



IMAGINE YOU COULD SEE YOUR BUILDING BEFORE IT'S BUILT

David Fung

Senior Associate, Aedas Ltd;
Chairman, BIM Task Force, Board of Practice, HKIA;
Vice Chairman, HKIBIM;
Chairman of AIAB

The Hong Kong Polytechnic University

Campus in the Shenzhen Virtual University Science Park

Location

Shenzhen

Building Type

Institutional – Theatre, laboratories, classrooms,
library, offices and administration

GFA

12,500 sq.m + 4,000 sq.m basement

Completion

End of 2009

Client

Hong Kong Polytechnic University

Architect

Aedas Ltd

Structural Engineer

Scott Wilson (Benaim (China) Ltd.)

E/M Engineer

JRP

LOCATION



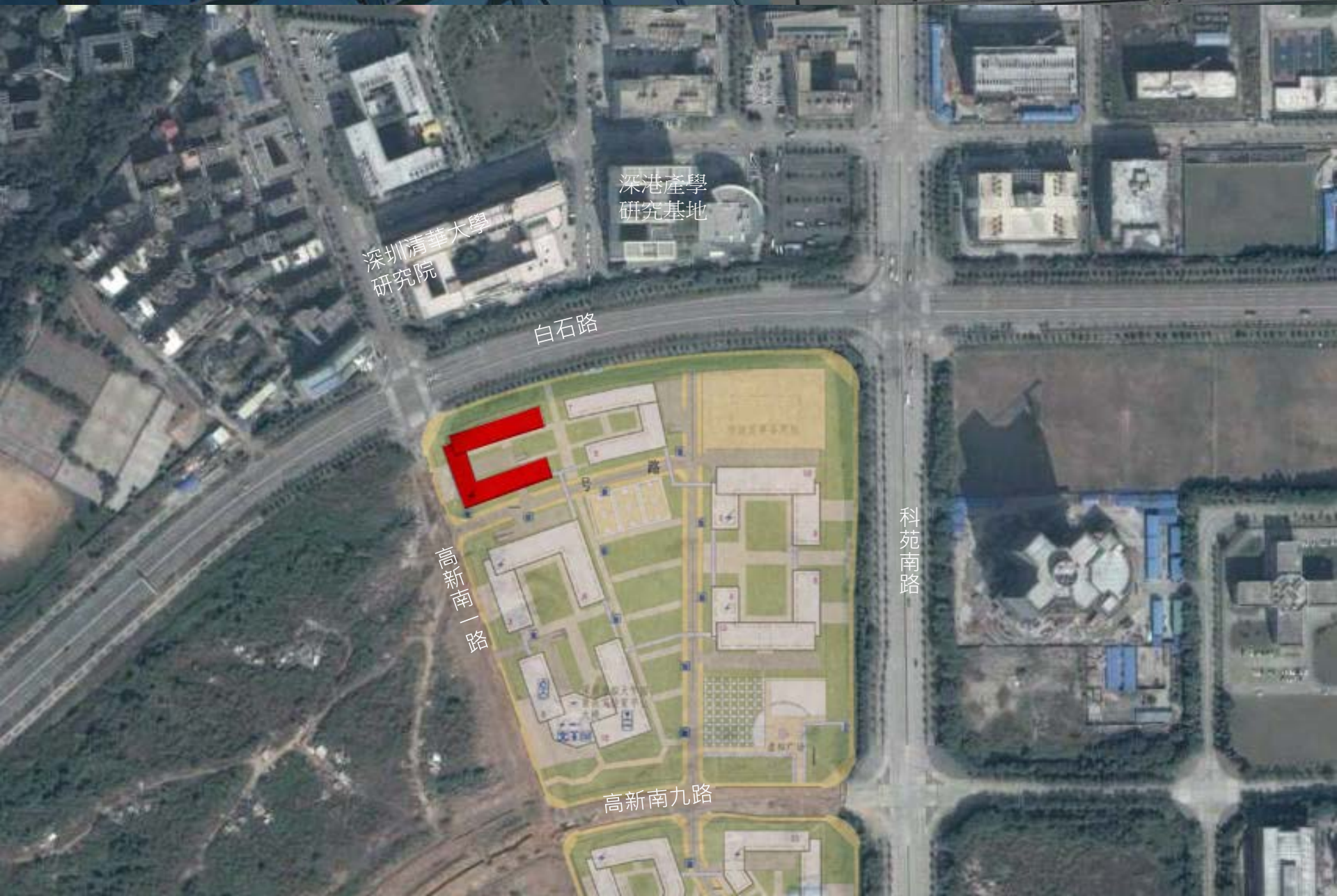
SITE



基地

深圳虛擬大學園
國家大學科技園

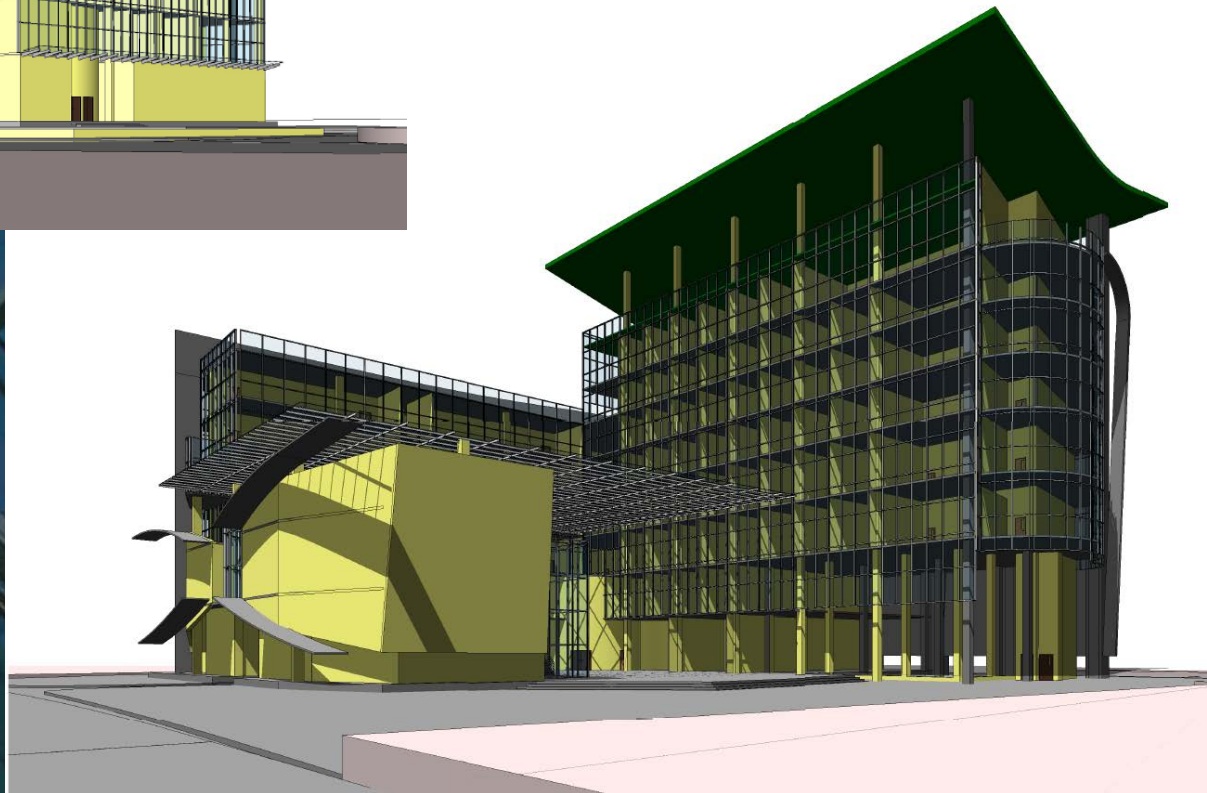
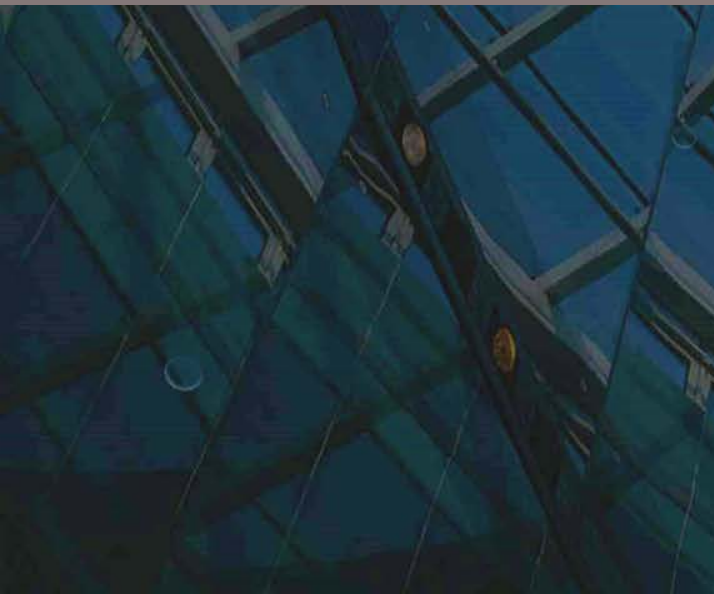
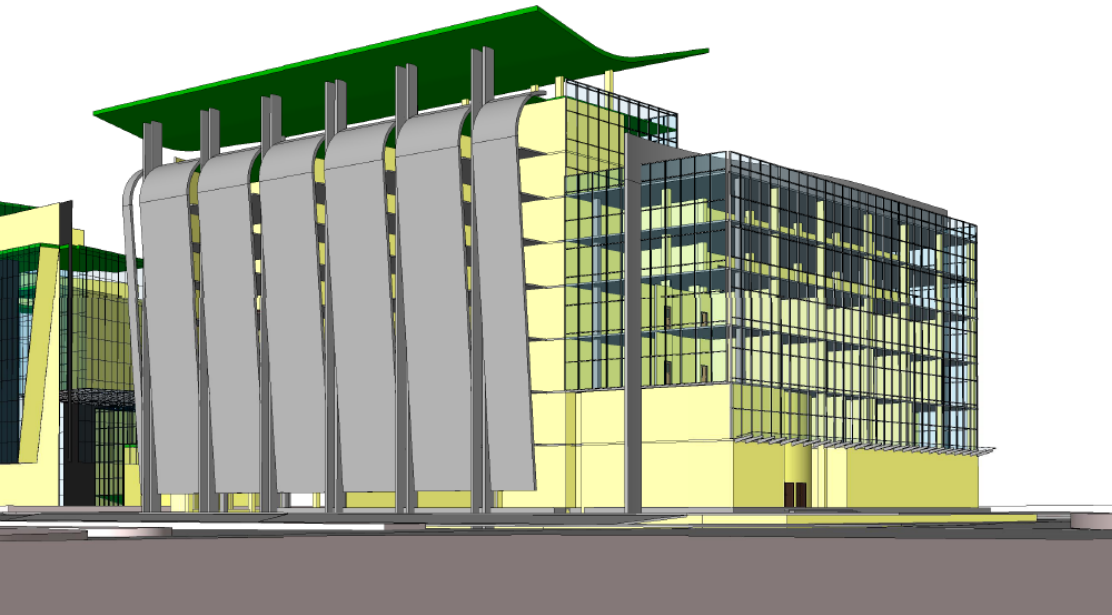
SITE



Use of Building Information Modeling (BIM) for the PolyU project

- 1 Design Ideas**
- 2 Visualization & Presentation**
- 2 Co-ordination/ Collaboration**
- 3 Drawing Production**
- 4 Construction**

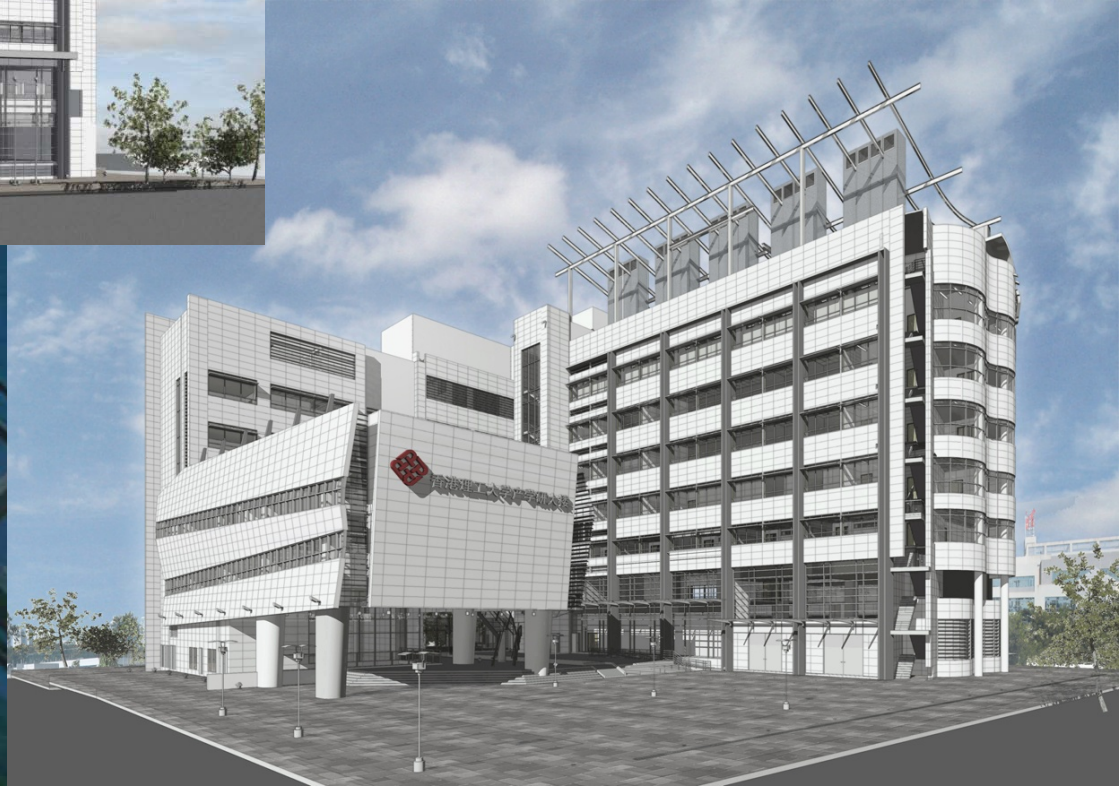
EARLY DESIGN IDEAS



DEVELOPING DESIGN IDEAS



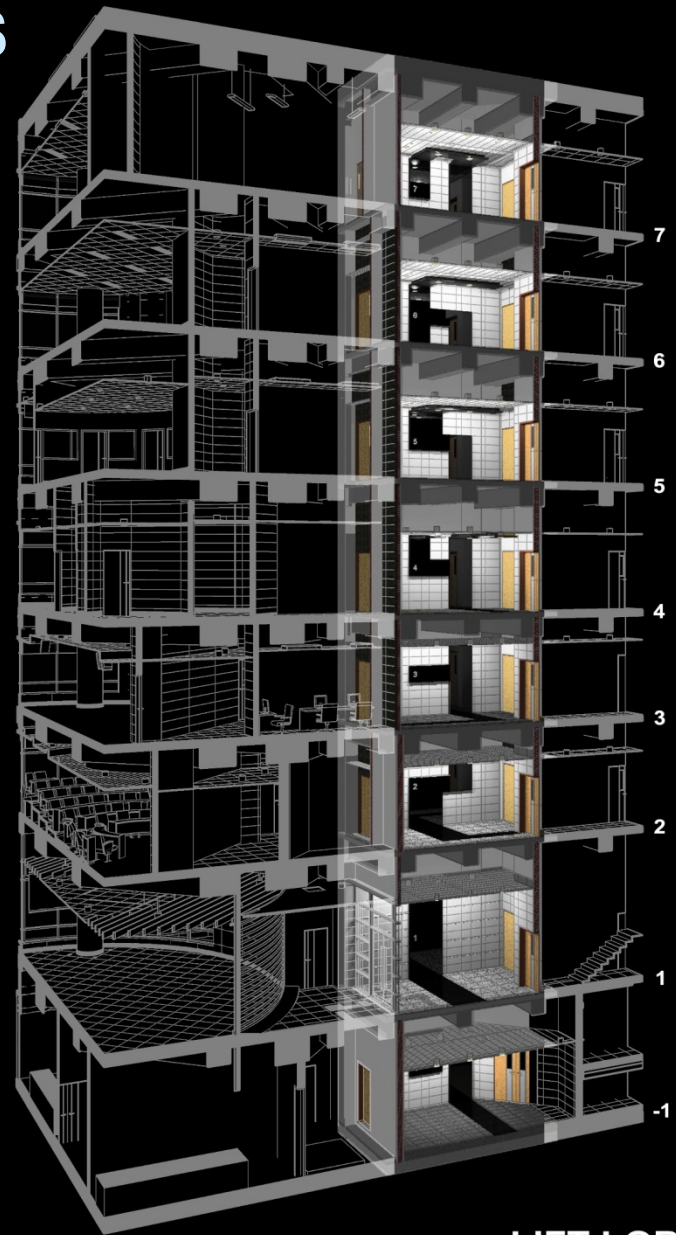
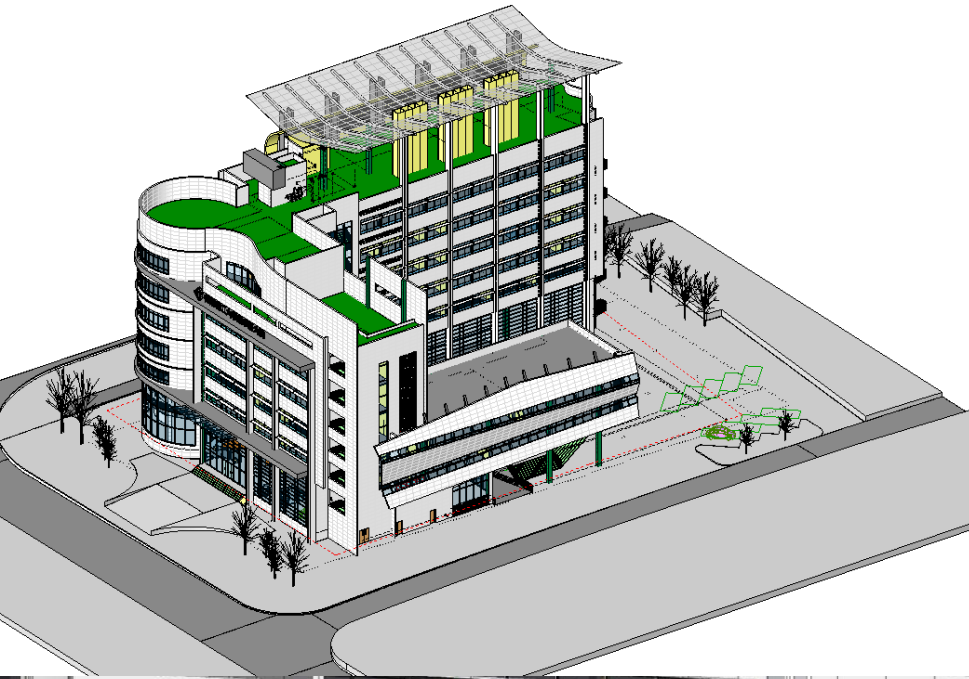
DEVELOPED DESIGN IDEAS



TESTING MASSING IN GOOGLE EARTH



PRESENTING DESIGN IDEAS

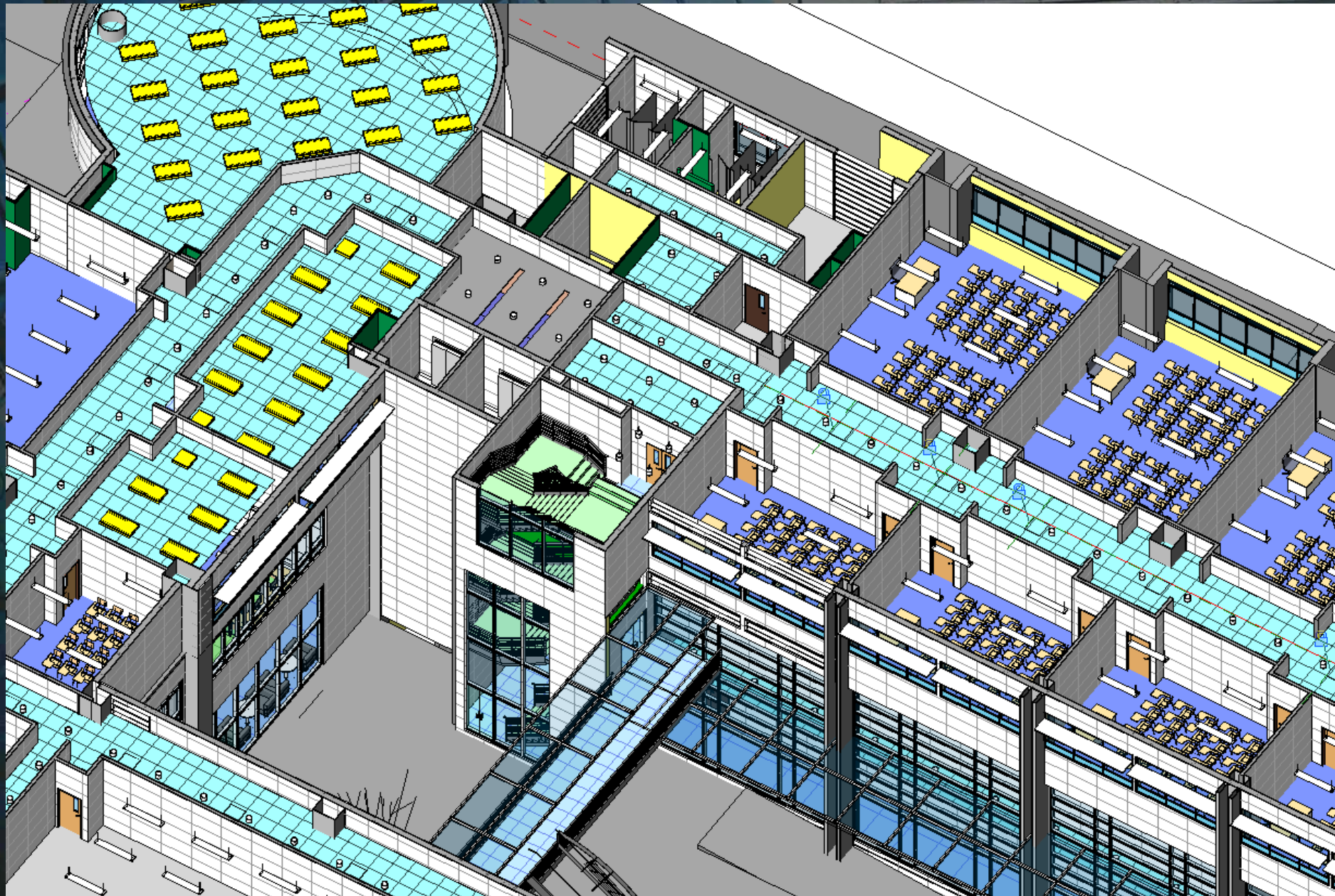


LIFT LOBBY
DESIGN CONCEPT

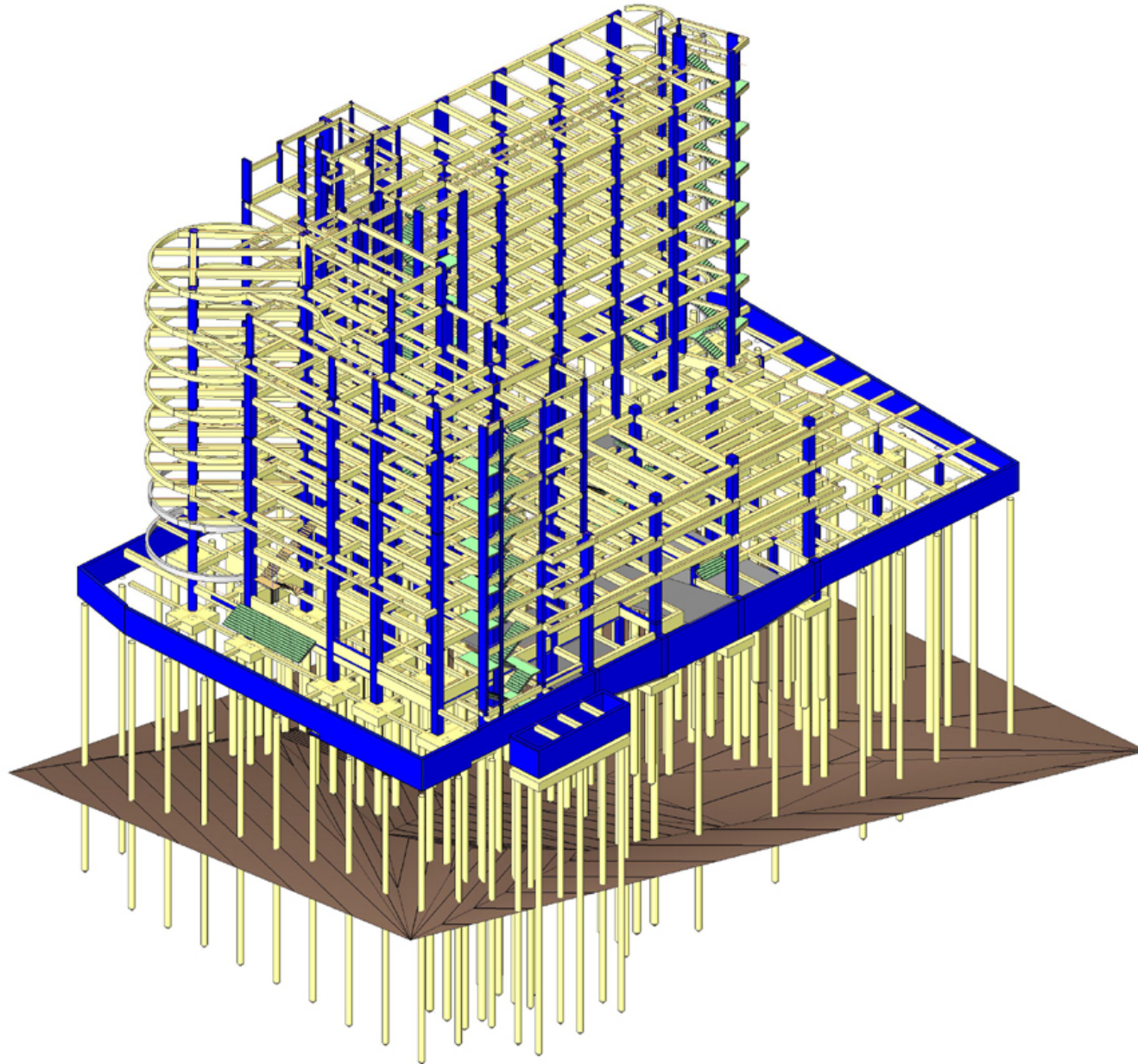
DETAILED DESIGN



ARCHITECTURAL CO-ORDINATION

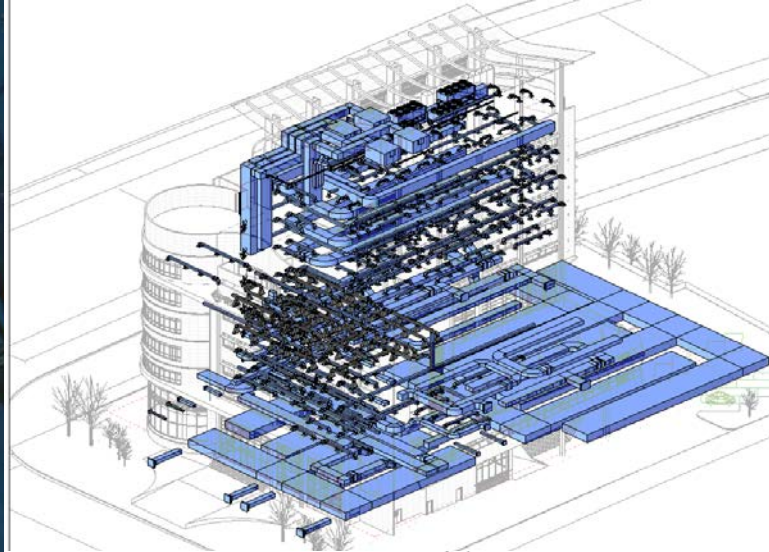


STRUCTURAL DESIGN MODEL

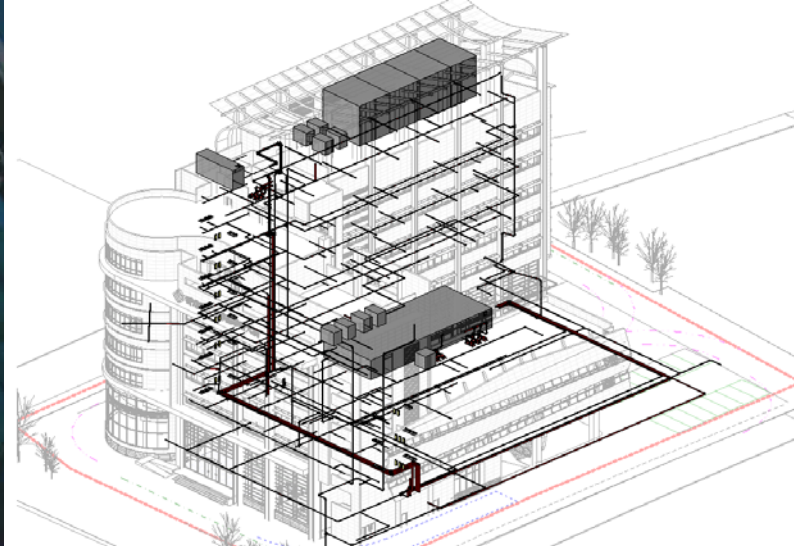
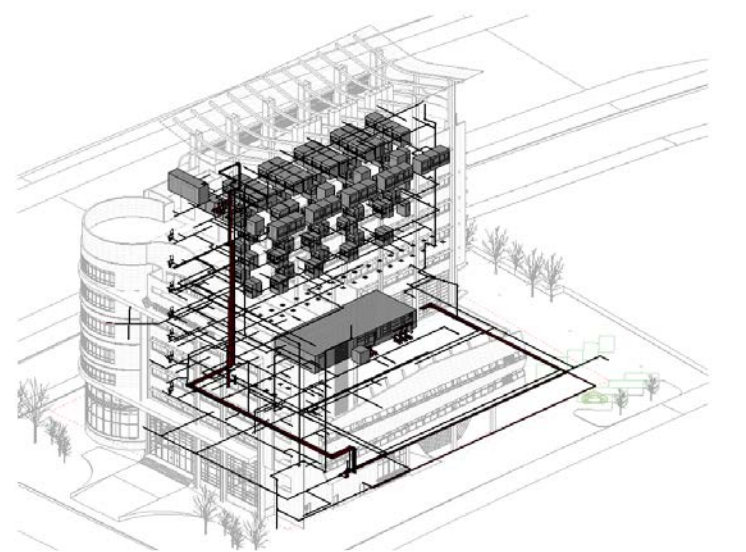


BUILDING SERVICES CO-ORDINATION

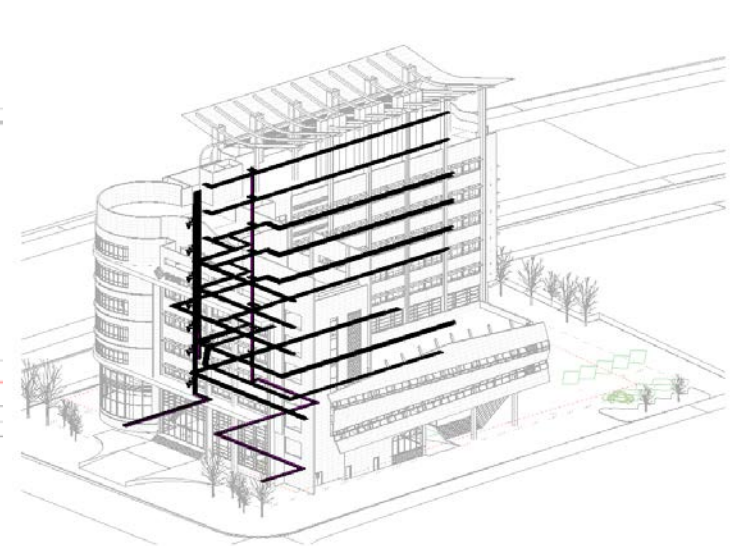
HVAC Installation



Fire Services Installation

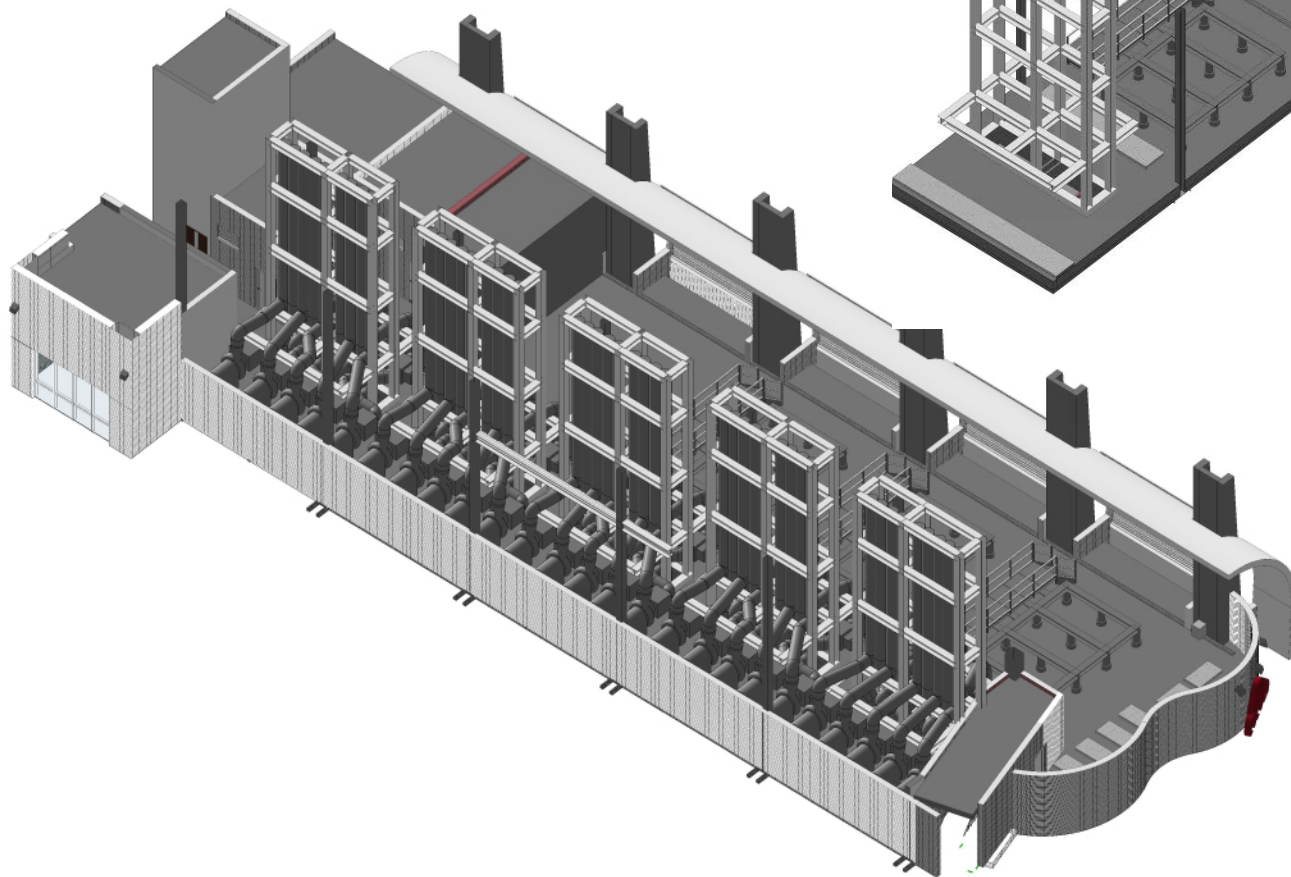
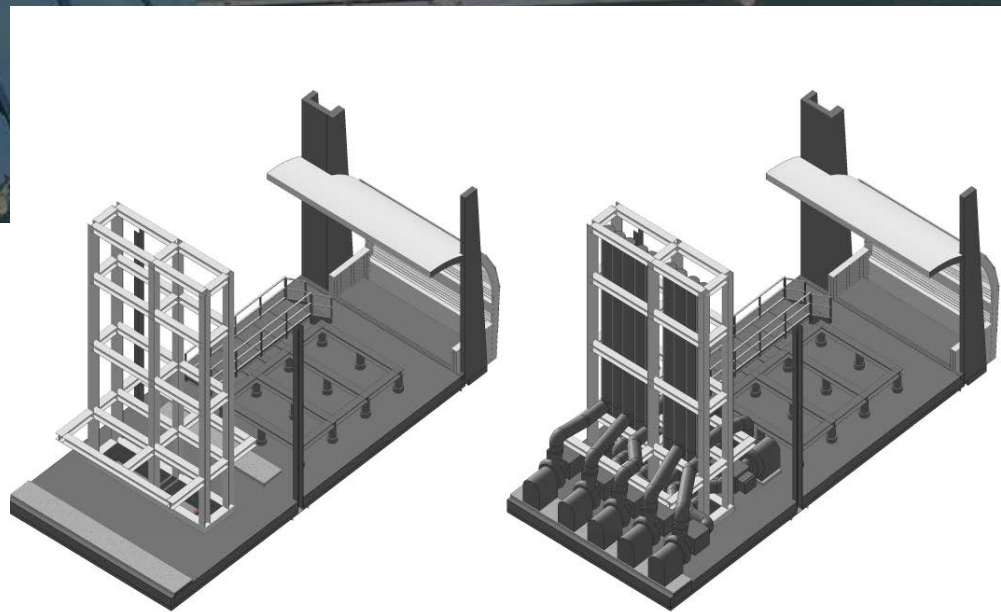


P/D Installation



Electricity Installation

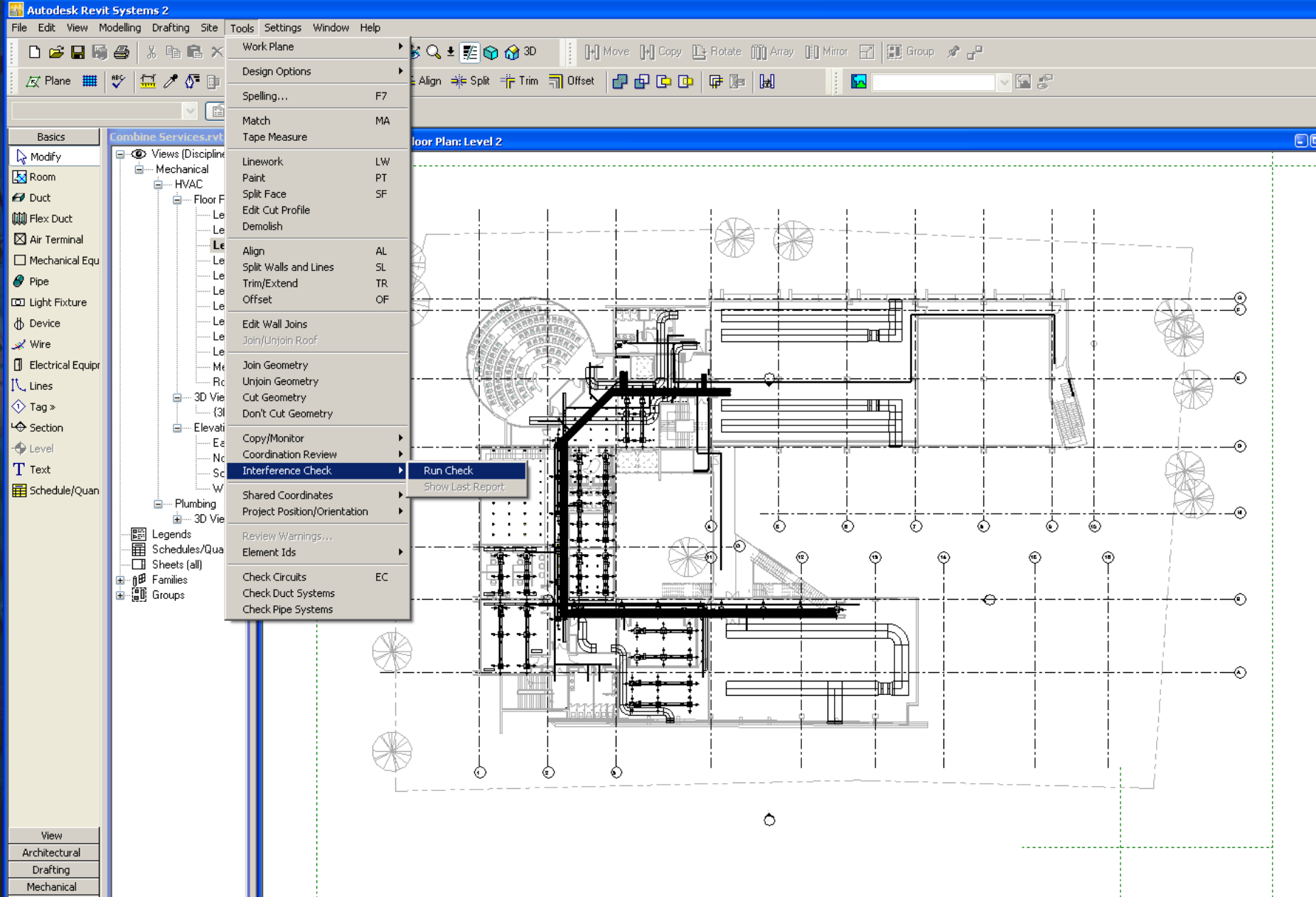
SPECIAL CO-ORDINATION - LABORATORIES



CO-ORDINATED DETAILED DESIGN



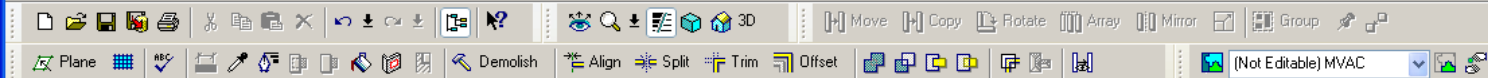
CLASH ANALYSIS



CLASH ANALYSIS

Autodesk Revit Systems 2

File Edit View Modelling Drafting Site Tools Settings Window Help



☒ Press + Drag ☐ Editable Only

Basics
Modify
Room
Duct
Flex Duct
Air Terminal
Mechanical Equ
Pipe
Light Fixture
Device
Wire
Electrical Equip
Lines
Tag >
Section
Level
Text
Schedule/Quan

PolyU Shenzhen Cam... 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

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

Last Update:

Note: Refresh updates interferences listed above.

Show

Export...

Refresh

Close

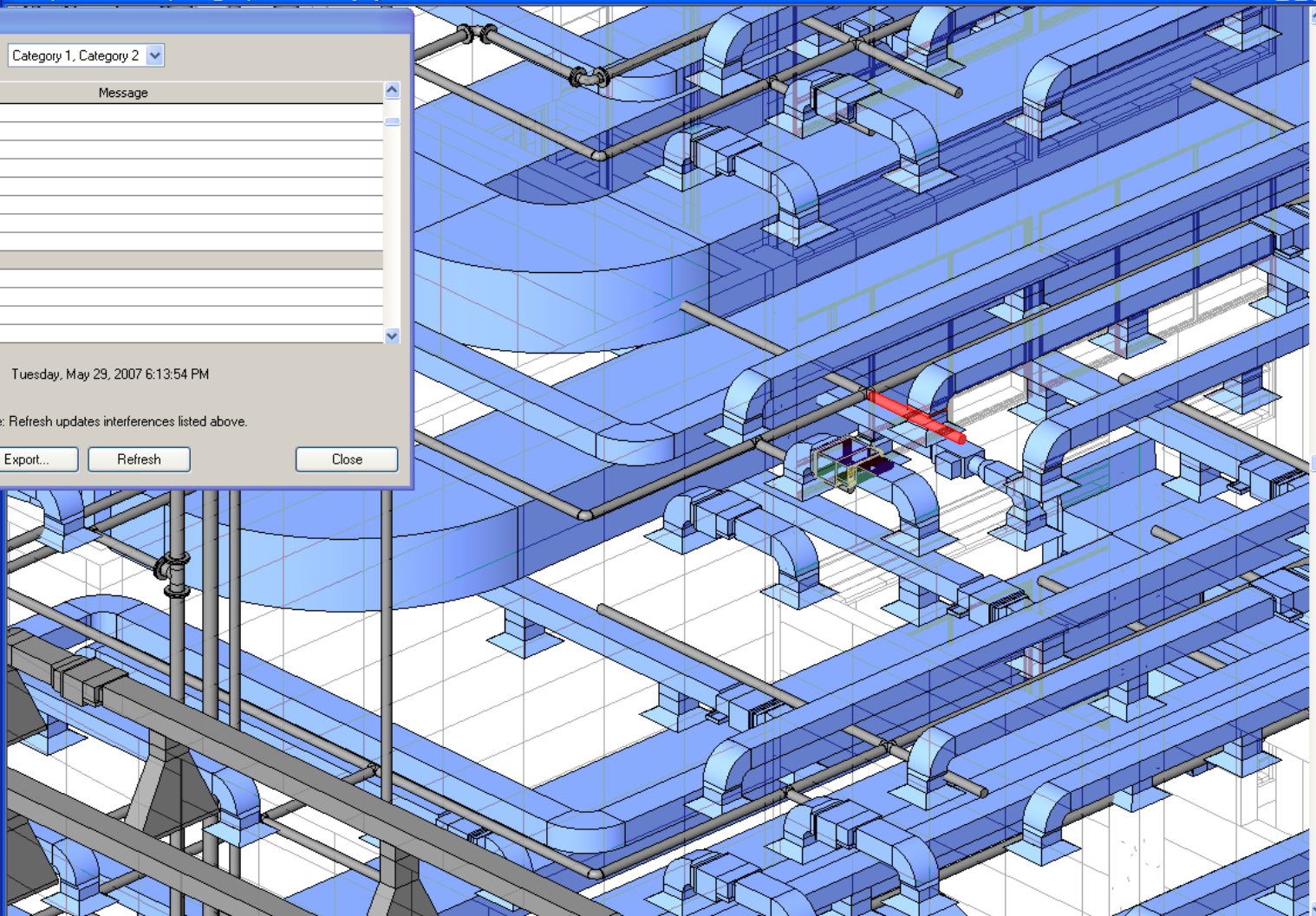
Duct Schedule
Pipe Schedule
Room Schedule
Wall Schedule

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

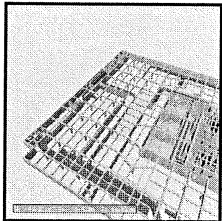
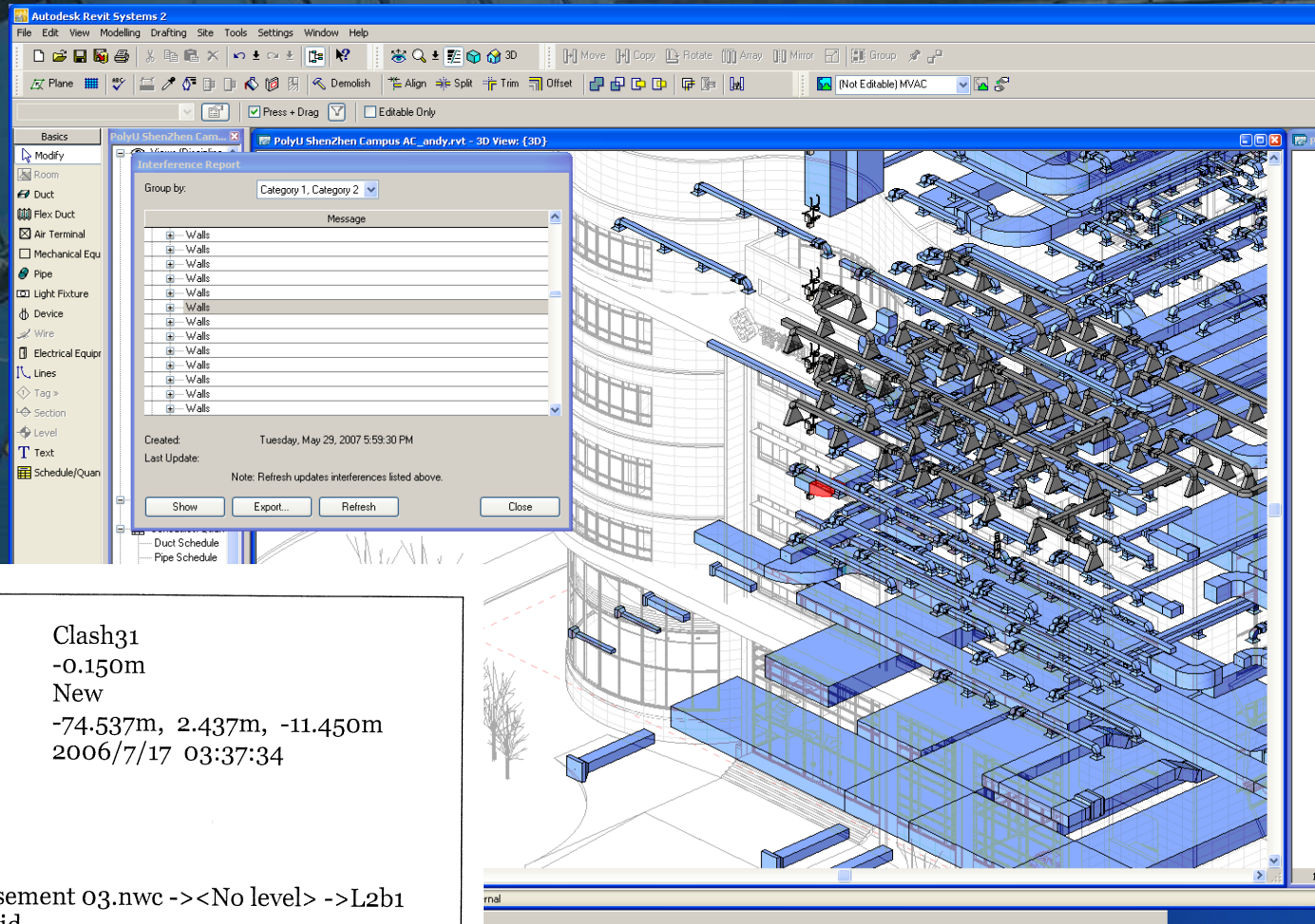
Families

- Air Terminals
- Annotation Symb
- Ceilings
 - Basic Ceilin
 - Generic
 - Plaster E



1 : 150

CLASH ANALYSIS 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

A 3D perspective view of a lecture hall. The room features rows of grey desks and blue chairs arranged in a tiered fashion. The ceiling is blue with square acoustic tiles, and the walls are yellow. A doorway is visible in the background, and a small display case is on the left.

A 3D perspective view of a classroom layout. The room features a blue floor, yellow walls, and a whiteboard. A teacher's desk is positioned at the front, and rows of student desks are arranged in the center. A blue partition wall is visible on the left side.

A 3D perspective rendering of a modern, empty lecture hall or classroom. The room features a grid-patterned ceiling with recessed lighting, large windows on the left wall, and a whiteboard at the front. Rows of grey chairs and dark tables are arranged in the space.

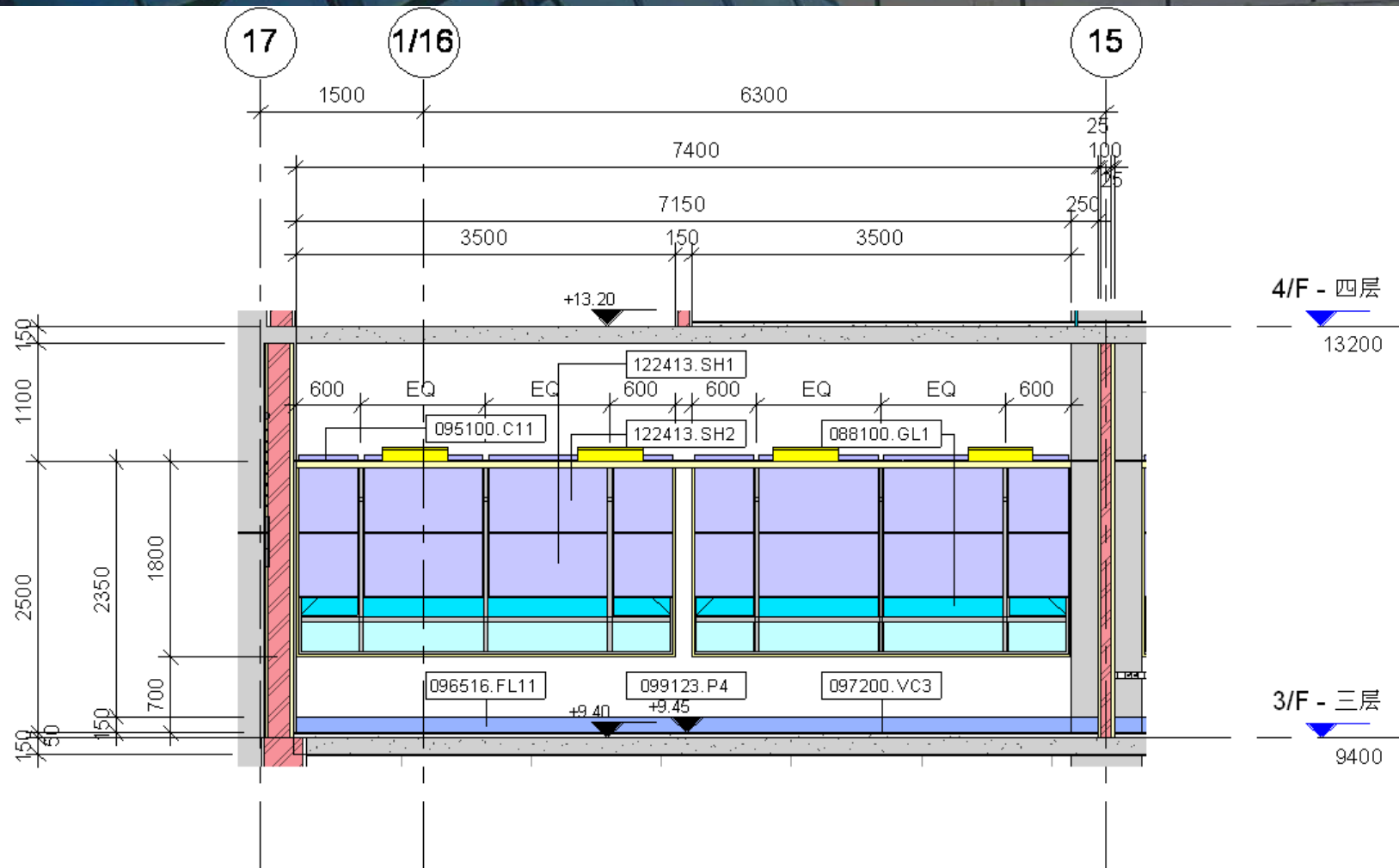
A 3D perspective view of a lecture hall. The stage area at the front features a yellow wall and a wooden desk with a chair. The seating area is filled with rows of light blue chairs facing the stage. The floor is blue, and the walls are yellow and white.

[illegible][illegible]

A perspective view of a long, brightly lit corridor. The floor is made of large, dark square tiles. The walls are white, and the ceiling is made of a grid of glass panels with recessed lighting. On the right side, there are long rows of dark bookshelves. On the left side, there is a white counter or reception desk. The corridor leads to a bright light at the far end, suggesting an exit or a large open space.

[illegible][illegible]

PRODUCTION OF DRAWINGS



2

行政人员培训室立面图(高楼三层)6

1:50

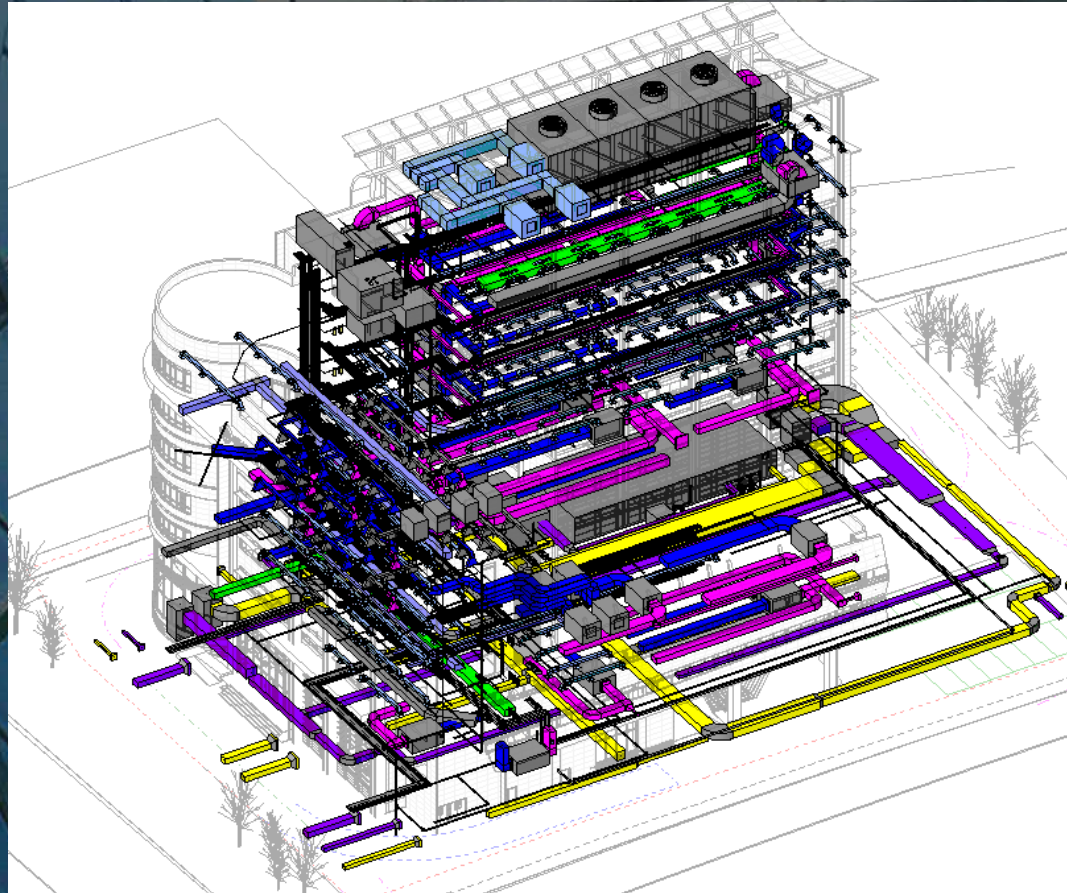
CONSTRUCTION



CONSTRUCTION



BUILDING SERVICES CONSTRUCTION



CONSTRUCTION







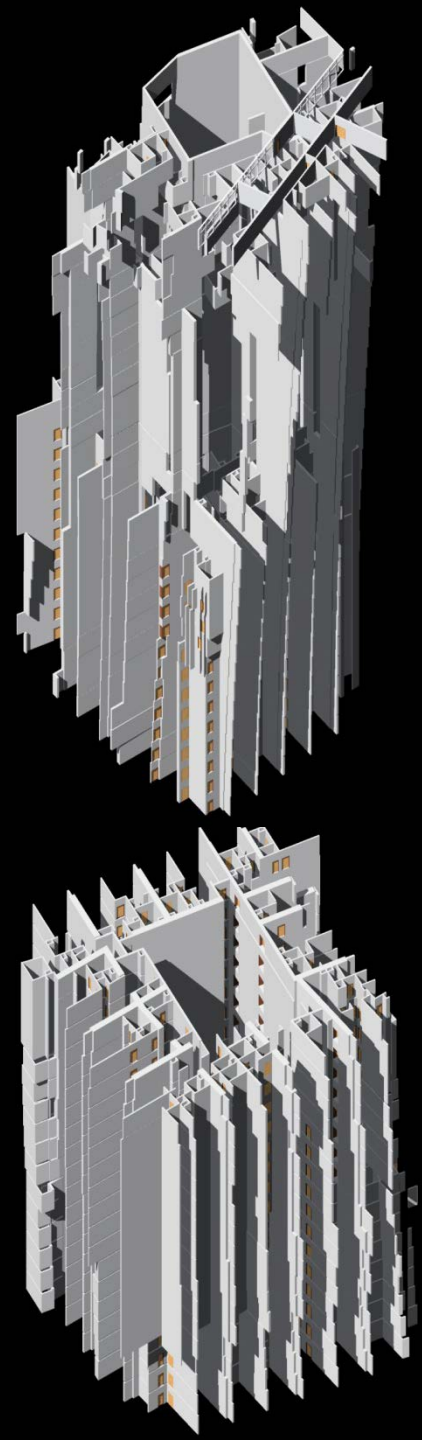
DEVELOPMENT



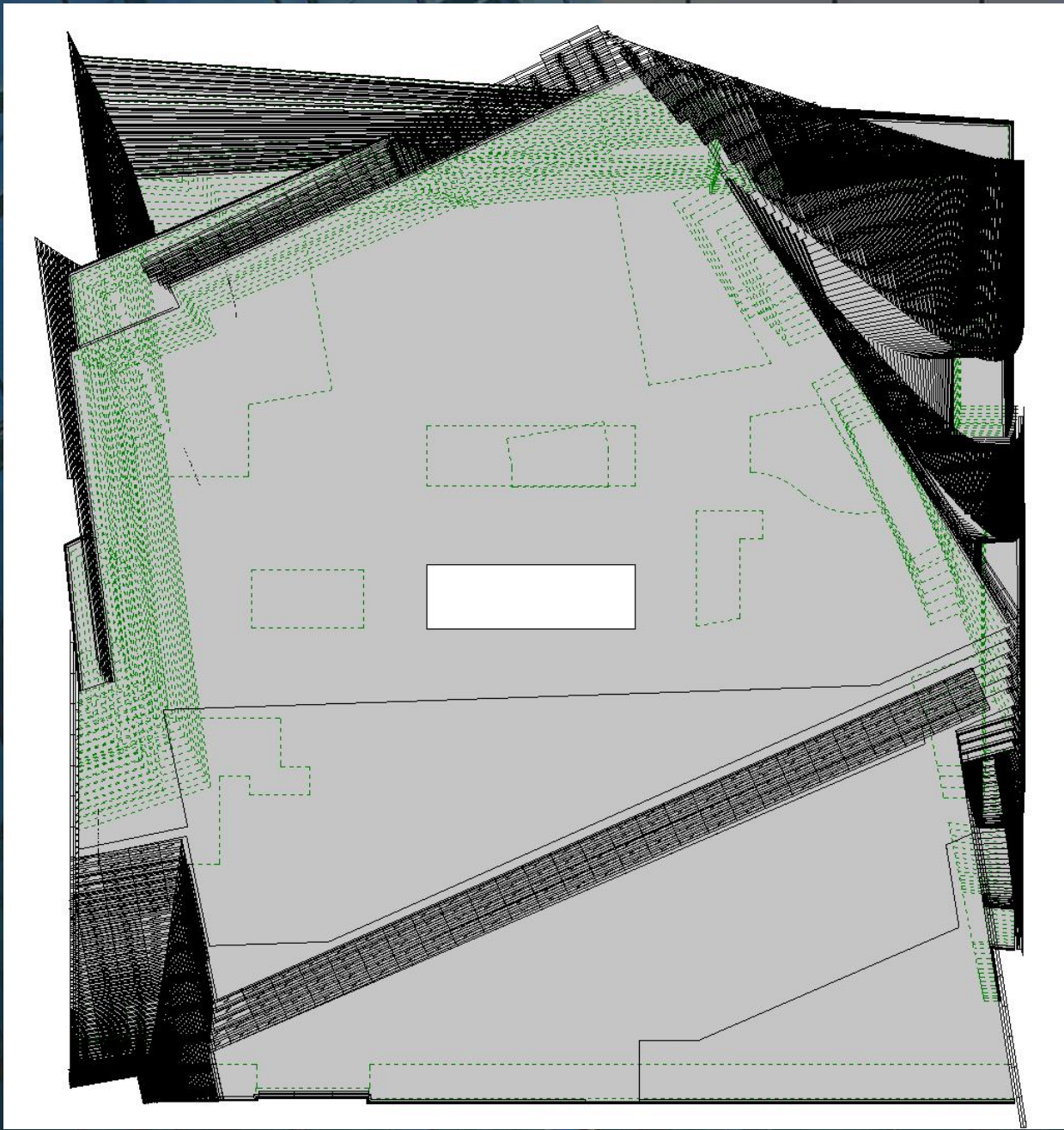
Program: Residential, Site Area: 3,746 sqm
Floor Area: 659,659 sqm Building Height: 345 m

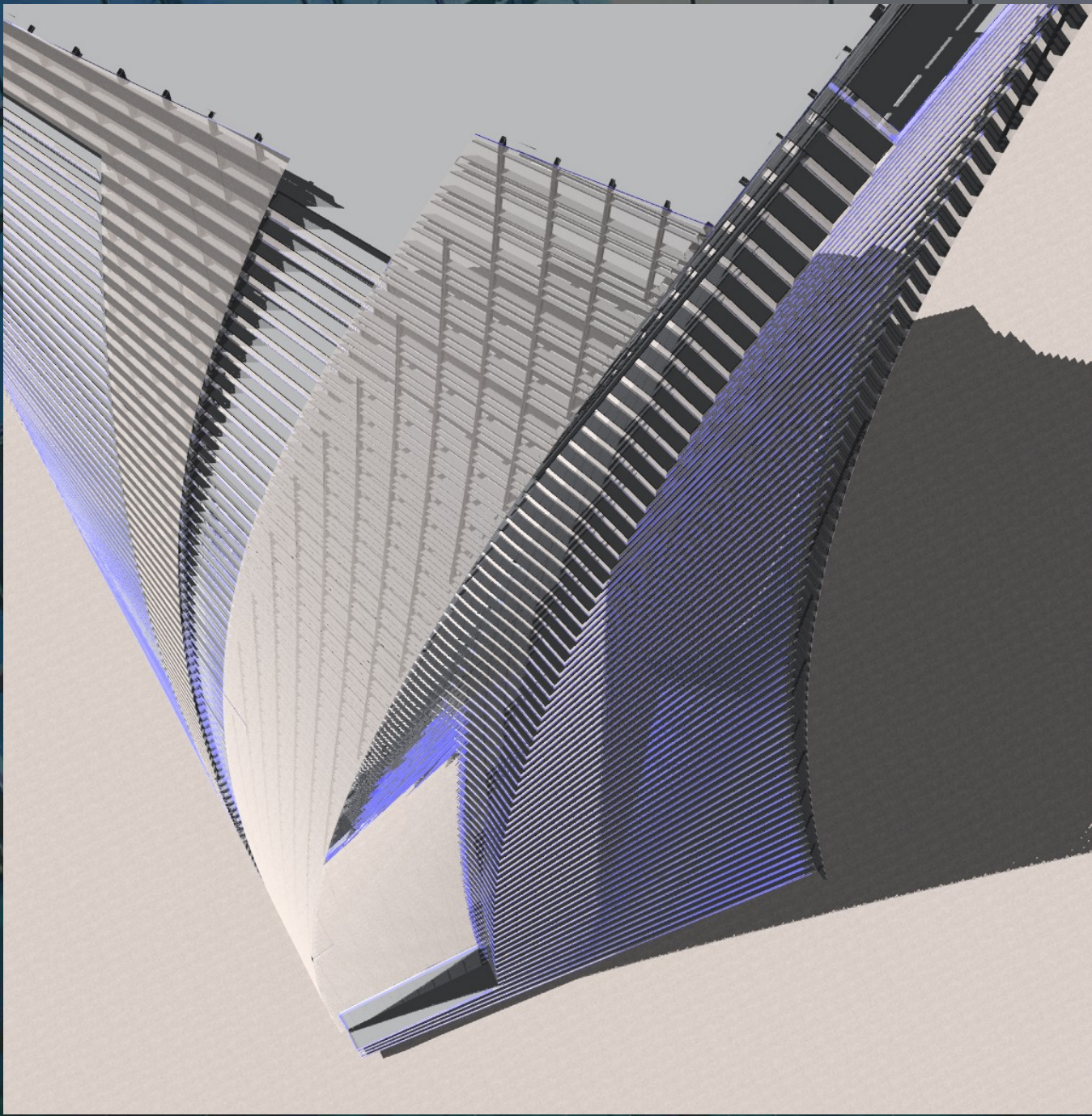


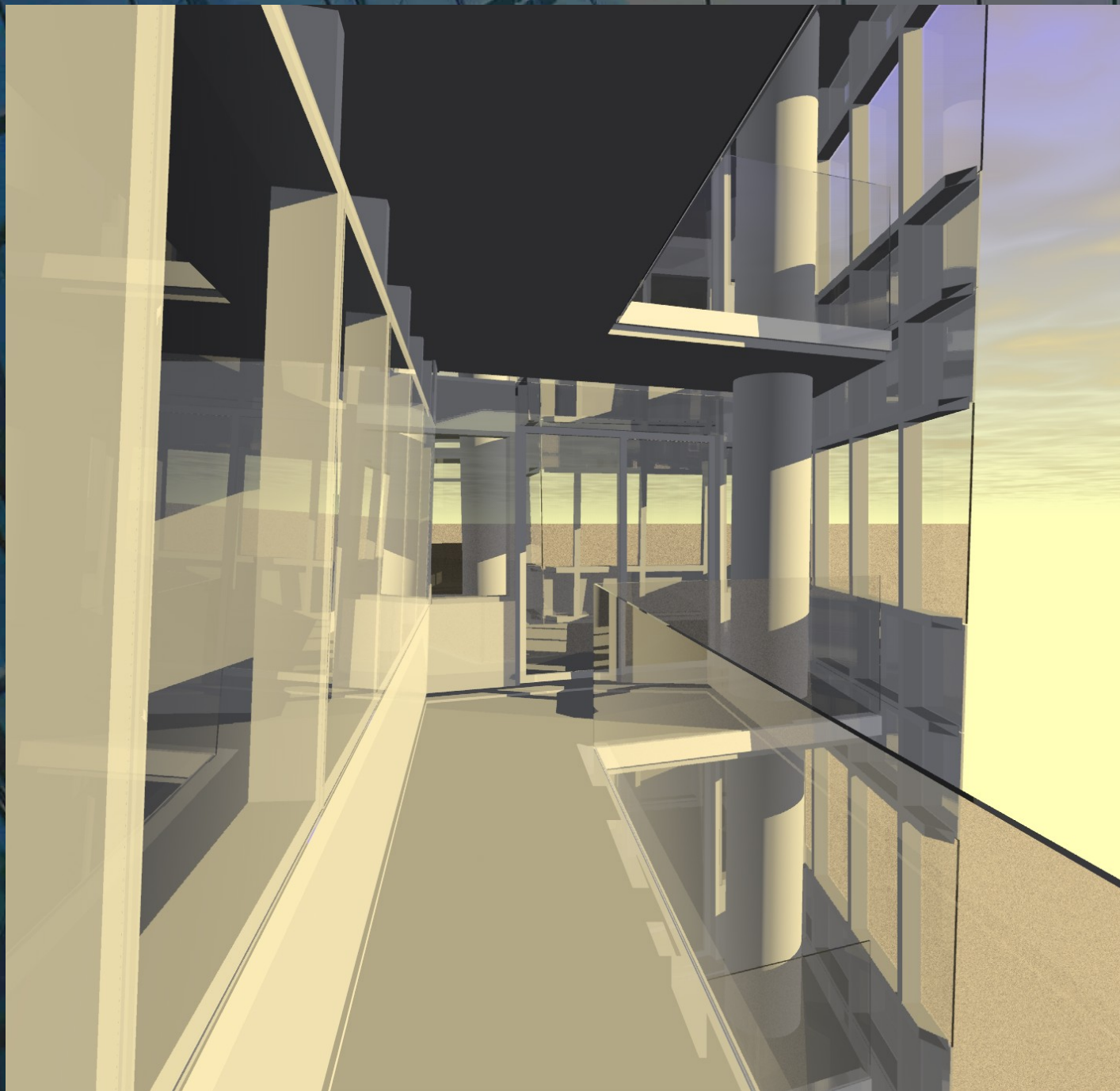
Dubai **Ocean Heights One**

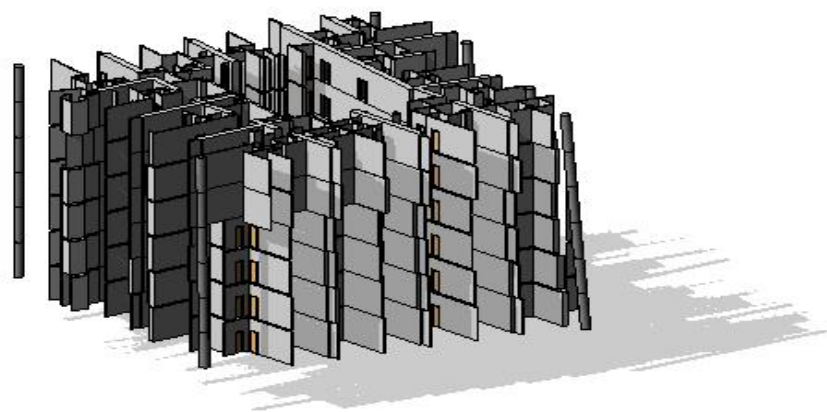


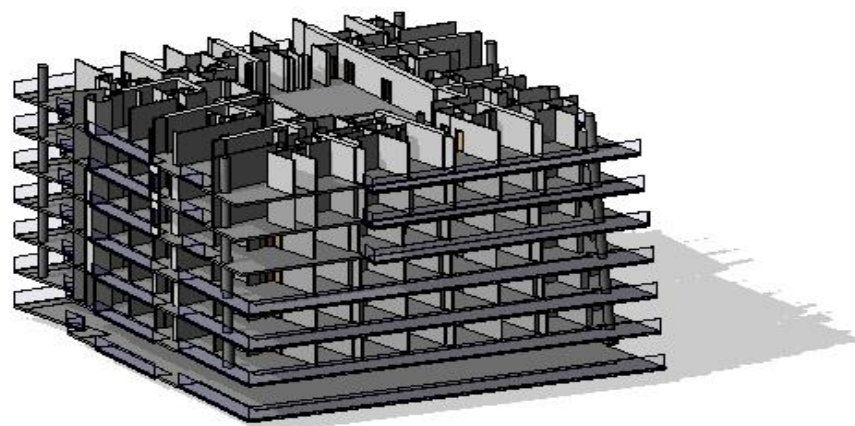
COMPLEX GEOMETRY





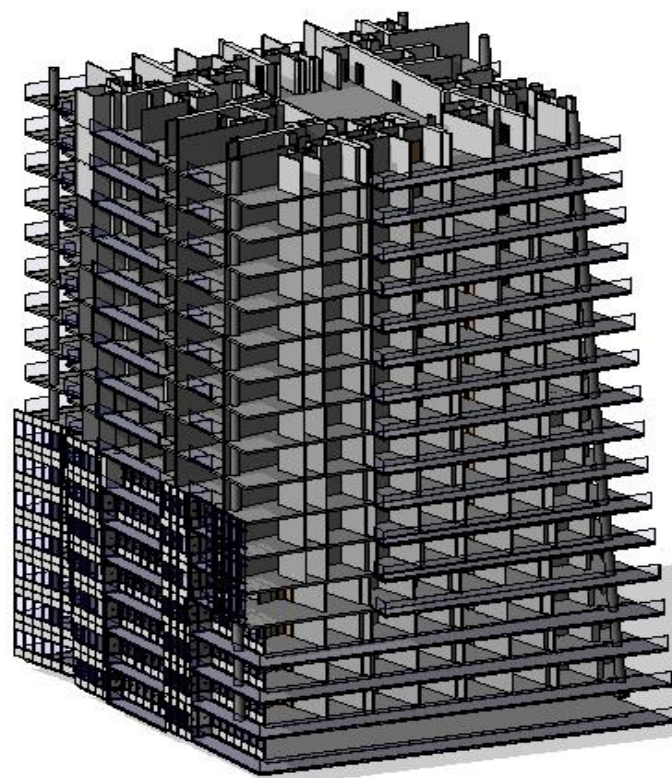




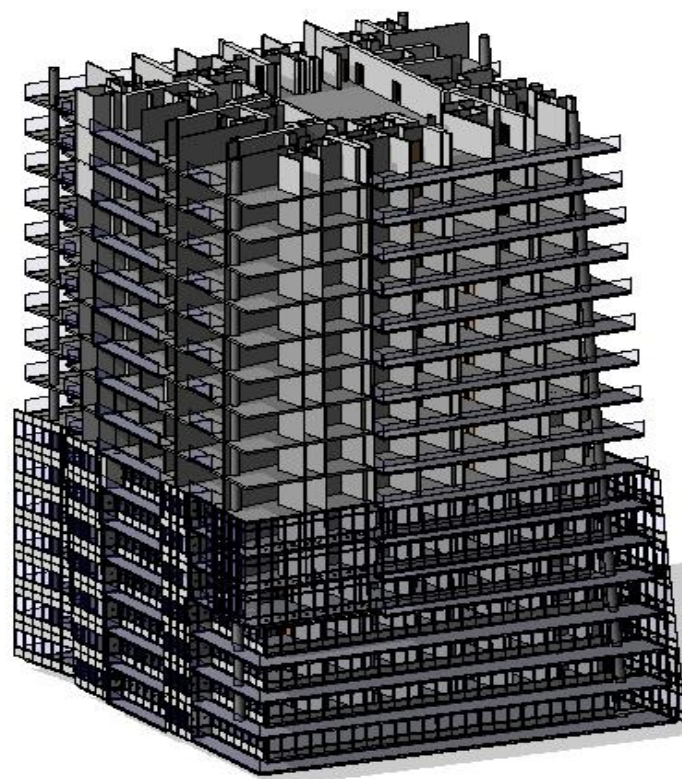








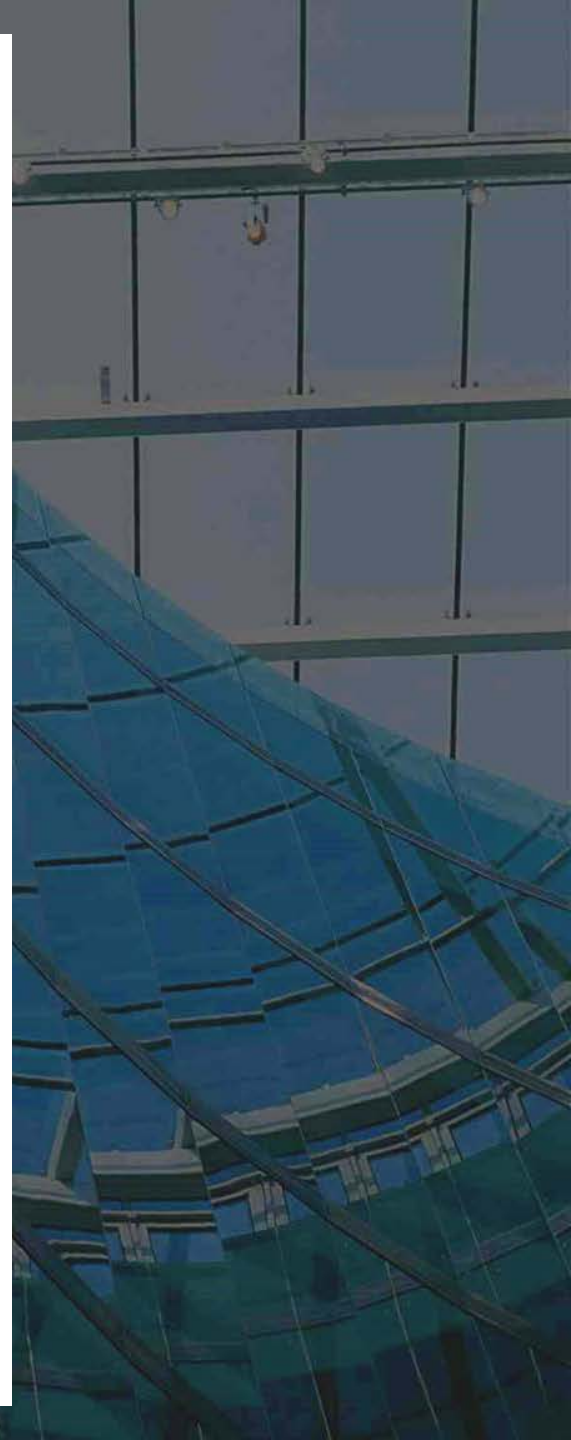


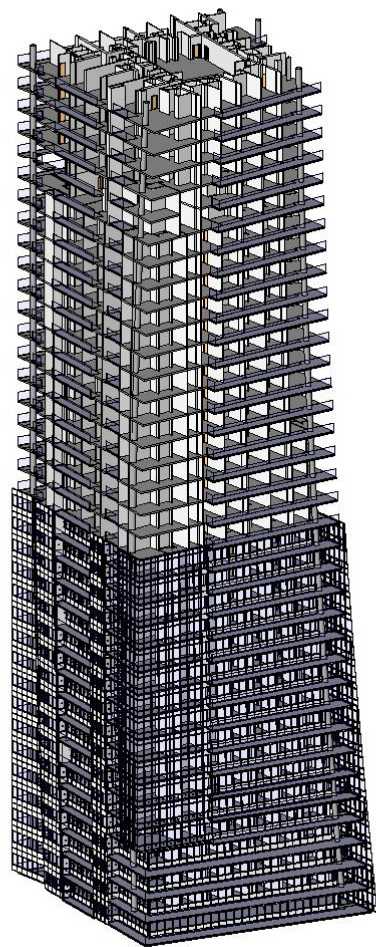


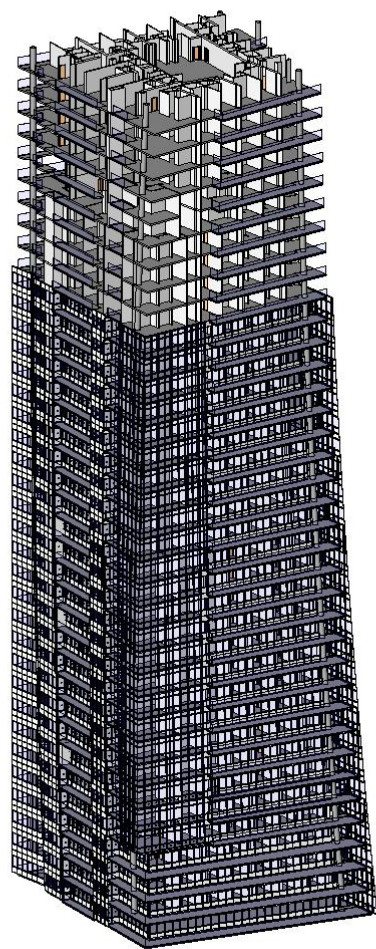


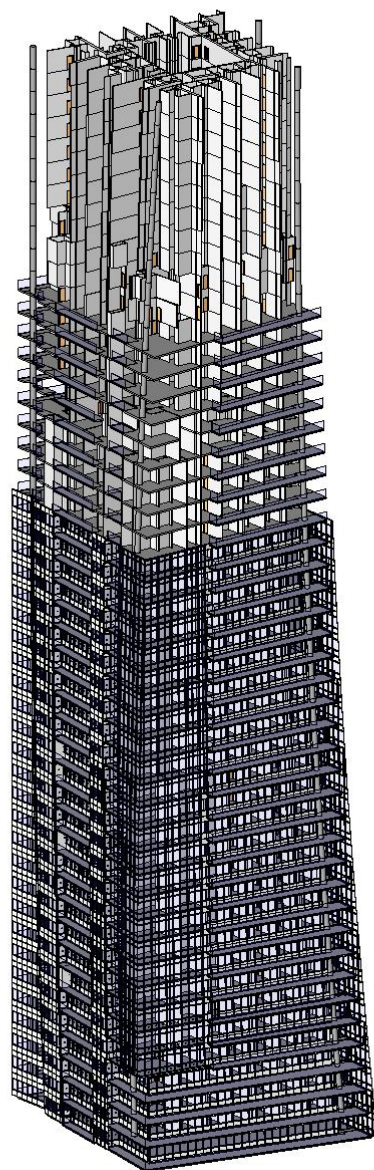


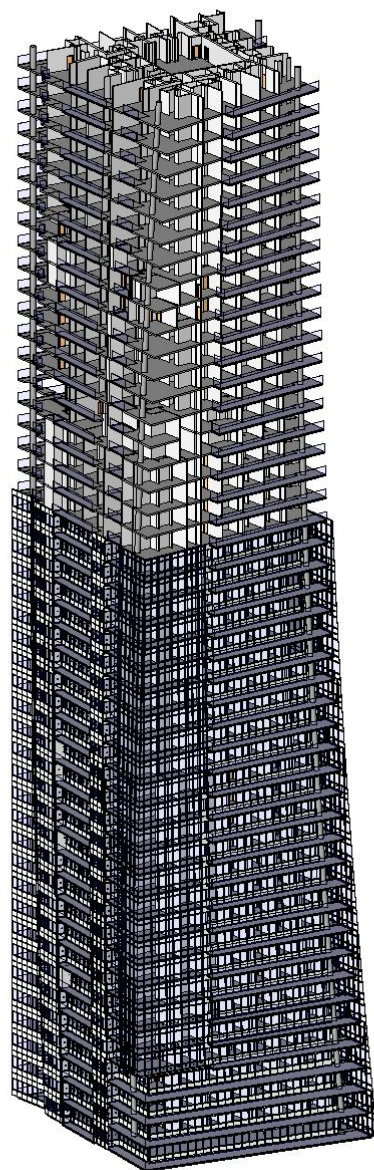


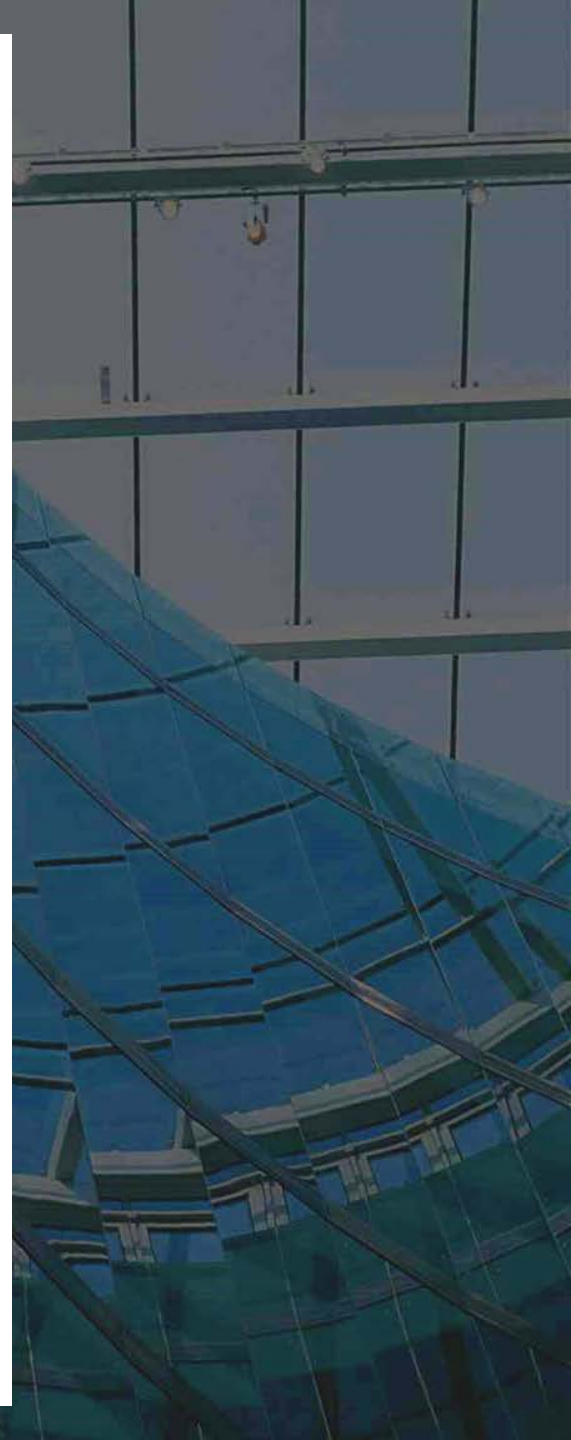
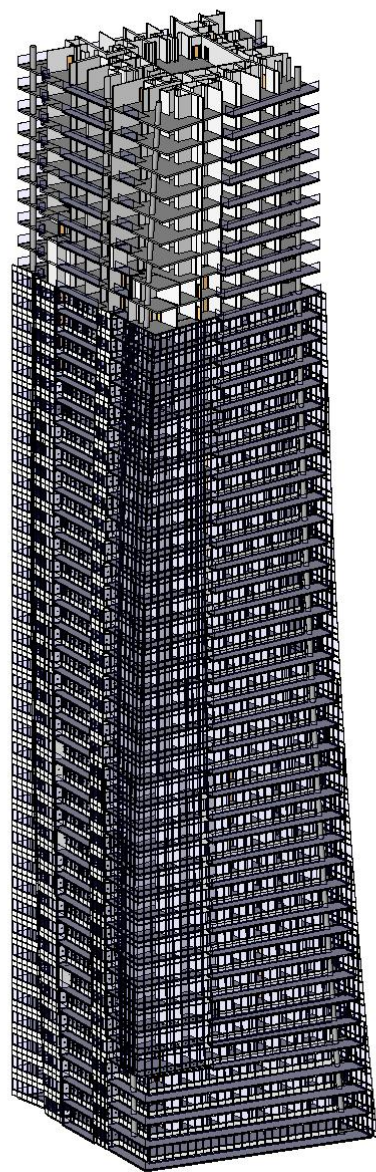


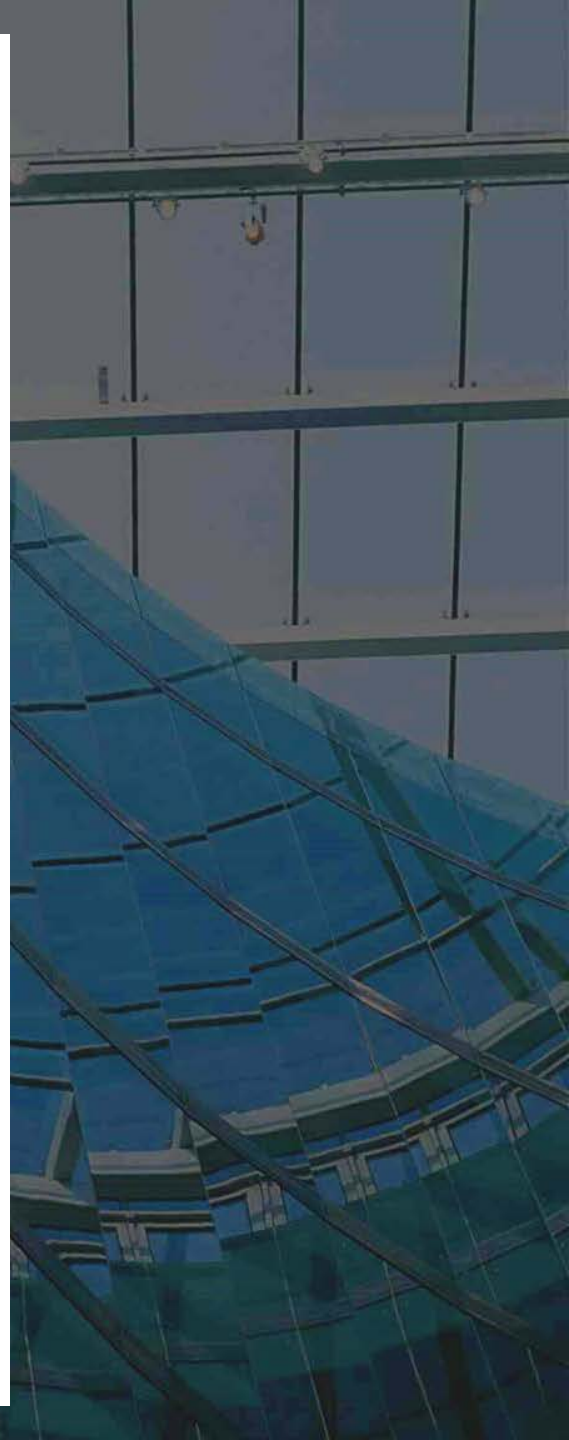
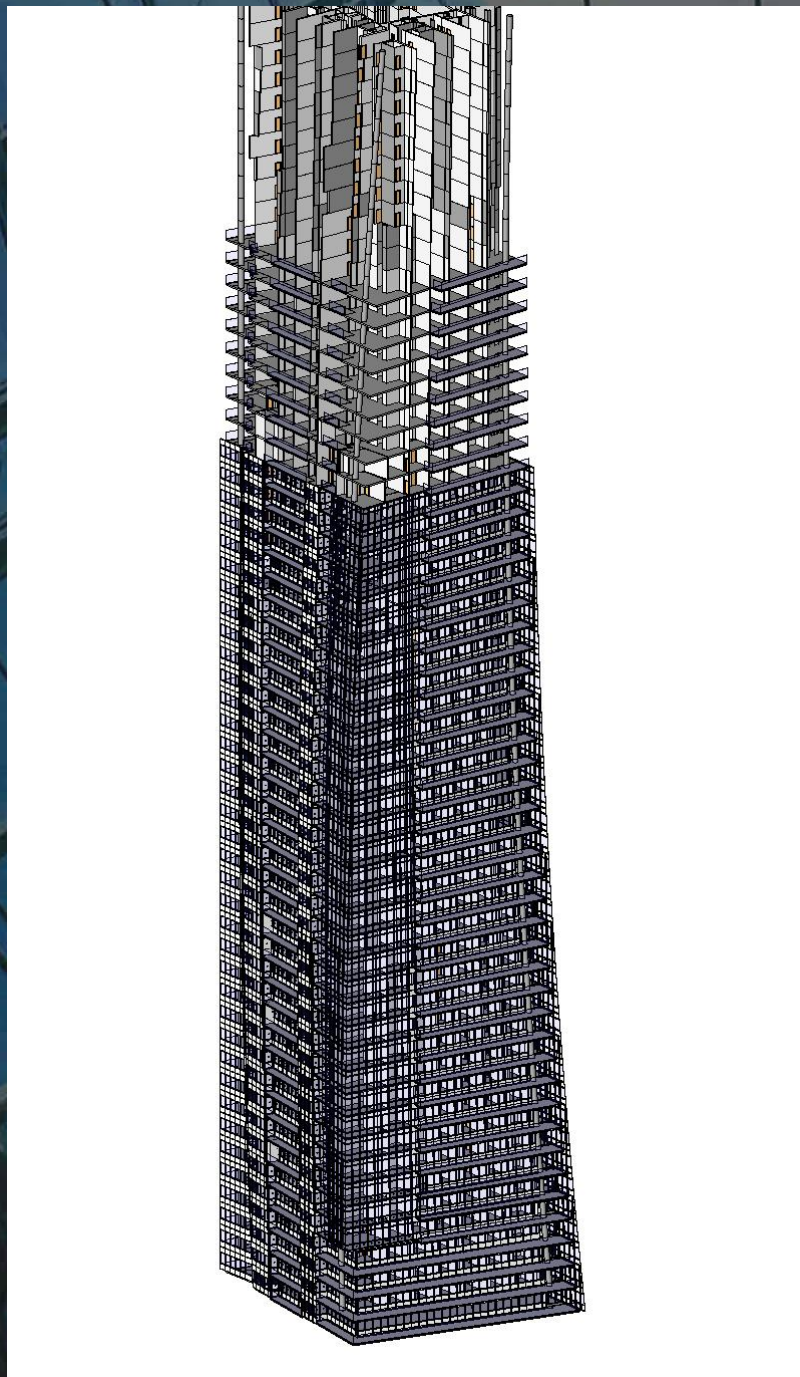


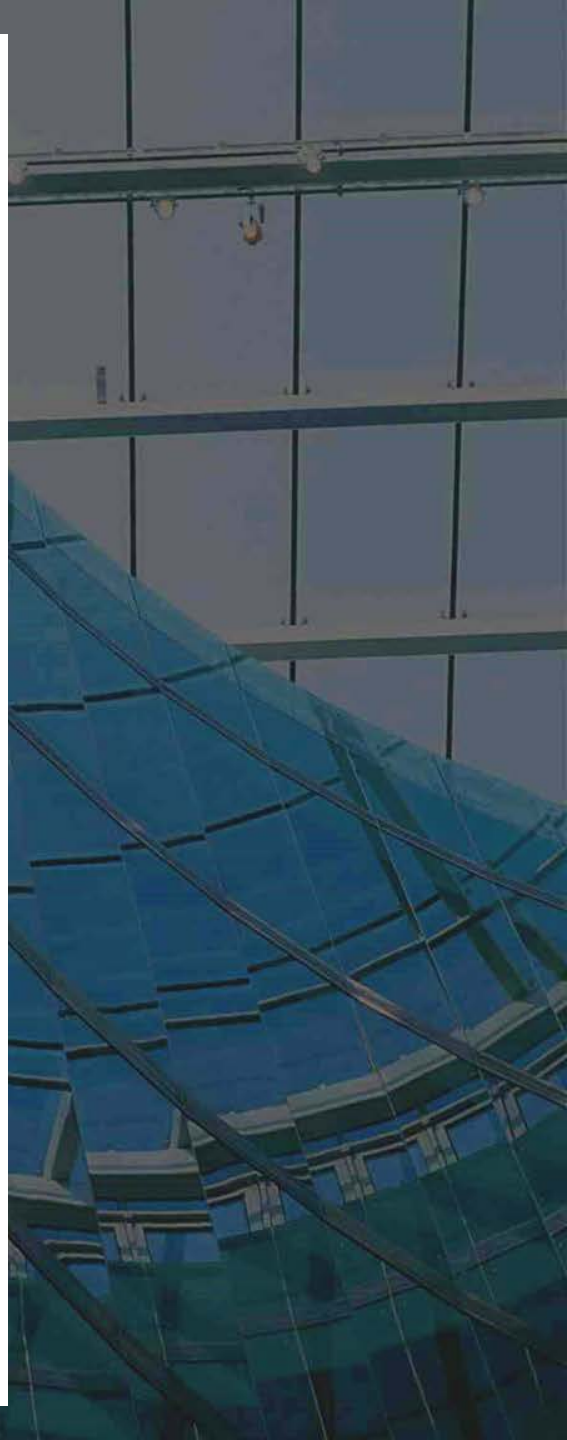
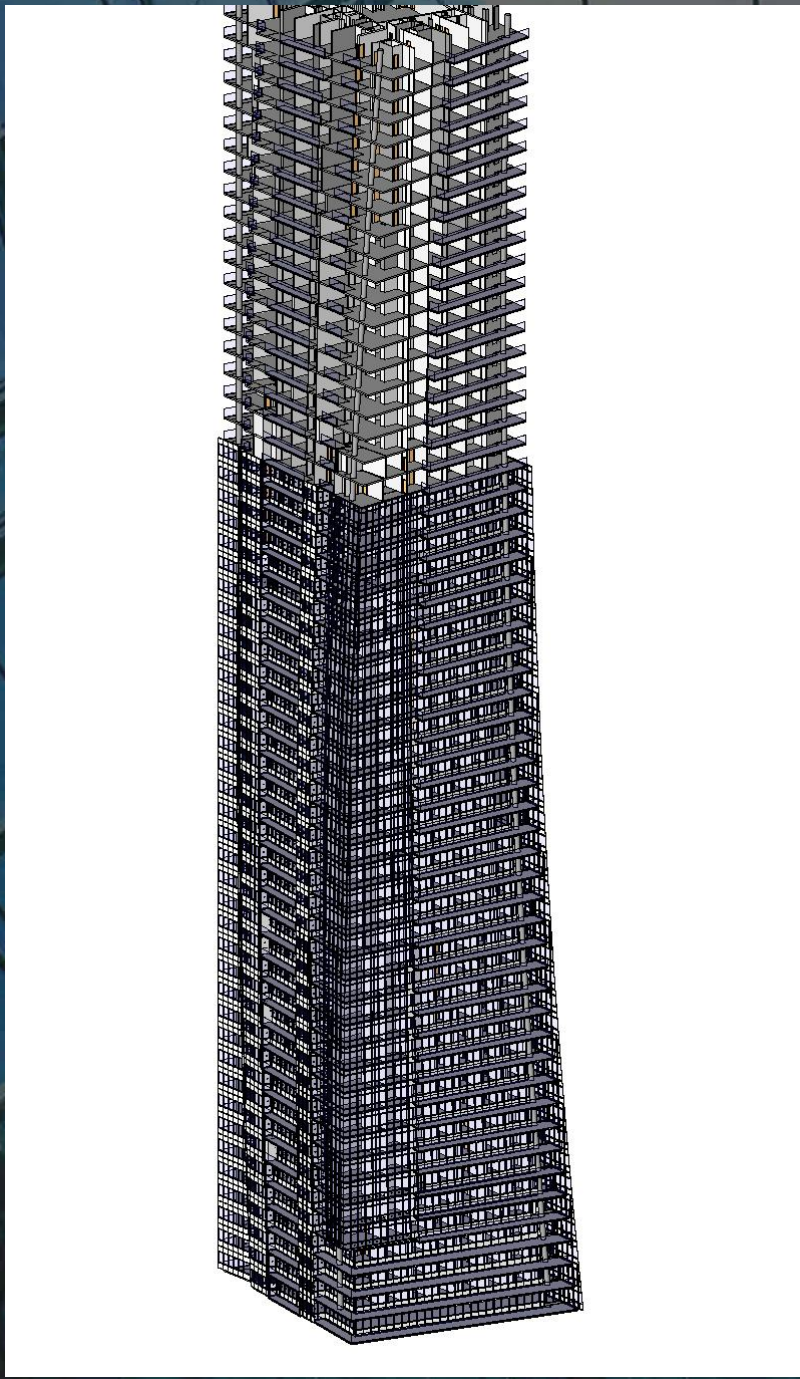


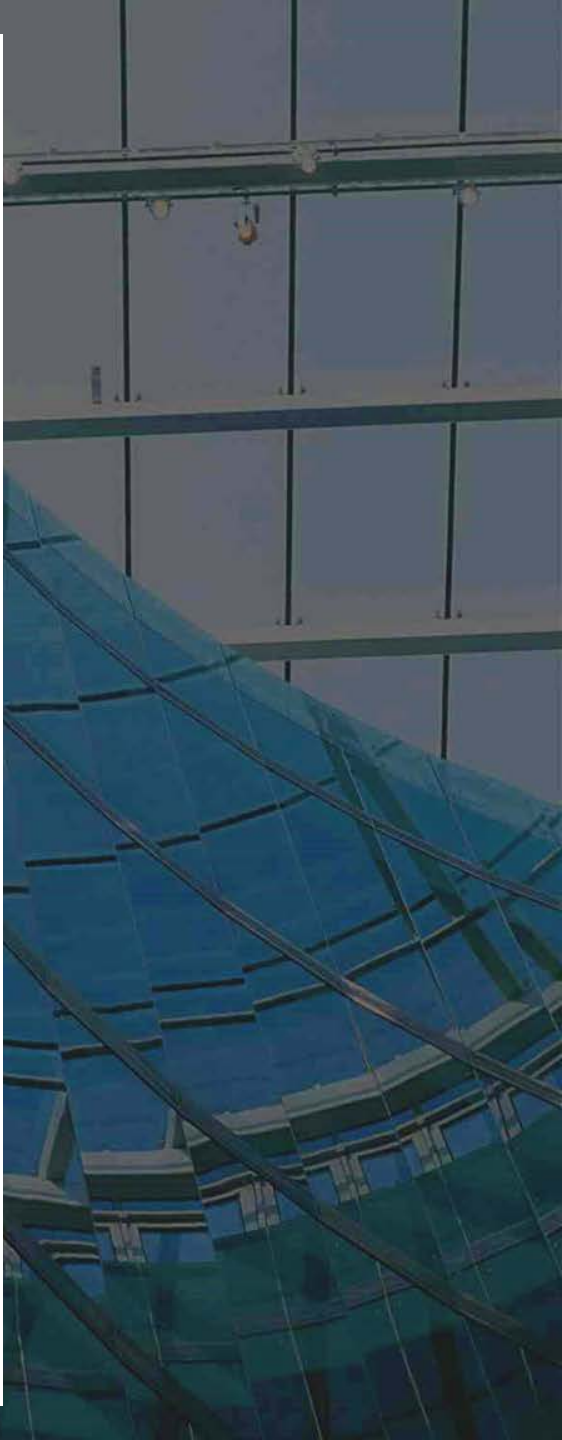
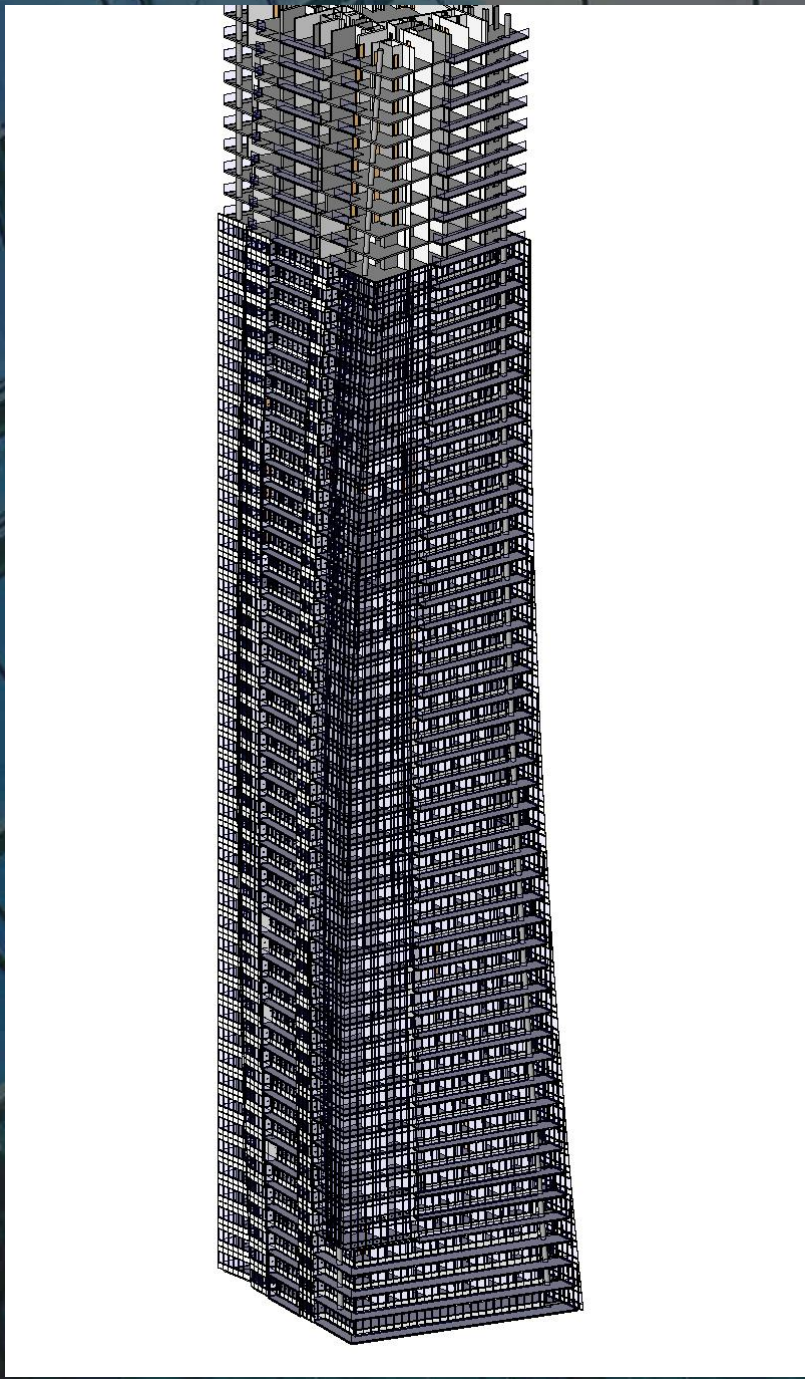


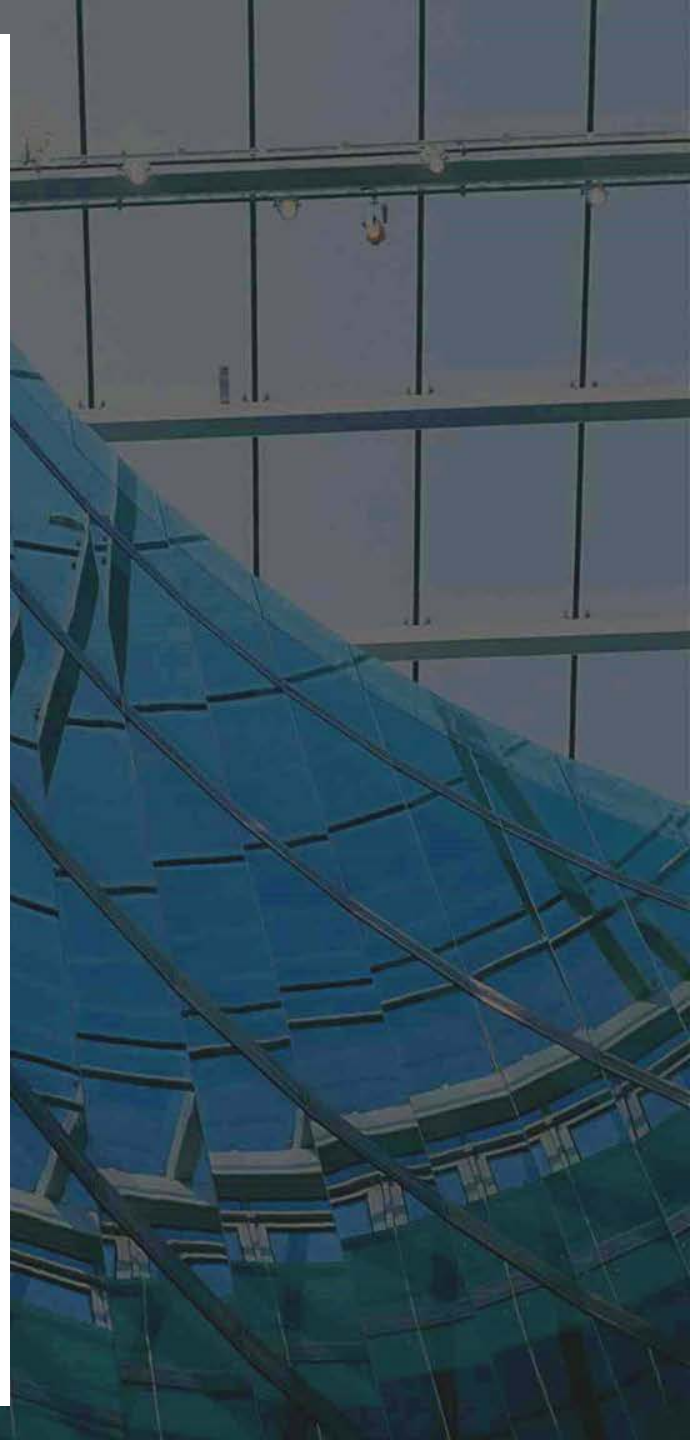


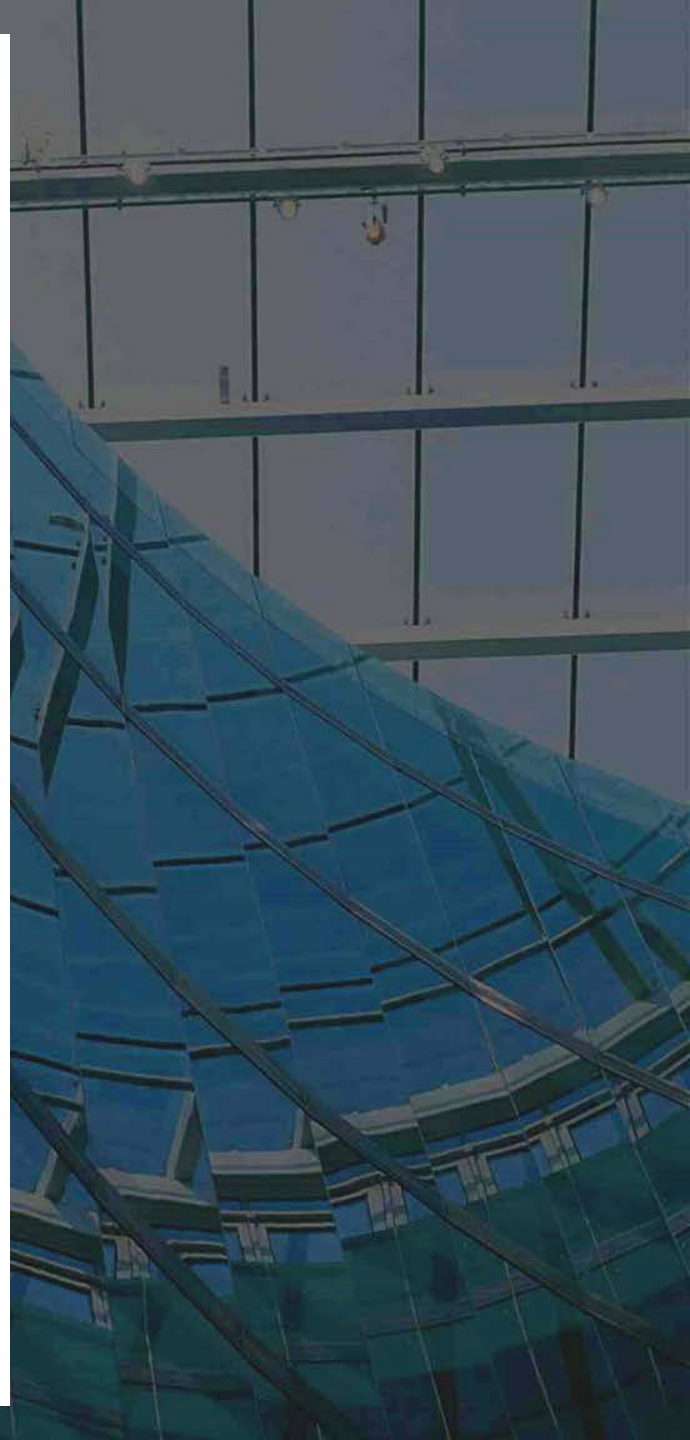


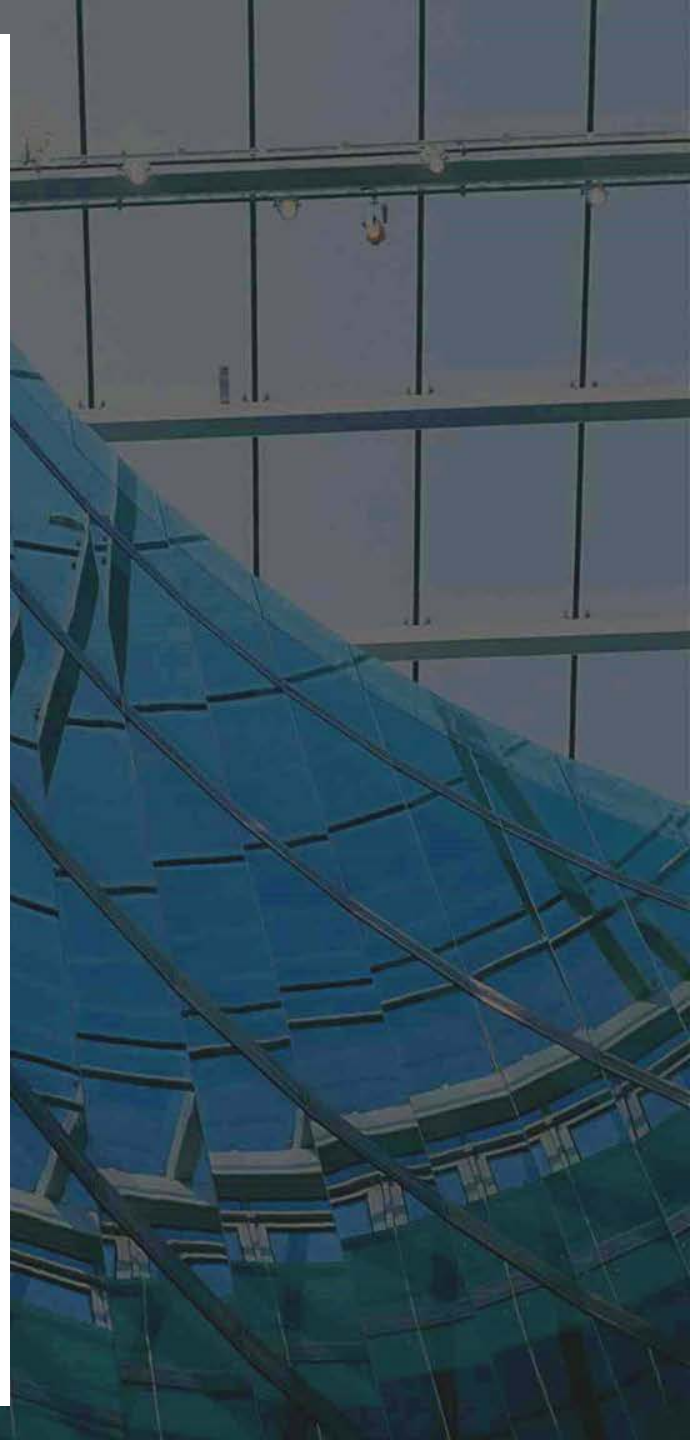


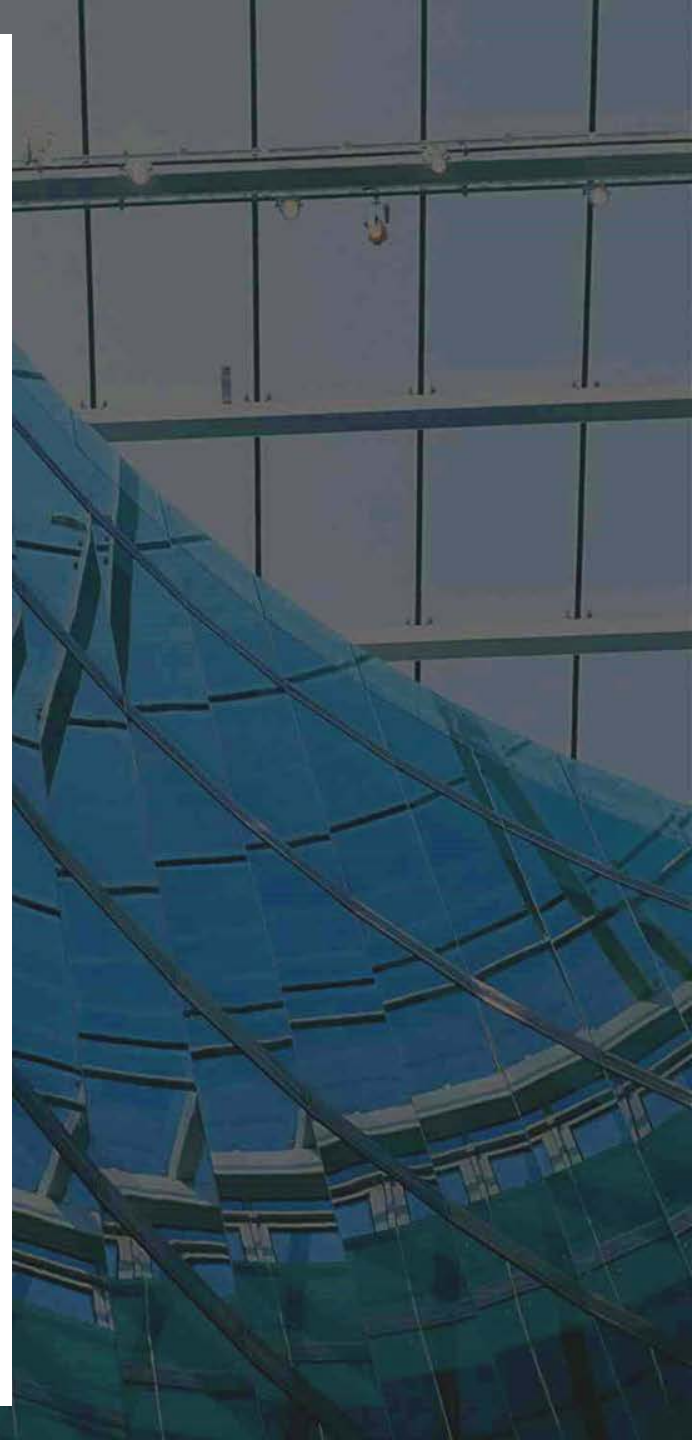


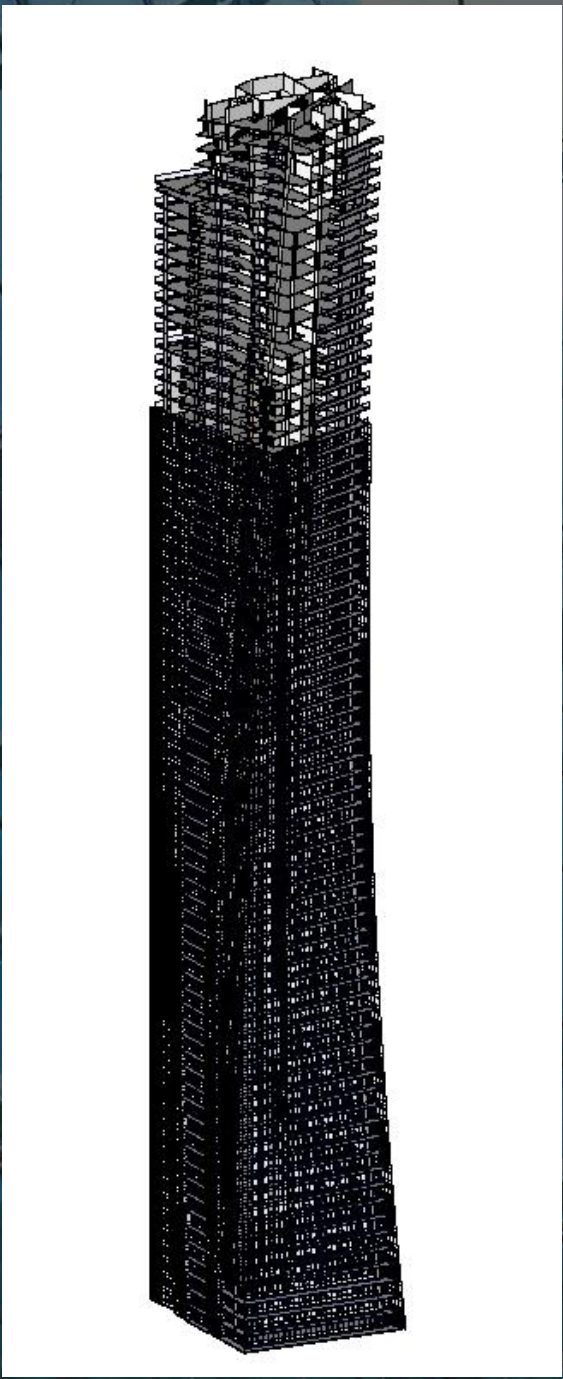


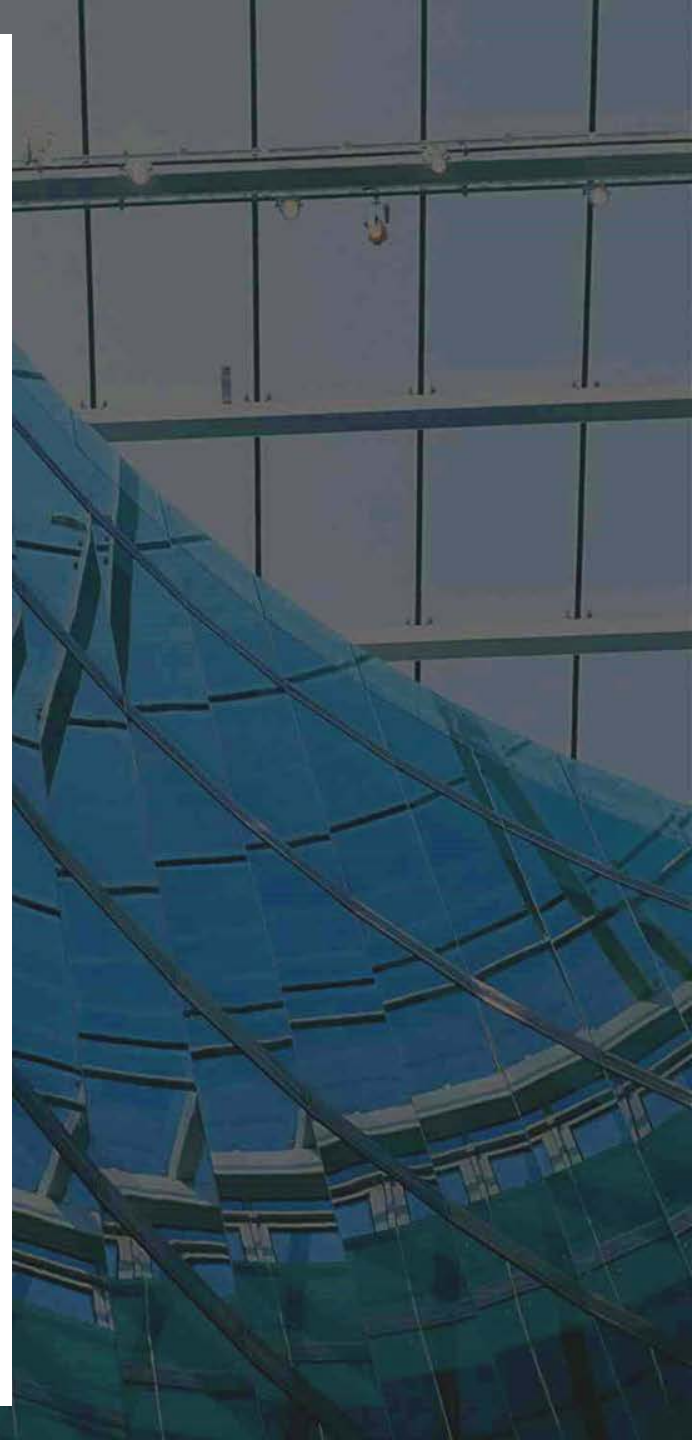


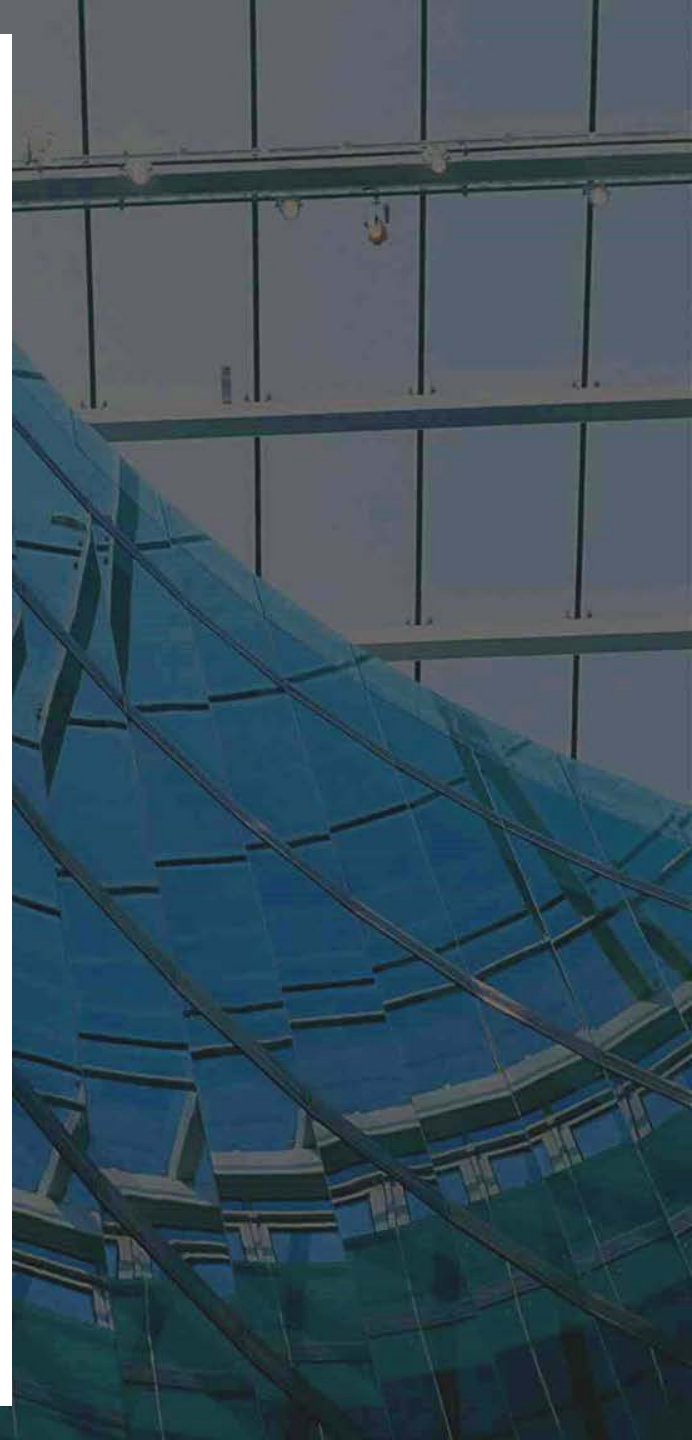


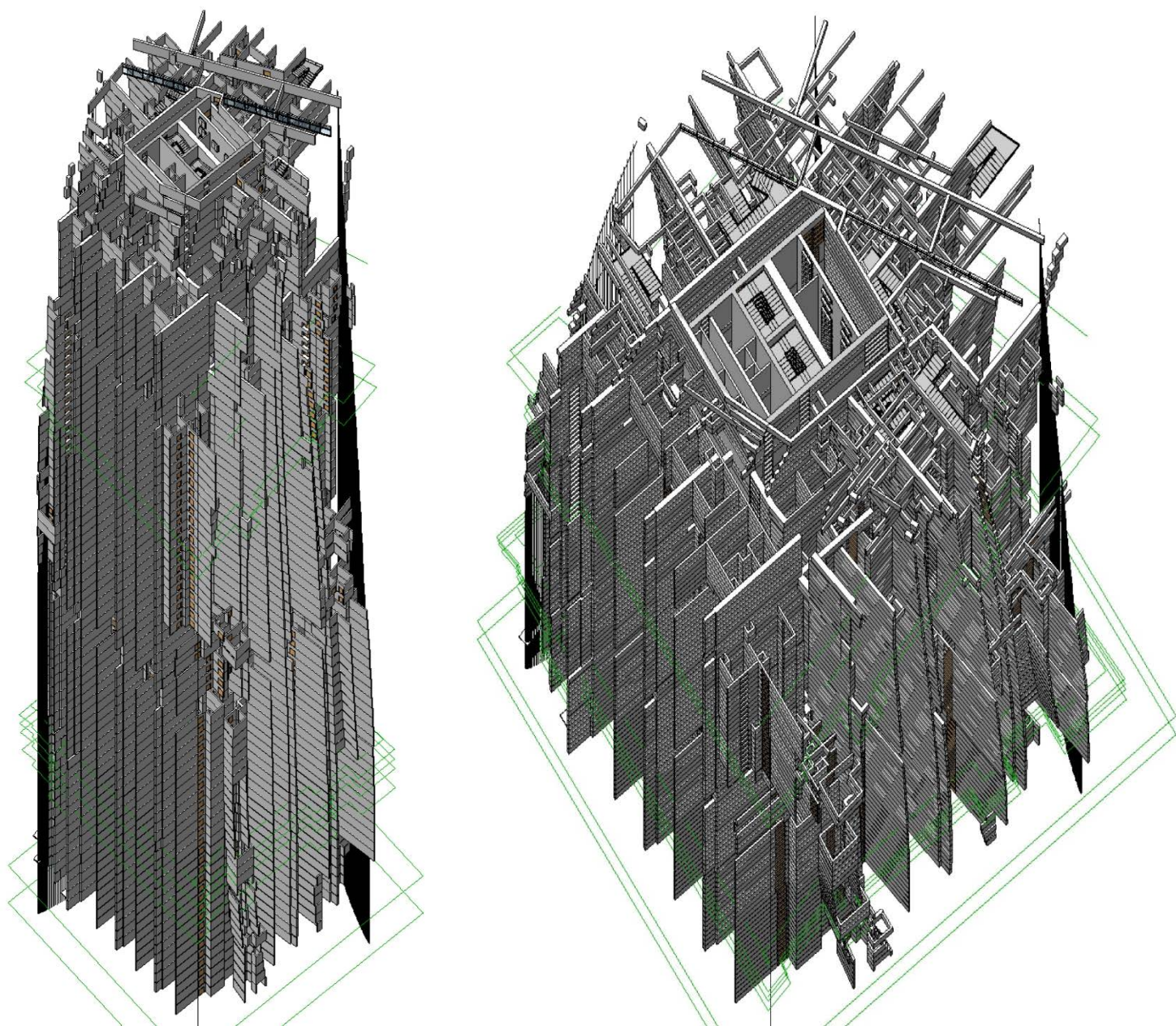




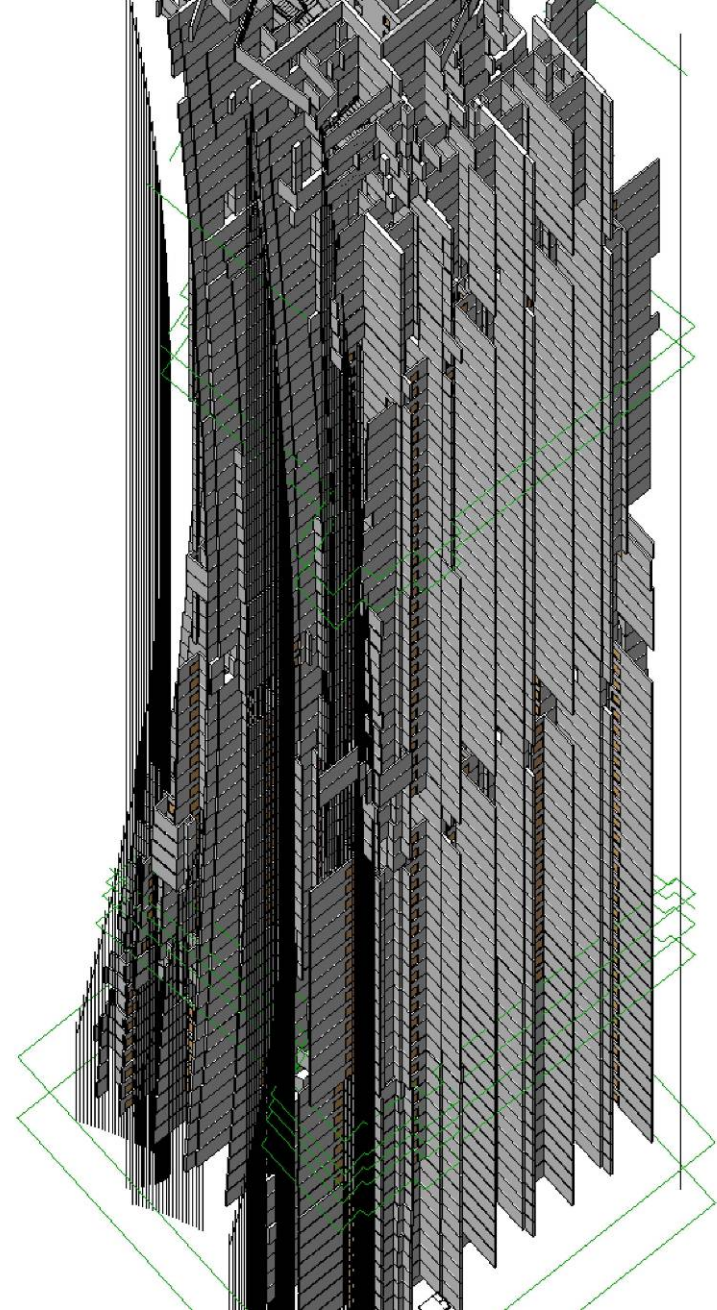
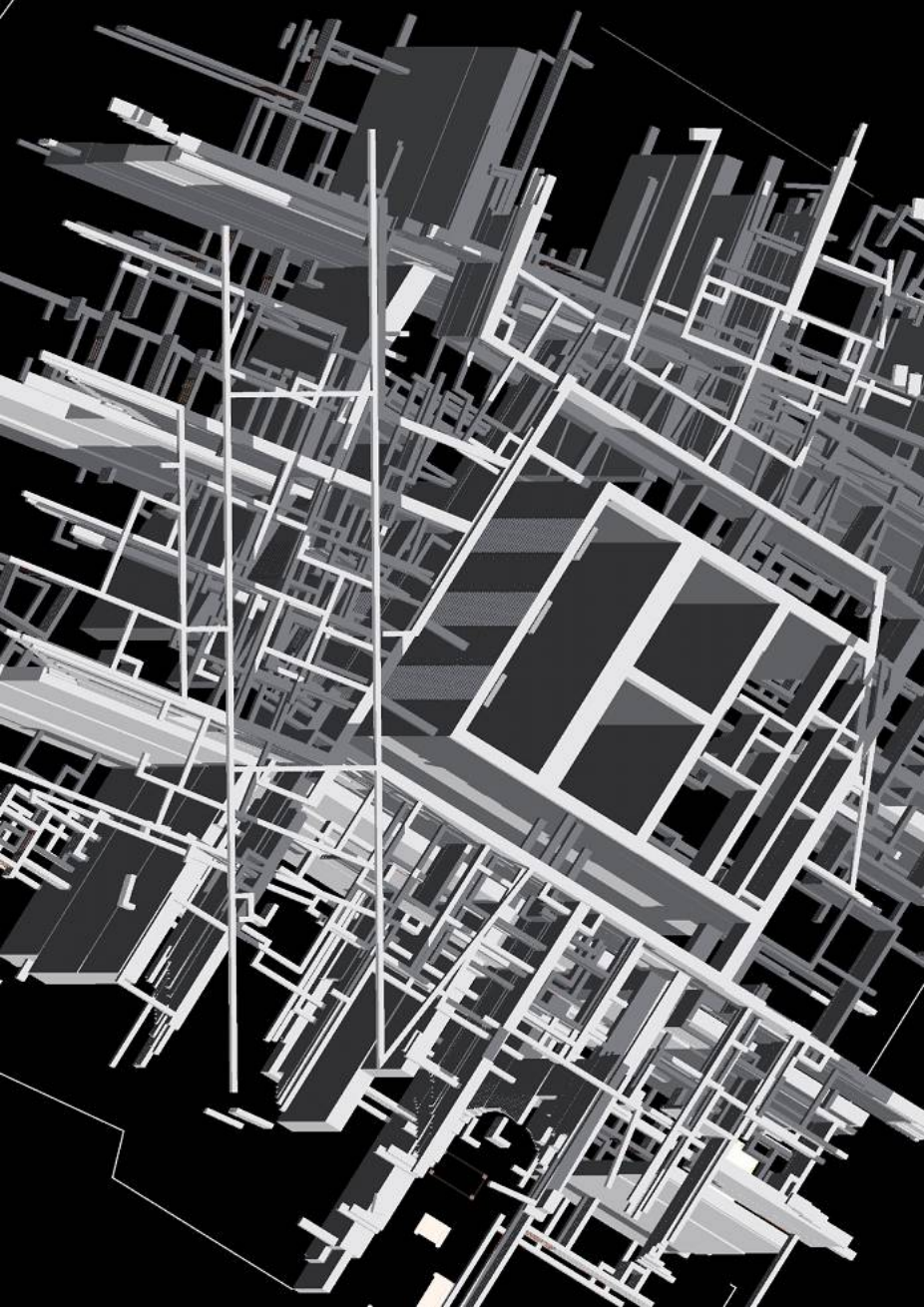




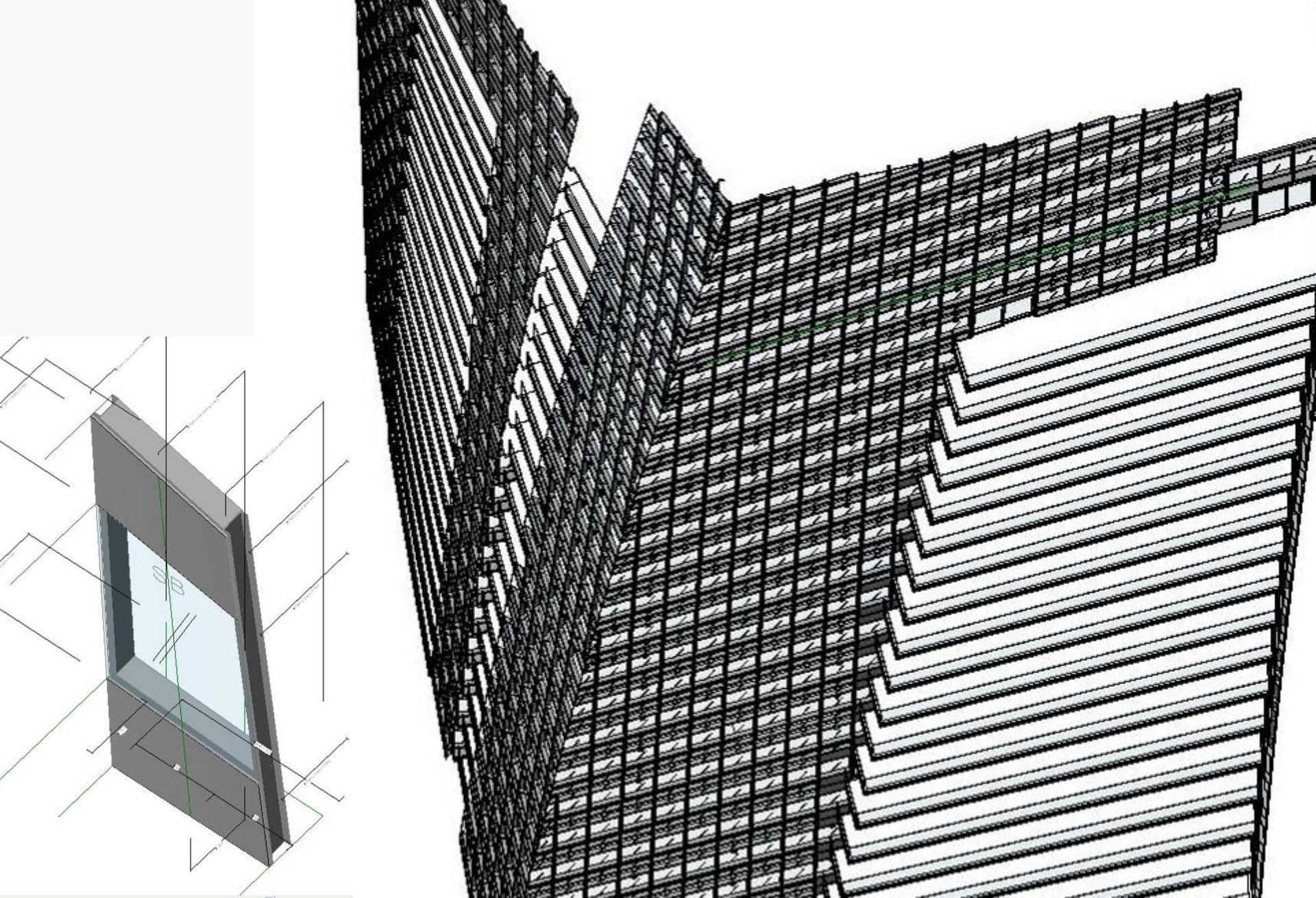




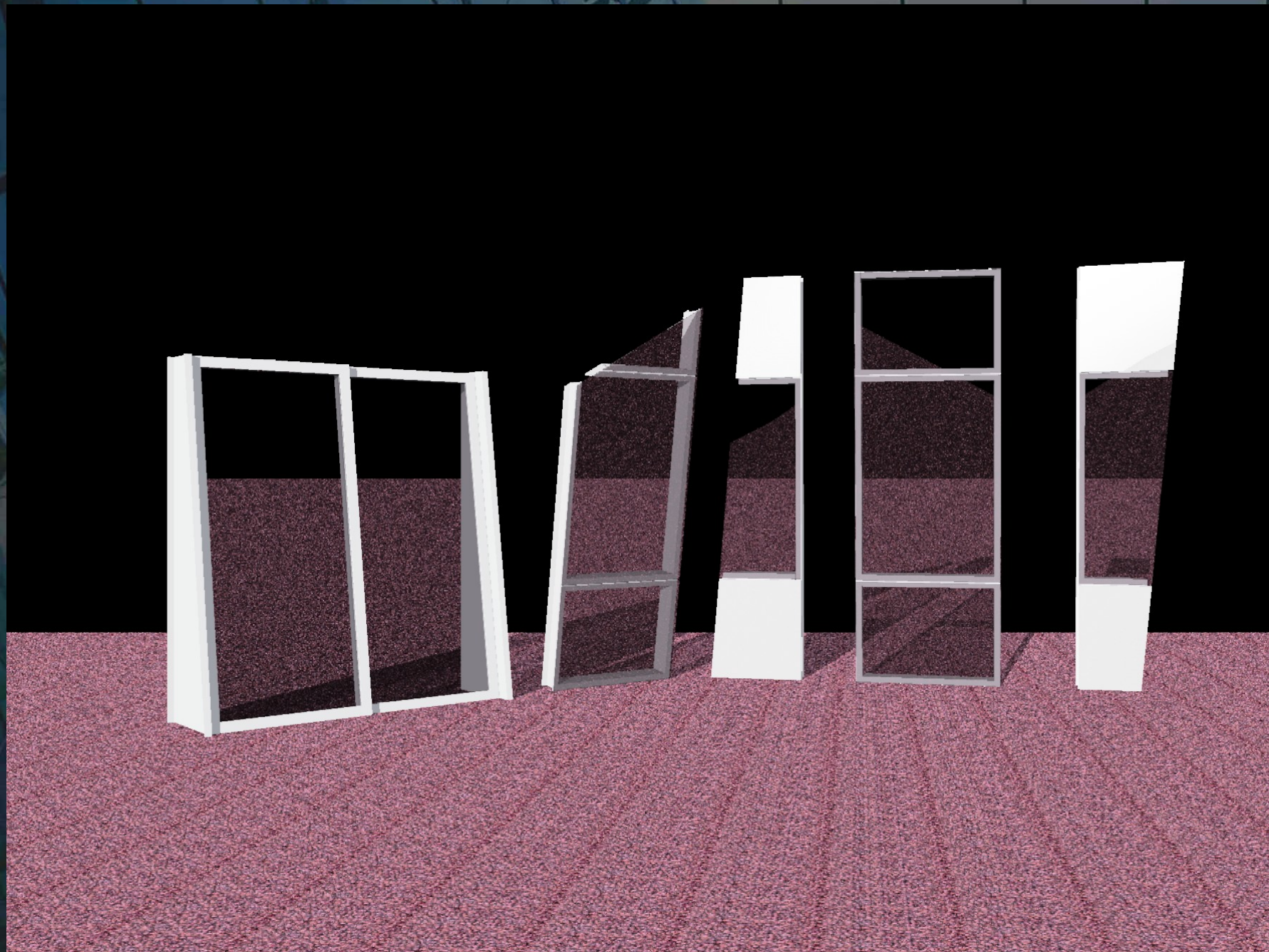
VERTICAL CO-ORDINATION



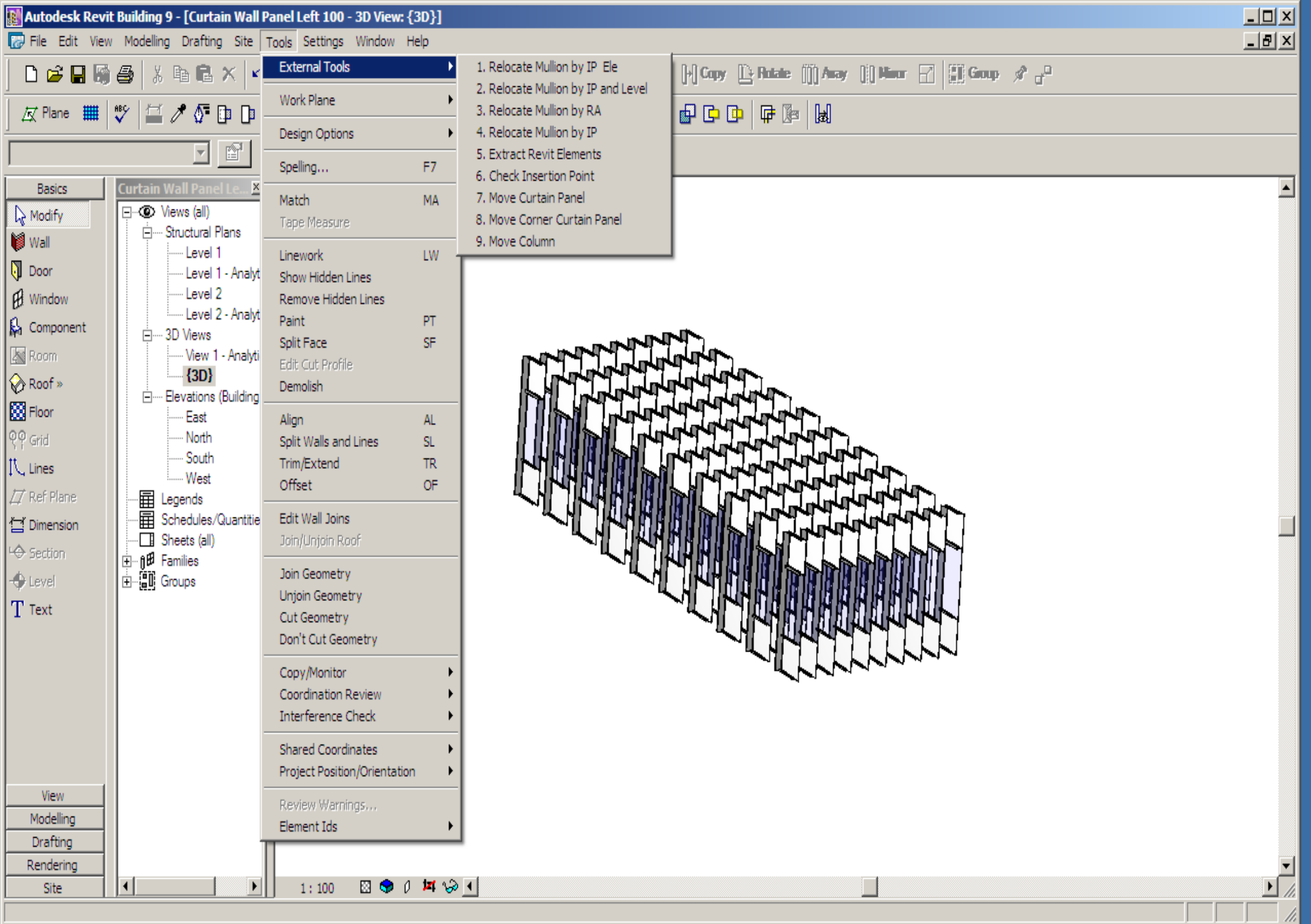
INTERNAL vs EXTERNAL

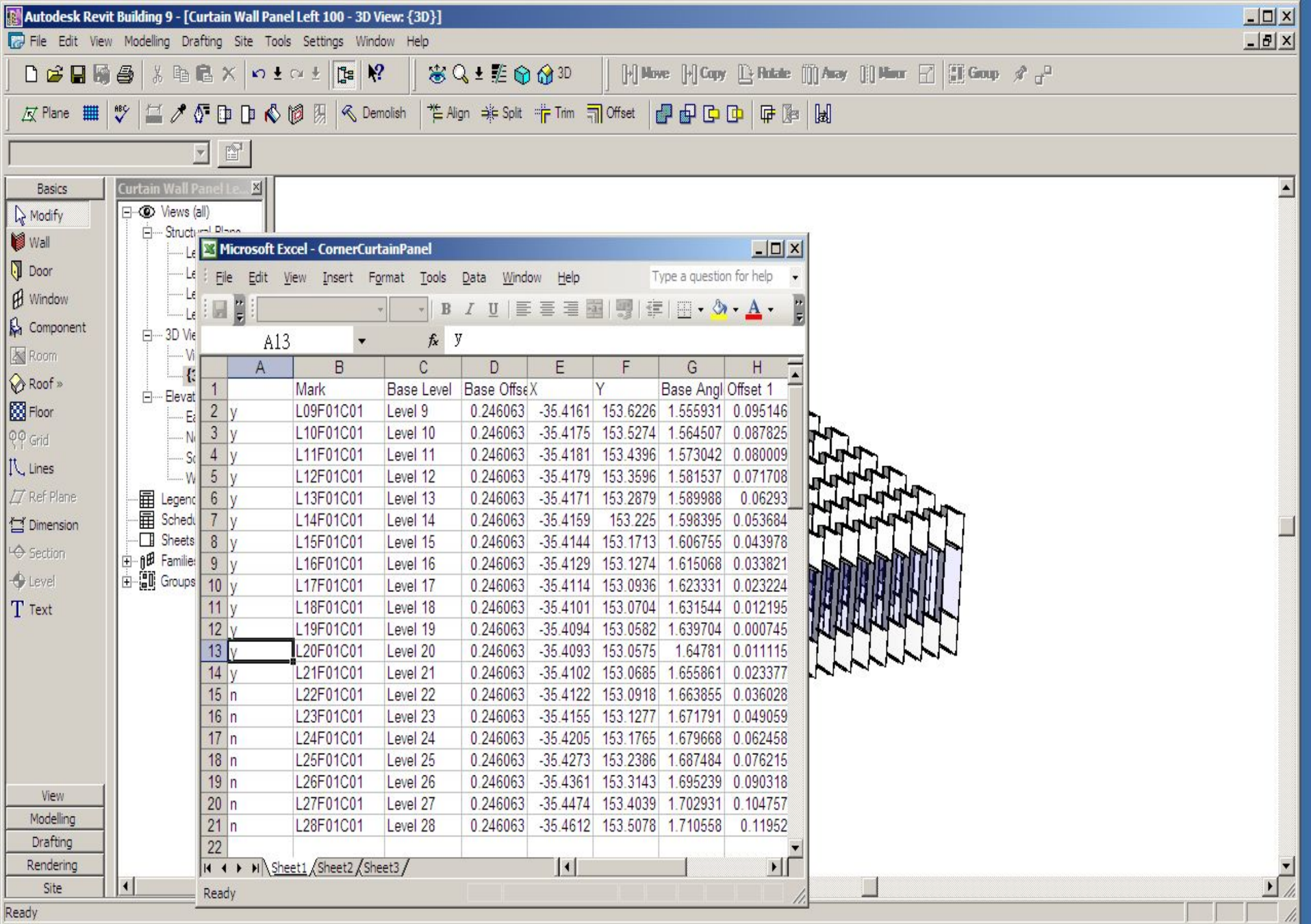


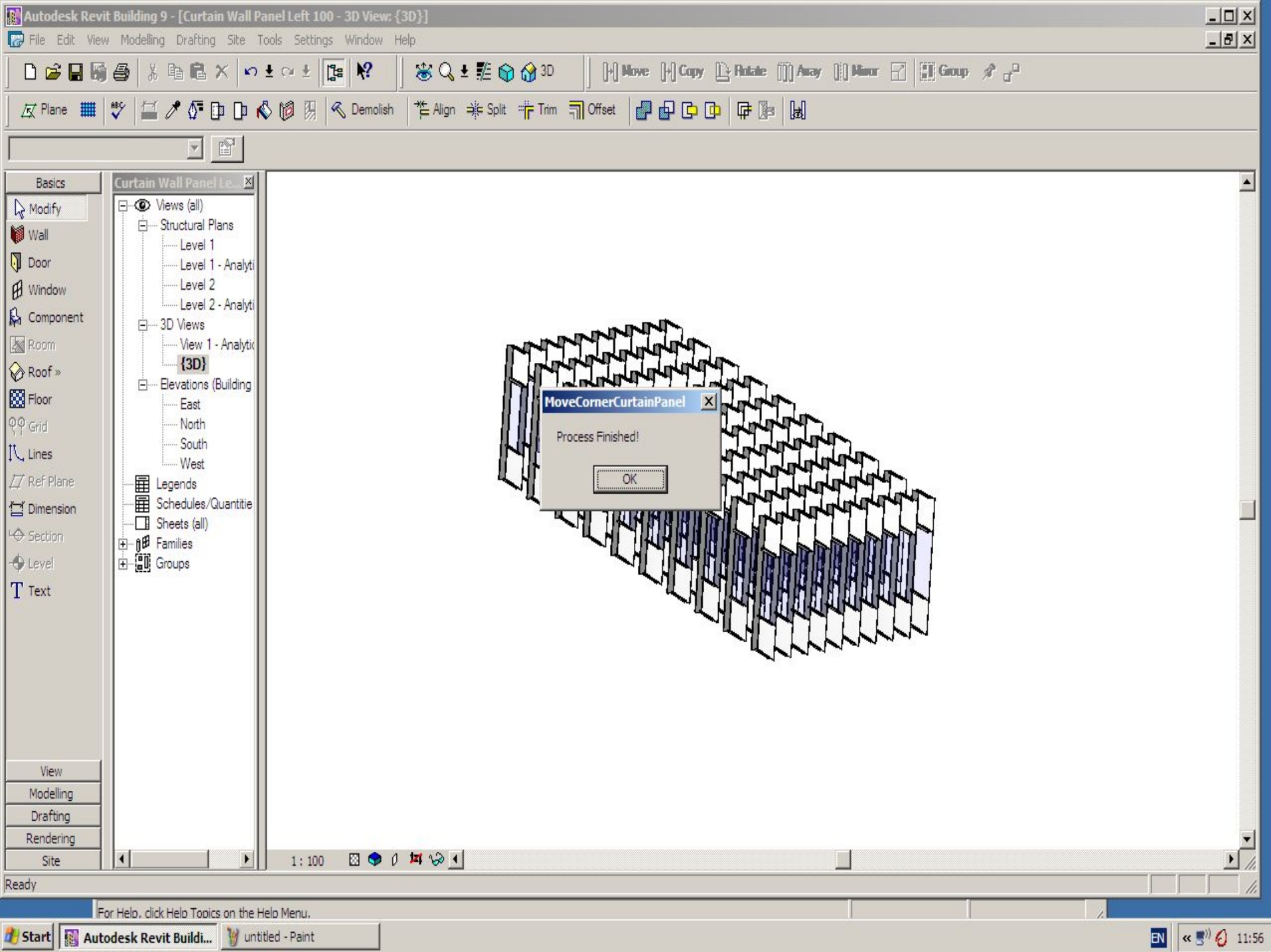
COMPLICATED CURTAIN WALL

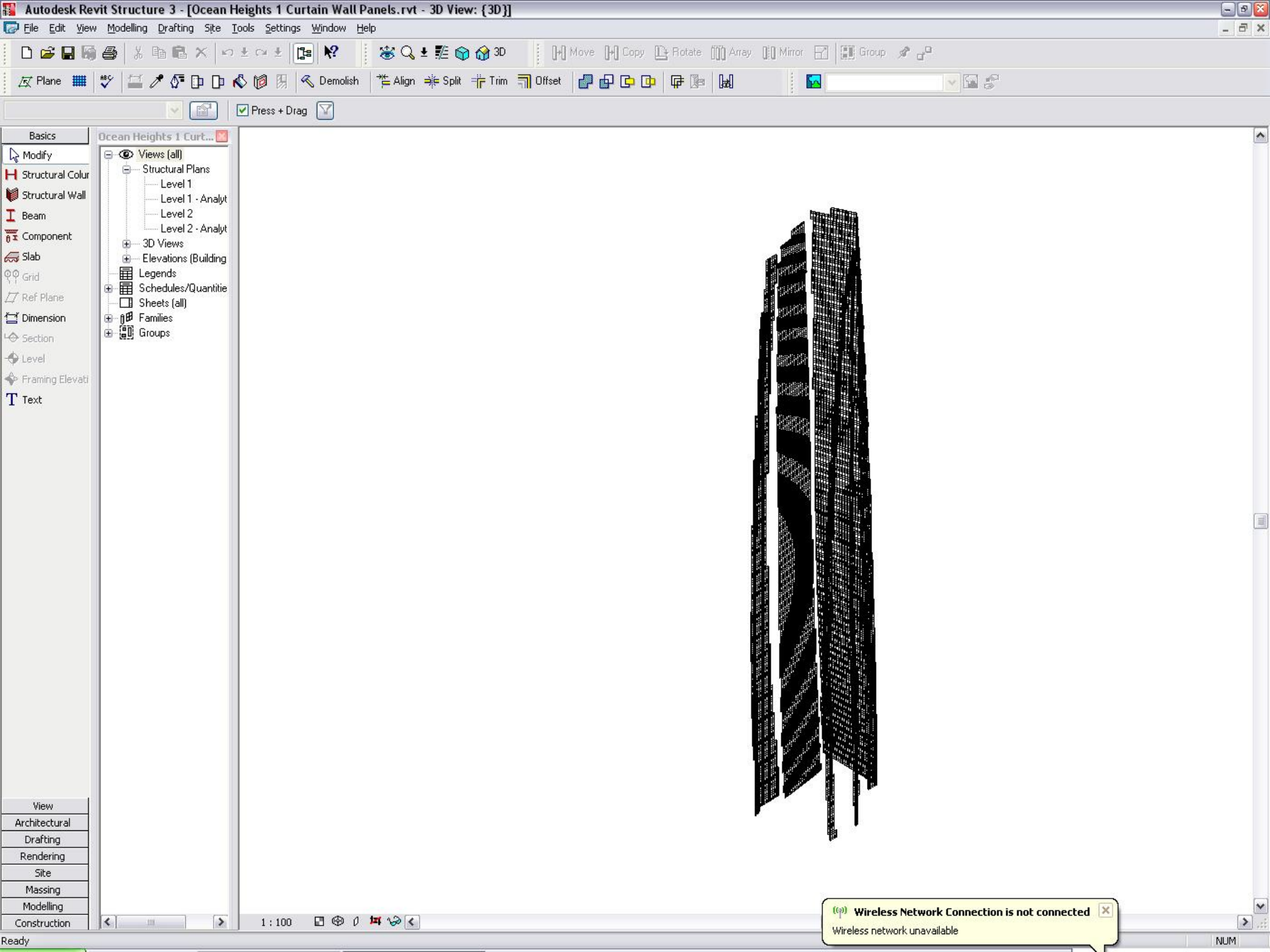


Ref Plane	Level 20	Sliding Door	L71B05D12	Level 71	2550.00		0.00
Dimension	Level 30	Sliding Door	L71B05D15	Level 71	2550.00		0.00
Section	Level 40	Sliding Door	L72B01D02	Level 72	2400.00		0.00
Level	Level 50	Sliding Door	L72B02D02	Level 72	2500.00		0.00
Framing Elevati	Level 60	Sliding Door	L72B04D01	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					











IF CLIENT WANTS A BIM – PROJECT
WHAT DO THEY EXPECT?

Challenges from the Technology to the Industry

(Questions I posted during HKIA BIM Seminar Jan 2007)

- Participation of all participants
- Redefinition of roles of all Building Industry Participants
- Project Delivery Time
- Fee Structure
- Standard Contract Provision – position of BIM model
- Contractual Relationship
- Other supports – Government, Professional Bodies, Education
- BIM Authorities – Standards and Certification
-



THANK YOU