

## **DESIGN / MODELLING / RENDERING**

*Slide 2:* very 1st Revit model based on winning design, along w/ some rendering / modelling works using AutoCAD and 3DMax, ChongQing

*Slide 3:* computational design using Rhino/Grasshopper and Revit/Dynamo, Toronto

## **AutoCAD / ADT**

*Slide 4:* AutoCAD drawing using ADT Project Navigator, mixed use, HOK, Hong Kong

## **Digital Project**

*Slide 5:* Model / Material Takeoff / Design Issue (Clashing) report using Digital Project, mixed use, Gehry Technologies, Hong Kong

## **Revit**

*Slide 6:* very 1st Revit project at DD, residential, HOK, Hong Kong

*Slide 7:* various Revit projects at Concept / SD / DD, mixed use / interior / hotel / office, HOK, Hong Kong

*Slide 8:* Revit project at SD, hotel, and emails support, along w/ Revit related forum discussion posts, HOK, Hong Kong

*Slide 9-10:* Revit project at CD, residential, Cedarglen Homes, Calgary

*Slide 11:* Revit project at CD, mixed use, Nemetz, Vancouver

*Slide 12:* Revit project at CD, office, along w/ some documentation of office Revit standards and best practice, Nemetz, Vancouver

*Slide 13:* Revit project at CD, residential / hotel, along w/ excerpt from CAADRIA paper of Revit CUI add-on tool, Ong & Ong, Singapore

*Slide 14-15:* Revit project at CD, office, BIAD, Beijing

*Slide 16-17:* Revit project at Concept / SD, mixed use, Memphis, Shanghai

*Slide 18:* Revit project at SD, arena, DSRA, Halifax

*Slide 19:* Revit research project for energy analysis, DSRA, Halifax

*Slide 20:* Revit project at CD, facility, Inviro, Toronto

## **Navisworks**

*Slide 21:* Navisworks Project and Template for clashing detection at CD, office, BIAD, Beijing

## **BIM 360 / Forge Customization**

*Slide 22:* BIM 360 training project w/ customized viewer via Forge, MTRC, Hong Kong

## **Customization in AutoCAD / Revit / Navisworks**

*Slide 23-24:* AutoCAD programming using Lisp / VBA / VB.Net, HOK, Hong Kong

*Slide 25-26:* Revit programming using C#, Strucsoftsolutions, Montreal

*Slide 27-28:* Revit programming using C#, Cedarglen Homes, Calgary

*Slide 29-30:* web based DWF / database programming using C# / SQL, Cedarglen Homes, Calgary

*Slide 31:* Revit programming using C# / XML, Ong & Ong, Singapore

*Slide 32:* Navisworks programming using C#, BIAD, Beijing

*Slide 33:* Revit programming using Dynamo, BIAD, Beijing

*Slide 34:* Revit programming using C#, DSRA, Halifax

*Slide 35:* Revit programming using Dynamo / Python to create 3D rooms and select walls profile-edited, DSRA, Halifax

*Slide 36:* Navisworks API and Dynamo, MTRC, Hong Kong

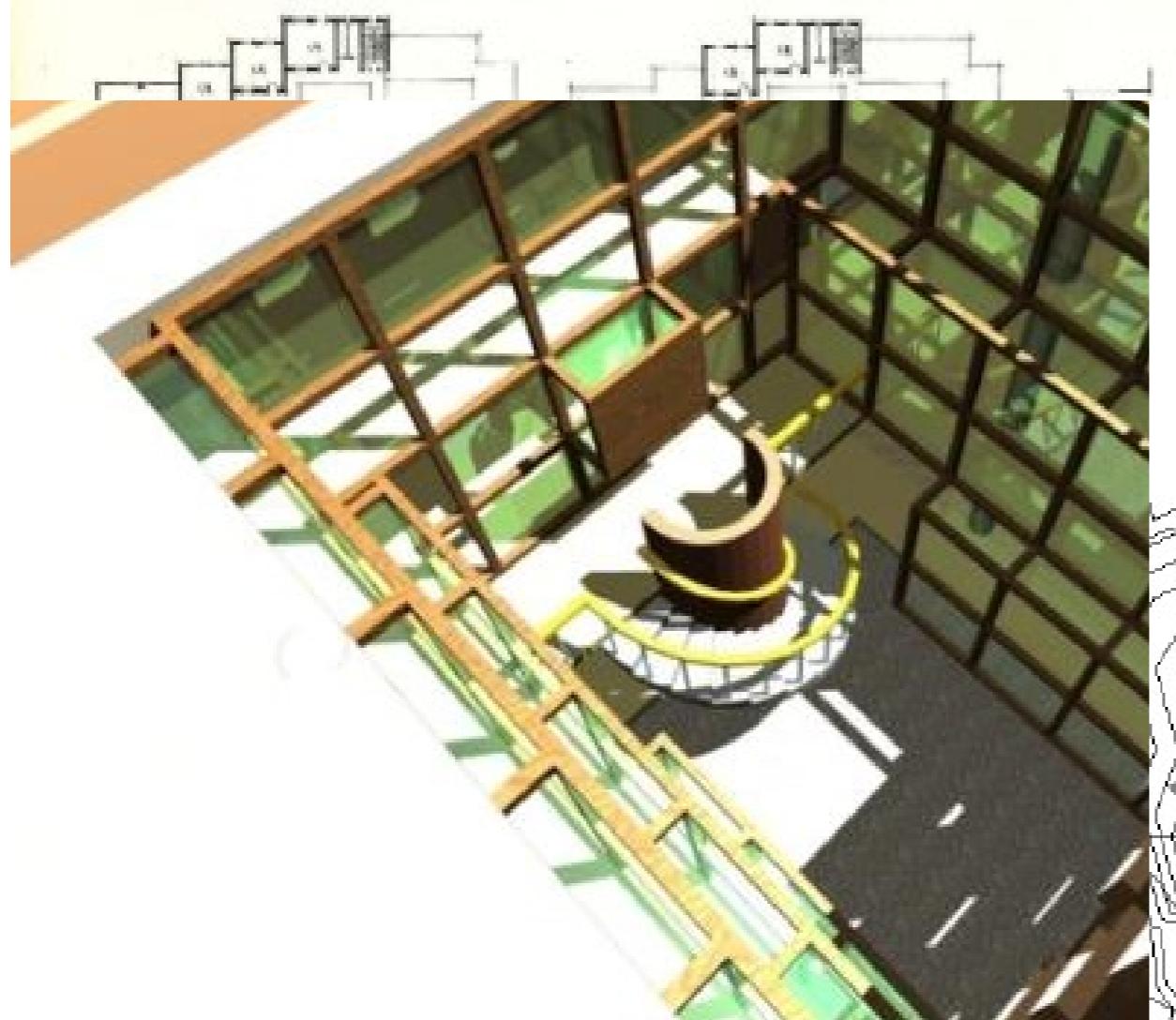
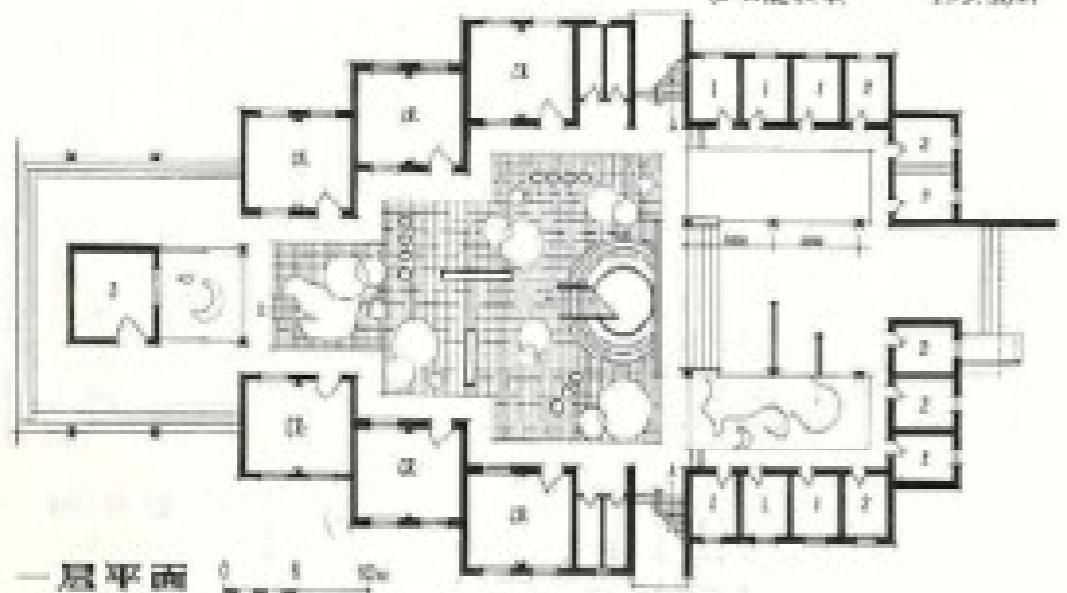
图中 重庆建筑工程学院建筑系

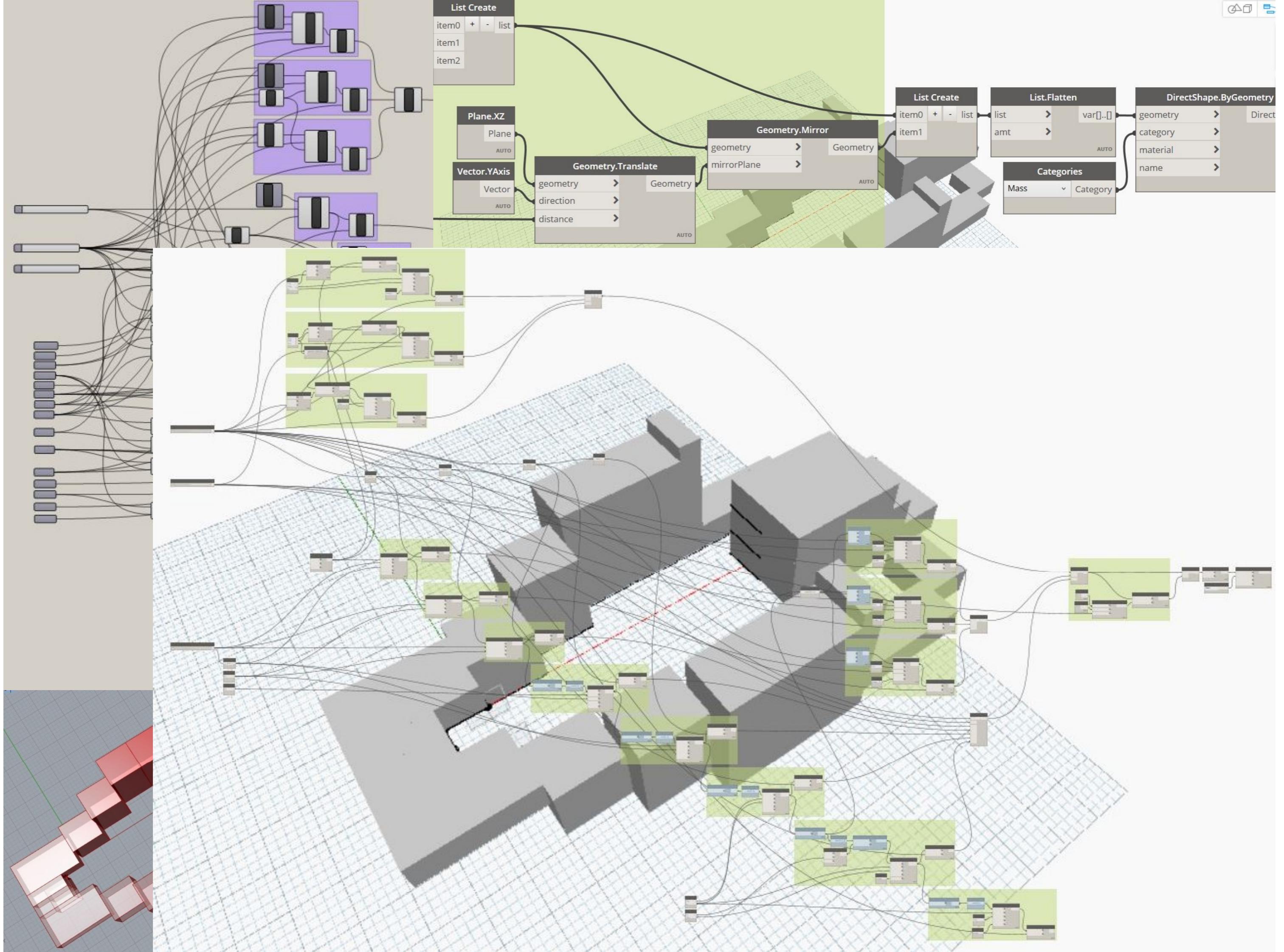
## 主要技术经济指标

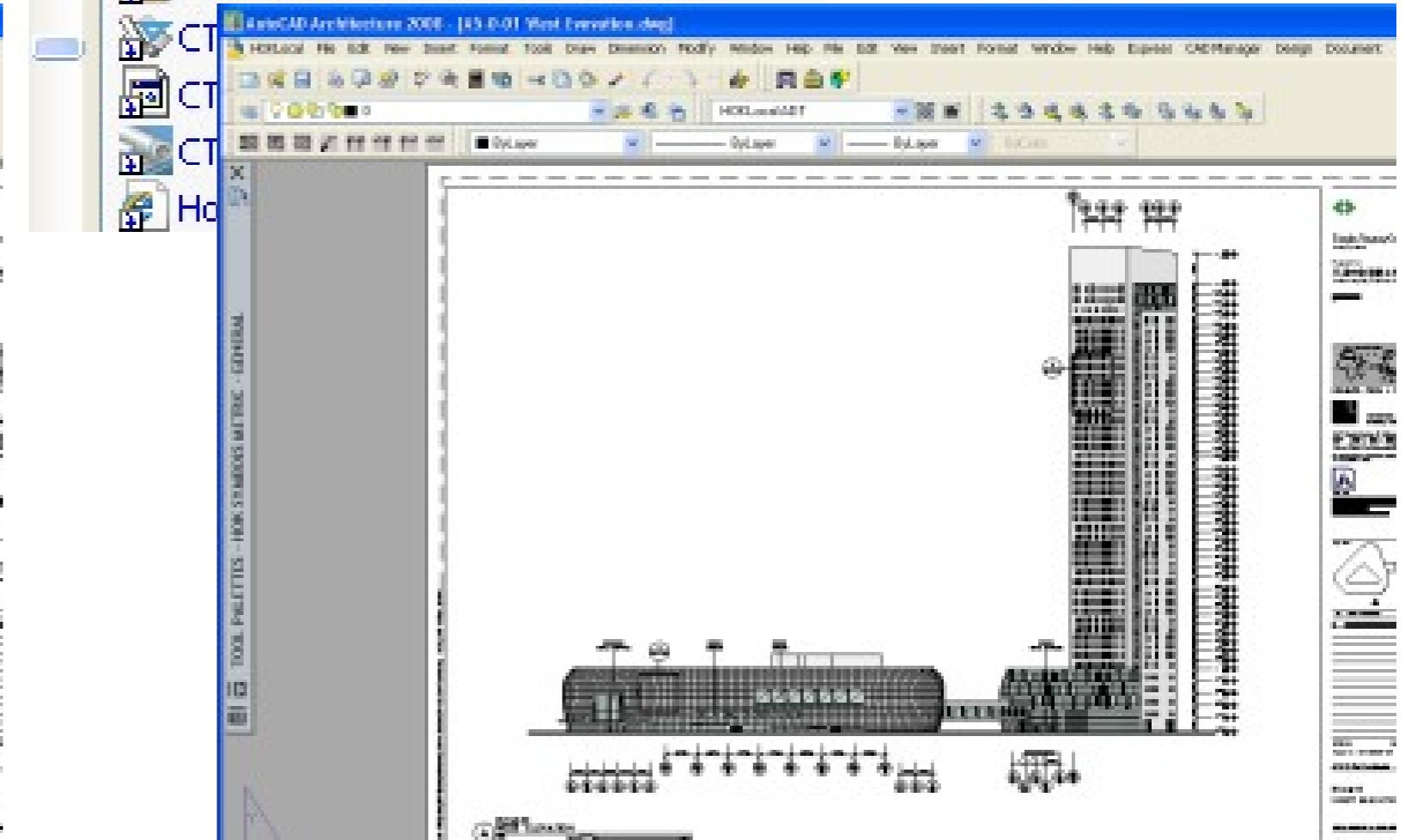
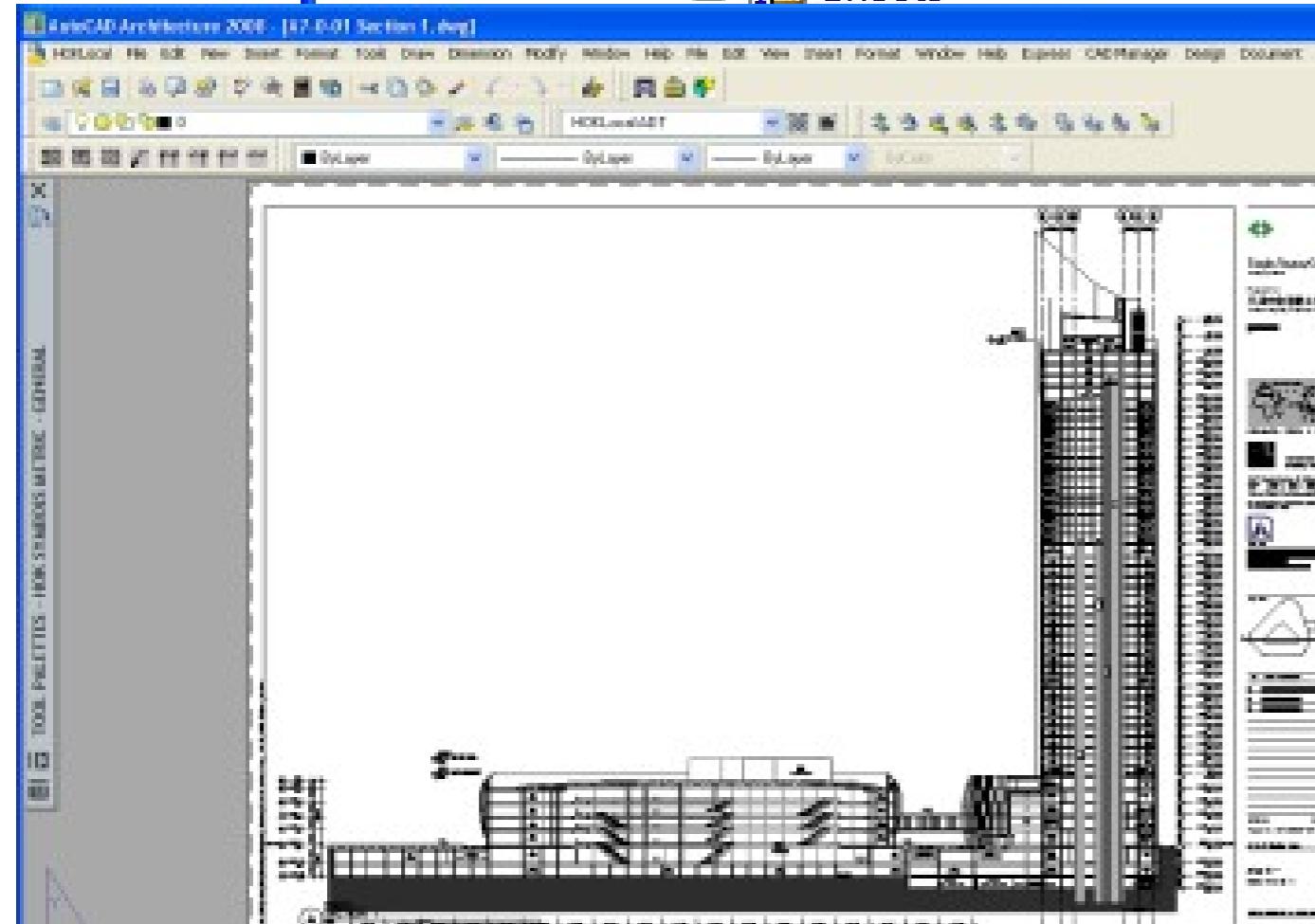
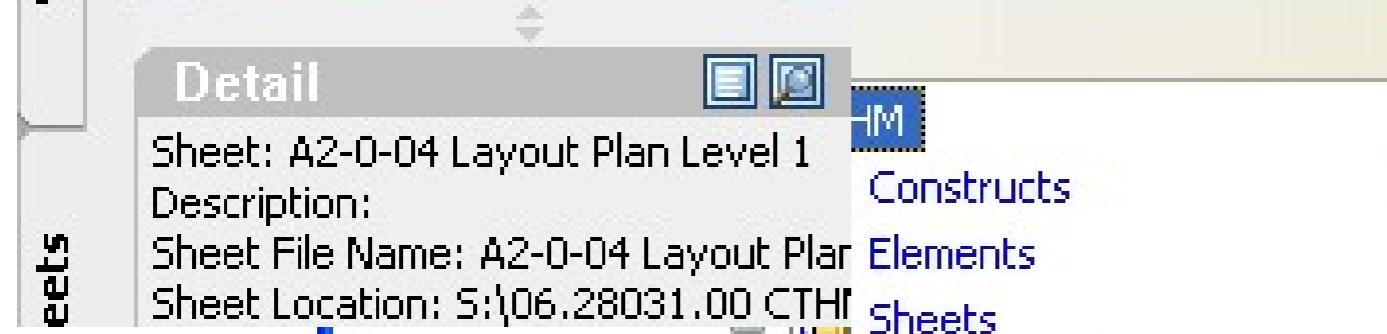
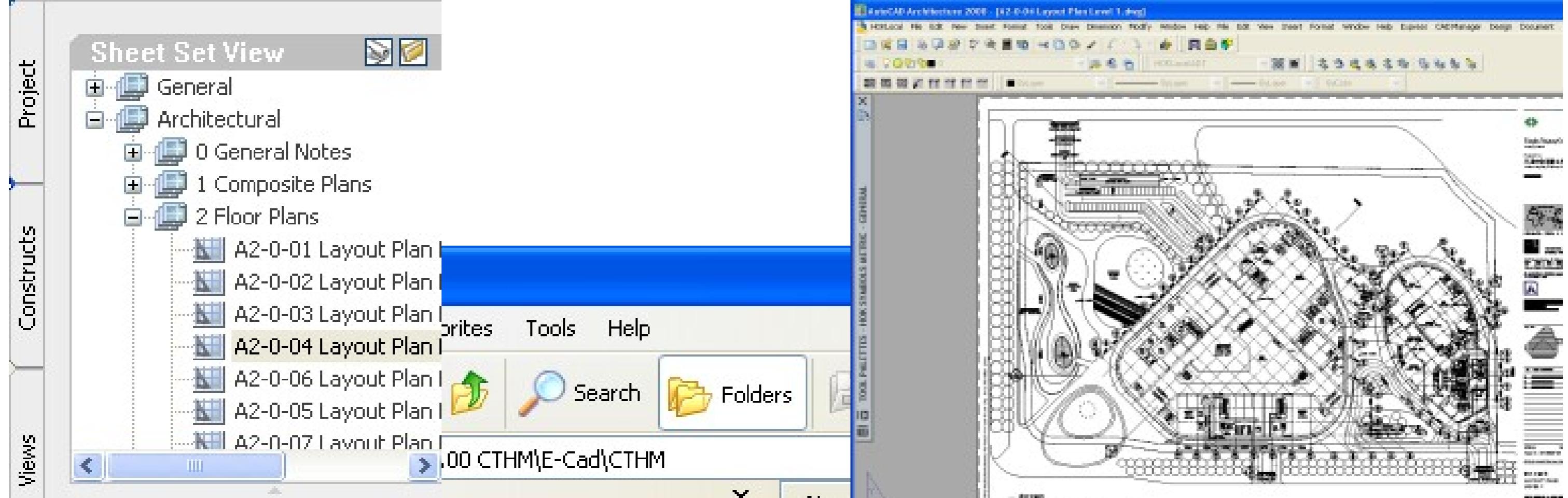
规 格  
总用地面积:  
总建筑面积:  
总使用面积:  
分项使用面积:  
普通教室:  
音乐教室:  
自然教室:  
多功能教室:

10 层  
9013.25M<sup>2</sup>  
3158.8M<sup>2</sup>  
1940.17M<sup>2</sup>  
49.77M<sup>2</sup>  
49.10M<sup>2</sup>  
71.50M<sup>2</sup>  
195.30M<sup>2</sup>

910号子4  
1.17M<sup>2</sup>/毛  
2.60M<sup>2</sup>/土  
2.78M<sup>2</sup>/生  
1.11M<sup>2</sup>/毛  
1.09M<sup>2</sup>/土  
1.60M<sup>2</sup>/生







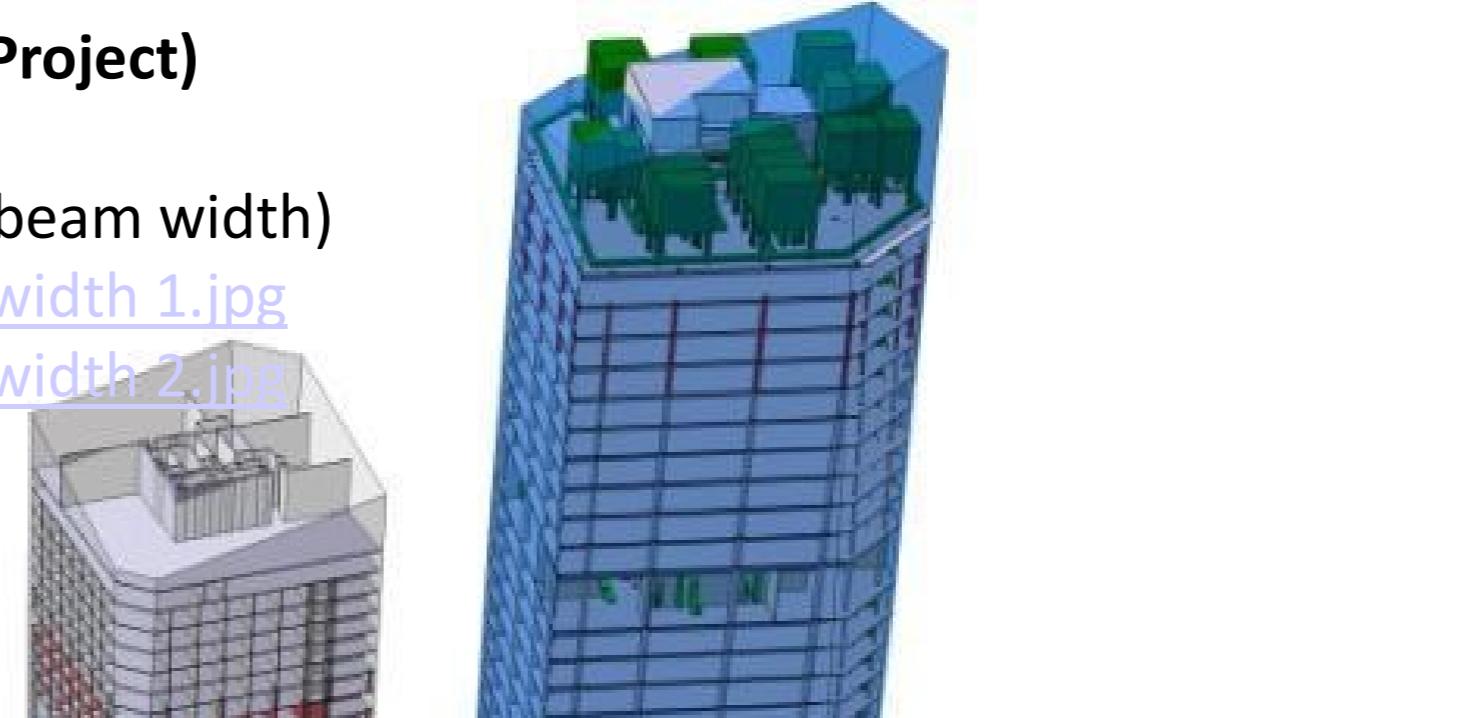
# 太古汇项目的一些设计疑问 (Design Issue for TKH Project)

1) 柱截面尺寸比梁的宽度小 (column size less than beam width)

[T02 L05-L19 and L24-L28 beam width and column width 1.jpg](#)

[T02 L05-L19 and L24-L28 beam width and column width 2.jpg](#)

[Podium L3 beam width and column width.jpg](#)



2) 核心筒外形不同(different core profile)

[Hotel core and column.pdf](#)



3) 卫生间定位/移位 (washroom alignment/shift)

[T02 L05-L19 Washroom.jpg](#)

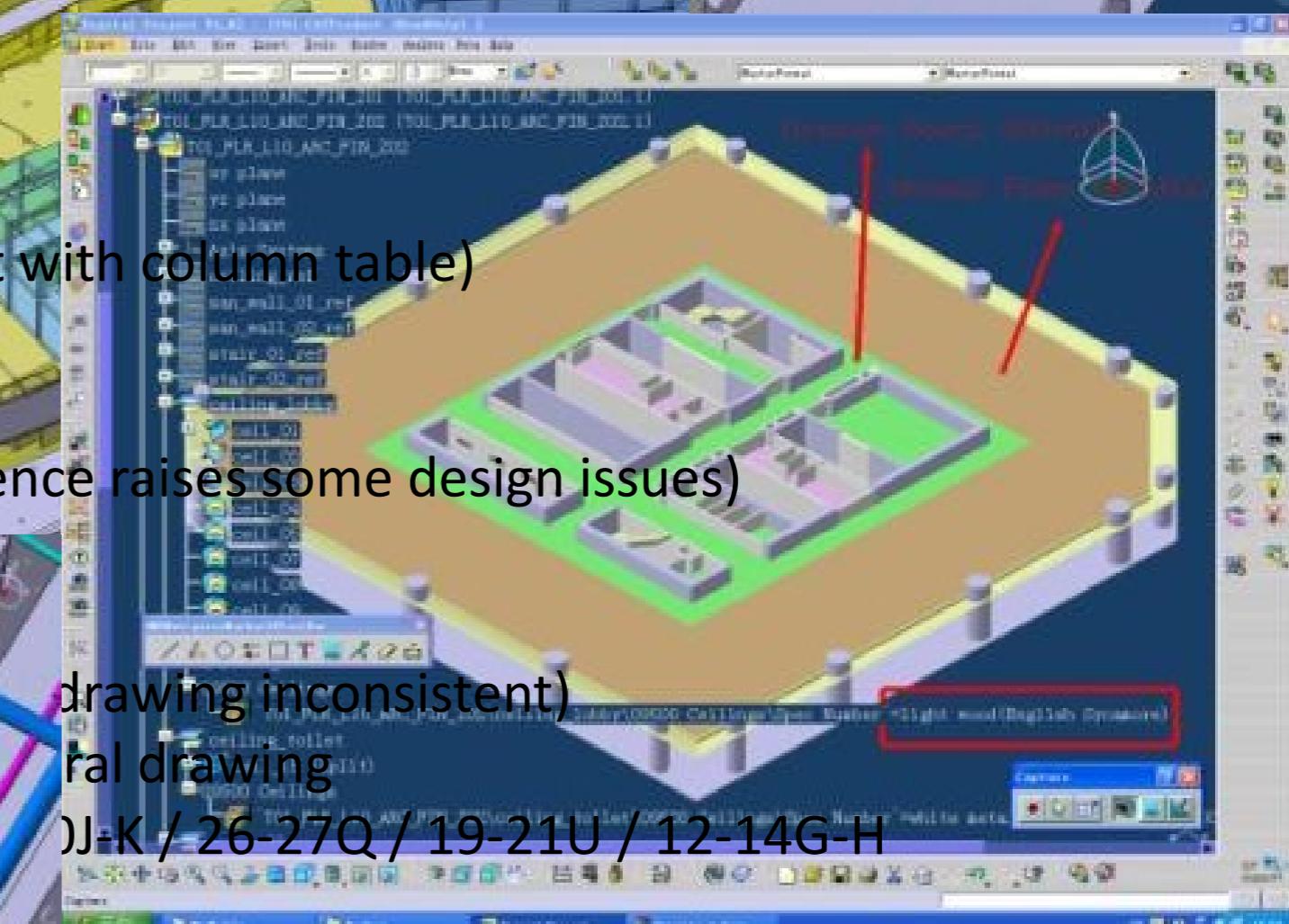
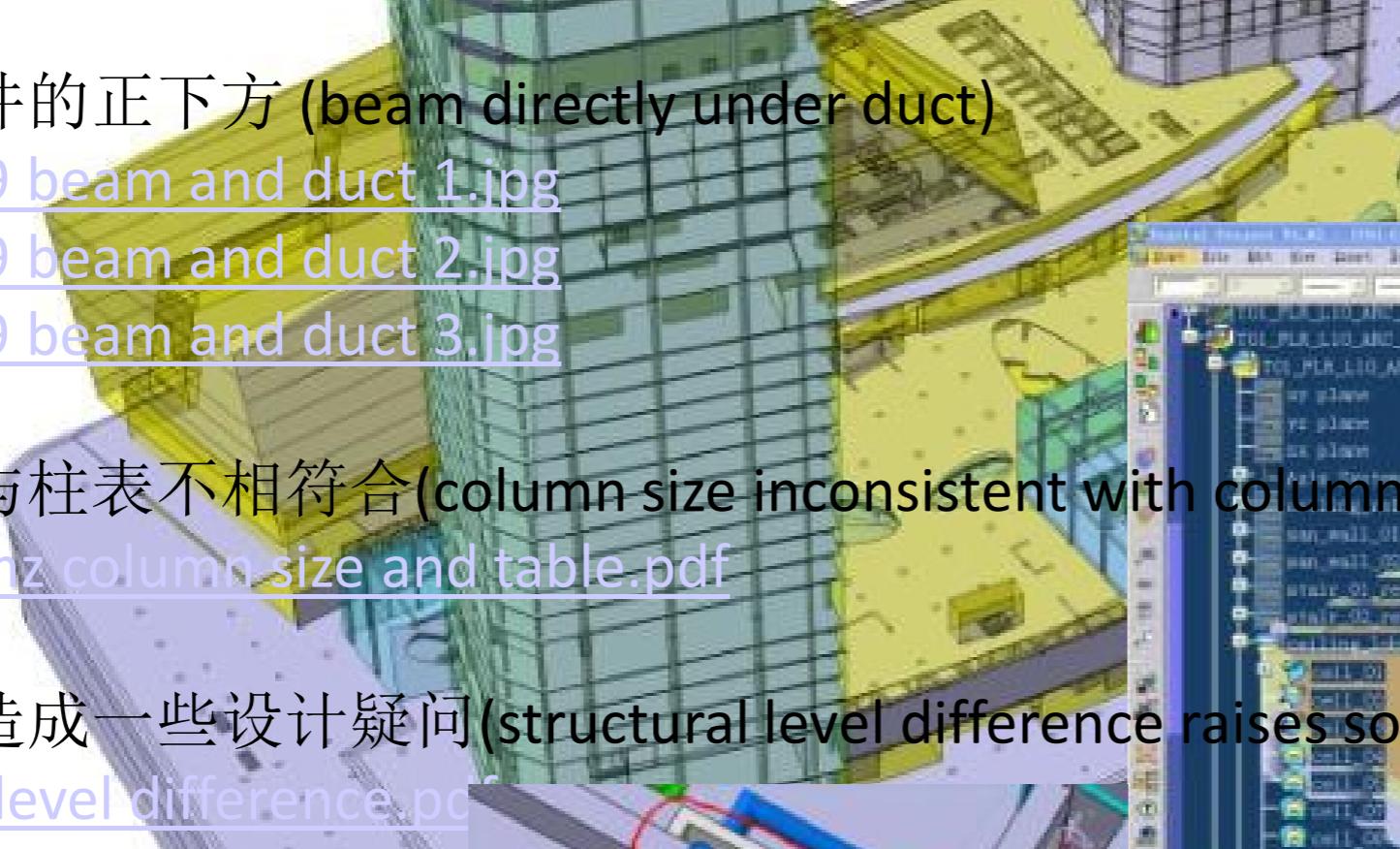


4) 梁在管道井的正下方 (beam directly under duct)

[T02 L05-L19 beam and duct 1.jpg](#)

[T02 L05-L19 beam and duct 2.jpg](#)

[T02 L05-L19 beam and duct 3.jpg](#)



5) 柱的尺寸与柱表不相符合(column size inconsistent with column table)

[Podium L2mz column size and table.pdf](#)



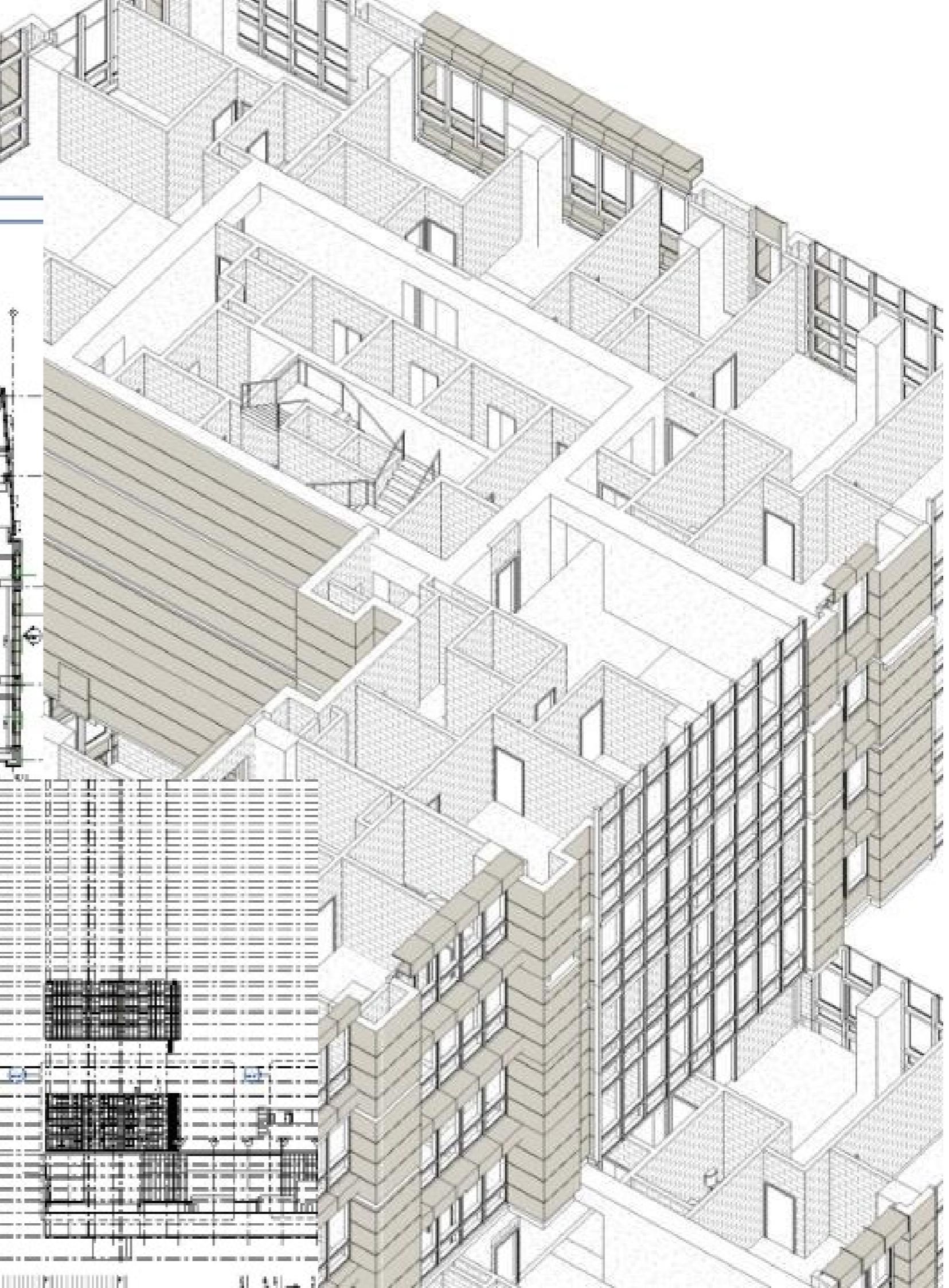
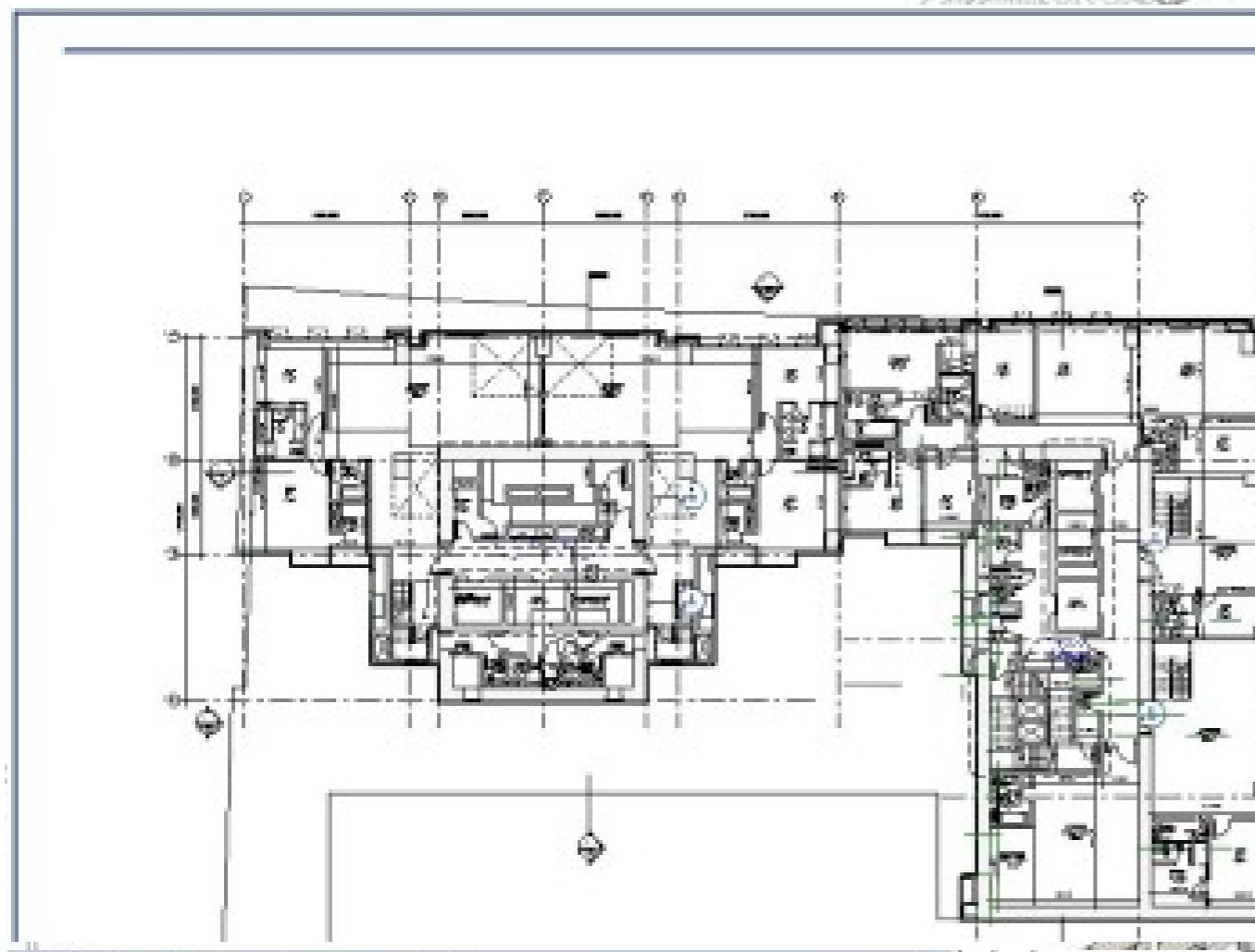
6) 结构高差造成一些设计疑问(structural level difference raises some design issues)

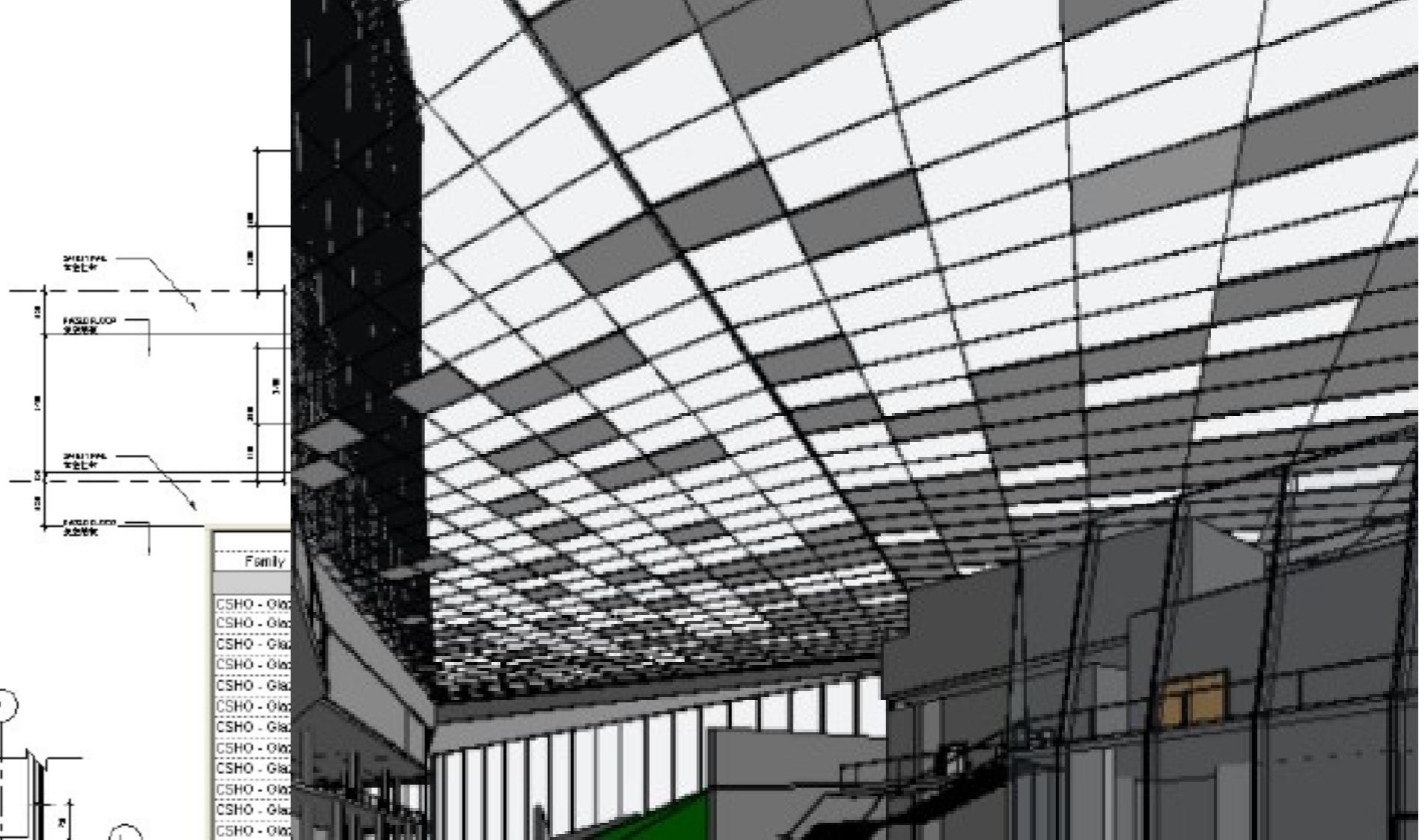
[Podium B4 level difference.pdf](#)

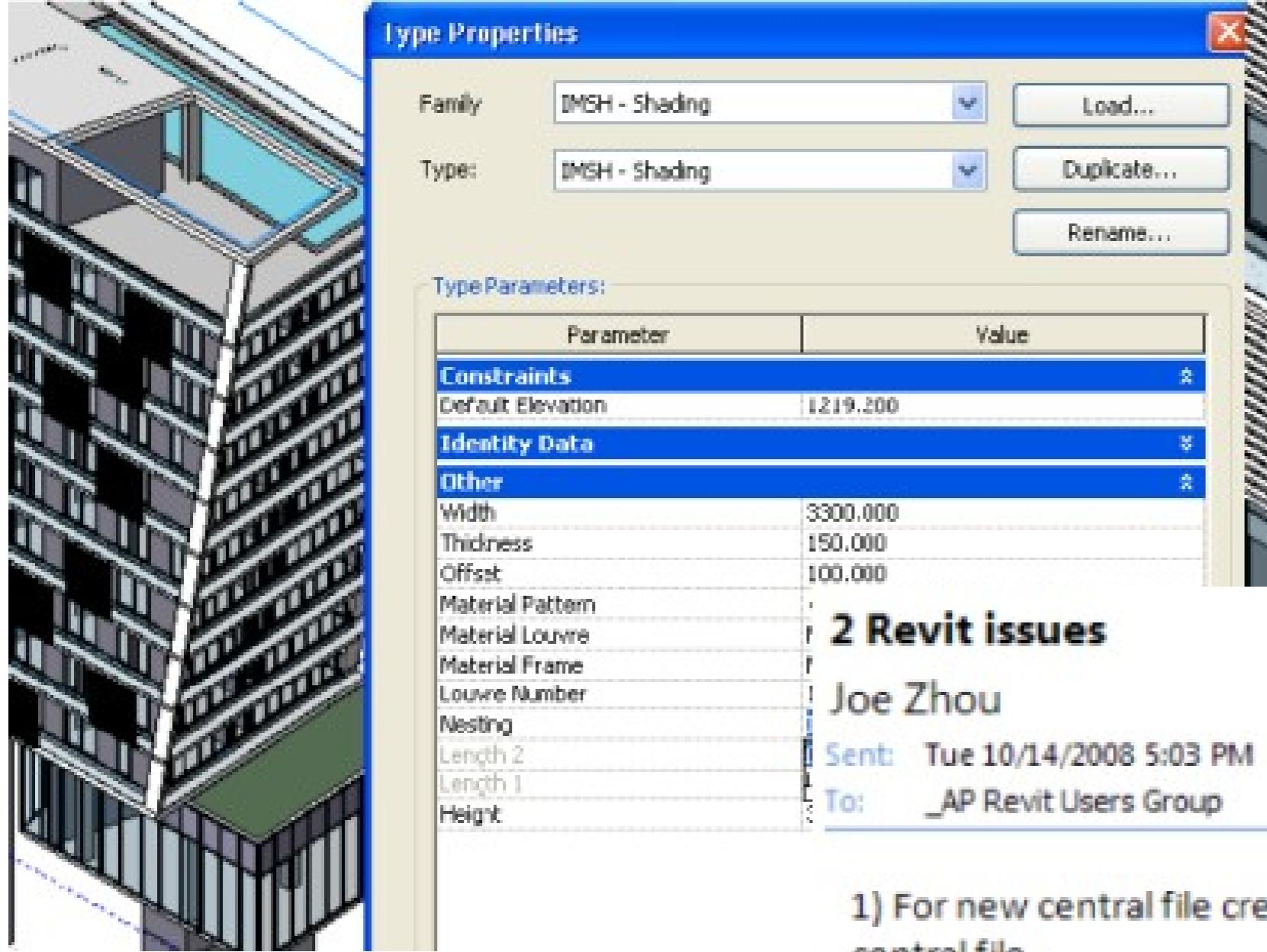
7) 建筑图与结构图不相符合 (a) column in structural drawing

[Podium B4 at grid 4C / 11C](#)

use ADT at first  
switch to Revit  
no more CAD!!!







Search:  
Keyword(s): ning, zhou

Search:	
<a href="#">New Utility to get elements on a certain level</a>	Started by sfaust, 2007-11-20 05:22 PM <a href="#">1</a> <a href="#">2</a> <a href="#">3</a> <a href="#">4</a> <a href="#">5</a> ... <a href="#">9</a>
<a href="#">Void Cut Two Walls</a>	Started by gdb, 2011-08-09 05:27 PM
<a href="#">Key Schedule Parameter</a>	Started by aaronrumpf, 2012-02-09 09:51 PM <a href="#">1</a> <a href="#">2</a>
<a href="#">Printing Halftone Text Resolved</a>	Started by mabrey, 2008-04-04 07:20 PM
<a href="#">Interacting with Revit through a UserForm</a>	Started by dangtrang37325793, 2011-04-29 01:44 PM <a href="#">1</a> <a href="#">2</a>
<a href="#">Even or Odd Formula</a>	Started by ronan, 2011-04-29 01:44 PM <a href="#">1</a> <a href="#">2</a>

<http://forums.augi.com/search.php?searchid=840940>

<https://www.revitforum.org/search.php?searchid=1875283>

Search: keyword(s): ning zhou			
<b>Search</b>			
<a href="#">different conduit colors</a>	Started by Ning Zhou, September 20th, 2011 12:07 AM <a href="#">1</a> <a href="#">2</a>	Replies: 18 Views: 5,269	Last Post: February 9th, 2017 04:01 PM by bad_jacko
<a href="#">Separating the models and the drawings</a>	Started by oscar01, February 9th, 2017 01:23 AM <a href="#">1</a> <a href="#">2</a>	Replies: 16 Views: 629	Last Post: February 9th, 2017 01:27 PM by Andrew P.
<a href="#">Revit Electrical Template</a>	Started by UserShall, October 16th, 2013 05:01 PM <a href="#">1</a> <a href="#">2</a> ... <a href="#">8</a>	Replies: 40 Views: 5,367	Last Post: January 20th, 2017 06:36 PM by oscar01
<a href="#">millions joins between curtain wall and sloped glazing</a>	Started by Ning Zhou, January 12th, 2017 08:17 AM	Replies: 4 Views: 157	Last Post: January 13th, 2017 08:13 PM by Ning Zhou
<a href="#">Display of Levels and Levels in 3D views</a>	Started by Ning Zhou, March 20th, 2014 09:53 AM	Replies: 5 Views: 1,399	Last Post: December 8th, 2016 03:03 PM by nsgoc_nguyen
<a href="#">BIM Job Site</a>	Started by Cysa, September 18th, 2012 10:40 AM <a href="#">1</a> <a href="#">2</a>	Replies: 14 Views: 4,107	Last Post: August 29th, 2014 03:29 PM by tiffrangato
<a href="#">Can callouts show up through linked views?</a>	Started by need4script, February 3rd, 2012 11:00 PM <a href="#">1</a> <a href="#">2</a>	Replies: 15 Views: 8,779	Last Post: August 3rd, 2016 06:37 PM by ap000skunk
<a href="#">Revit Model update from 2014 to 2016</a>	Started by Ning Zhou, July 3rd, 2016 02:54 PM	Replies: 0	Last Post: July 3rd, 2016 02:54 PM

## Revit performance issues

Joe Zhou

Sent: Wed 10/15/2008 6:11 PM  
To: Yee Kim; Mabel Wang; Rita Lai; [\\_AP Revit Users Group](#)  
Cc: [\\_AP Revit Users Group](#)

A few notes on Revit perf:

1) increase paging file size  
2) enable 3GB switch  
The above task needs to be done by computer's local administrator. If local IT is not available, the

- 3) clean up temp files
  - 4) unload unneeded linked drawings
  - 5) close hidden or unnecessary drawings
  - 6) purge unused families
  - 7) restart Revit or computer
- recommendation is to rest computer for lunch

**Family Types**

Name: 24" x 48"

Parameter	Value	Formula
<b>Constraints</b>		
Equal Split	<input checked="" type="checkbox"/>	=
<b>Construction</b>		
<b>Graphics</b>		
Trim interior on (defa	<input type="checkbox"/>	=
Trim exterior on (defa	<input type="checkbox"/>	=
Grill on (default)	<input type="checkbox"/>	=
Grill options (default)	5	=
<b>Text</b>		
CH_Type		=
<b>Materials and Finishes</b>		
<b>Dimensions</b>		
<b>Identity Data</b>		
<b>IFC Parameters</b>		
<b>Model Properties</b>		
CH_Grill (default)	<input type="checkbox"/>	= Grill on
CH_Egress	<input checked="" type="checkbox"/>	=
<b>Other</b>		
tmp (default)	<input type="checkbox"/>	= or(Grill full, Grill upper full)
Grill upper full (defau	<input type="checkbox"/>	= and(Grill options = 5, Grill on)
Grill single ladder (de	<input type="checkbox"/>	= and(Grill options = 4, Grill on)
Grill full (default)	<input type="checkbox"/>	= and(Grill options = 1, Grill on)
Grill double ladder (d	<input type="checkbox"/>	= and(Grill options = 2, Grill on)
Grill heritage (default)	<input type="checkbox"/>	= and(Grill options = 3, Grill on)
Win Width	1' 10 1	= Width - 0' 0 3/4" * 2
Win P Height	2' 0 1/	= if(Equal Split, Height / 2 - 0' 0 3/
Win O Height	2' 0 1/	= if(Equal Split, Height / 2 - 0' 0 3/
valid	<input checked="" type="checkbox"/>	= and(v1, v2)
v1	<input checked="" type="checkbox"/>	= and(Win O Height > 0' 10 101/12
v2	<input checked="" type="checkbox"/>	= if(Win O Height < 3' 3 95/256", 1 -

OK Cancel Apply Help

**Family Types**

Name: default

Parameter	Value	
<b>Graphics</b>		
Solid Fill (defau	<input checked="" type="checkbox"/>	=
Batten Top	<input checked="" type="checkbox"/>	=
Batten Middle	<input checked="" type="checkbox"/>	=
Batten Bottom	<input checked="" type="checkbox"/>	=
<b>Text</b>		
CH_Type (defau	CH_Batte	=
<b>Materials and Finishes</b>		
Material Lower	<By C	=
Material OSB	<By C	=
Material Post	<By C	=
Material Upper	<By C	=
Material Batten	<By C	=
<b>Dimensions</b>		
<b>Identity Data</b>		
<b>Other</b>		
tmp4	0' 4"	=
tmp3	0' 4"	= Width1 Post * 1.5
tmp2	0' 1"	= Width1 Post / 2
tmp1	3' 11"	= if(Batten Bottom,
Offset Top	0' 4"	= if(Batten Top, Hei
Offset Middle	0' 6"	= if(Batten Middle, H
Offset Bottom	0' 8"	= if(Batten Bottom,
OBU	0' 0 3/8"	= Width Batten - Wi
Max Post	0' 6"	= if(Width2 Post > V

OK Cancel Apply Help

**Family Types**

Name:

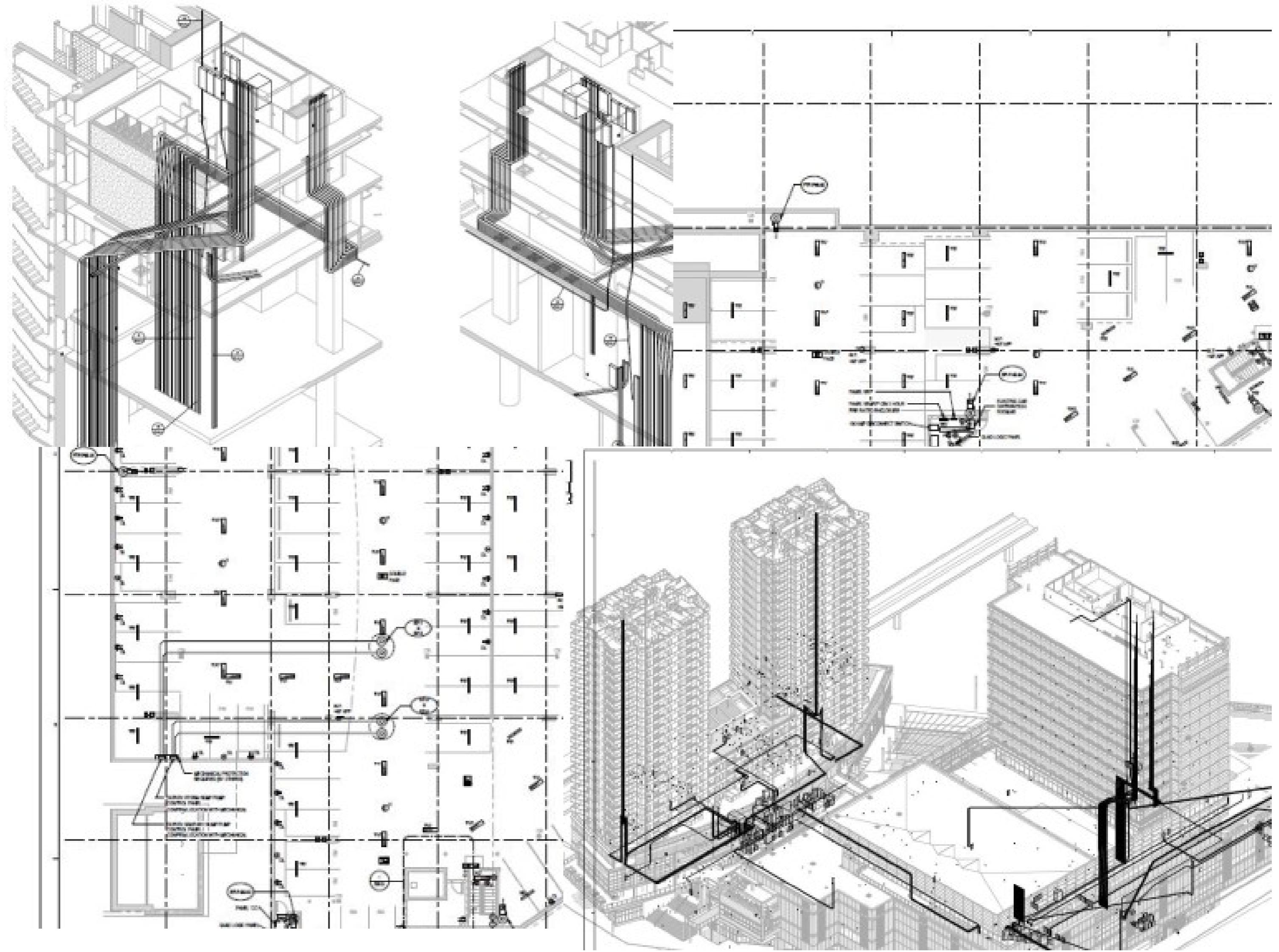
Parameter	Value	Formula
<b>Graphics</b>		
Siding on/off (default)	<input checked="" type="checkbox"/>	=
Batten Top Corner Angle 2 (defa)	0.000°	=
Batten Top Corner Angle 1 (defa)	0.000°	=
Batten Top (default)	<input checked="" type="checkbox"/>	=
Batten Bottom Corner Angle 2 (d)	0.000°	=
Batten Bottom Corner Angle 1 (d)	0.000°	=
Batten Bottom (default)	<input checked="" type="checkbox"/>	=
<b>Text</b>		
CH_Type (default)	CH_Batt=	
<b>Materials and Finishes</b>		
M3 (default)	<By	=
M2 (default)	<By	=
M1 (default)	<By	=
<b>Dimensions</b>		
W (default)	0' 4"	=
T3 (default)	0' 0 1/4"	=
T2 (default)	0' 1"	=
T1 (default)	0' 1"	=
Slope (default)	0.50000	=
Offset (default)	2' 0"	=
H (default)	2' 0"	=
Cutoff (default)	1' 0"	=
<b>Identity Data</b>		
<b>Other</b>		
L (default)	4' 0"	=
A (default)	26.565°	=

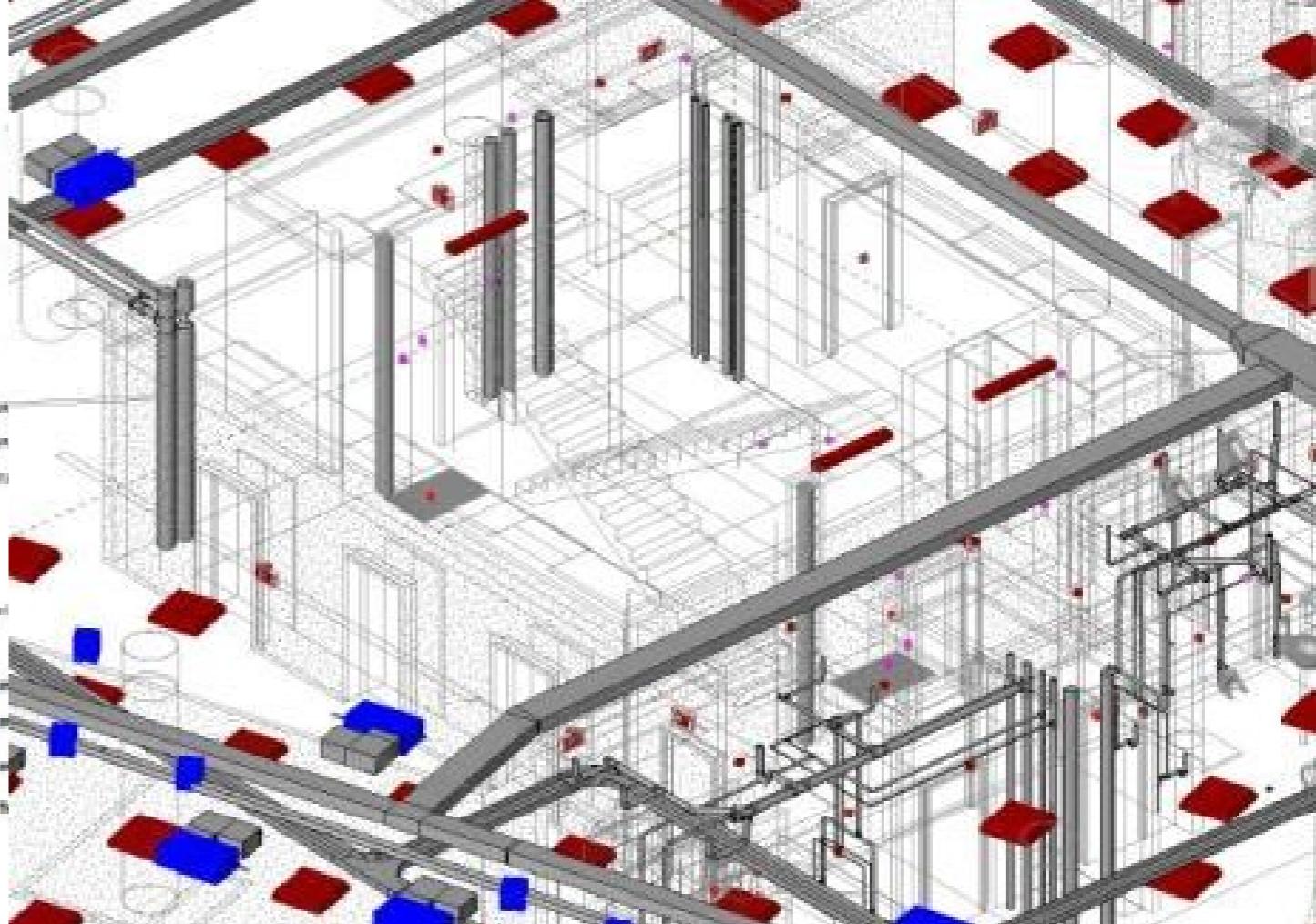
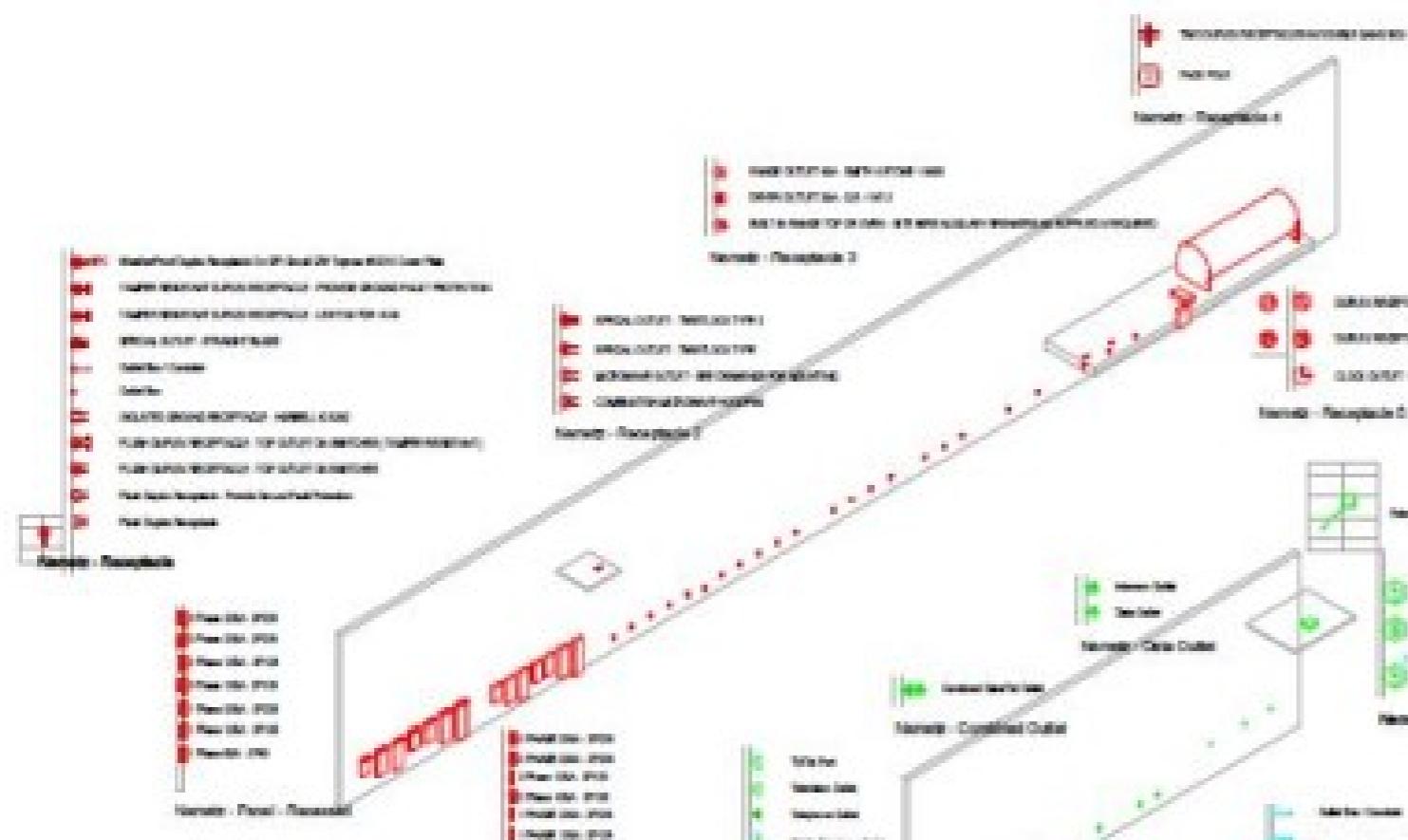
**OK**   **Cancel**

CH Linear Schedule_Batten					
CH_Type	Family and Type	CH_Width	Count	CH_Length	Rounding-Up Length
CH_Battens Column	CH_Batten: Edge based	4"	8	5' - 2"	8' - 0"
CH_Battens Column	CH_Batten: Edge based	8"	8	5' - 2"	8' - 0"
CH_Battens Column: 16				10' - 4"	16' - 0"
CH_Battens Gable	CH_Batten face based: default	4"	6	9' - 4"	12' - 0"
CH_Battens Gable	CH_Batten face based: default	6"	2	4' - 6"	6' - 0"
CH_Battens Gable	CH_Batten line based: edge	6"	6	39' - 0"	41' - 0"
CH_Battens Gable: 14				52' - 10"	59' - 0"
CH_Battens Wall	CH_Batten face based: default	6"	34	154' - 7 1/2"	178' - 0"
CH_Battens Wall	CH_Batten face based: default	10"	1	14' - 1"	15' - 0"
CH_Battens Wall	CH_Batten line based: edge	6"	10	81' - 7 1/2"	90' - 0"
CH_Battens Wall	CH_Batten line based: edge	8"	1	3' - 6"	4' - 0"
CH_Battens Wall	CH_Batten line based: edge	10"	3	17' - 1"	20' - 0"
CH_Battens Wall: 49				270' - 11"	307' - 0"
Grand total:	79			334' - 1"	382' - 0"



CH Area Schedule_Ext Cladding		
Material: Name	Material: Area	Rounding-Up Area
CH_Ext Cladding_Eng Wood Panel	21.33 SF	22.00 SF
CH_Ext Cladding_Eng Wood Panel	21.33 SF	22.00 SF
Column: 2	42.65 SF	44.00 SF
CH_Ext Cladding_Eng Wood Panel	5.79 SF	6.00 SF
CH_Ext Cladding_Eng Wood Panel	1.96 SF	2.00 SF
Gable: 2	7.75 SF	8.00 SF
CH_Ext Cladding_Eng Wood Panel	8.89 SF	9.00 SF
CH_Ext Cladding_Eng Wood Panel	77.81 SF	78.00 SF
CH_Ext Cladding_Eng Wood Panel	3.13 SF	4.00 SF
CH_Ext Cladding_Eng Wood Panel	5.33 SF	6.00 SF
Wall: 4	95.15 SF	97.00 SF
CH_Ext Cladding_Eng Wood Panel	145.55 SF	149.00 SF
CH_Ext Cladding_Vinyl	646.05 SF	647.00 SF
CH_Ext Cladding_Vinyl	48.16 SF	49.00 SF
CH_Ext Cladding_Vinyl	34.74 SF	35.00 SF
CH_Ext Cladding_Vinyl	16.05 SF	17.00 SF
CH_Ext Cladding_Vinyl	13.45 SF	14.00 SF
CH_Ext Cladding_Vinyl	331.34 SF	332.00 SF
CH_Ext Cladding_Vinyl	664.26 SF	665.00 SF
Wall: 7	1754.04 SF	1759.00 SF
CH_Ext Cladding_Vinyl	1754.04 SF	1759.00 SF





Nemetz Revit Questions and Answers

*drafted on May 30, 2011*

May 2011

- 1) Q: Estella Chan and many others asked about the proper linkage procedure  
A: short demo has been provided, and related document at H:\Nemetz - REVIT MEP - Standard Families\REVIT - Documentation\Nemetz - Procedure to link other discipline models

- 2) Q: Delfin Maranan raised the question of modeling irregular "cover" for certain equipments modeled as one single piece element using standard wall / ceiling / etc. tools

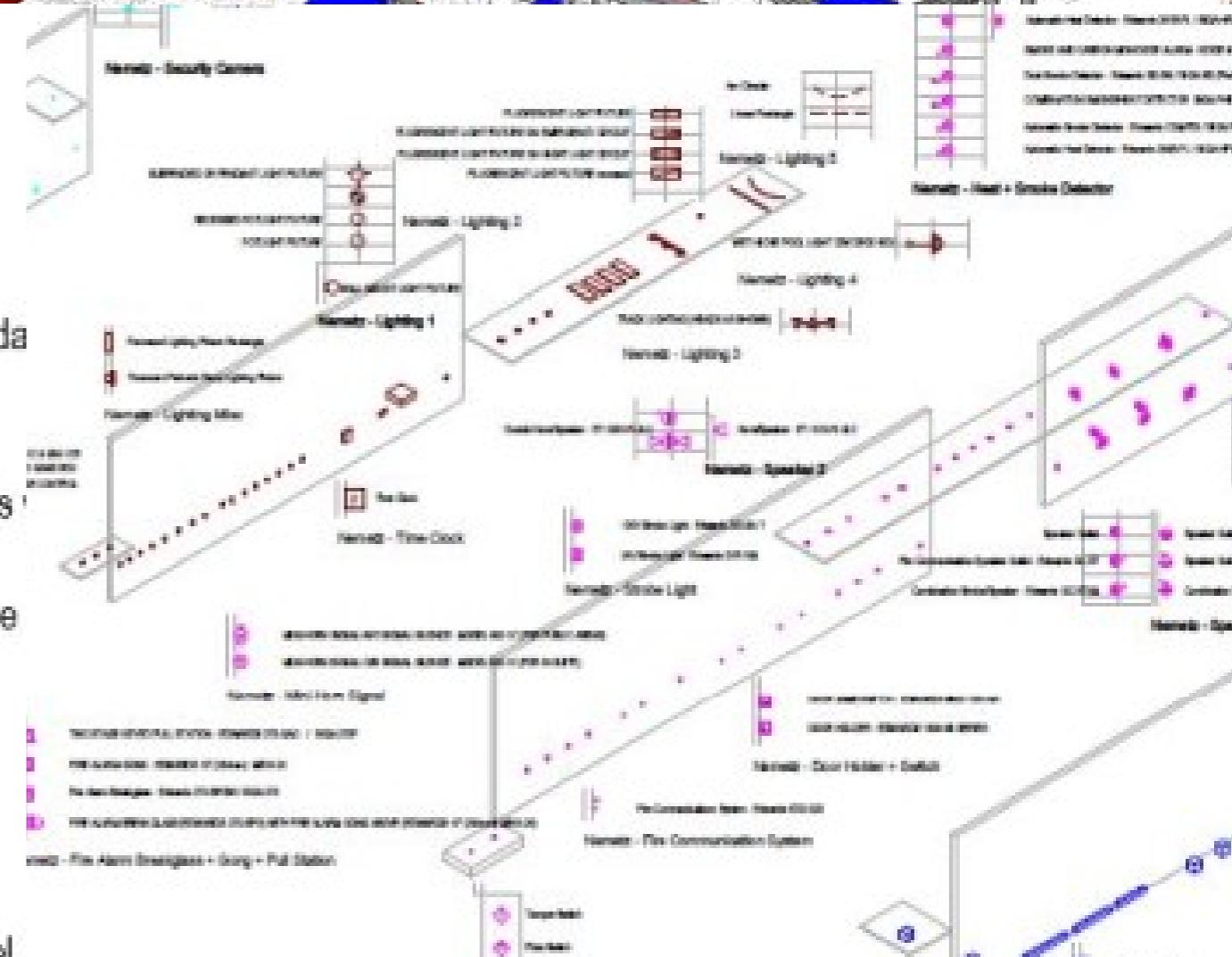
A: use In-Place modeling tool, go to Home -> Component -> Model In-Place, you can choose category like wall / ceiling / etc., use it as last option because it's not recommended

- 3) **Q:** Ben Yip asked about how to set up Snap

A: go to Manage -> Snaps

- 4) Q: Delfin Maranan mentioned that he has trouble to select certain elements in Revit model

A: it's because Design Option has been used in Revit model, in order to select it, you have to "Options" at low bottom of screen



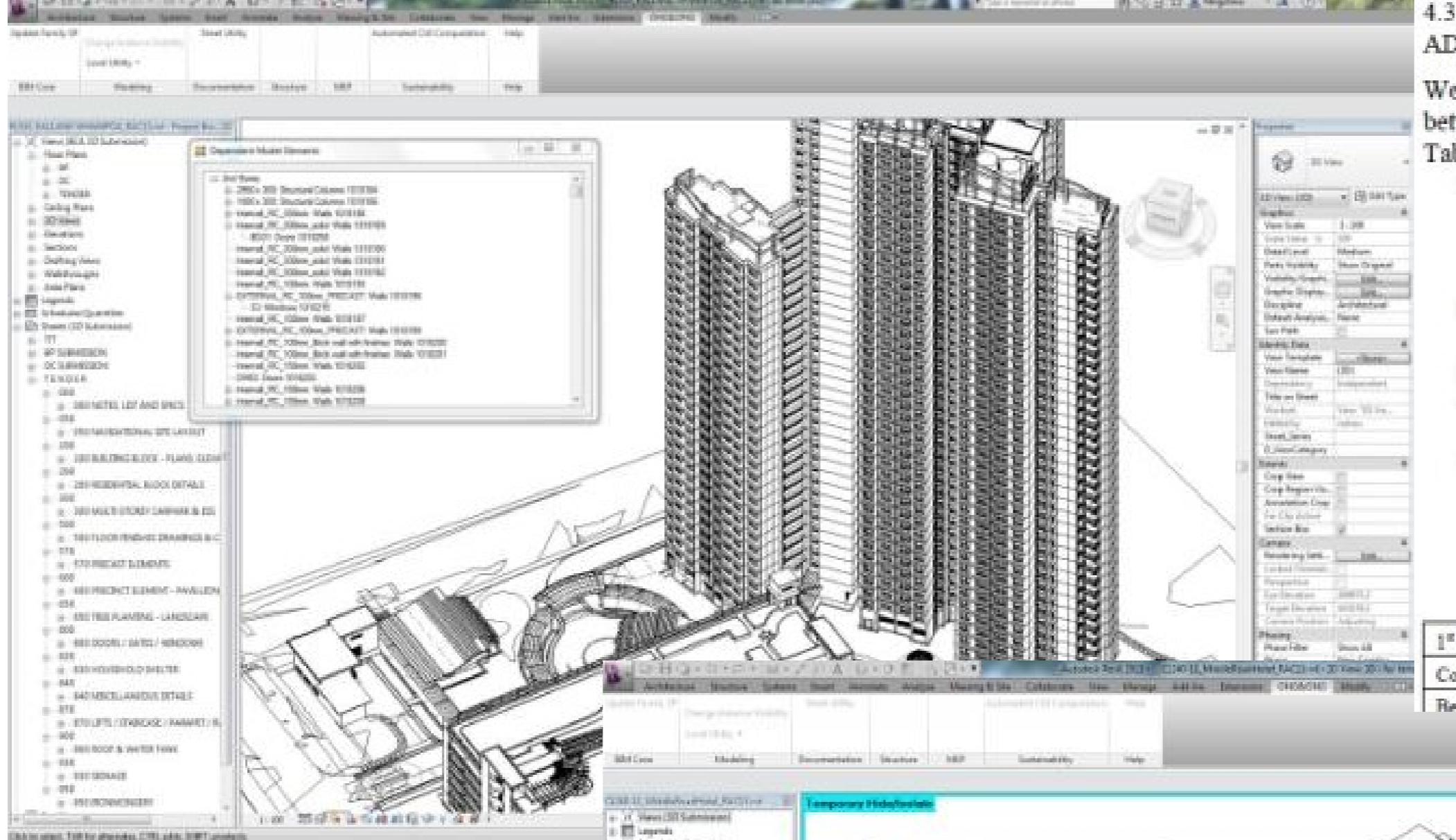
## 4.3. COMPARISON BETWEEN MATERIAL TAKE-OFF ADD-ON TOOL

We have done some studies on a real project and can provide comparison between Material Take-off schedule and our CUI Add-on tool. From Table 1, we can summarise our experiment as follows:

- There are some columns which were positioned on levels which did not get picked up by Material Take-off add-on tool all columns within the range of '1<sup>st</sup>' storey level will be included.
- Material Take-off did not include some beams although they have been included as part of '1<sup>st</sup>' storey level.
- Similar to beams, the same issue applied to slabs.
- Some stairs located in between levels were not included in take-off. CUI add-on tools picked up all stairs within '1<sup>st</sup>' storey.
- Some walls spanned across multiple levels, but Material take-off schedule will not be able to separate them level by level. These walls were included in '1<sup>st</sup>' storey level.

Table 1.

1 <sup>st</sup> Storey	Using Material Take-Off Schedule	Using CUI Add-on
Columns	16.12	46.92
Rebars	\$55.15	\$94.57



2. Vertical element that spans across multiple levels will not be reported correctly. As per figure 2, a wall spanning from 1<sup>st</sup> storey up to 3<sup>rd</sup> storey. This will create a potential error whereby the report will show wall on level 1 only but not on level 2 and level 3.

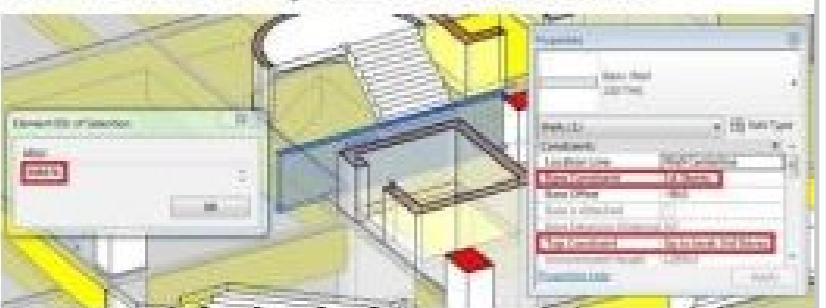
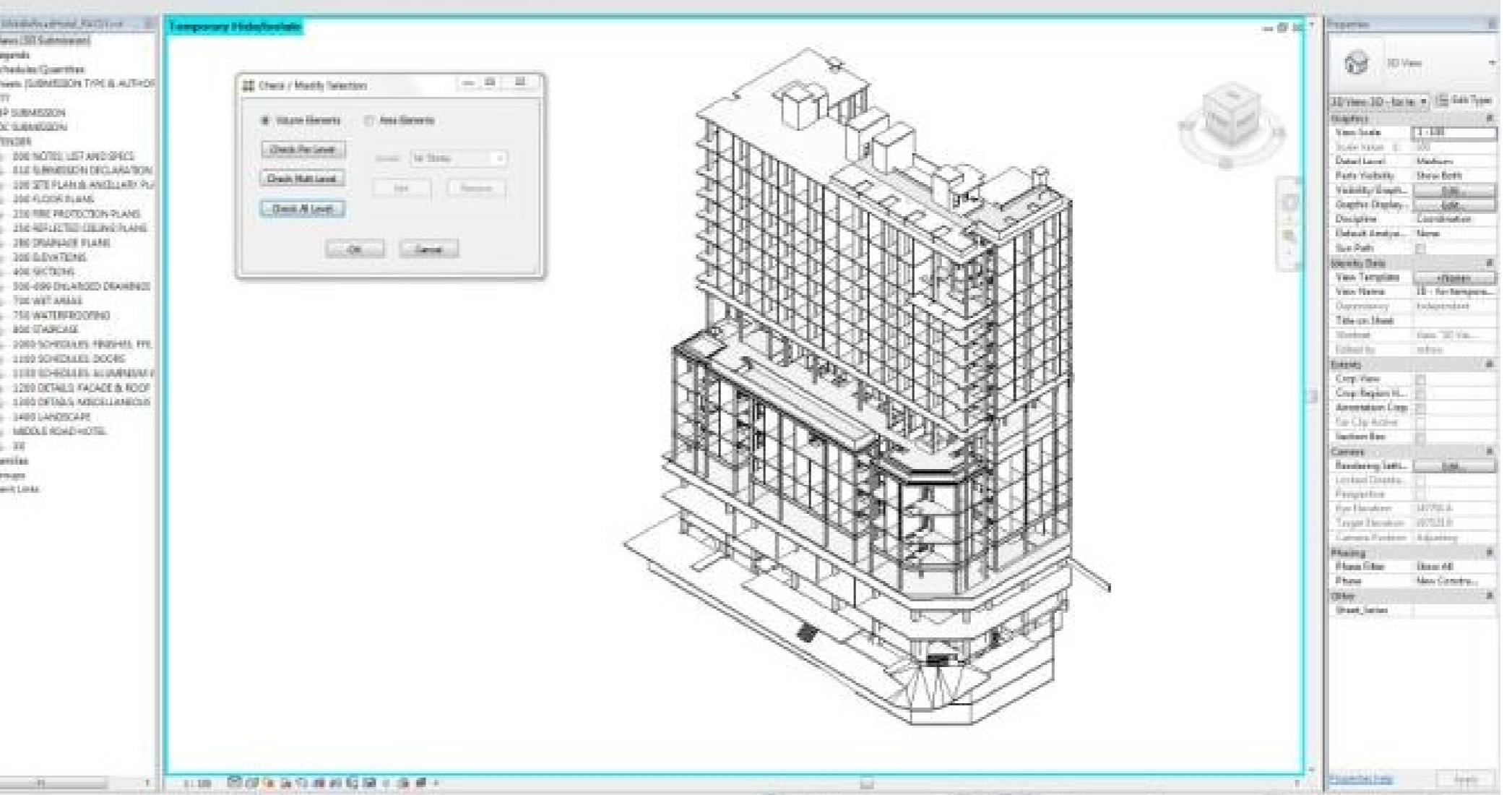
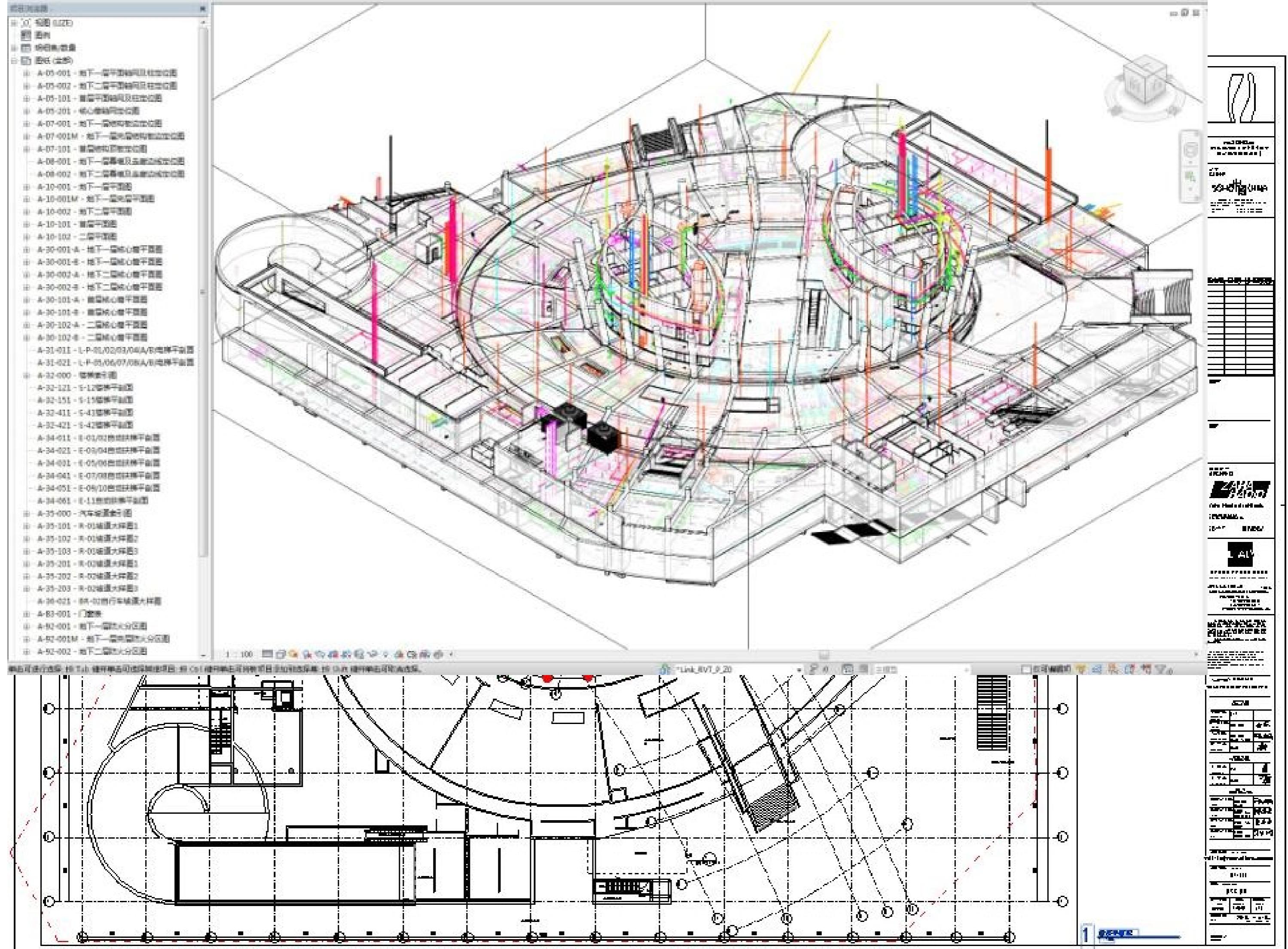
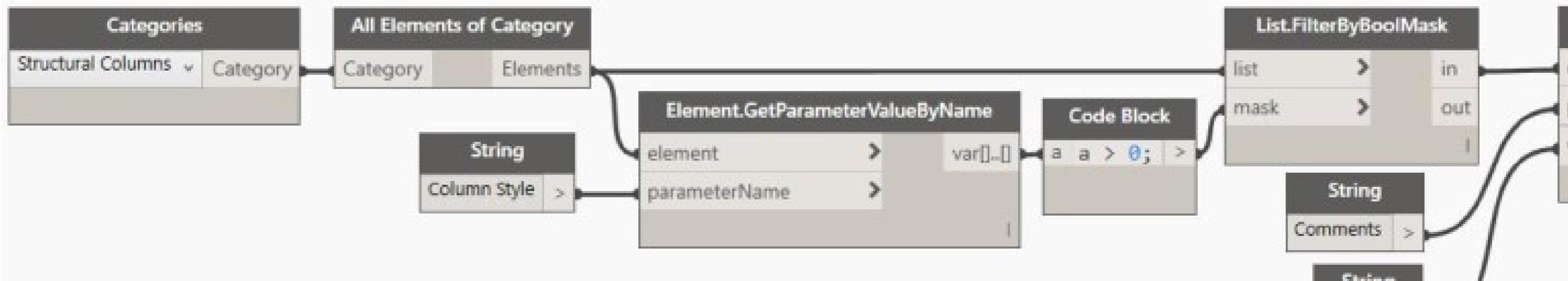
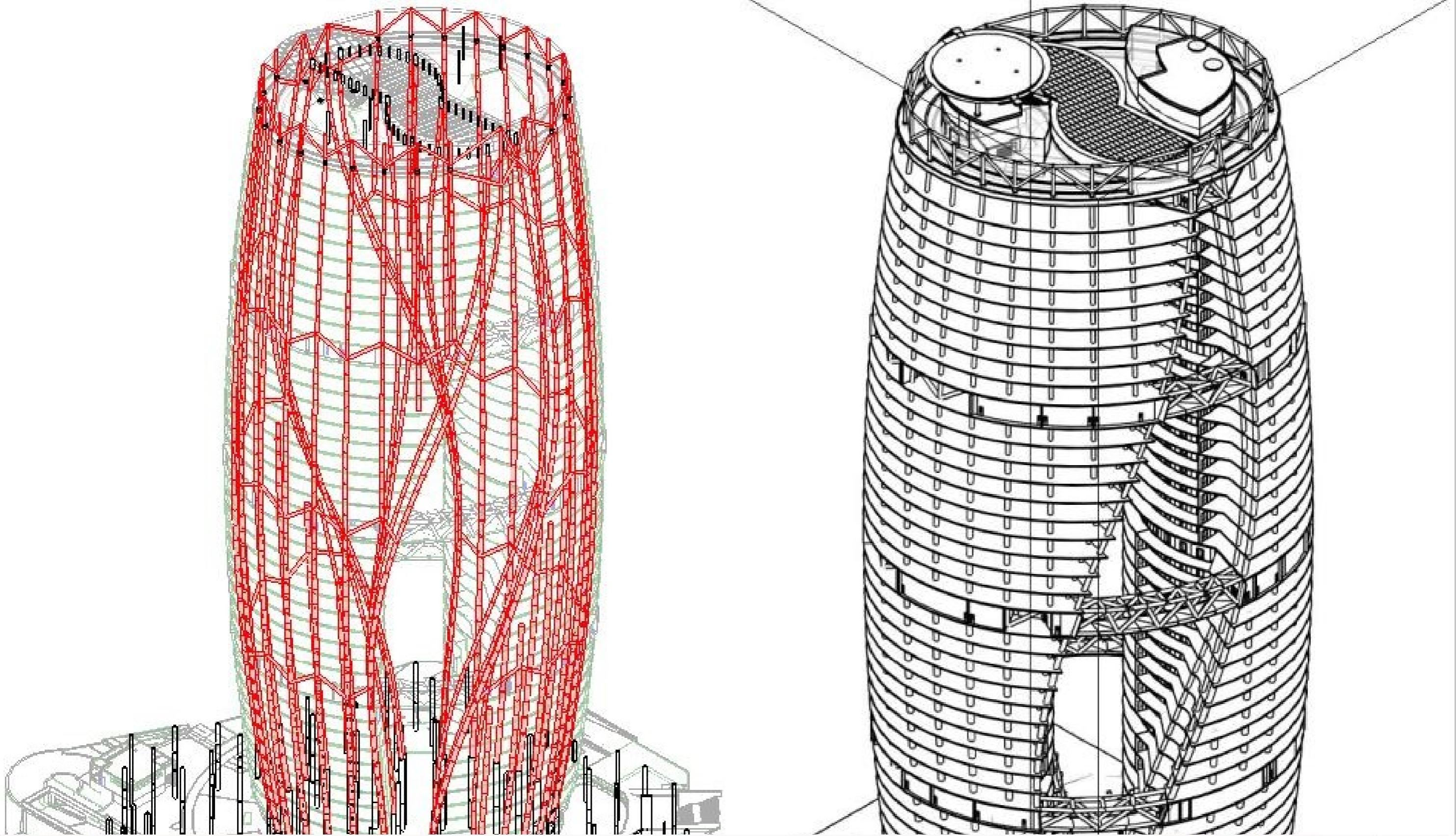


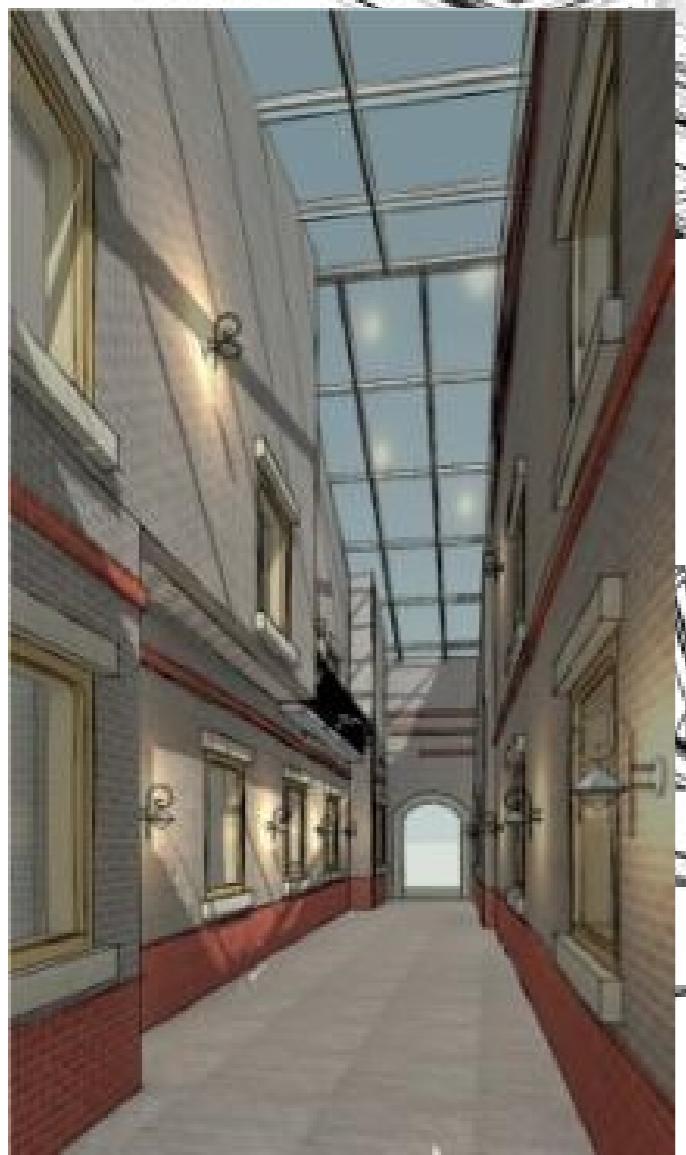
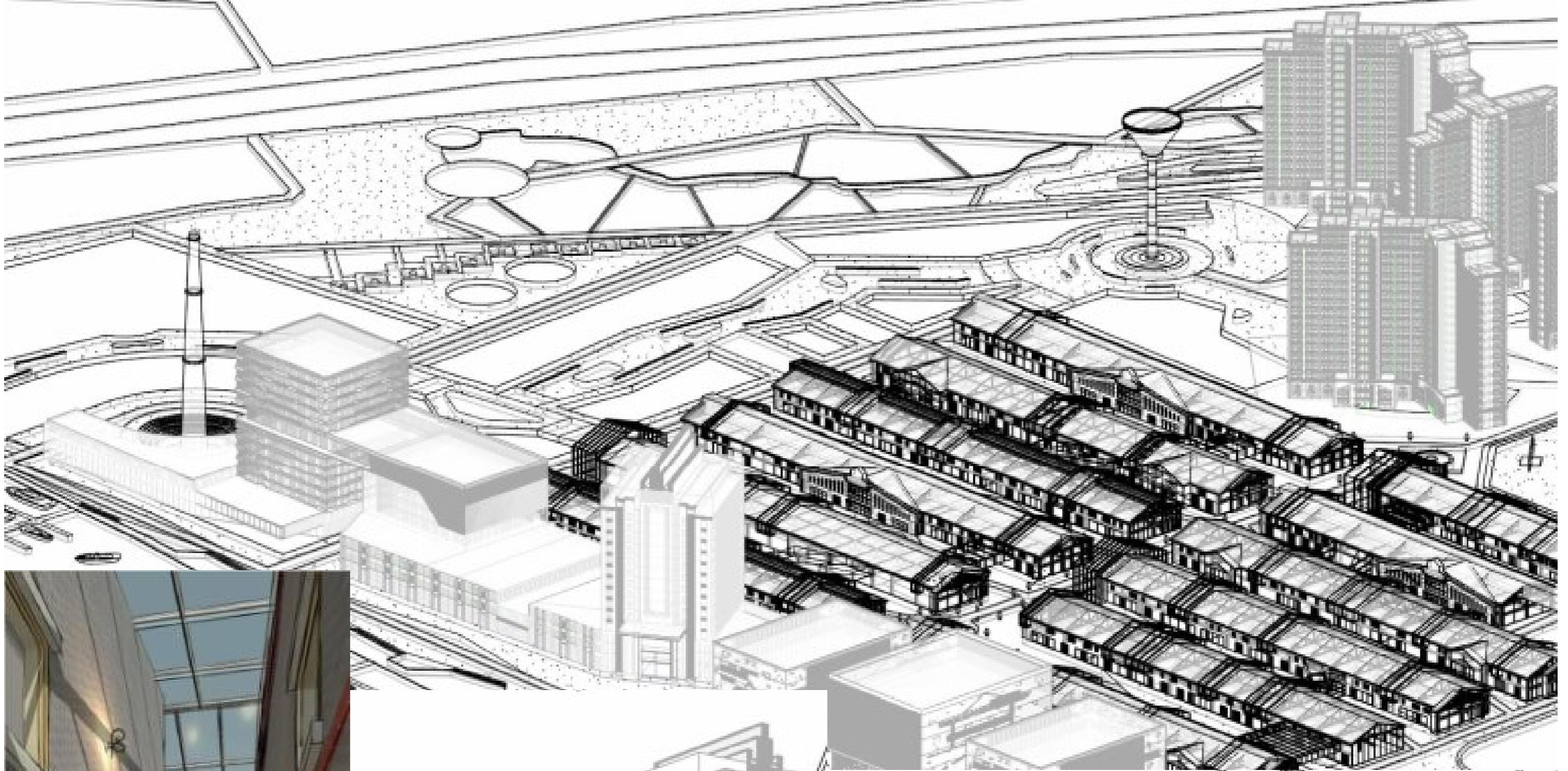
Figure 2.

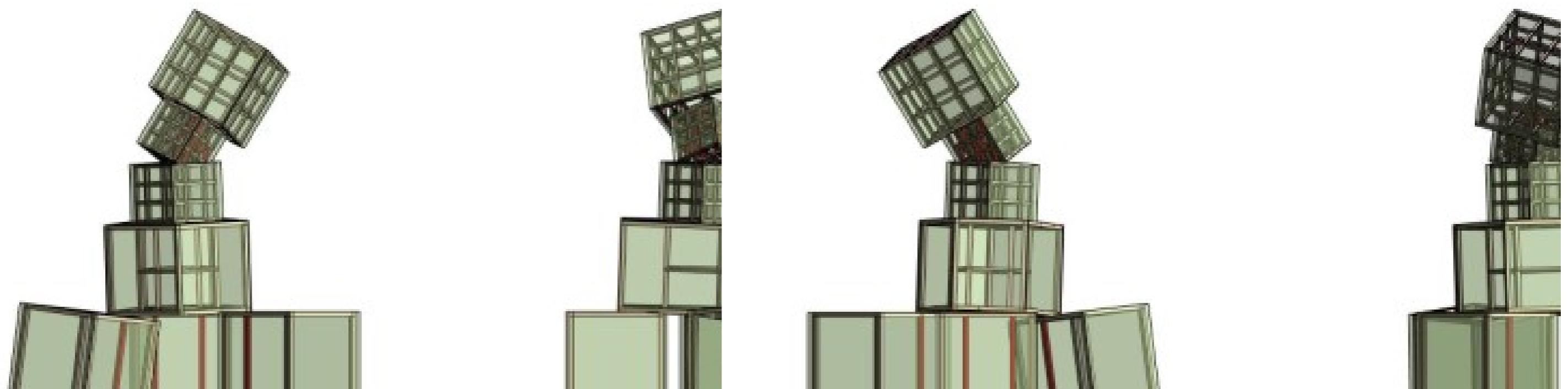
3. User may manipulate the level setting by using 'base offset' feature in order to adjust the position of the object. This is will create inaccuracy in the report hence some objects may be reported on different levels (figure 3).











Project Browser - boxes\_ac.rfa X Temporary Hide/Isolate

Views (全部)  
Sheets (全部)  
Families  
Annotation Symbols  
Generic Models  
△ 2pt\_frame\_ac  
△ 3pt\_cut\_ac  
△ 3pt\_frame\_ac  
base  
box\_4sides\_ac  
△ box\_4sides\_cut\_ac  
box\_5sides\_ac  
Pattern

**Temporary Hide/Isolate**

Parameter Value Formula

p5_Y	23.400	=
p5_Z	6702.736	=
p5a_Angle	60.000°	=
p5b_Angle	22.000°	=
p5c_Angle	23.000°	=
p6_Angle	286.000°	=
p6_X	512.484	=
p6_Y	157.368	=
p7_Angle	0.000°	=
p7_X	89.883	=
p7_Y	2613.763	=
p7_Z	0.000	=
screen Thickness1	20.000	=
screen Thickness2	80.000	=
steel height	3000.000	=

**Visibility**

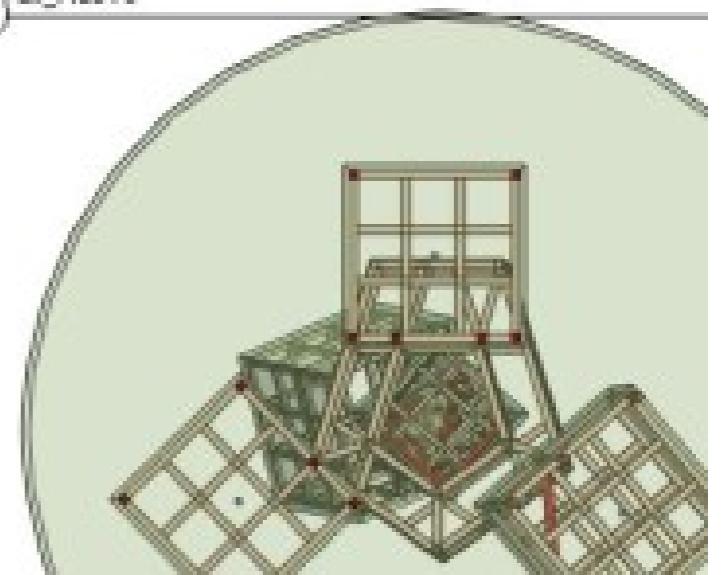
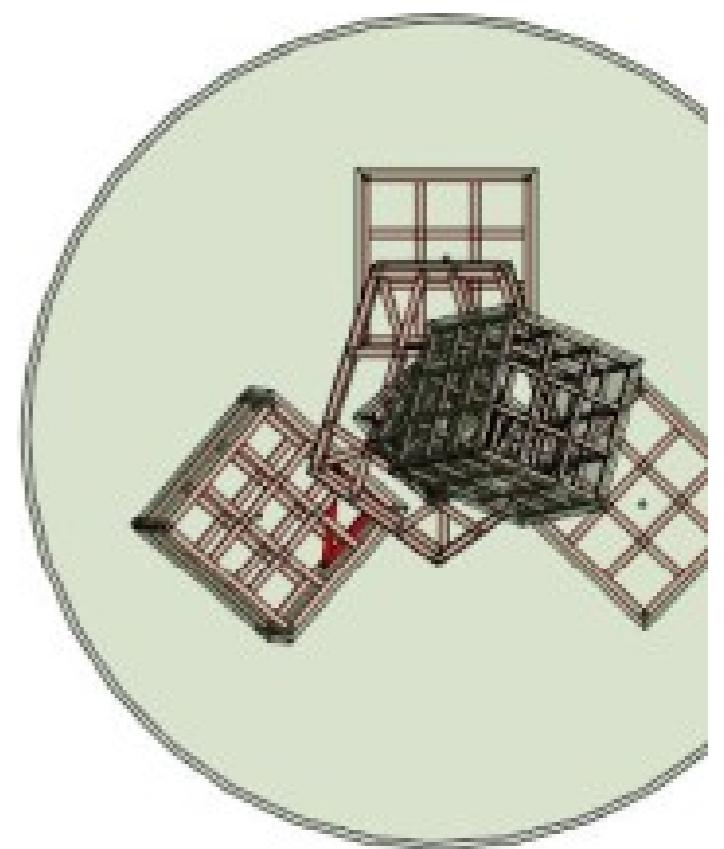
box1 (default)	<input checked="" type="checkbox"/>	=
box2 (default)	<input checked="" type="checkbox"/>	=
box3 (default)	<input checked="" type="checkbox"/>	=
box4 (default)	<input checked="" type="checkbox"/>	=
box5 (default)	<input checked="" type="checkbox"/>	=
box6 (default)	<input checked="" type="checkbox"/>	=
box7 (default)	<input checked="" type="checkbox"/>	=

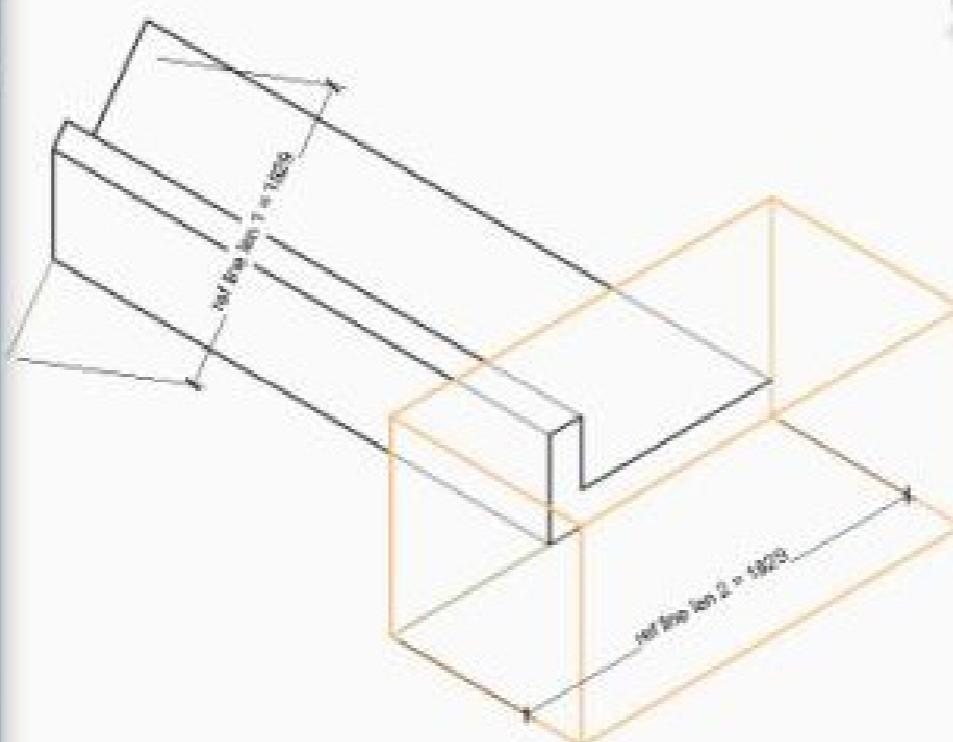
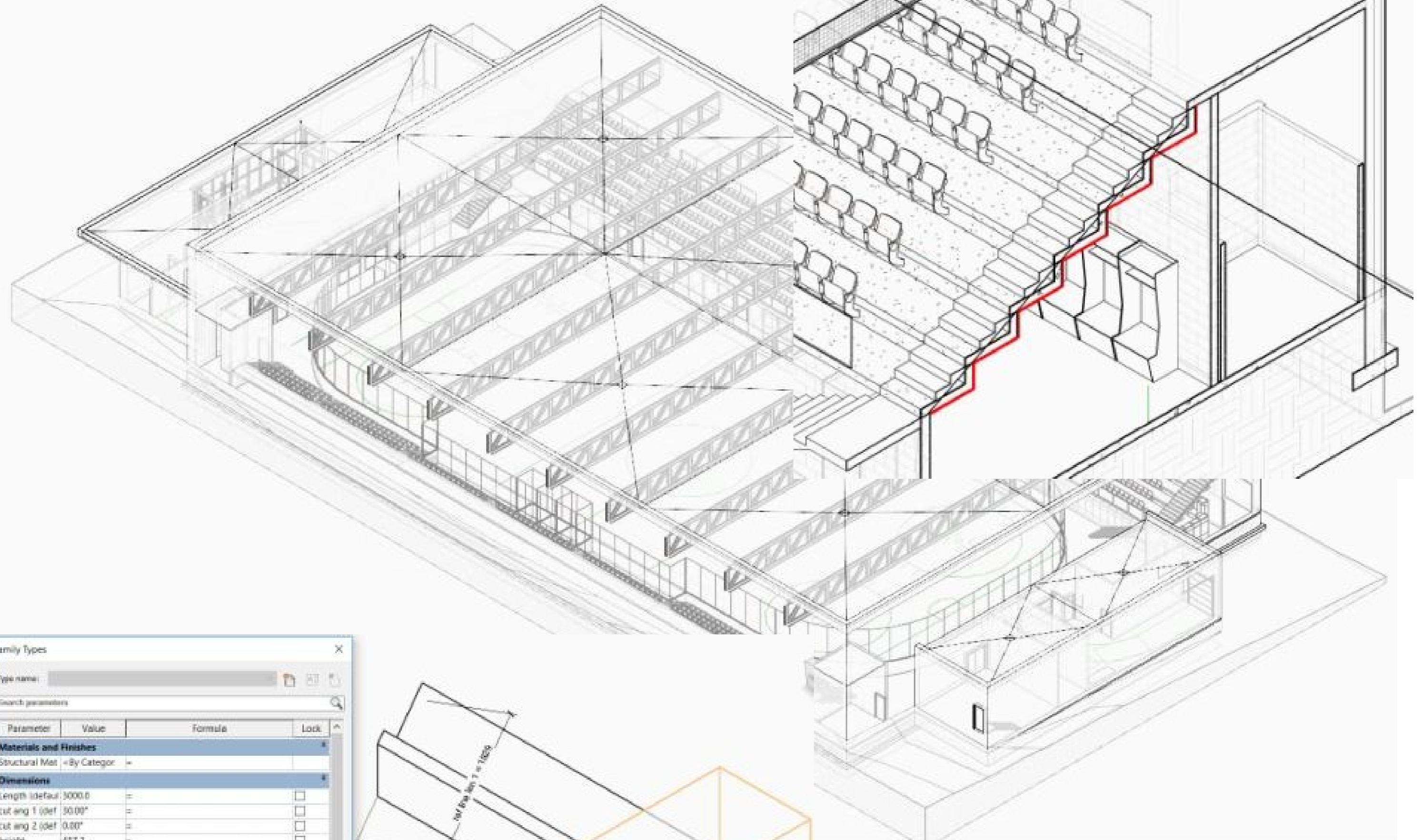
**Other**

control	<input type="checkbox"/>	=
screen	<input type="checkbox"/>	=
tmp1	104.000	=frame Width
tmp2	64.000	=frame Width

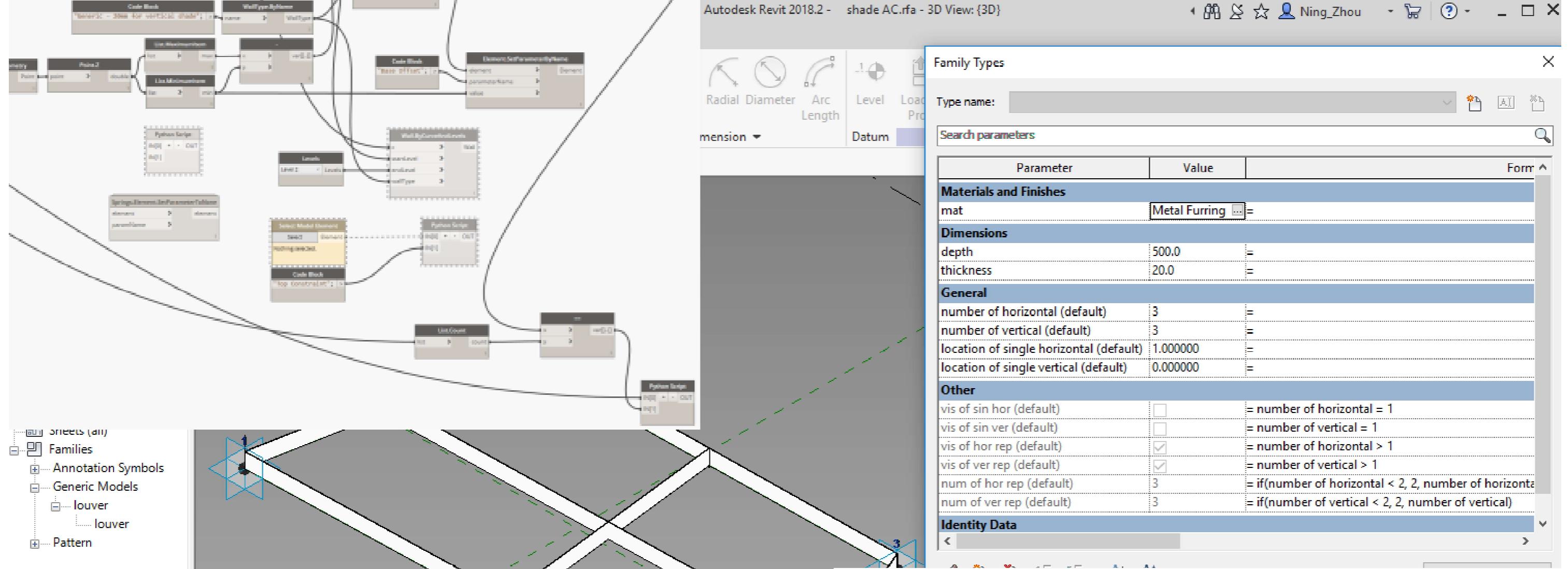
**Identity Data**

OK Cancel



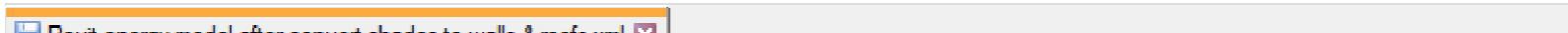


<https://www.revitforum.org/architecture-general-revit-questions/37190-best-way-model-arena-seating.html>



C:\Users\NingZhou\Desktop\New folder\energy modeling\Revit energy model after convert shades to walls & roofs.xml - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?



Revit energy model after convert shades to walls & roofs.xml

```

1  <?xml version="1.0" encoding="UTF-16"?>
2  <gbXML useSIUnitsForResults="true" temperatureUnit="C" lengthUnit="Meters" areaUnit="SquareMeters" version="2018.2" xmlns="http://www.gbxml.org/schema">
3    <Campus id="aim0002">
4      <Location>
5        <StationId IDType="WMO">120778_2004</StationId>
6        <ZipcodeOrPostalCode>00000</ZipcodeOrPostalCode>
7        <Longitude>-63.5666</Longitude>
8        <Latitude>44.65</Latitude>
9        <Elevation>50.9016</Elevation>
10       <CADModelAzimuth>0</CADModelAzimuth>
11       <Name>Halifax, NS Canada</Name>
12     </Location>
13   <Building buildingType="Office" id="aim0013">

```

Find result - 64 hits

Search "Shade" (64 hits in 1 file)

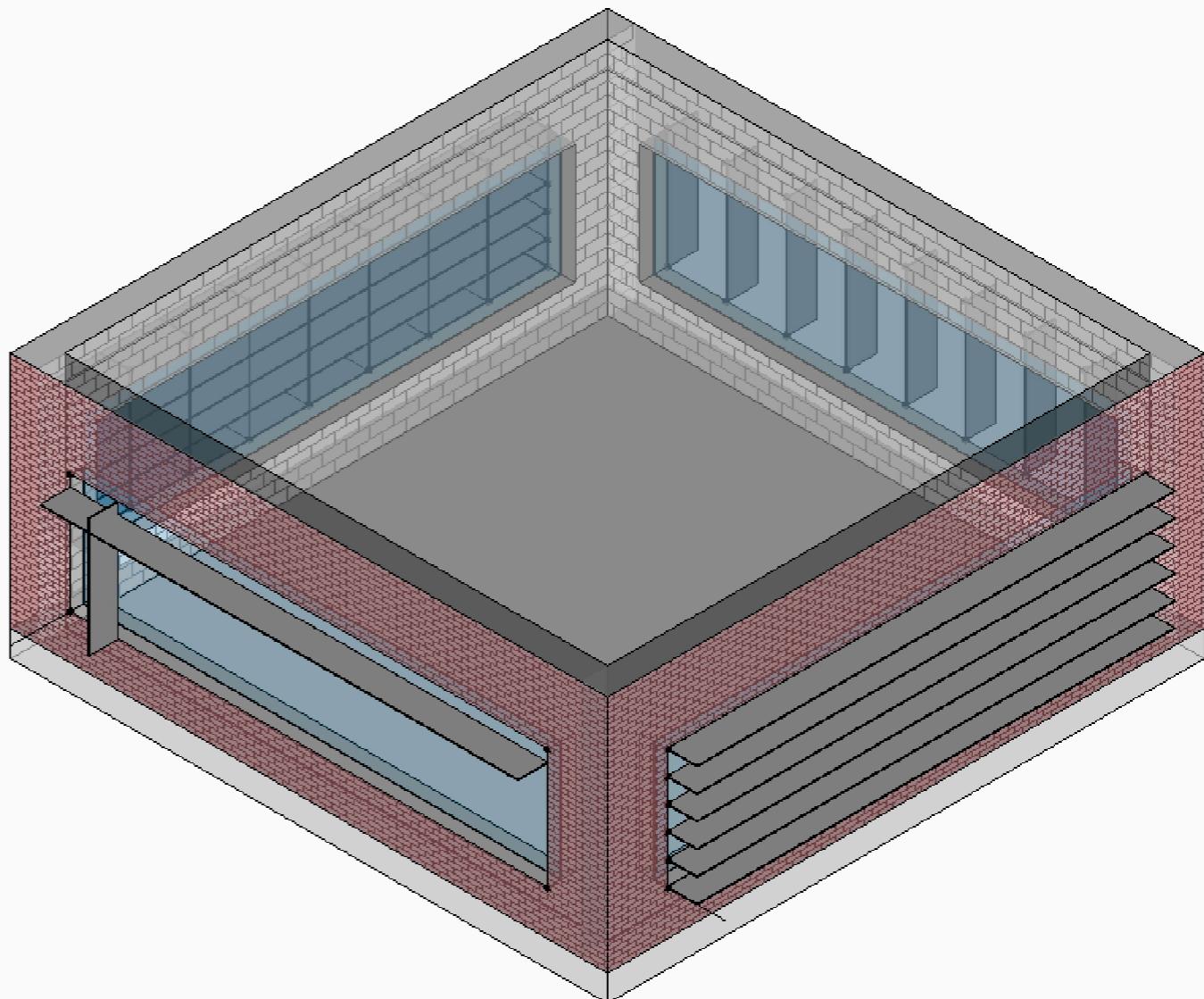
C:\Users\NingZhou\Desktop\New folder\energy modeling\Revit energy model after convert shades

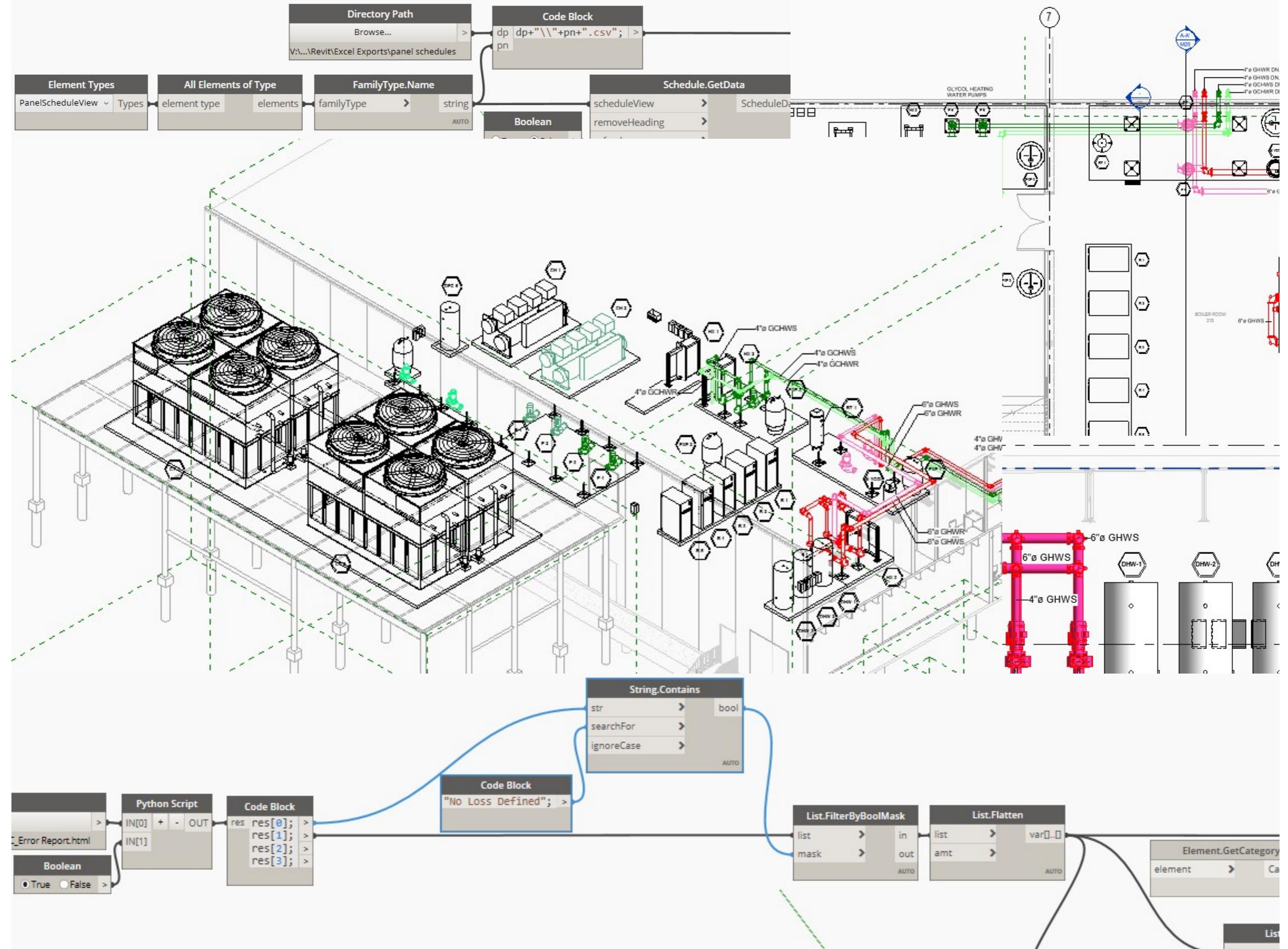
```

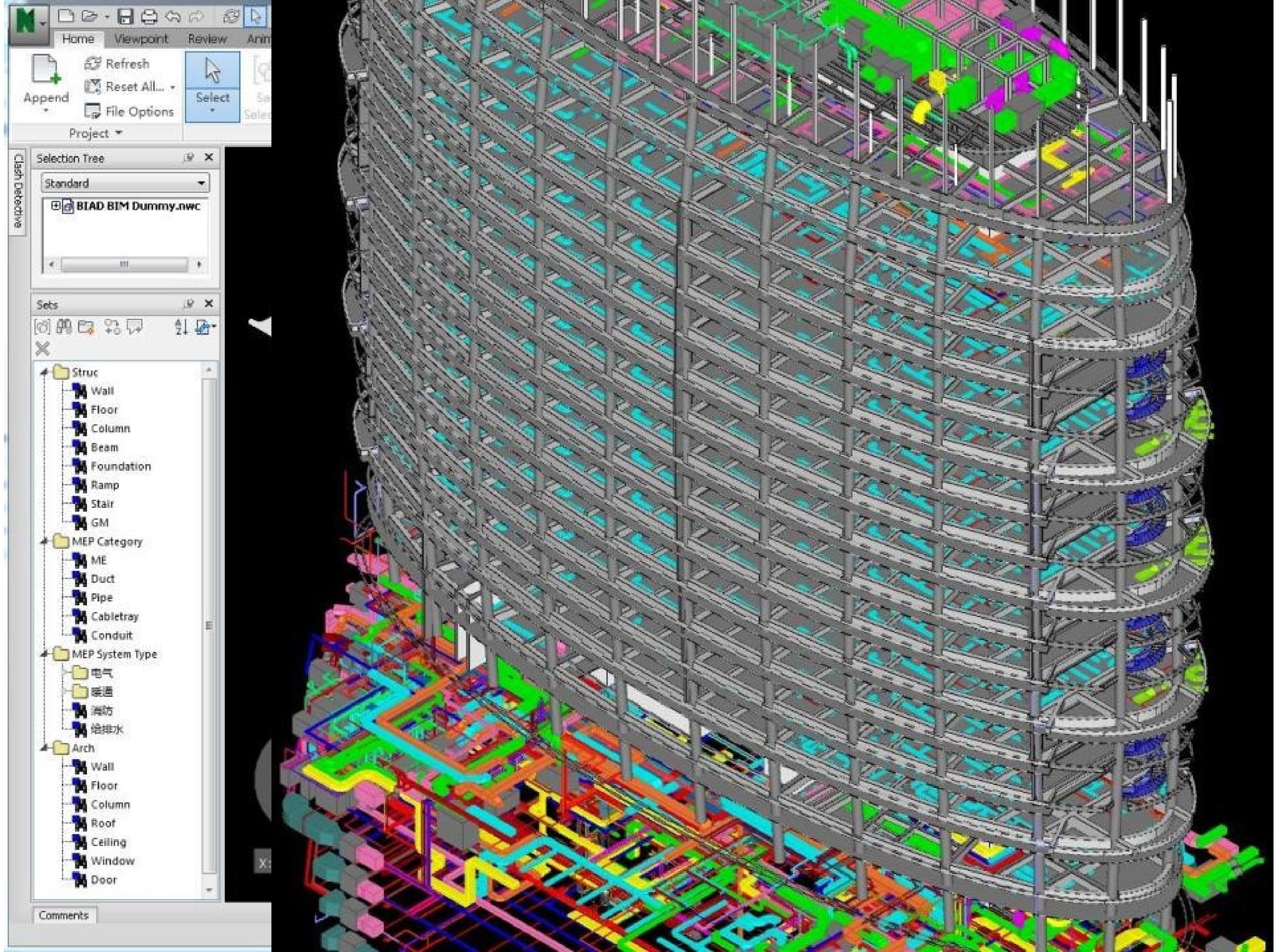
Line 758:      <Surface surfaceType="Shade" exposedToSun="true" id="aim0260">
Line 794:          <CADObjectId>Basic Roof: Generic Roof - 20mm for horizontal shade [443847]
Line 797:          <Surface surfaceType="Shade" exposedToSun="true" id="aim0270">
Line 833:          <CADObjectId>Basic Roof: Generic Roof - 20mm for horizontal shade [443865]
Line 836:          <Surface surfaceType="Shade" exposedToSun="true" id="aim0280">
Line 872:          <CADObjectId>Basic Roof: Generic Roof - 20mm for horizontal shade [443883]
Line 875:          <Surface surfaceType="Shade" exposedToSun="true" id="aim0290">
Line 911:          <CADObjectId>Basic Roof: Generic Roof - 20mm for horizontal shade [443901]

```

eXtensible Markup Language file







joe zhou

- DE-Legacy Revit Models
- DE-Object Library
- DE-Sandbox
- DE-Training Project
- Drawings & Models
- Project Files
  - 01 MTR
  - 02 WIP
    - 01 ARC
      - Consumed
      - W\_SCL\_HIK\_ARC\_ALL\_CEN.rvt
        - v1: 6/18/2021, 8:04:20 AM by Raymu
        - v2: 6/18/2021, 8:19:53 AM by Raymu
        - v3: 6/29/2021, 9:23:16 AM by Raymu
        - v4: 7/9/2021, 5:54:57 AM by Raymu
        - v5: 7/9/2021, 6:15:55 AM by Raymu
        - v6: 7/12/2021, 8:01:05 AM by Raymu
        - v7: 7/13/2021, 2:16:42 AM by Raymu
        - v8: 7/28/2021, 9:43:23 AM by Raymu
        - v9: 8/4/2021, 2:30:11 AM by Raymu
    - 02 STR
    - 03 CIV
    - 04 ECS
    - 05 P&D
    - 06 FPS
    - 07 FED
  - Detailed Design



{} package.json M X

JS start.js

index.html M

# main.css M

JS ForgeViewer.js M

JS SheetsBrowserExt.js M X

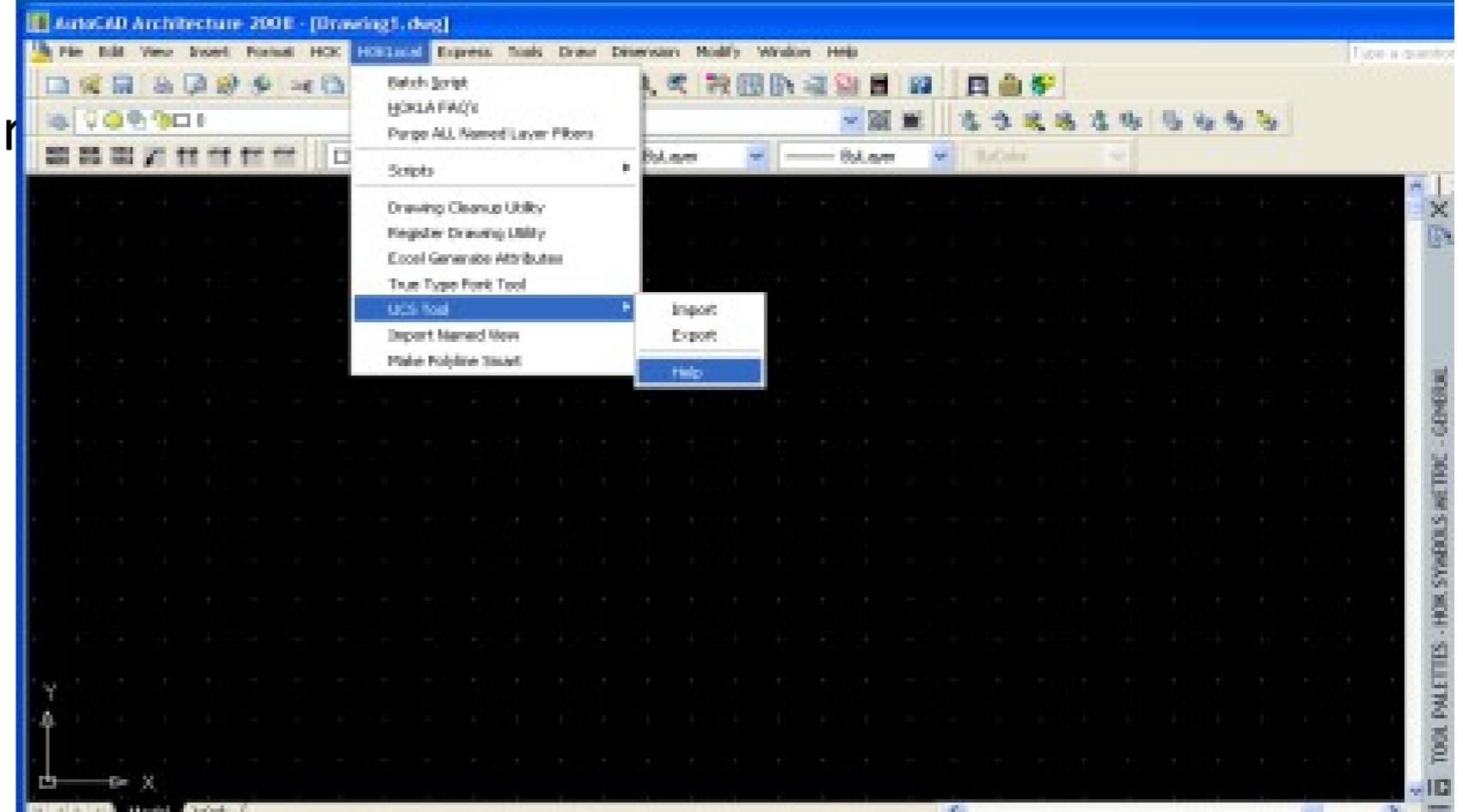
public &gt; js &gt; JS SheetsBrowserExt.js &gt; ...

```

73    setLevelFilterByName(name, focus) {
74        const level = this.findLevelByName(name);
75        if (level) {
76            // this.viewer.setCutPlanes([new THREE.Vector4(0,0,1,-1*(level.zMax - (level.zMax - level.zMin > 4
77            this.viewer.setCutPlanes([new THREE.Vector4(0,0,1,-1*(level.zMin + 7.6))], [new THREE.Vector4(0,0,
78
79            this.isFilterApplied = true;
80            this.levelSelector.selectFloor(level.index, false);
81            this.prevFilter = {

```

```
(defun HokLocalStartup( / )
  (load "HOK customized plot using rector")
  (load "ZeroThickness.fas")
  (load "FlattenAll.fas")
  (load "Overkill In Lisp.fas")
  (load "Delete Invisible Objects.fas")
  (load "Merge Binding Layers.fas")
  (load "Change Xref Layers.fas")
  (load "Change Viewport Layers.fas")
  (load "Detach Unloaded Xrefs.fas")
  (load "Import SVF.fas")
  (command "Netload" "DrawingCleanupUtility.dll")
  (load "UCS_export.fas")
  (load "UCS_import.fas")
  (load "Import Named Views.fas")
  (load "HOK customized polyline and text with area info using rector.fas")
```



## Option Explicit

```
Public Const conName = "HOK True Type Font Tool"
Public Const gstrFONT = "romans.shx"
Public Const gstrTYPEFACE = "Arial"
Public Const gdblWIDTH = 0.85
```

```
' This is the main entry point for the program
Public Sub Test_Run()
```



```
Imports System.Windows.Forms
```

```
Public Class dlgDCU
```

```
    Private Sub OK_Button_Click(ByVal sender As System.
```

```
Handles OK_Button.Click
```

```
        Me.DialogResult = System.Windows.Forms.DialogRe
```

```
        Me.Close()
```

```
        Dim script As String = ""
```

```
        Dim var As String = ""
```

```
        If chkAudit.Checked Then
```

```
            script = script & "audit" & vbCr & "yes" & vbCr
```

```
        End If
```

```
        If chkPurgeAll.Checked Then
```

```
            script = script & "-purge" & vbCr & "all" & vbCr &
```

```
        End If
```

```
' omitted
```

```
        Dim myAcad As Autodesk.AutoCAD.Interop.AcadAp
```

```
        Dim myDWG As Autodesk.AutoCAD.Interop.AcadDe
```

```
        myAcad = Autodesk.AutoCAD.ApplicationServices.A
```

```
        myDWG = myAcad.ActiveDocument
```

## Cleanup Options

### Default

 Audit (audit) Purge All (purge)

### 3D to 2D

 Zero Thickness (zt) Flatten All (fa)

### HOK Standards

 Change Xref Layers (cxl) Change Viewport Layers (cvl) System Variables

### Basic Cleanup

 Delete Duplicate Objec Delete Invisible Objec

### Advanced Cleanup

 Merge Binding Layers Detach Unloaded Xref Reset Viewport Scale L

## Excel Generate Attributes

Attribute Block Name

Excel File Path

Excel File Name

Excel Sheet Name

```
r.ActiveDocument.EndTransaction();
```

```
}
```

```
} // BeamSystemBuilder
```

```
void Create2DBeamSystem(APPLICATION r, List<BSPData> _2DList)
```

```
{
```

```
    List<BSPData> dirList2D = new List<BSPData>();
```

```
    m_Bsd.BSP.BSPDict.TryGetValue(true, out dirList2D);
```

```
    frmProgress progress = new frm
```

```
    progress.Show();
```

```
    progress.Refresh();
```

```
    int count = _2DList.Count;
```

```
    progress.pbaBS.Step = progress.
```

```
    for (int i = 0; i < count; i++)
```

```
{
```

```
    int j = i + 1;
```

```
    progress.Text = "creating " + j.ToString() + " / " + count.ToString() +
```

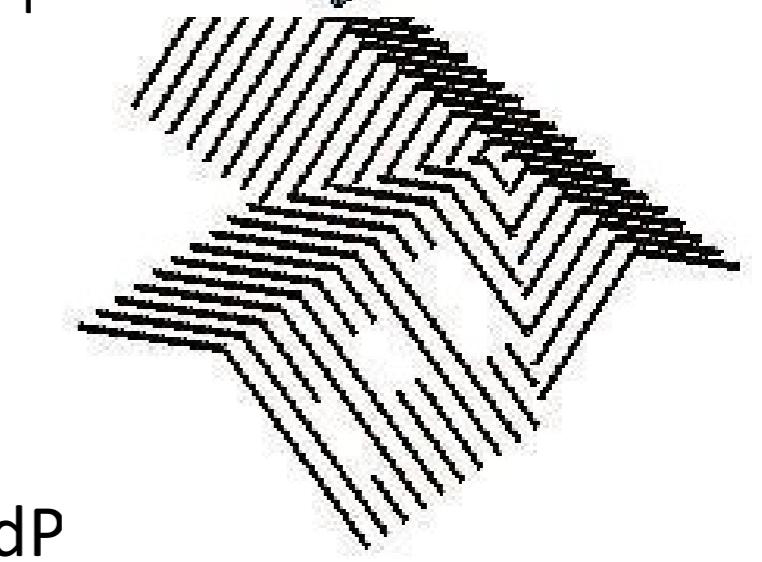
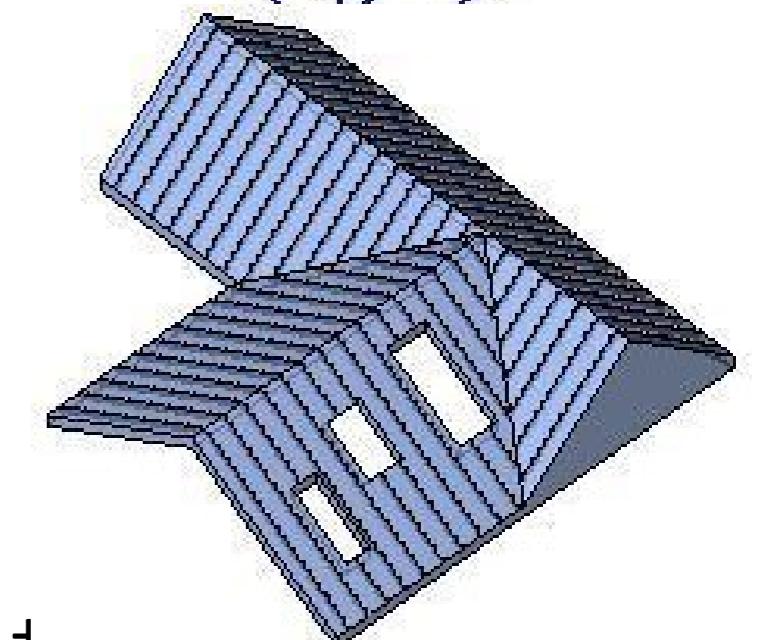
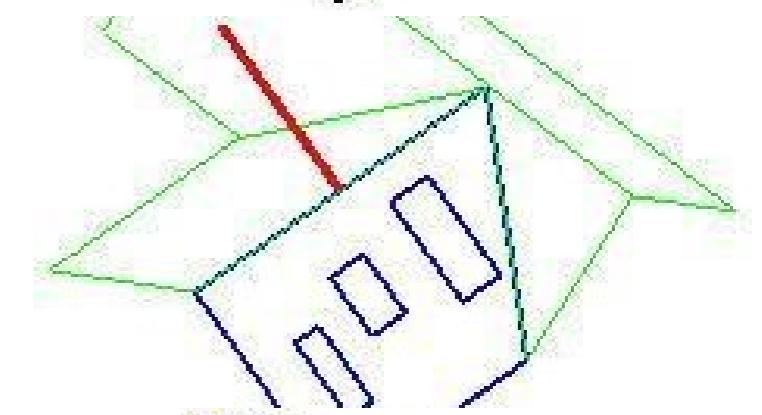
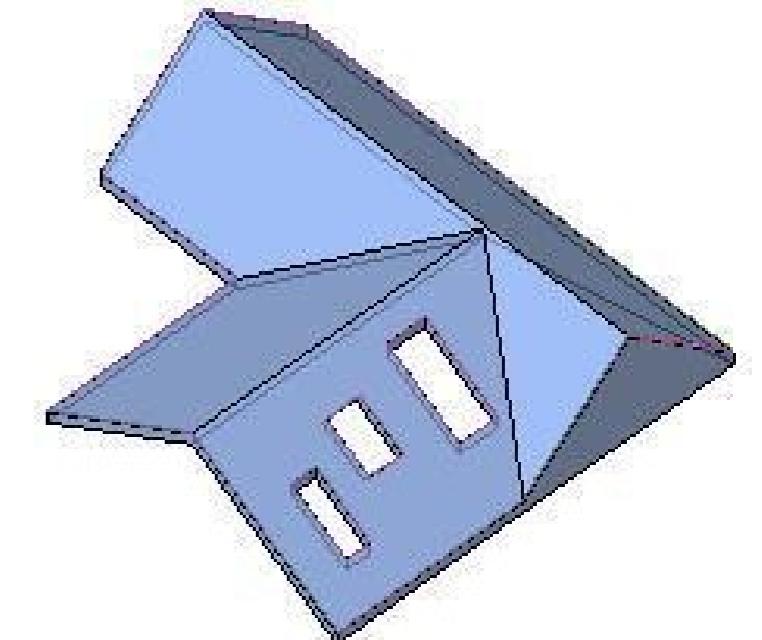
```
    progress.pbaBS.PerformStep();
```

```
    progress.Refresh();
```

```
    ModelCurveArrArray mcaa = _2DList[i].Profiles;
```

```
    XYZ nor = Utilities.getNormalMCA(mcaa.get_Item(0));
```

```
    XYZ ori = mcaa.get_Item(0).get_Item(0).GeometryCurve.get_EndP
```



```

}

public VStudData m_VL = new VStudData(); // vertical left stud
public VStudData m_VR = new VStudData(); // vertical right stud
public VStudData m_IVL = new VStudData(); // intermediate vertical stud
public VStudData m_IVR = new VStudData(); // intermediate vertical stud

public enum cutbackType
{
    Center,
    Front,
    Back
};

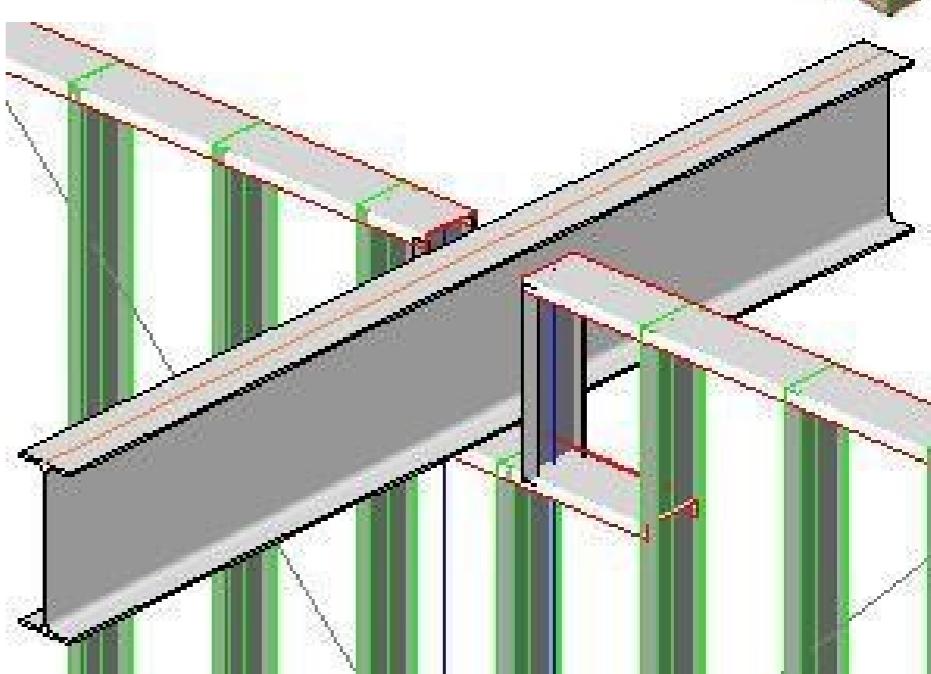
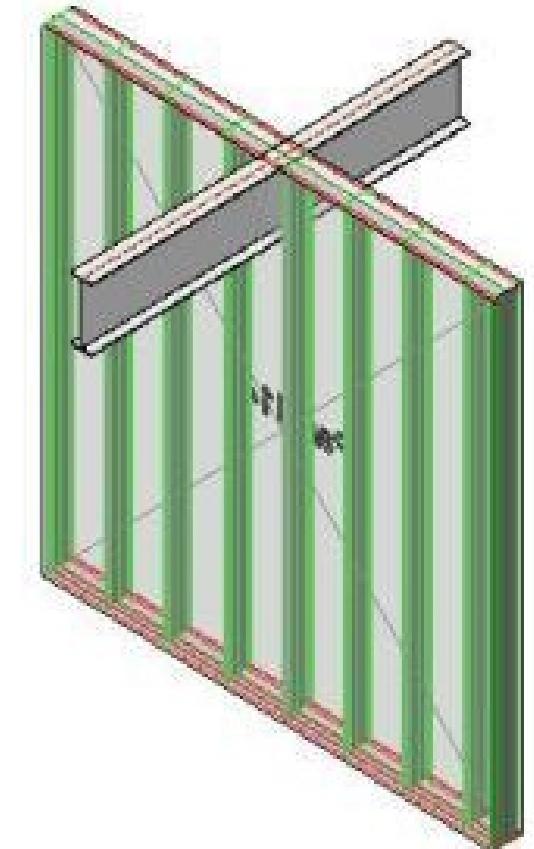
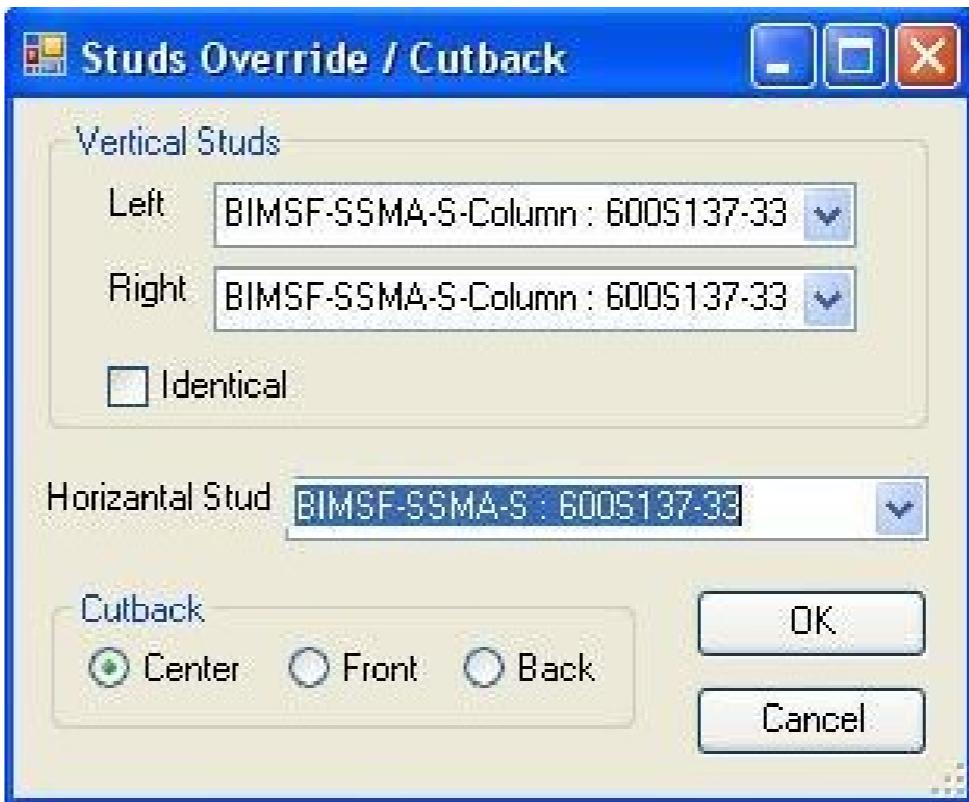
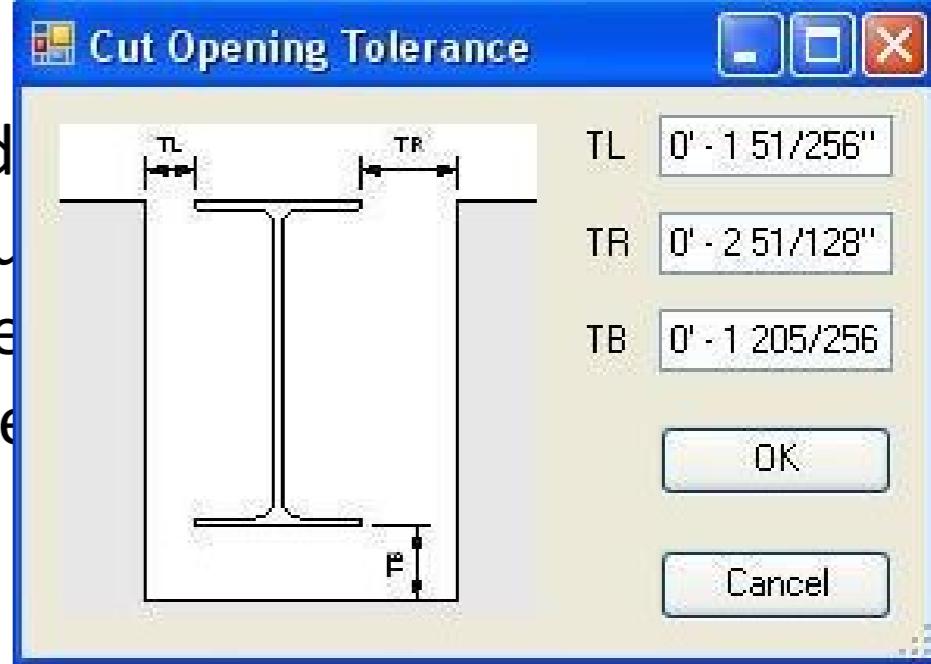
public cutbackType m_Cutback;

public List<string> m_ColumnList;
public List<string> m_FramingList;

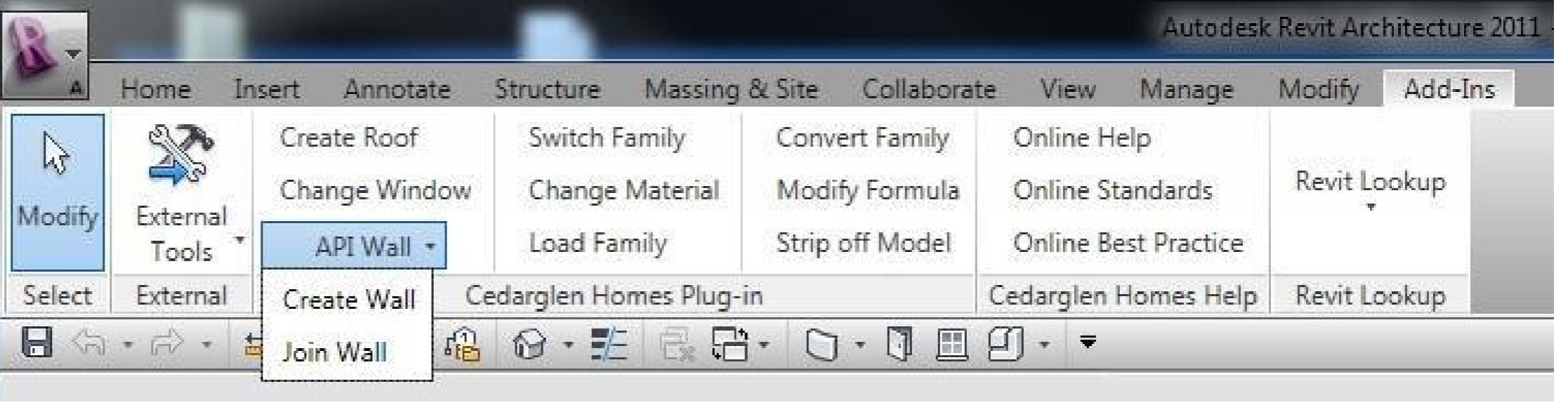
public AddStuds(APPLICATION r, ELEMENT e)
{
    m_ColumnList = Utilities.getColumnList(r);
    m_FramingList = Utilities.getFramingList(r);

    m_IT.FI = e as FamilyInstance;
    m_IT.W = rparam.Beam_CS_Width(m_IT.FI.Symbol);
}

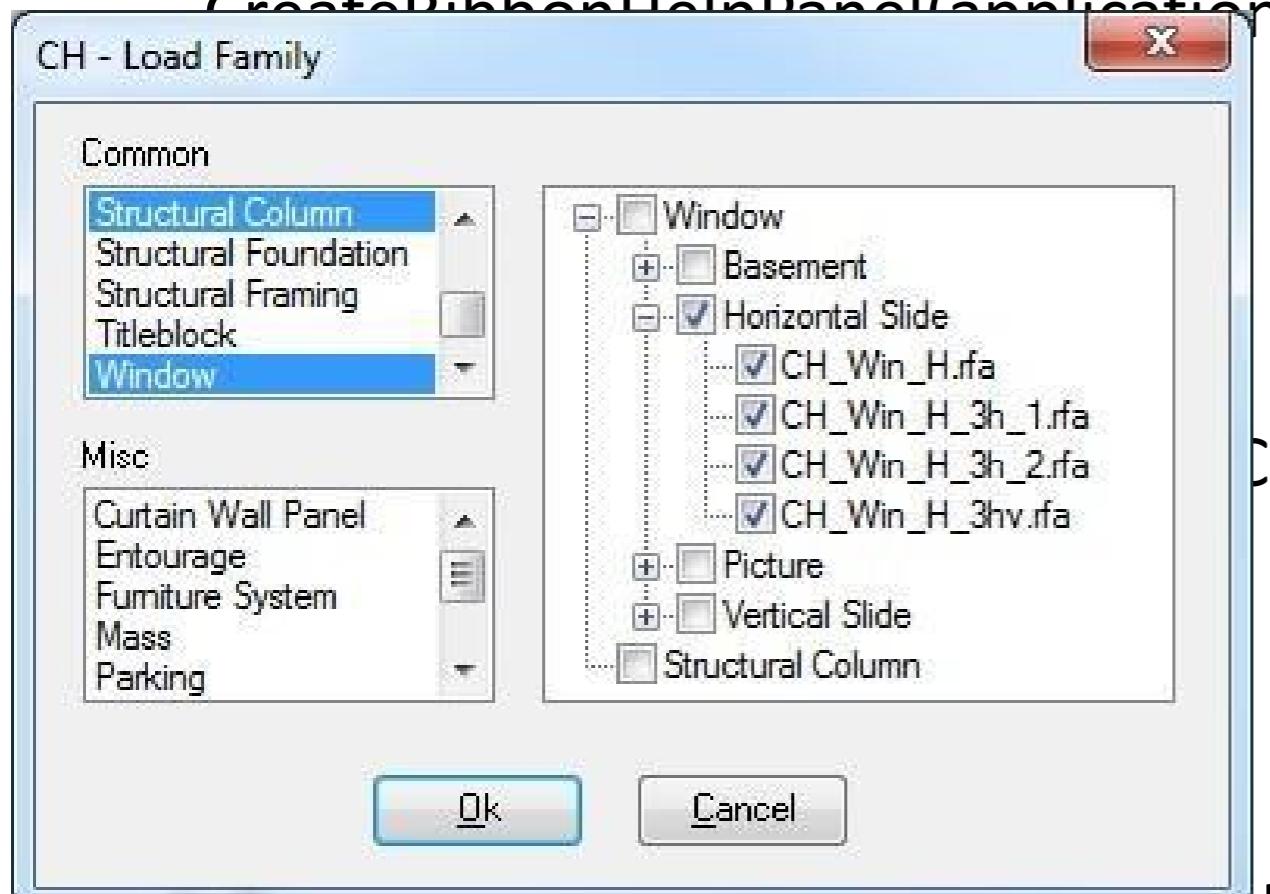
```



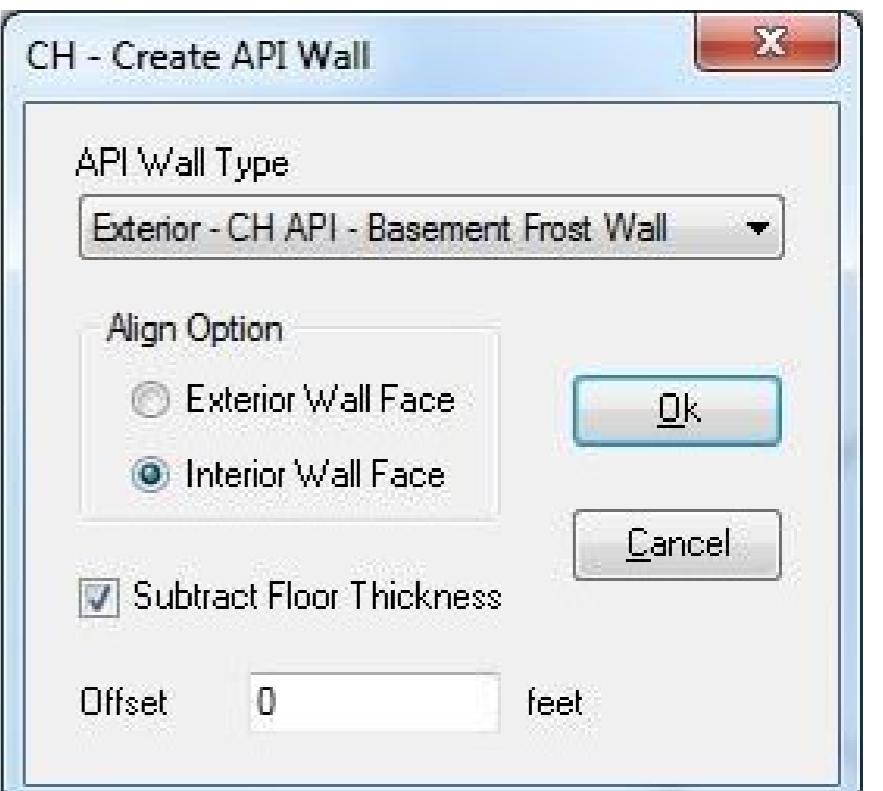
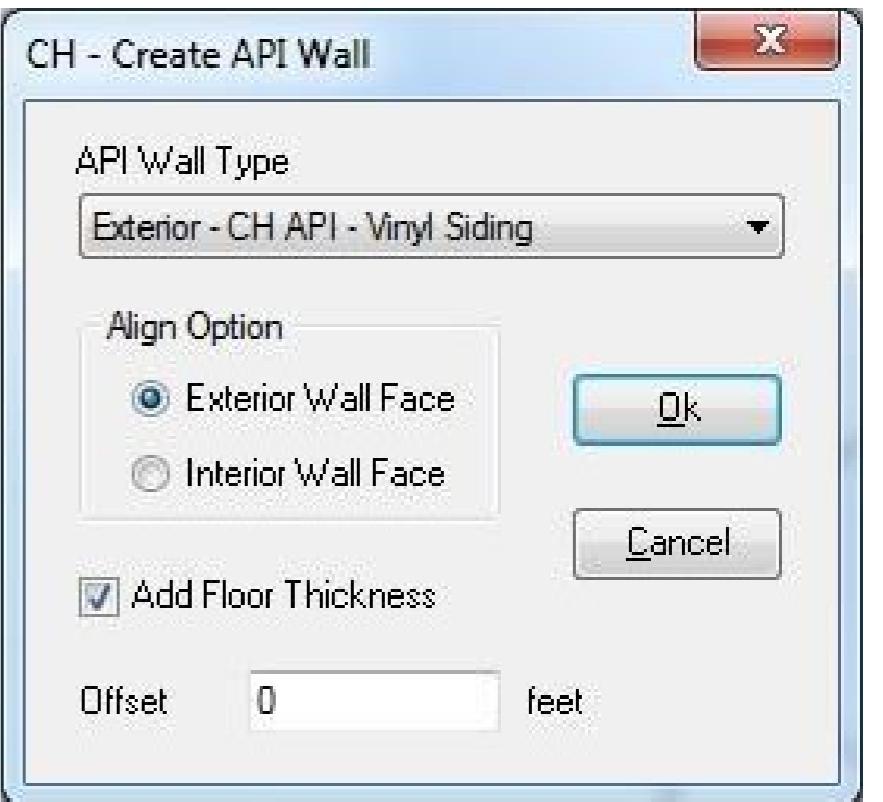
```
[Transaction(Transaction)
[Regeneration(Regeneration)
public class CH_Ribbon
{
    static string AddInPath
    "CH_Command.dll");
```



```
public CmdResult OnStartup(UIControlledApplication application)
{
    application.DialogBoxShowing += new
EventHandler<DialogBoxShowingEventArgs>(myDialogBoxShowing);
    try
    {
        CreateRibbonPluginPanel(application);
        CreateRibbonHelpPanel(application);
```



Create Ribbon Panel");



```

Transaction trans = new Transaction(doc, "CH - create wall(s)")
trans.Start();
foreach (Wall wall in walls)
{
    if (wall.Category.Name == "Stacked Walls") continue;
}

```

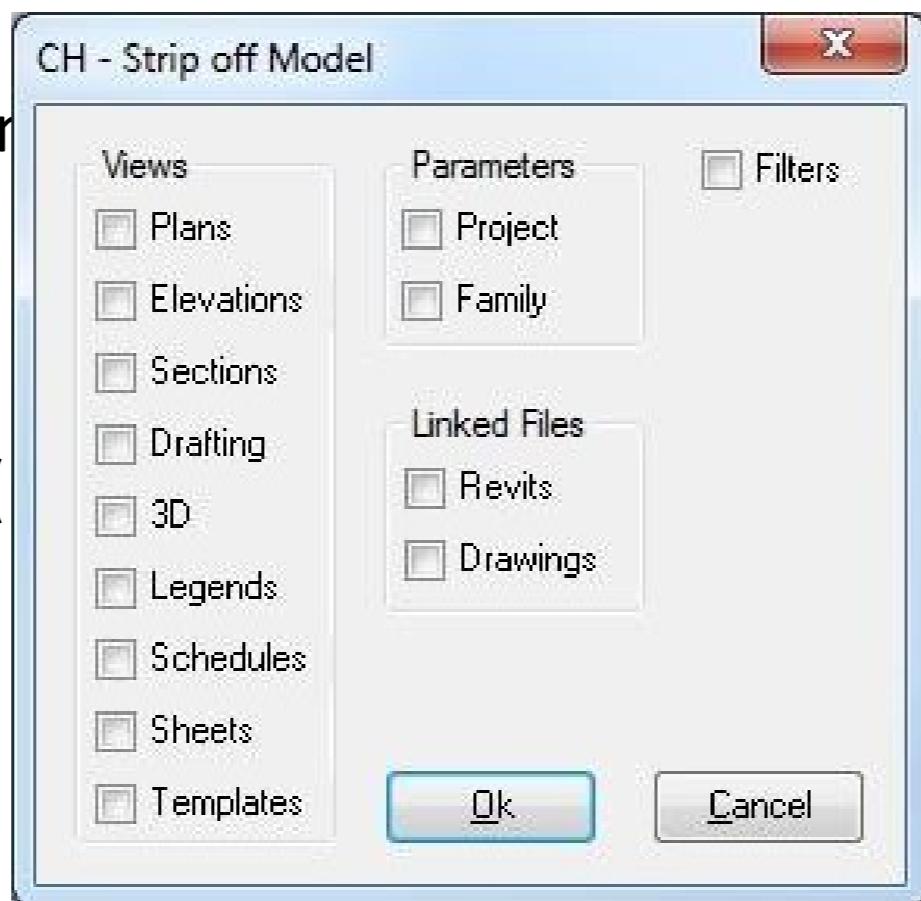


```
SubTransaction st = new SubTransaction(doc);
```

```

int wu =
wall.get_Parameter(BuiltInParameter.STRUCTURAL_ANALYSIS_TYPE);
if (wu != 1)
{
    st.Start();
    wall.get_Parameter(BuiltInParameter.STRUCTURAL_ANALYSIS_TYPE).Set(1);
    st.Commit();
    doc.Regenerate();
}

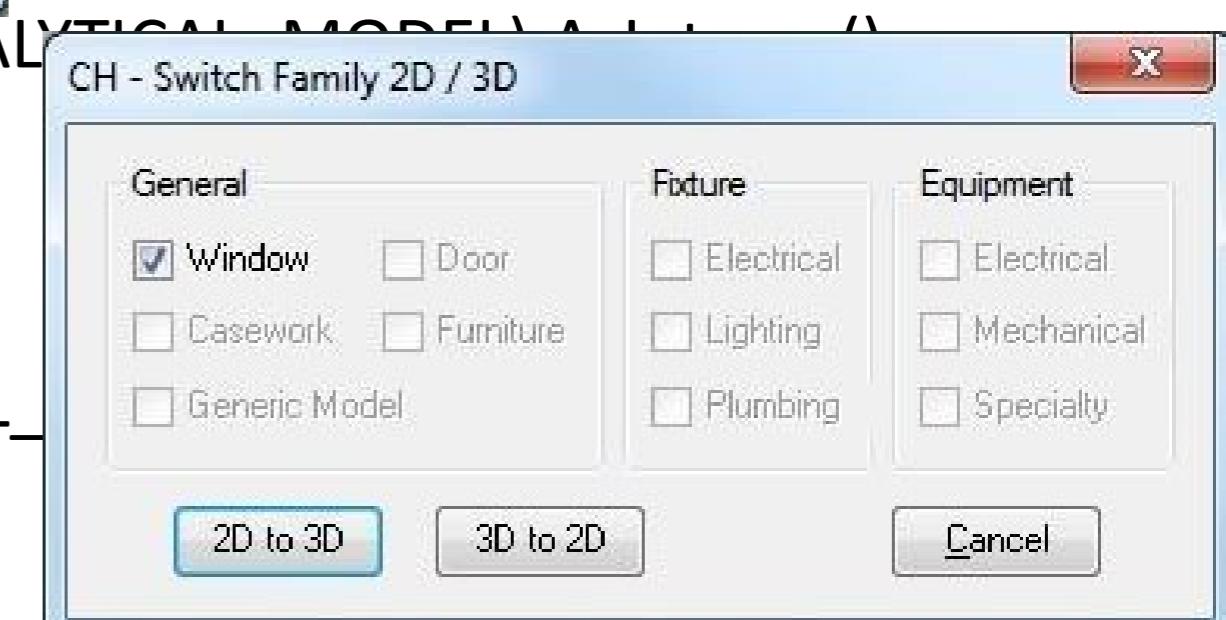
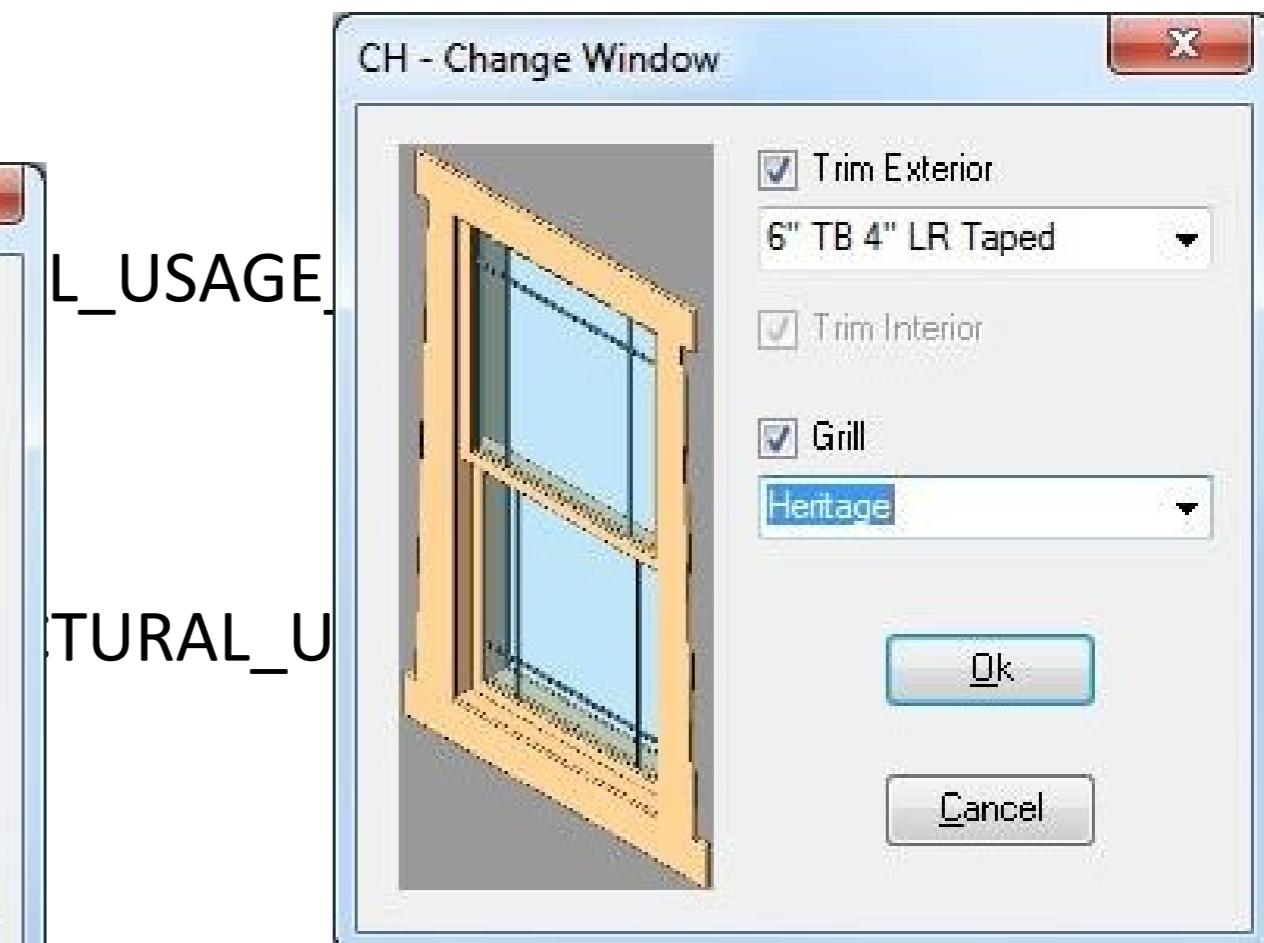
```



```

int am =
wall.get_Parameter(BuiltInParameter.STRUCTURAL_ANALYSIS_TYPE);
if (am != 1)
{
    st.Start();
    wall.get_Parameter(BuiltInParameter.STRUCTURAL_ANALYSIS_TYPE).Set(0);
    st.Commit();
    doc.Regenerate();
}

```



<%@ Page Title="Cedarglen Homes - Revit Web Application" MasterPageFile="~/Site.Master" Inherits="RevitWebApp" %>

<asp:Content ID="HeadContent" ContentPlaceHolderID="HeadContent">

<asp:Content ID="BodyContent" ContentPlaceHolderID="MainContent">

    <h2>Welcome to Cedarglen Homes</h2>

    <table>

        <tr valign="top">

            <td style="width: 150px; vertical-align: top; padding-right: 10px;">

                This site demon-

environment.

                <br />

                <br />

                DWFs containing

    Copyright © Cedarglen Homes 2010

                <asp:HyperLink runat="server" ID="HyperLink1" NavigateUrl="http://usa.autodesk.com/adsk/servlet/pc/index?siteID=123112&id=12423405" Text="Autodesk Design Review 2011" /> viewer pane.

                <br />

                <br />

                <b>Free Downloads from the Autodesk web site:</b> <br />

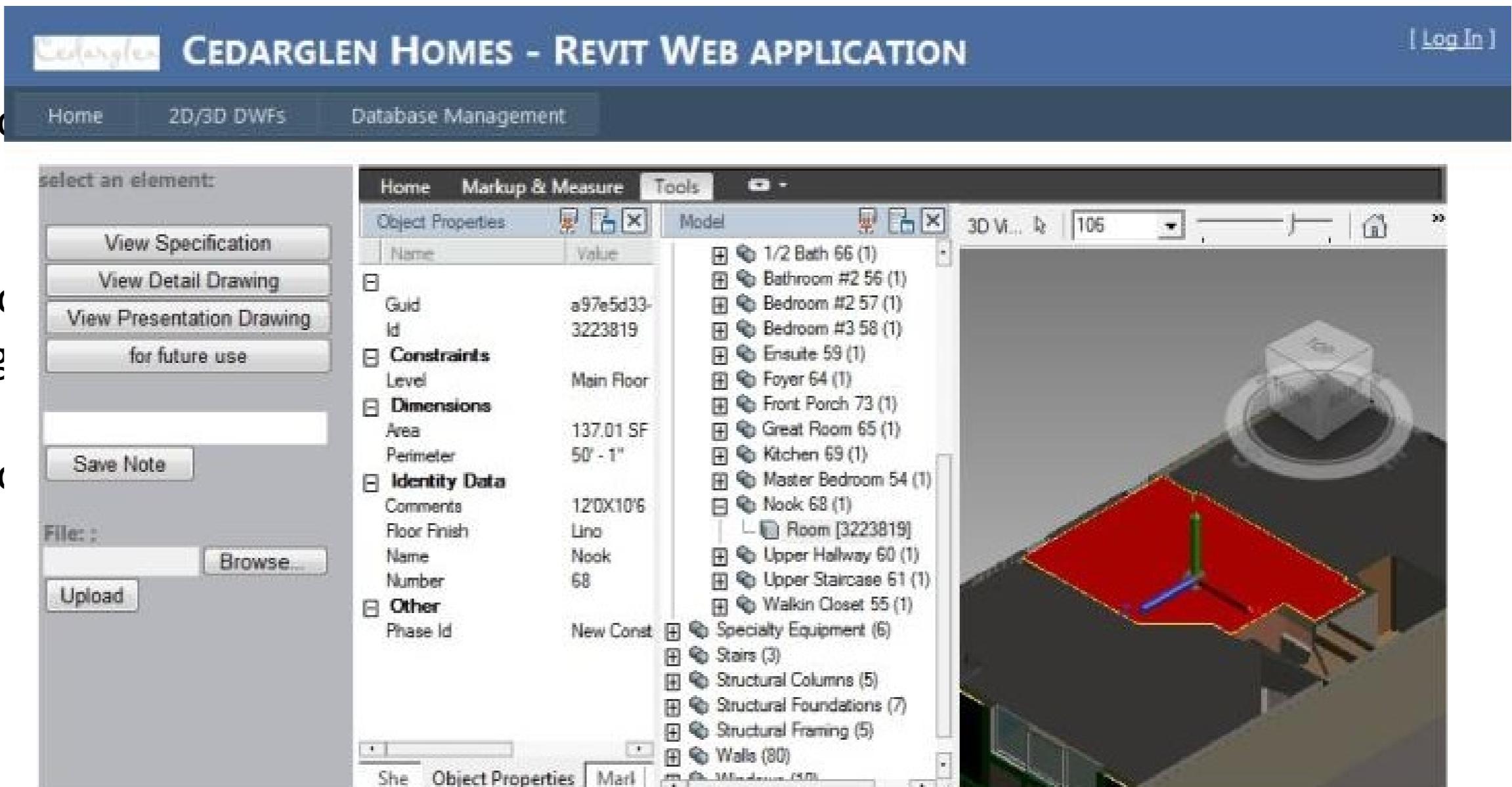
                <asp:HyperLink runat="server" ID="DWFHyperLink" NavigateUrl="http://usa.autodesk.com/adsk/servlet/pc/index?siteID=123112&id=12423405" Text="Autodesk Design Review 2011" /> viewer pane.

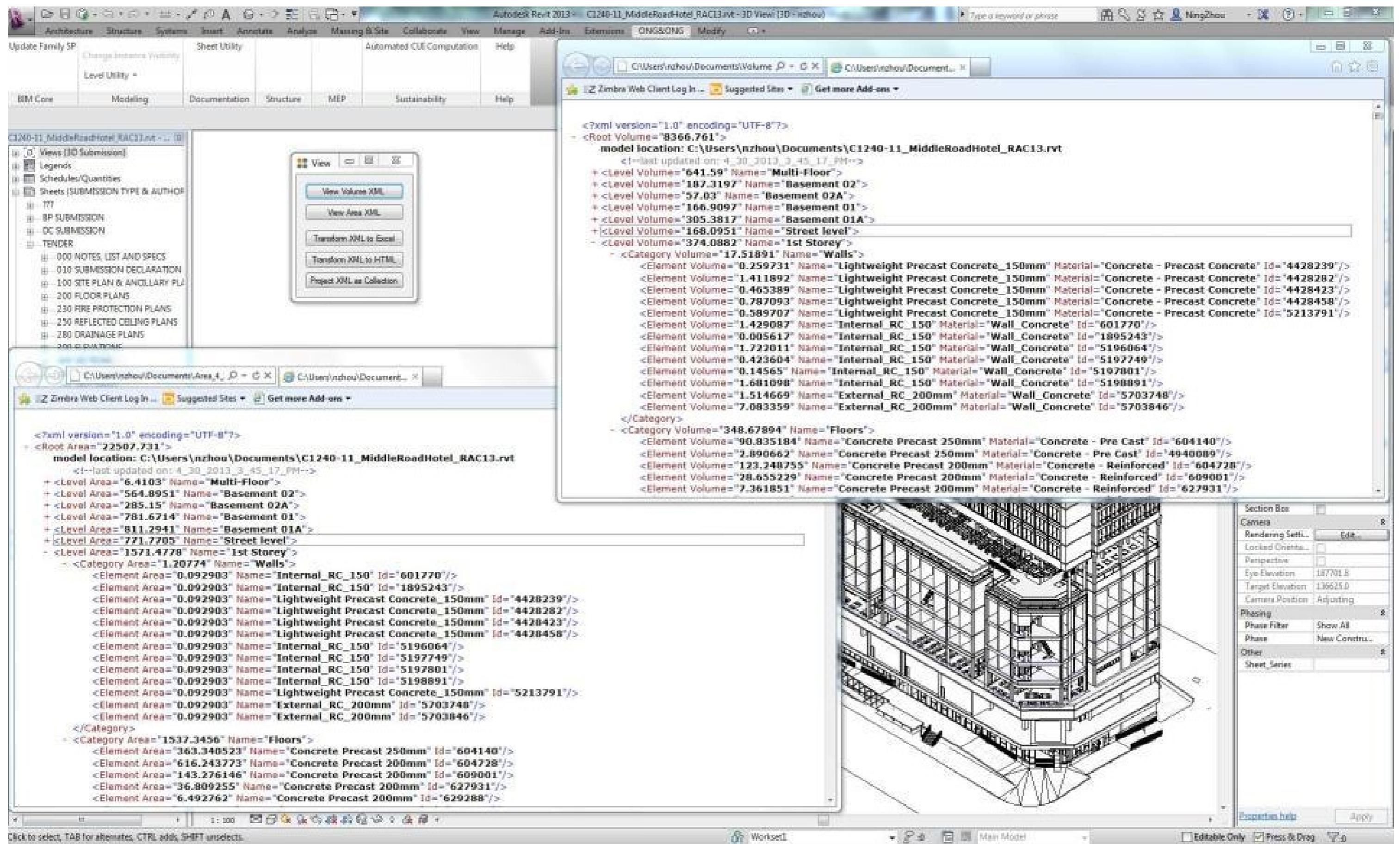


```

<body>
  <form id="form1" runat="server">
    <asp:Label runat="server" ID="LabelPrompt" Text="select an element:" Font-Bold="true"
    />
    <table runat="server" id="TableCommands" border="0">
      <tr valign="top">
        <td style="vertical-align:top; ">
          <br />
          <asp:Button runat="server" ID="ViewSpecification" Width="95%" Text="View
Specification" />
          <br />
          <asp:Button
Drawing" />
          <br />
          <asp:Button
Presentation Drawing
          <br />
          <asp:Button
/>
          <br />
        </td>
        </tr>
      </table>
      <table runat="se

```





```
[PluginAttribute("ClashDetective.Test", "NZS", ToolTip = "ClashDetective.Test tool tip",
DisplayName = "ClashDetective Grouping")]
```

```
//[AddInPluginAttribute(AddInLocation.AddIn)] // defa
```

```
public class Test : AddInPlugin
```

```
{
```

```
    public override int Execute(params string[] param
```

```
{
```

```
        DocumentClash oDC = NApp.MainDocument.Get
```

```
        DocumentClashTests oDCT = oDC.TestsData;
```

```
        // perhaps use recursive
```

```
        for (int i = 0; i < oDCT.Tests.Count; i++)
```

```
{
```

```
            ClashTest test = oDCT.Tests[i] as ClashTest;
```

```
            if (test.Children.Count.Equals(0)) continue;
```

```
            int groupNumber = 0;
```

```
            List<int> lstClashResultPos1 = new List<int>(); /
```

```
            bool done = false;
```

```
            // perhaps use recursive
```

```
            while (!done)
```

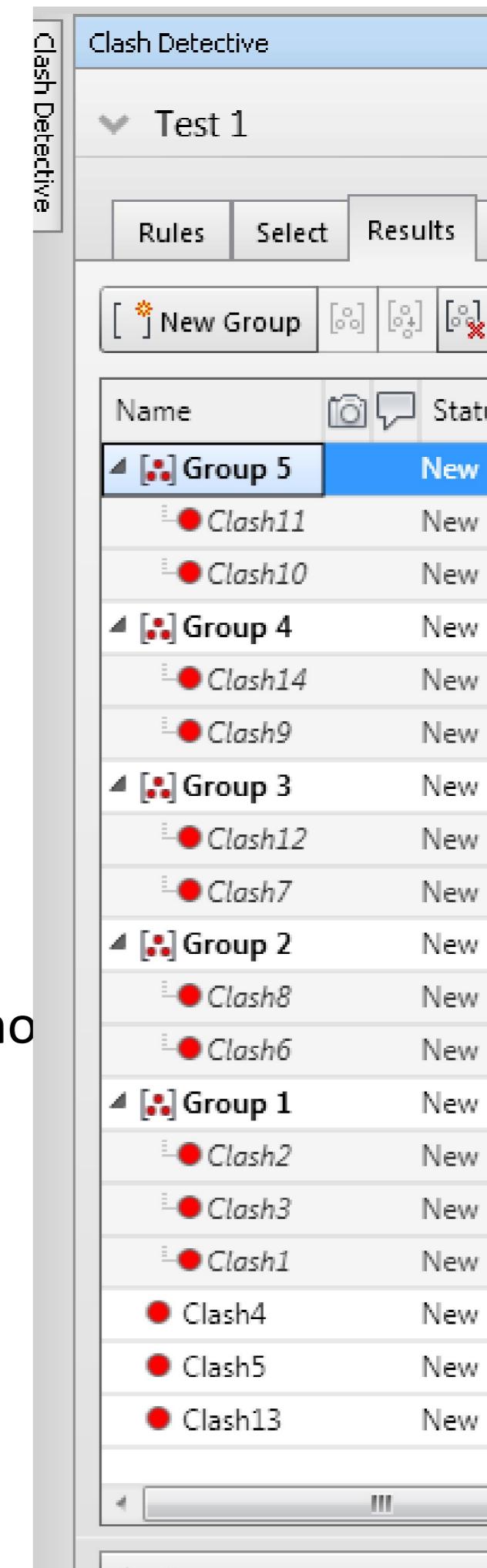
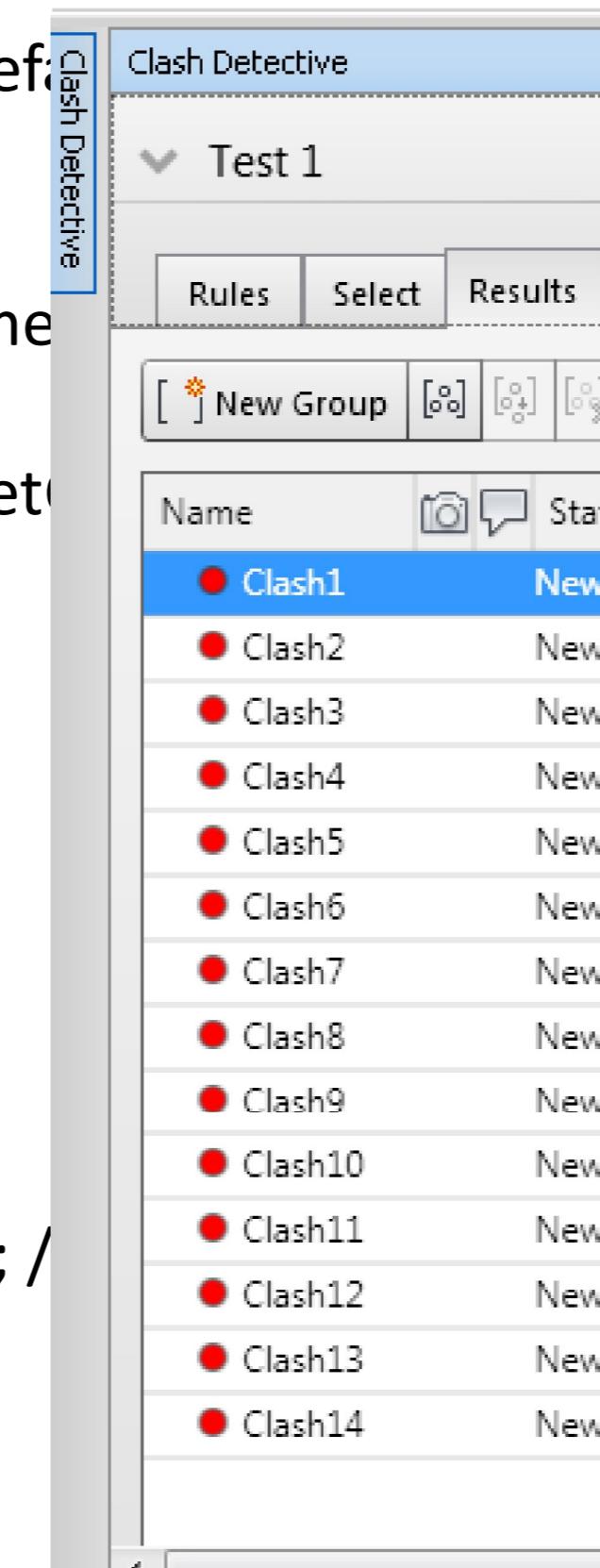
```
{
```

```
                ModelItemCollection sel1 = new ModelItemCollection();
```

```
                SavedItem issue1 = null;
```

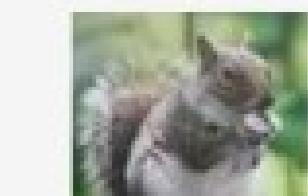
```
                int pos = 0;
```

```
                for (int j = groupNumber; j < test.Children.Count; j++)
```



Ning Zhou

Senior Member



Join Date: July 20, 2011

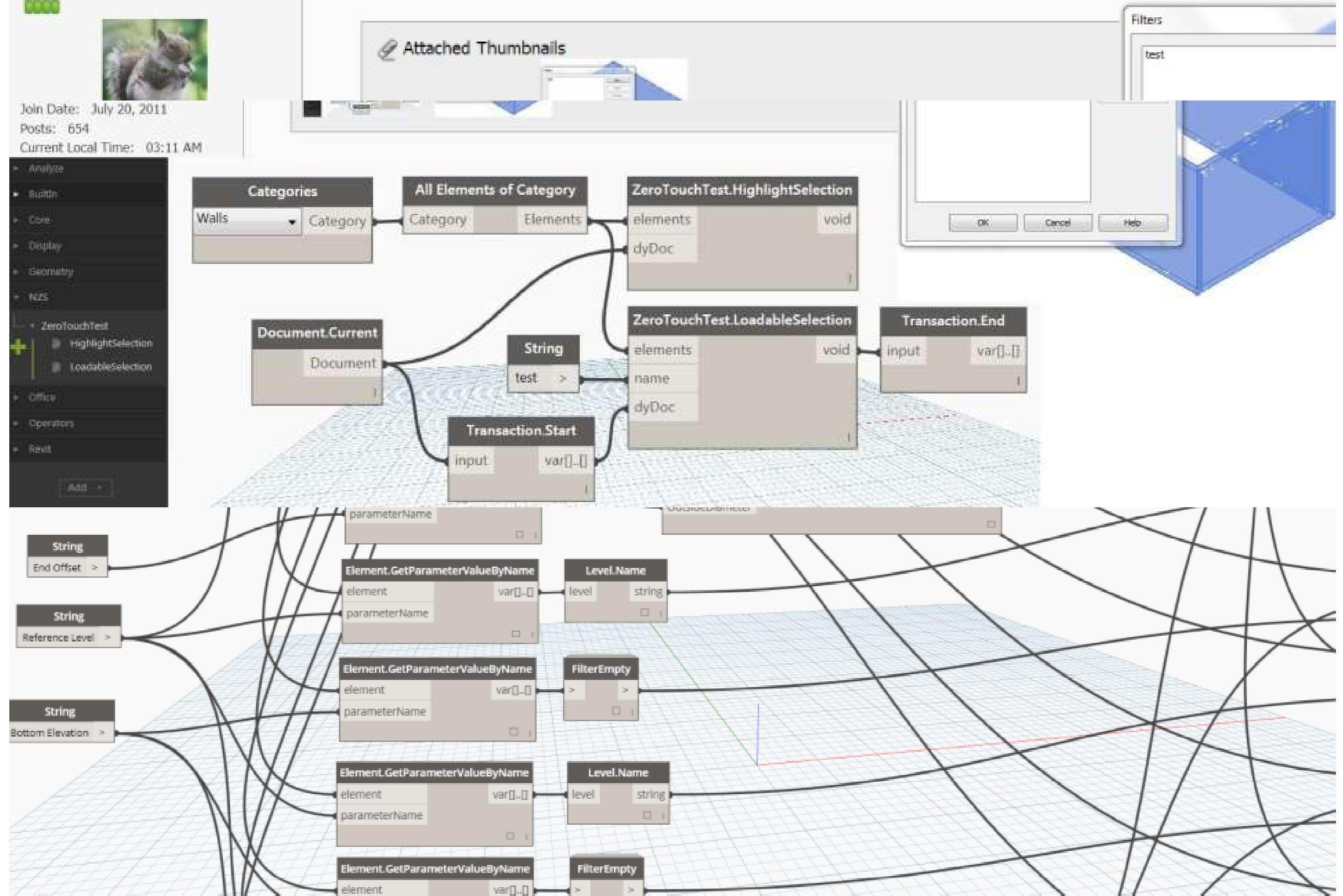
Posts: 654

Current Local Time: 03:11 AM

- Analysis
- Built-in
- Core
- Display
- Geometry
- NDS
- + ZeroTouchTest
  - HighlightSelection
  - LoadableSelection
- Office
- Operators
- Revit

Add →

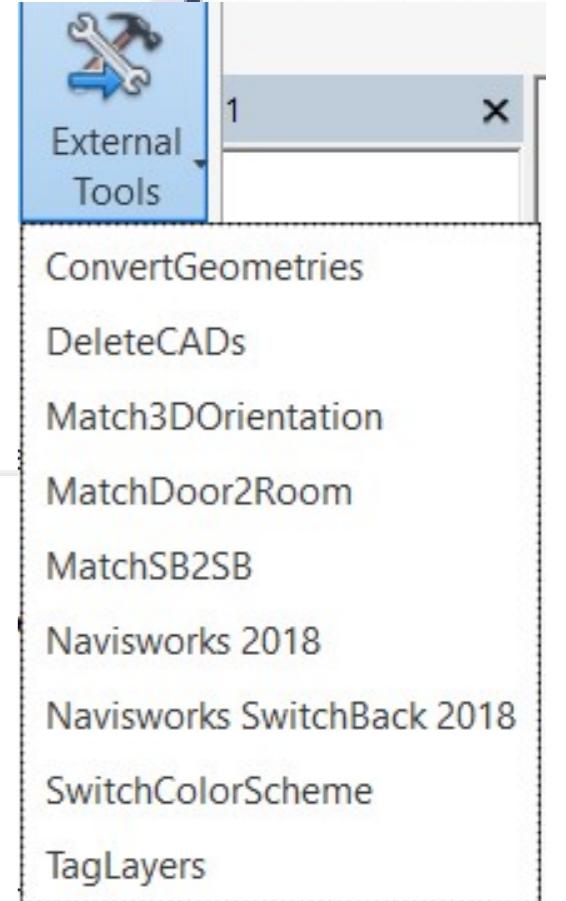
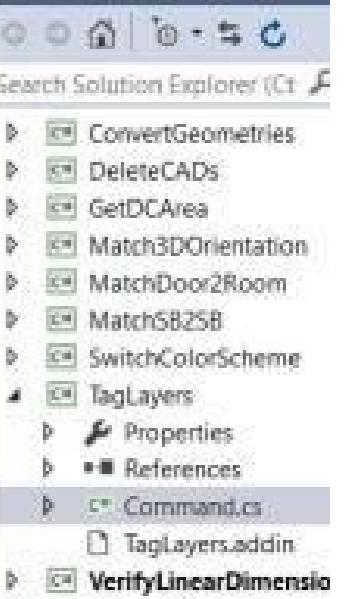
it should work, i didn't use clockwork, and not good at Python yet, so i tried to use normal API via C# to create my own Dynamo node, works great, well, my very first Zero Touch stuff!



TagLayers

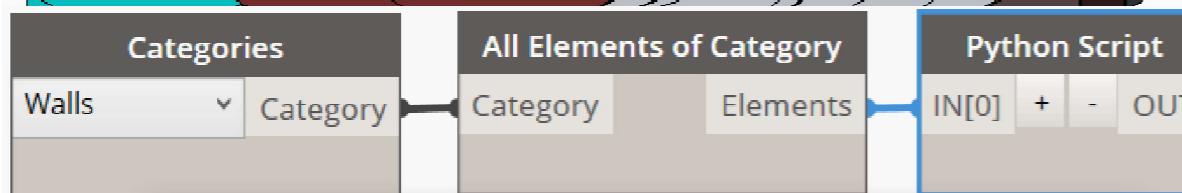
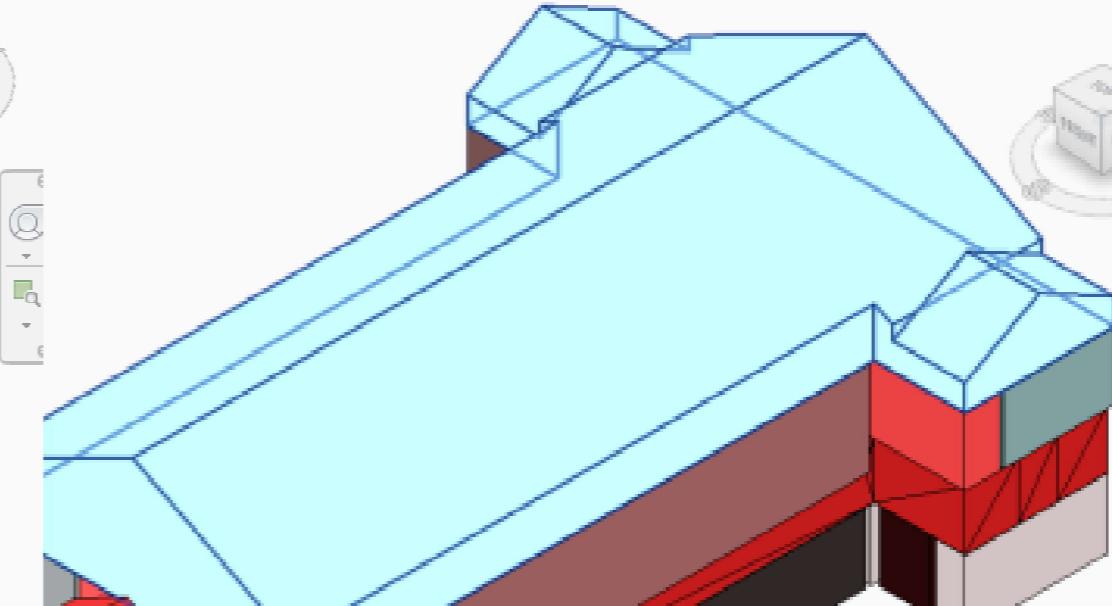
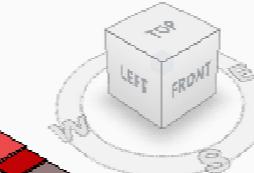
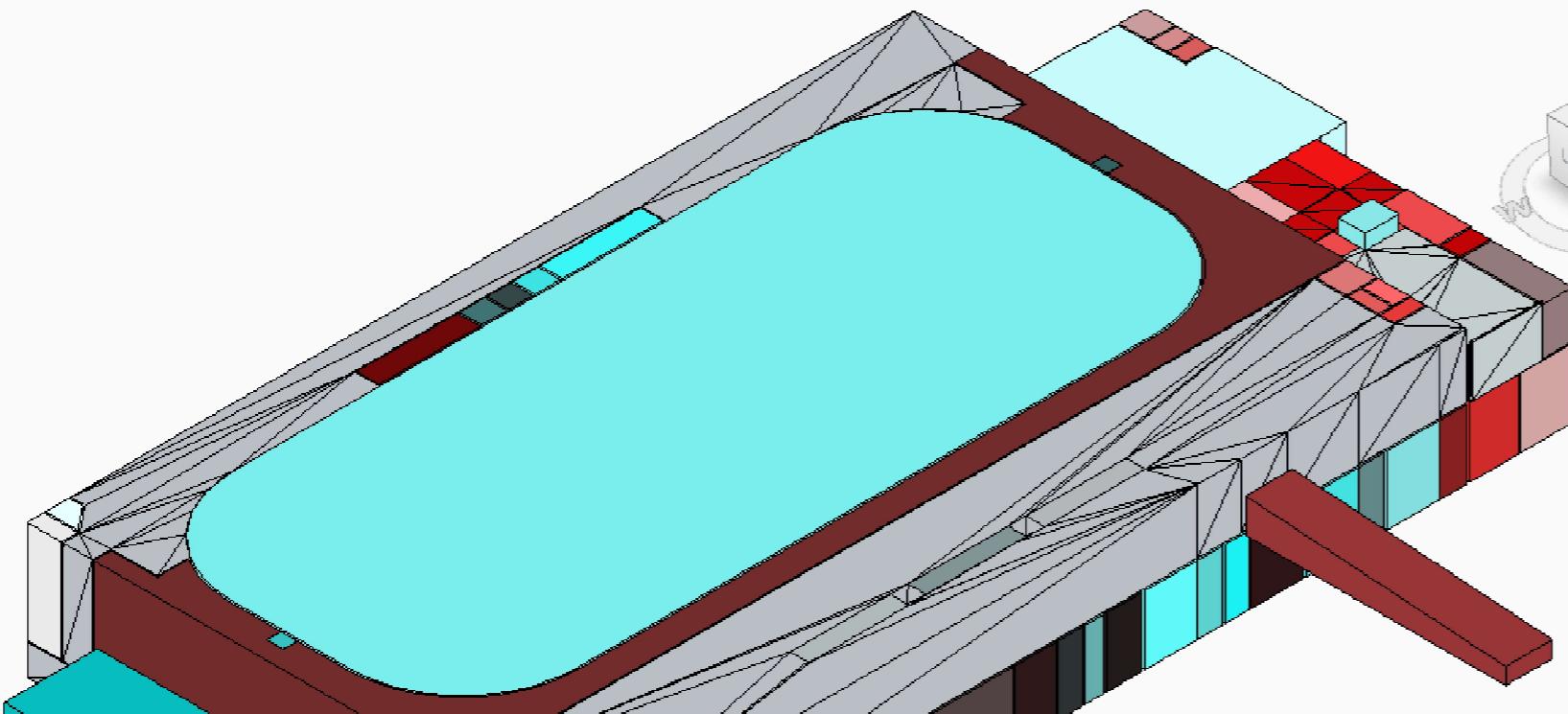
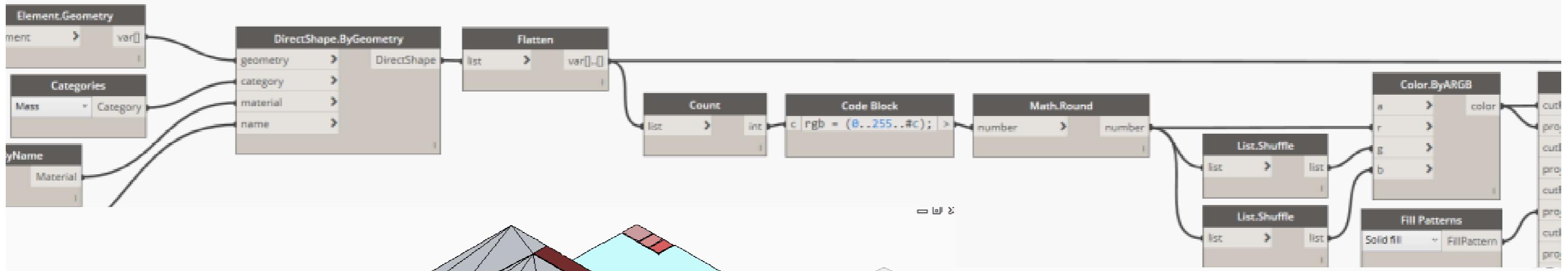
```

28     [Transaction(TransactionMode.Manual)]
29     public class TagLayers : IExternalCommand
30     {
31         public class DefaultElementsFilter { ... }
32         public class CSSelectionFilter { ... }
33
34         public Result Execute(ExternalCommandData commandData, ref string message, ElementSet elements)
35         {
36             UIApplication uiapp = commandData.Application;
37             Application app = uiapp.Application;
38             UIDocument uidoc = uiapp.ActiveUIDocument;
39             Document doc = uidoc.Document;
40
41             doc.ActiveView.DetailLevel = ViewDetailLevel.Fine;
42             //ReferenceArray ra = new ReferenceArray();
43             ISelectionFilter selFilter = new CSSelectionFilter(doc);
44             Reference myRef = uidoc.Selection.PickObject(ObjectType.PointOnElement, selFilter, "select wall/floor/roof/ceiling");
45             ElementId myId = myRef.ElementId;
46             Element myEle = doc.GetElement(myId);
47             XYZ myPt = myRef.GlobalPoint;
48
49             HostObjAttributes HOA = doc.GetElement(myEle.GetTypeId()) as HostObjAttributes;
50             CompoundStructure CS = HOA.GetCompoundStructure();
51             IList<CompoundStructureLayer> layersCS = CS.GetLayers();
52             string s = string.Empty;
53             foreach (CompoundStructureLayer layerCS in layersCS)
54             {
55                 Units.units = doc.GetUnits();
56                 FormatValueOptions formatValueOptions = new FormatValueOptions();
57
58                 @ECHO OFF
59                 REM Script to install DSRA Revit plug-in
60                 REM Author : Ning Zhou
61                 REM Date   : 29 Nov 2017
62
63                 NET USE Z: "\\\$ERVER12\Public" /PERSISTENT:NO
64
65                 SET REVITAPI=Z:\\REVIT\\DESIGN STANDARDS LIBRARY\\Dynamo+API
66                 SET REVIT2017_LOC=%appdata%\\Autodesk\\Revit\\Addins\\help_20171129.txt - Notepad
67
68                 copy "%REVITAPI%\\TagLayers.dll" "%REVIT2017_LOC%" File Edit Format View Help
69                 copy "%REVITAPI%\\TagLayers.addin" "%REVIT2017_LOC%" close Revit, and double click on "install Revit plug-ins.bat" to run installation script
70
71                 copy "%REVITAPI%\\MatchDoor2Room.dll" "%REVIT2017_LOC%" 1) TagLayers
72                 copy "%REVITAPI%\\MatchDoor2Room.addin" "%REVIT2017_LOC%" will tag multiple layers of wall/floor/roof/ceiling using multi-category tag
73                 . user may have to manually move tag around to appropriate location after initial placement
74
75                 copy "%REVITAPI%\\SwitchColorScheme.dll" "%REVIT2017_LOC%" 2) MatchDoor2Room
76                 . pls use custom multi-category tag based on Type Comments
77                 . instead of OOTB Autodesk one based on Type Mark
78
79                 copy "%REVITAPI%\\SwitchColorScheme.addin" "%REVIT2017_LOC%" 3) SwitchColorScheme
80                 . will turn on/off color scheme for plan views on sheet
81                 . click Yes to turn on color scheme
82                 . click No to turn off color scheme
83
84             }
85
86             myRef.Dispose();
87         }
88     }
89 
```



[https://forums.autodesk.com/t5/forums/searchpage/tab/message?advanced=false&allow\\_punctuation=false&q=ning%20zhou](https://forums.autodesk.com/t5/forums/searchpage/tab/message?advanced=false&allow_punctuation=false&q=ning%20zhou)

- 1) TagLayers
  - copy "%REVITAPI%\\TagLayers.dll" "%REVIT2017\_LOC%" will tag multiple layers of wall/floor/roof/ceiling using multi-category tag
  - . user may have to manually move tag around to appropriate location after initial placement
- 2) MatchDoor2Room
  - copy "%REVITAPI%\\MatchDoor2Room.dll" "%REVIT2017\_LOC%" pls use custom multi-category tag based on Type Comments
  - . instead of OOTB Autodesk one based on Type Mark
- 3) SwitchColorScheme
  - copy "%REVITAPI%\\SwitchColorScheme.dll" "%REVIT2017\_LOC%" will turn on/off color scheme for plan views on sheet
  - . click Yes to turn on color scheme
  - . click No to turn off color scheme

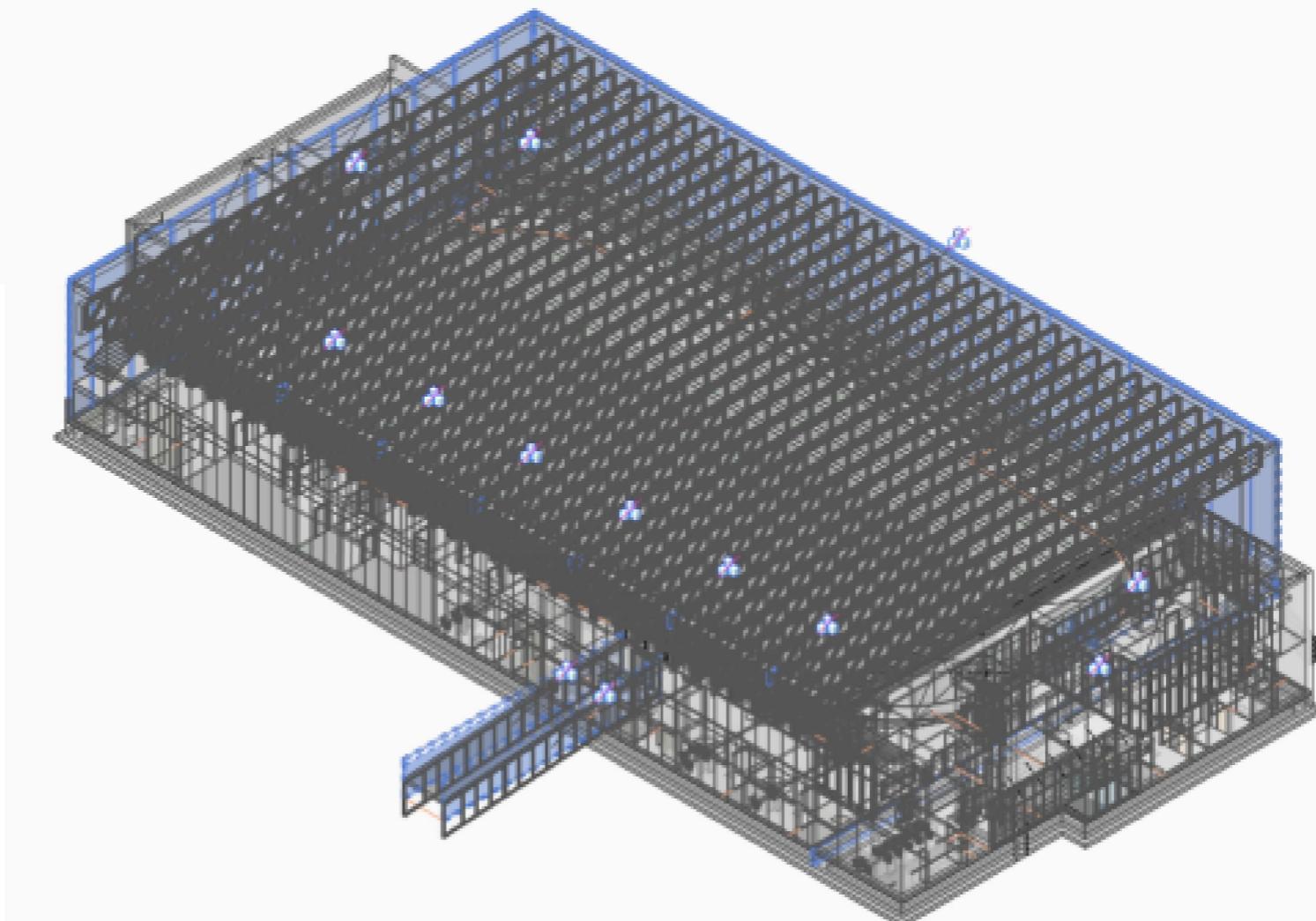


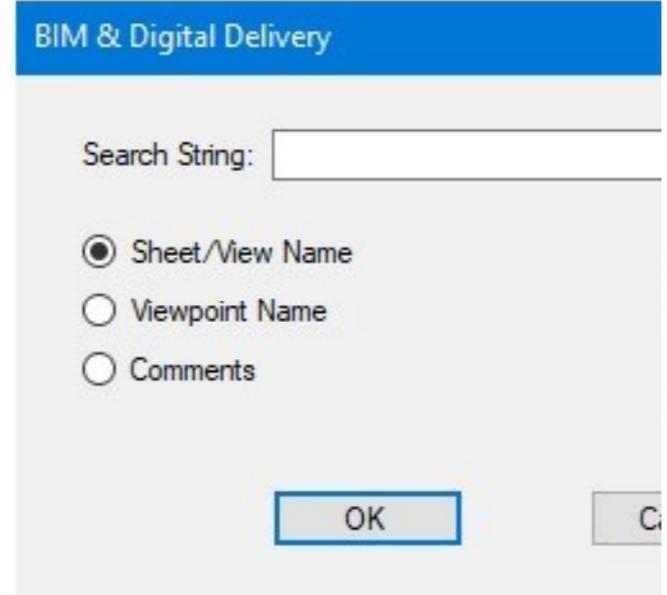
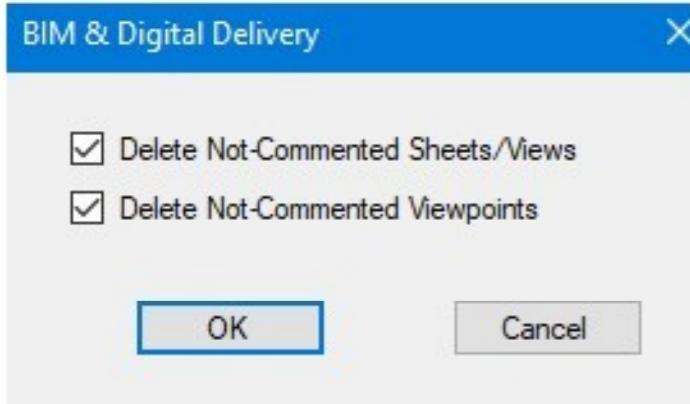
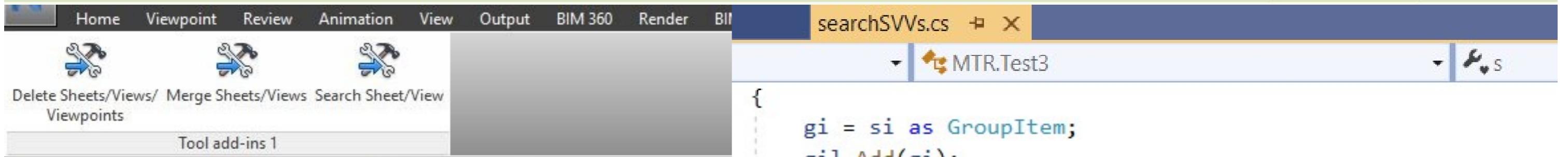
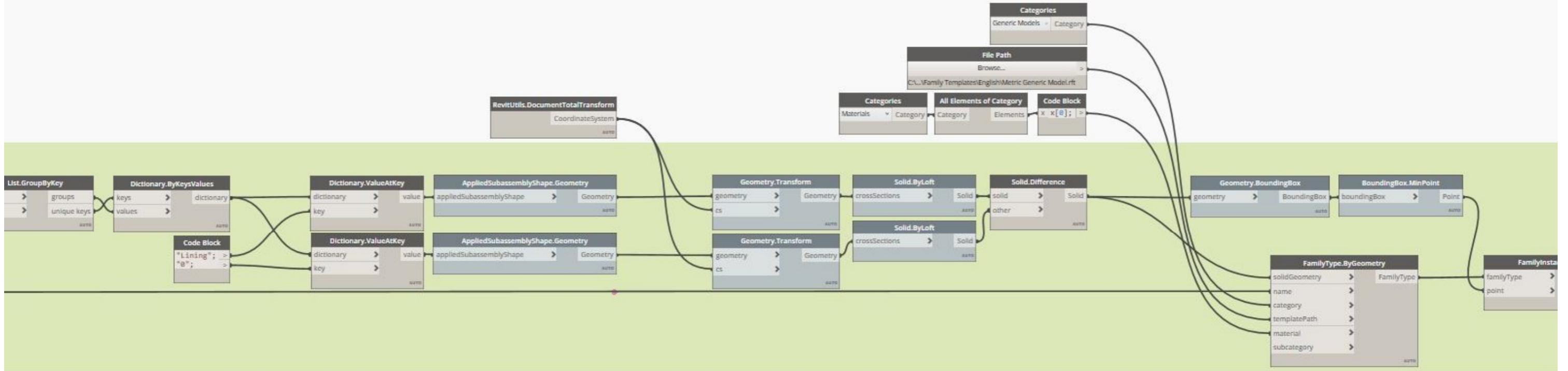
R Edit Python Script...

```

1 import clr
2
3 clr.AddReference("RevitServices")
4 import RevitServices
5 from RevitServices.Persistence import DocumentManager
6 from RevitServices.Transactions import TransactionManager
7 from System.Collections.Generic import *
8
9 clr.AddReference("RevitAPI")
10 import Autodesk
11 from Autodesk.Revit.DB import *
12
13 doc = DocumentManager.Instance.CurrentDBDocument
14 uiapp = DocumentManager.Instance.CurrentUIApplication
15 app = uiapp.Application
16 uidoc=DocumentManager.Instance.CurrentUIApplication.ActiveUIDocument
17
18 highlight = []
19 elements = UnwrapElement(IN[0])
20 elementsel = uidoc.Selection
21
22 TransactionManager.Instance.EnsureInTransaction(doc)
23 for element in elements:
24     trans = Autodesk.Revit.DB.SubTransaction(doc)
25     trans.Start()
26     id = doc.Delete(element.Id)
27     trans.RollBack()
  
```

Accept Changes Cancel





## functions

- 1) Delete Sheets/Views/Viewpoints -> delete sheets/views/viewpoints w/ following options
  - . Delete Not-Commented Sheets/Views -> delete all sheets/views without any comment in sheet browser
  - . Delete Not-Commented Viewpoints -> delete all viewpoints without any comment in all sheets/views of sheet browser

2) Merge Sheets/Views -> merge sheets/views due to merging different NWFs/NWDs with same sheets/views

- 3) Search Sheet/View -> search (partial) matched name/comment w/ following options
  - . Sheet/View Name -> search (partial) matched name and set found sheet/view to current
  - . Viewpoint Name -> search (partial) matched name and set found viewpoint to current
  - . Comments -> search (partial) matched comment and list in dialogbox and send to clipboard

```
{
  gi = si as GroupItem;
  gil.Add(gi);
  SavedItemCollection children = gi.Children;
  found = recursive1(svp, children, gil);
  if (found)
    break;
}
else if (bv)
{
  if (Regex.IsMatch(si.DisplayName, StringUtility.WildCardTo
{
  svp.CurrentSavedViewpoint = si;
  found = true;
  break;
}
```