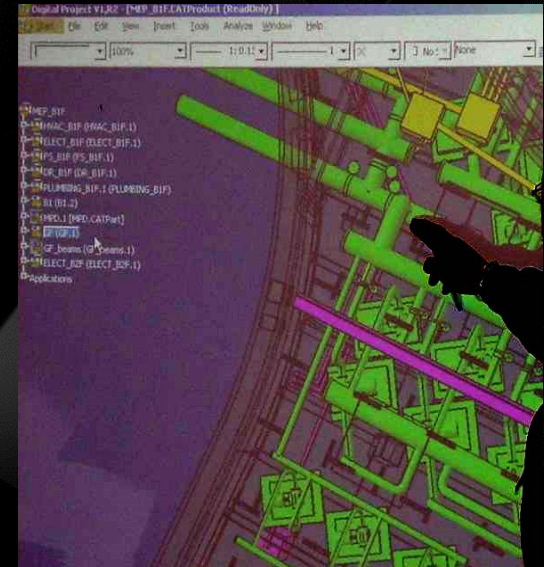
- Chiller Plants at IsE Basement

Detail Design and Coordination



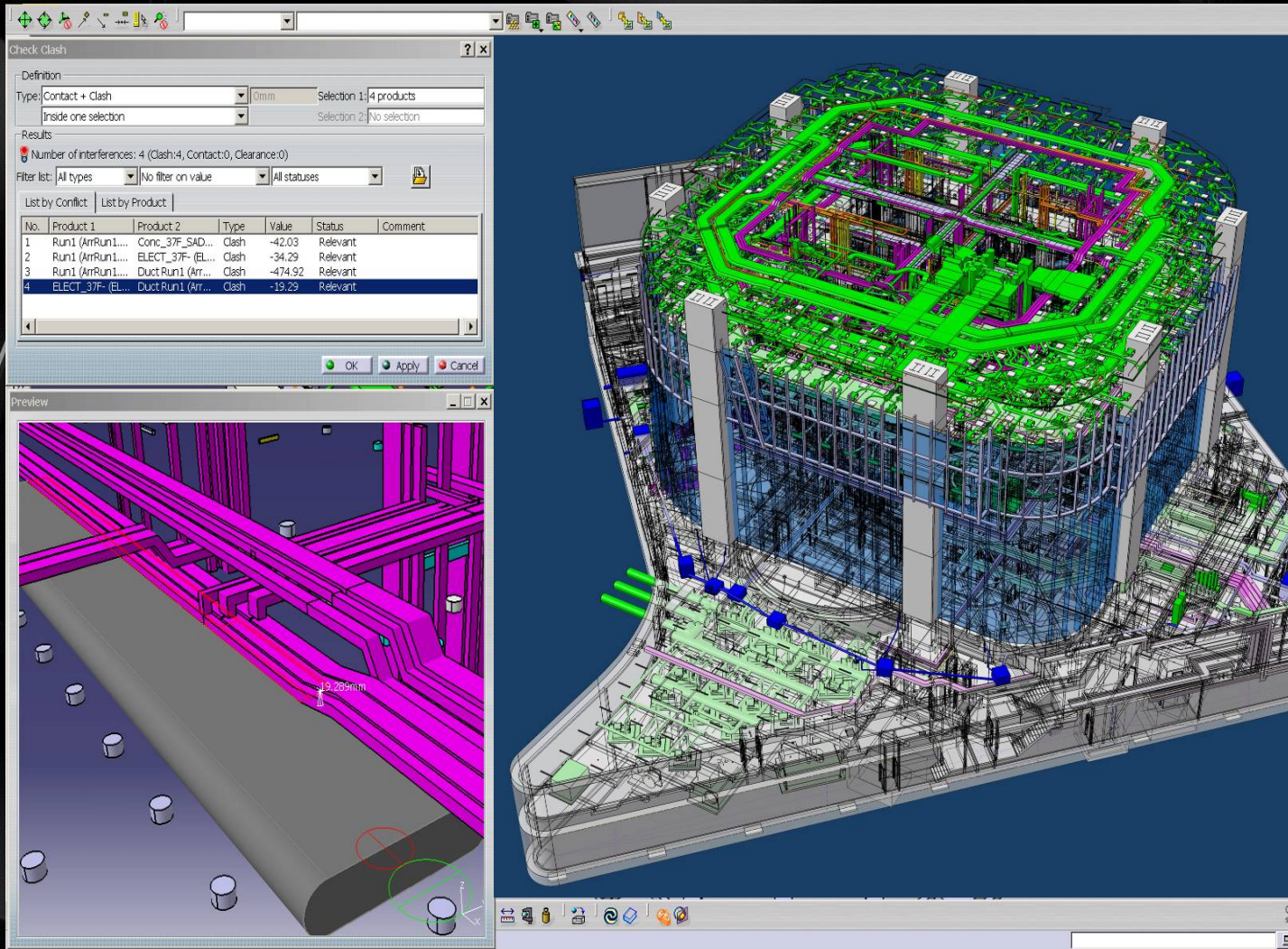
Project-wide multi-discipline design coordination

Detail Design and Coordination



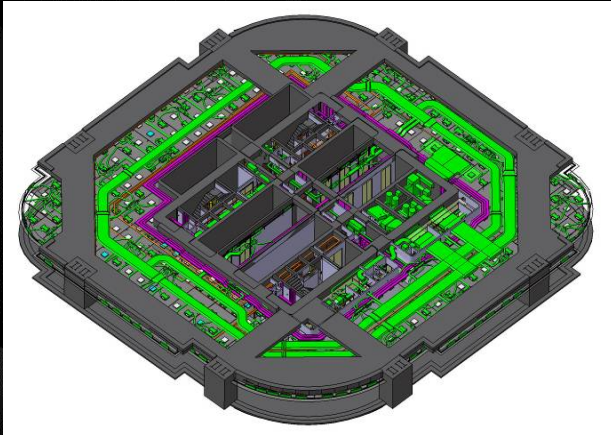
Owner, Architect, Structural, MEP, QS working in the same room on the same Contract 3D Building Information Model

Detail Design and Coordination

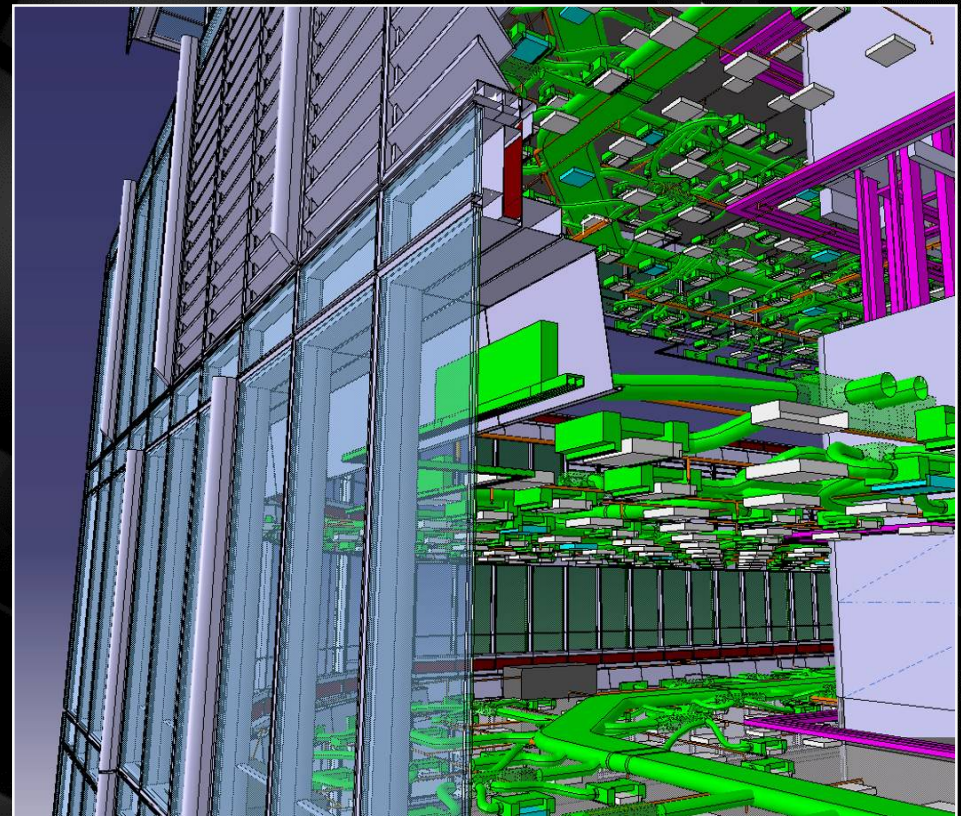
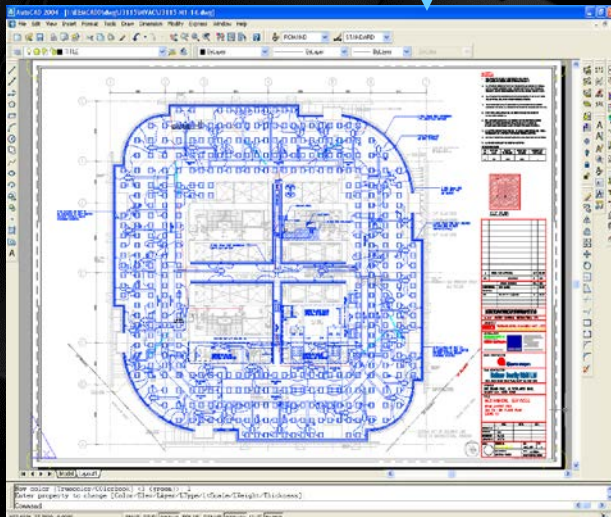


Automatic Clash Identification and Management

Work Document Coordination



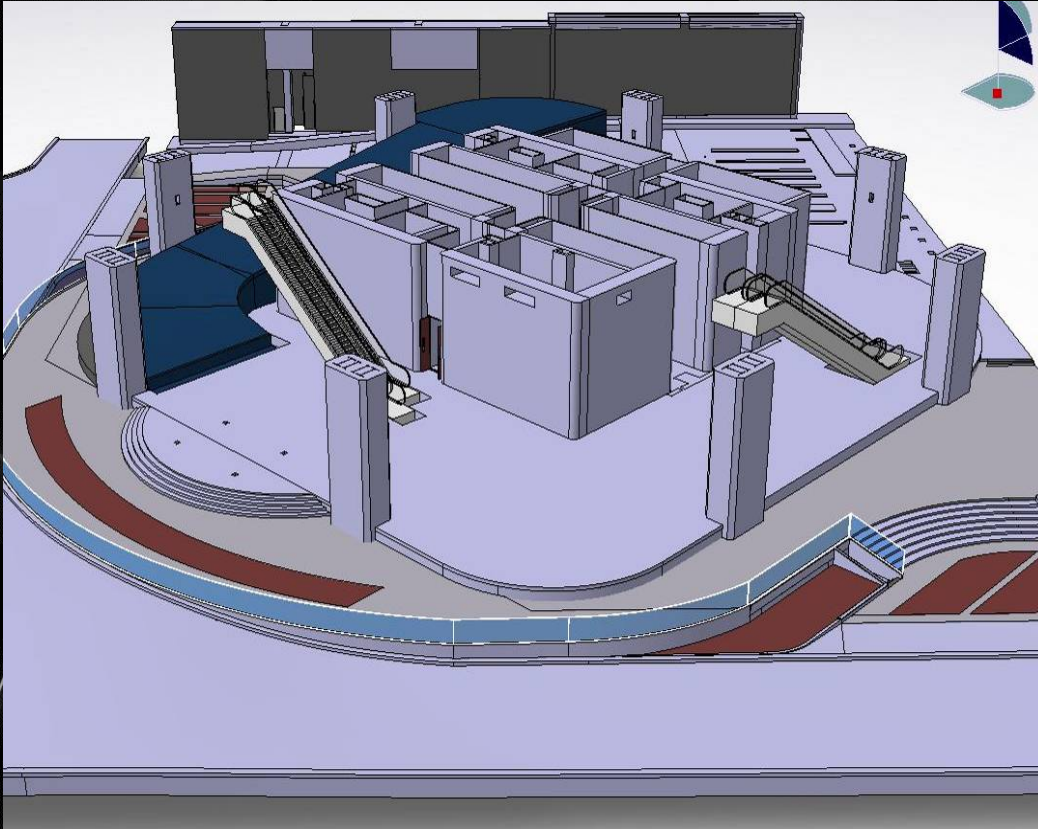
Coordinated 3D geometries



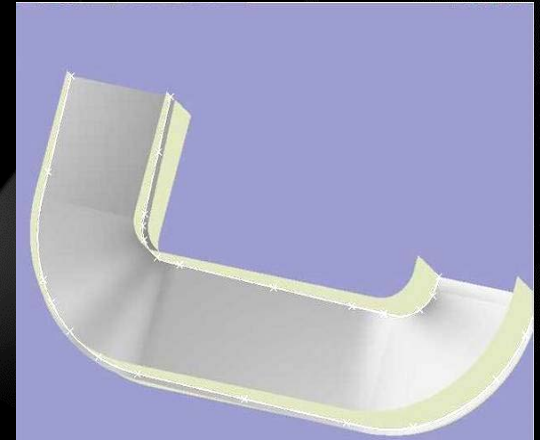
Live Sectioning

2D geometries output to ACAD for further coordination

Facilitate Design Development

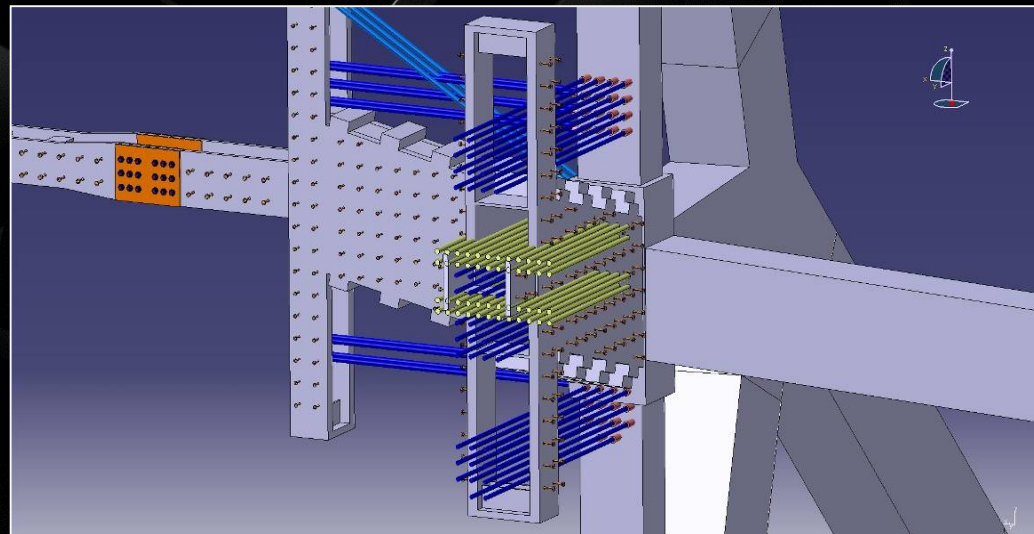
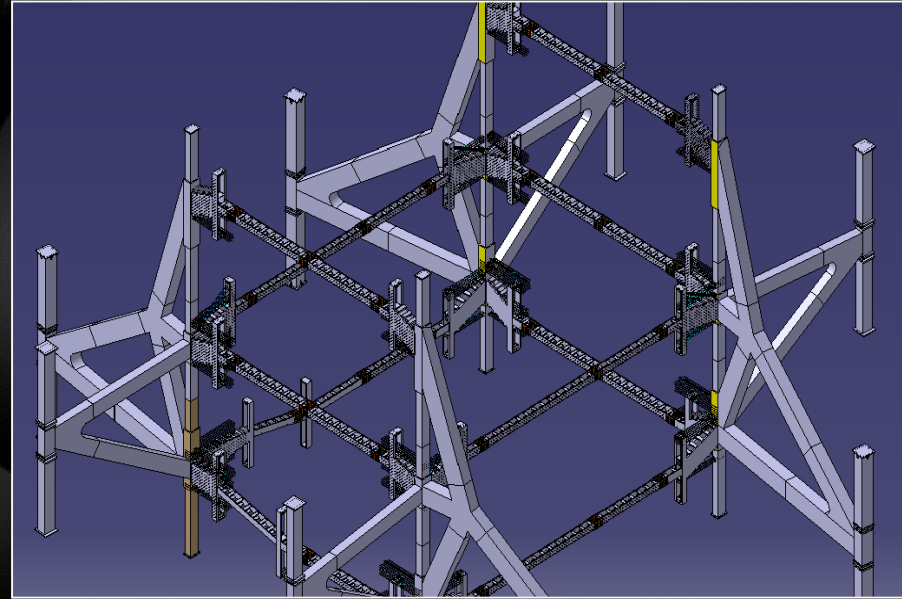


Road Curb Design Review



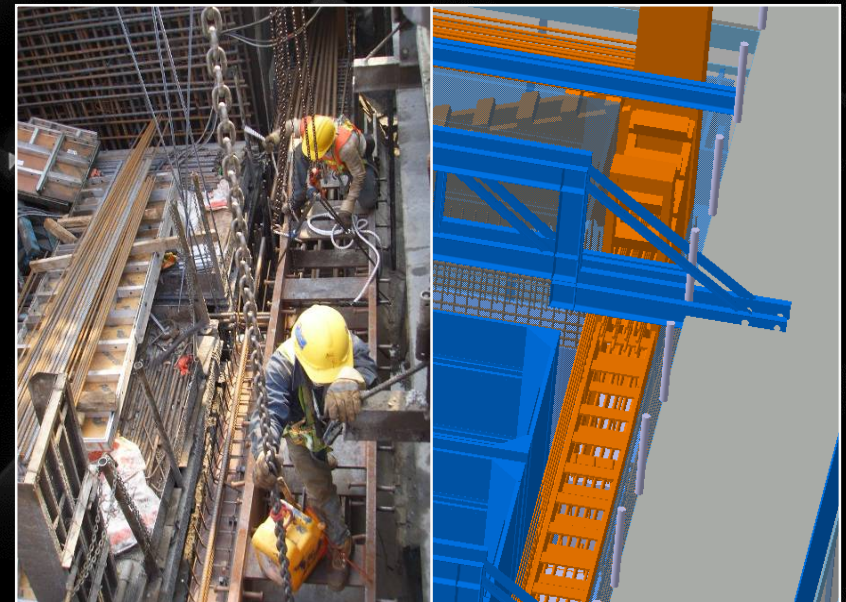
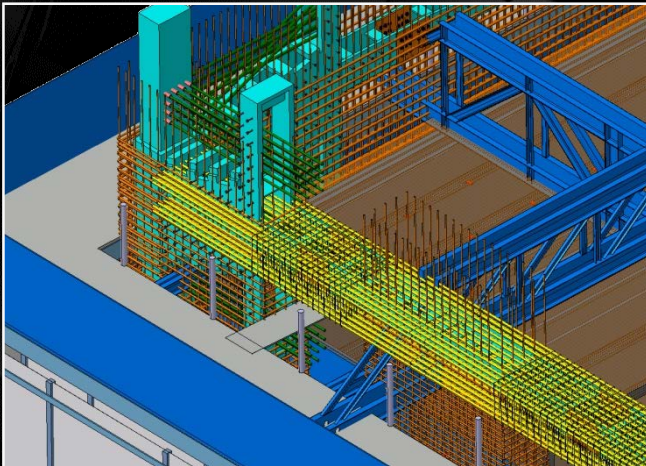
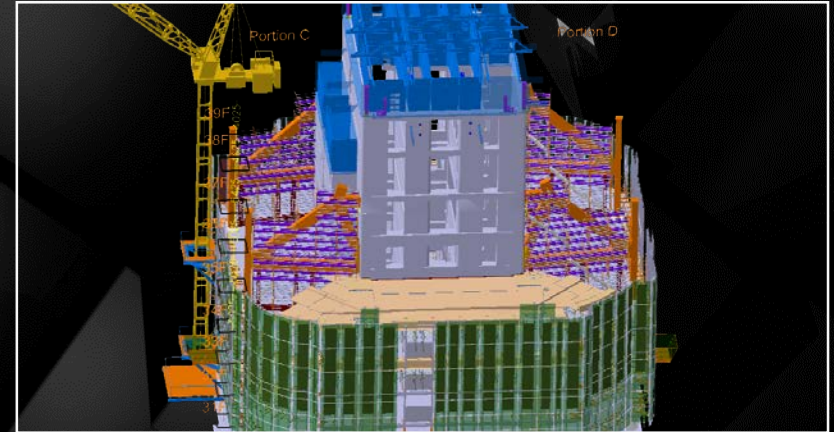
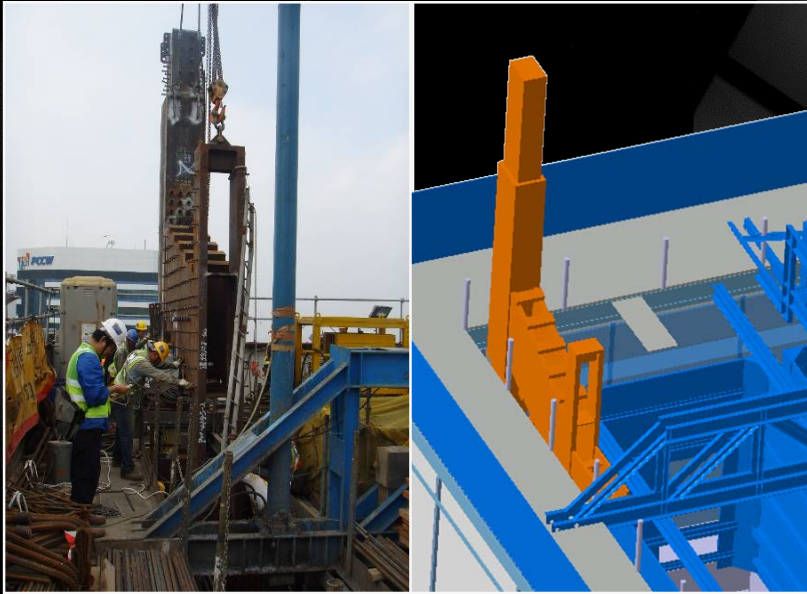
Car-ramp Design Review

Critical Structural Detail Checking



Steel Outrigger and Rebars

Critical Structural Detail Checking

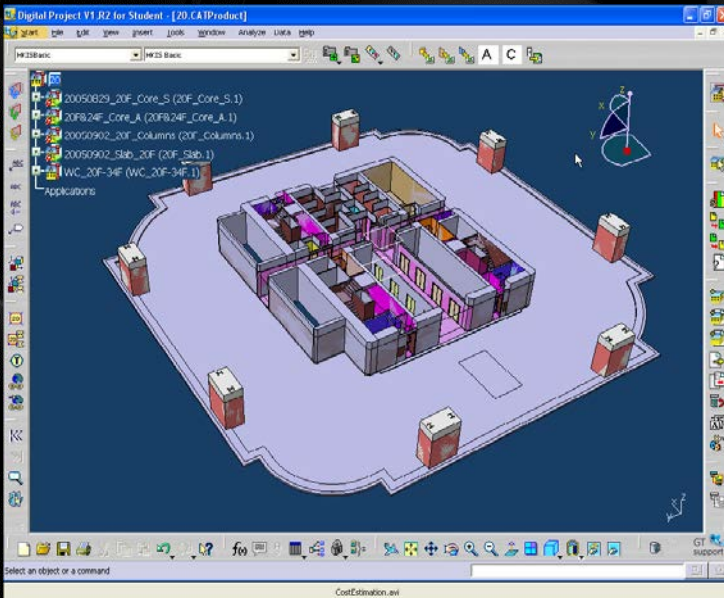


Steel Outrigger

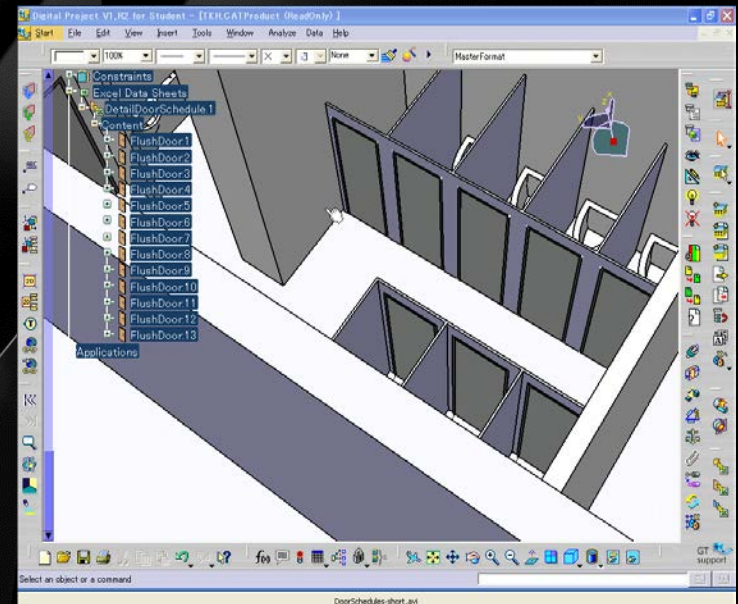
Scheduling and Data Extraction



- Quantity Extraction from BIM



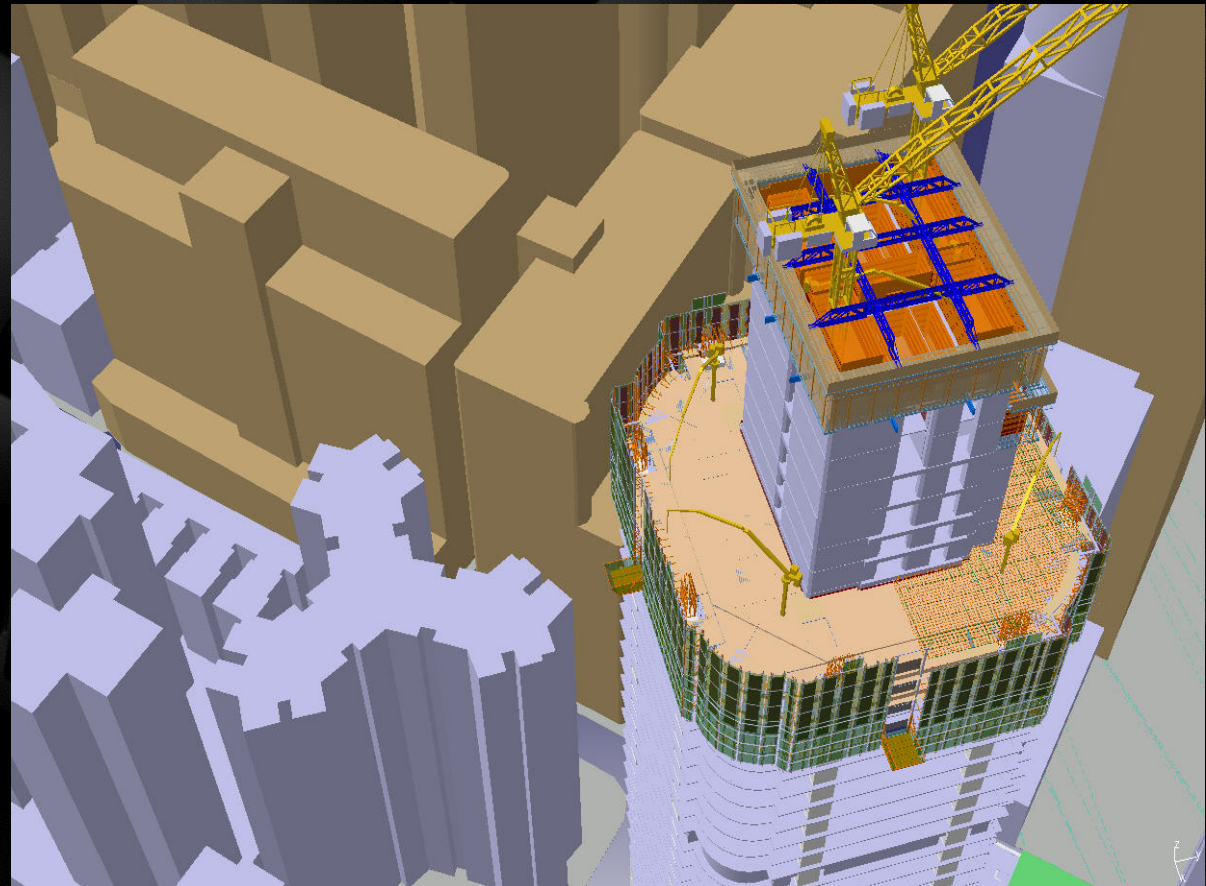
- Work Scheduling utilizing BIM



Virtual Prototyping (4D Model)



- Detail study on the critical process
 - 4-day floor cycle



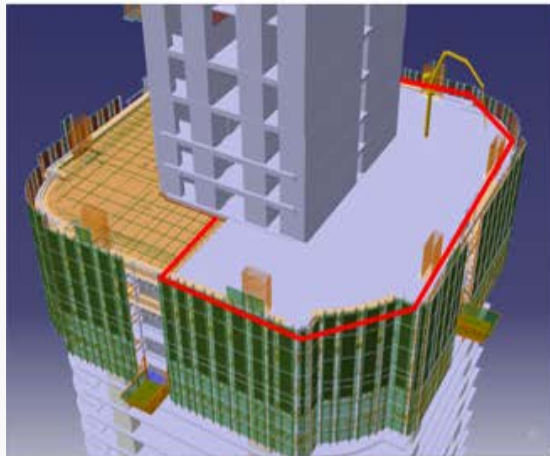
Morning



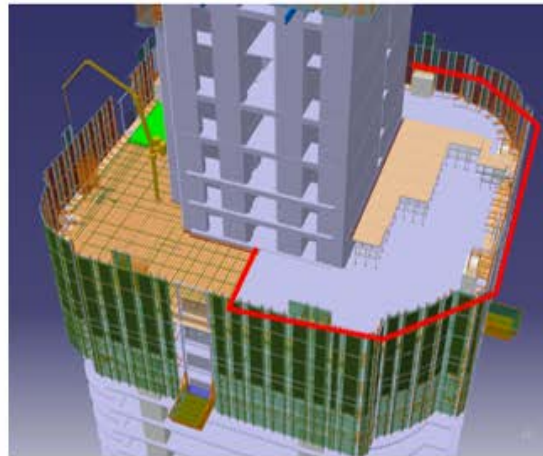
Afternoon



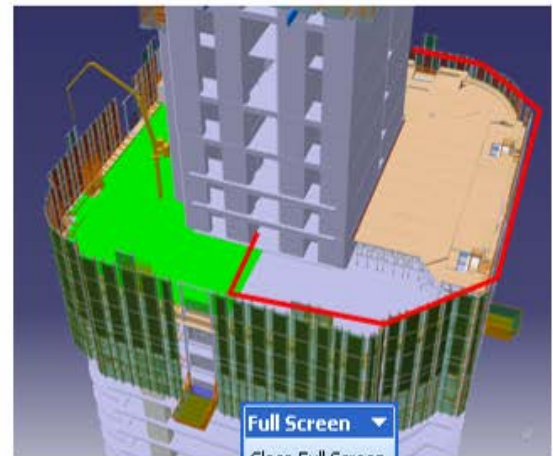
Evening



1. Set Up Table Form
2. Lift Safety Screen
3. Fixing Column Form



1. Set Up Table Form
2. Lift Safety Screen
3. Fixing Column Form

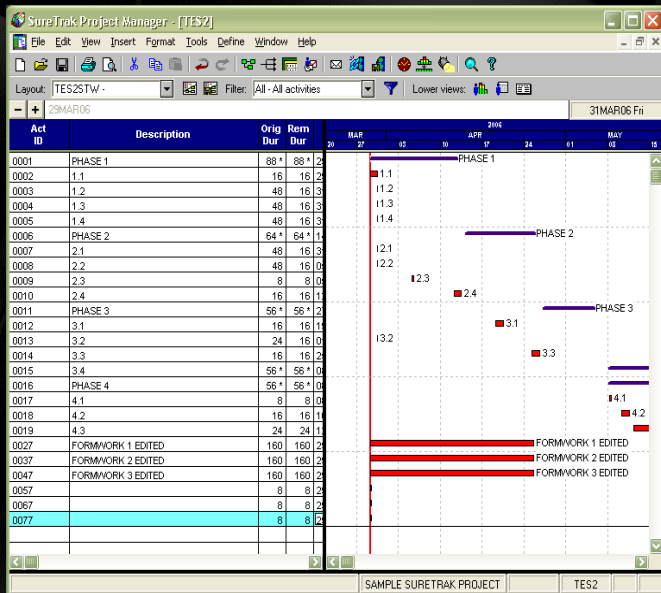


1. Set Up Table

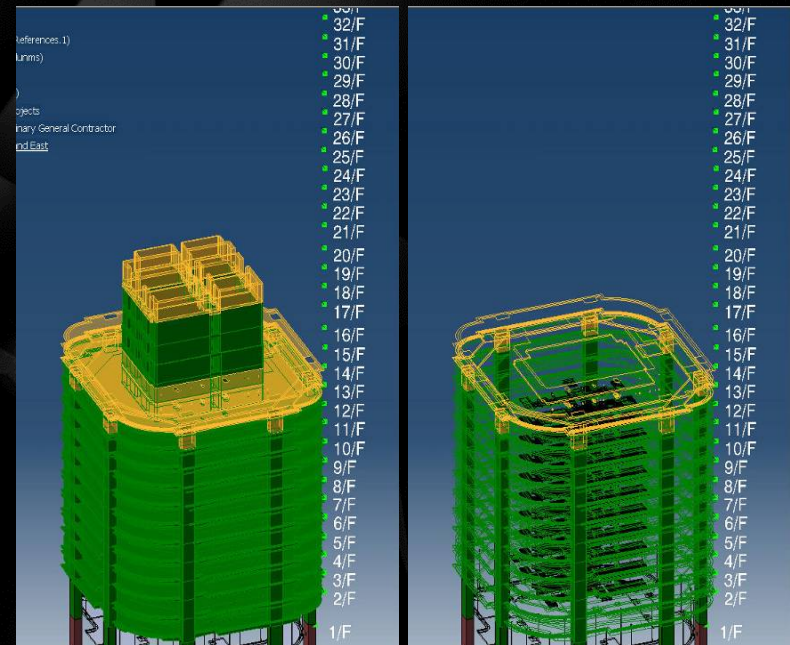
Visualize Master Progress with 4D Model



Data exchanging between Primavera and Digital Project



Primavera



Digital Project

True BIM for architects is a process for:

- **Design**
- **Collaboration**
- **Analysis**
- **Documentation**
- **Project Management**

Thank You...