A DVANCED
C ONSTRUCTION
I NFORMATION
D EVELOPMENT

HKIBIM CPD Seminar Realization of Organic Architecture – An BIM Application

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

BIM in Organic Design

BIM in Organic Design Realization

BIM

BIM in Organic Design Documentation

BIM in Organic Design Manufacturing

- **Organic architecture is a philosophy of architecture which promotes harmony between human habitation and the natural world through design approaches so sympathetic and well integrated with its site that buildings, furnishings, and surroundings become part of a unified, interrelated composition.**

- **The philosophy grew from the ideas of Frank Lloyd Wright's mentor, Louis Sullivan, who believed that "form follows function." Wright argued that "form and function are one."**

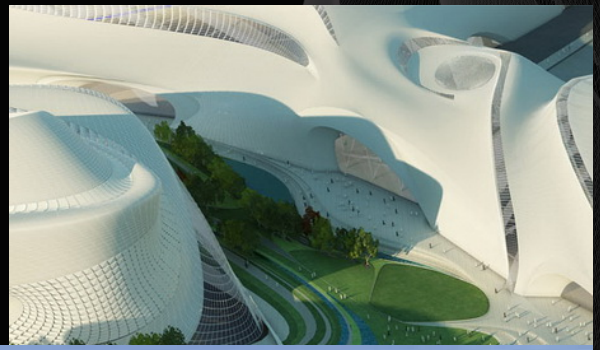
Organic Architecture – 流線型建築

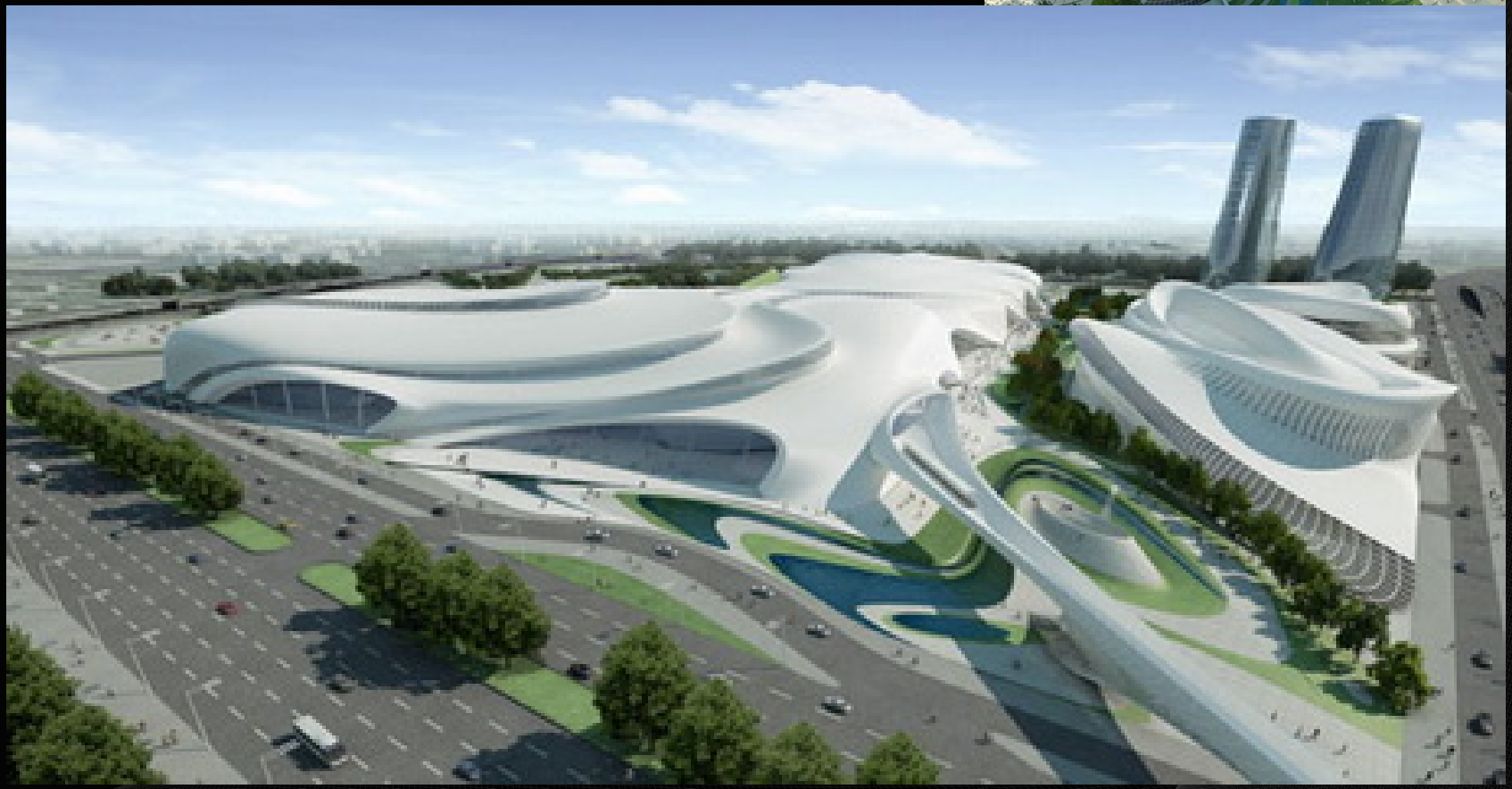
Frank O. Gehry

Sketches of Frank Gehry
DG Bank Berlin, Germany
SONY PICTURES CLASSICS

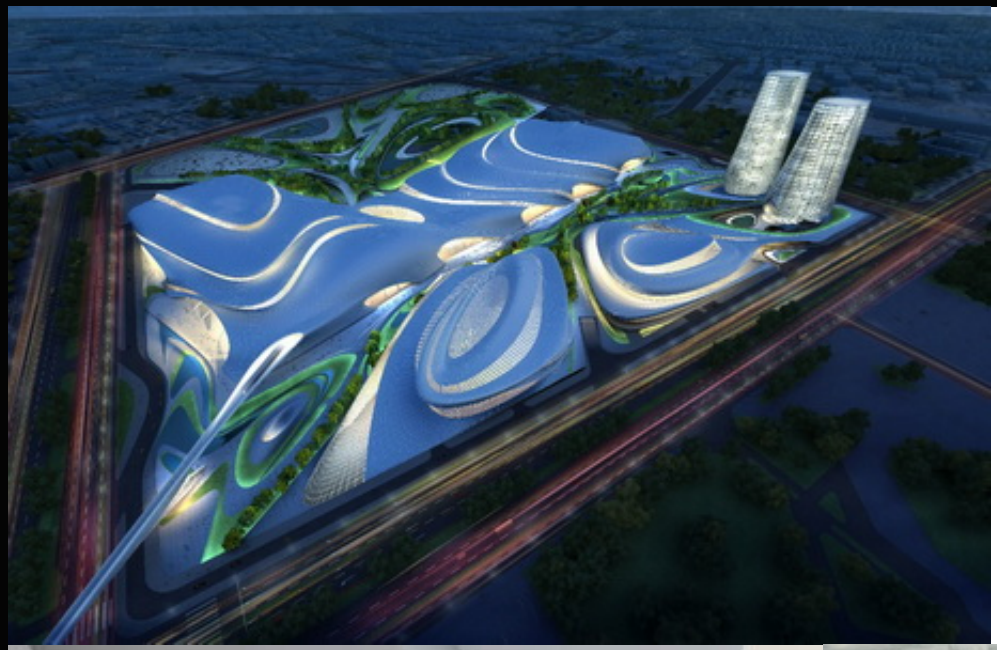
Frank O. Gehry

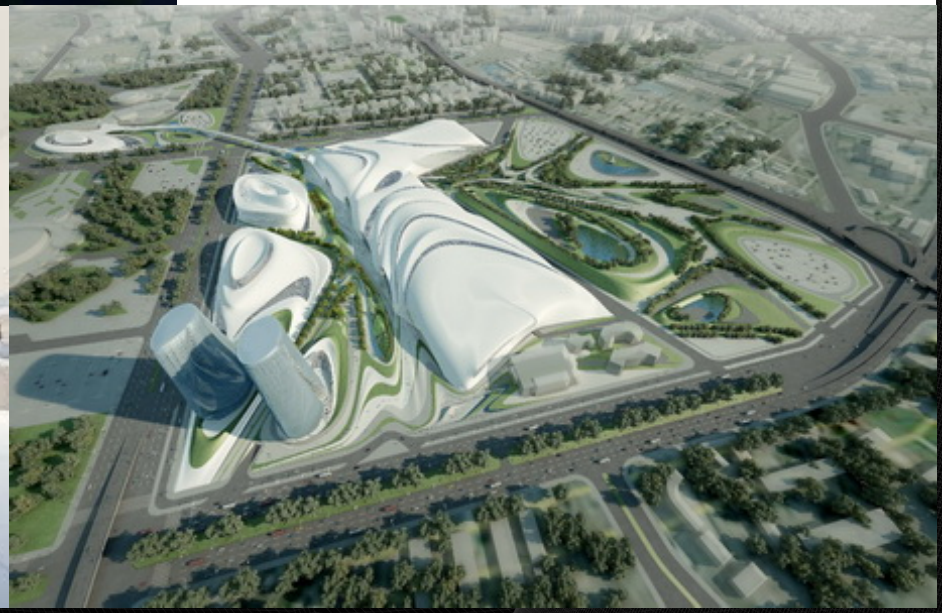
Santiego Calatrava

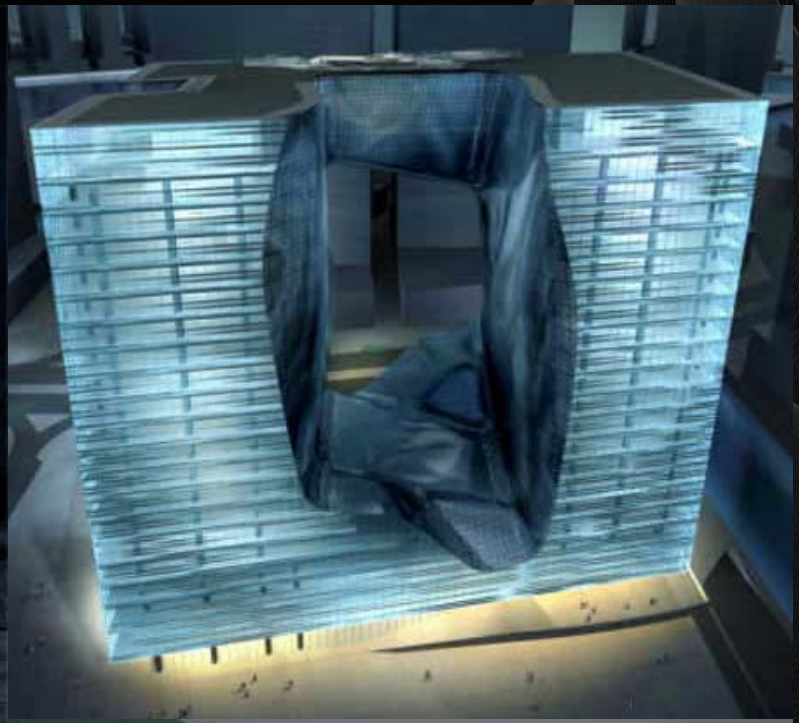


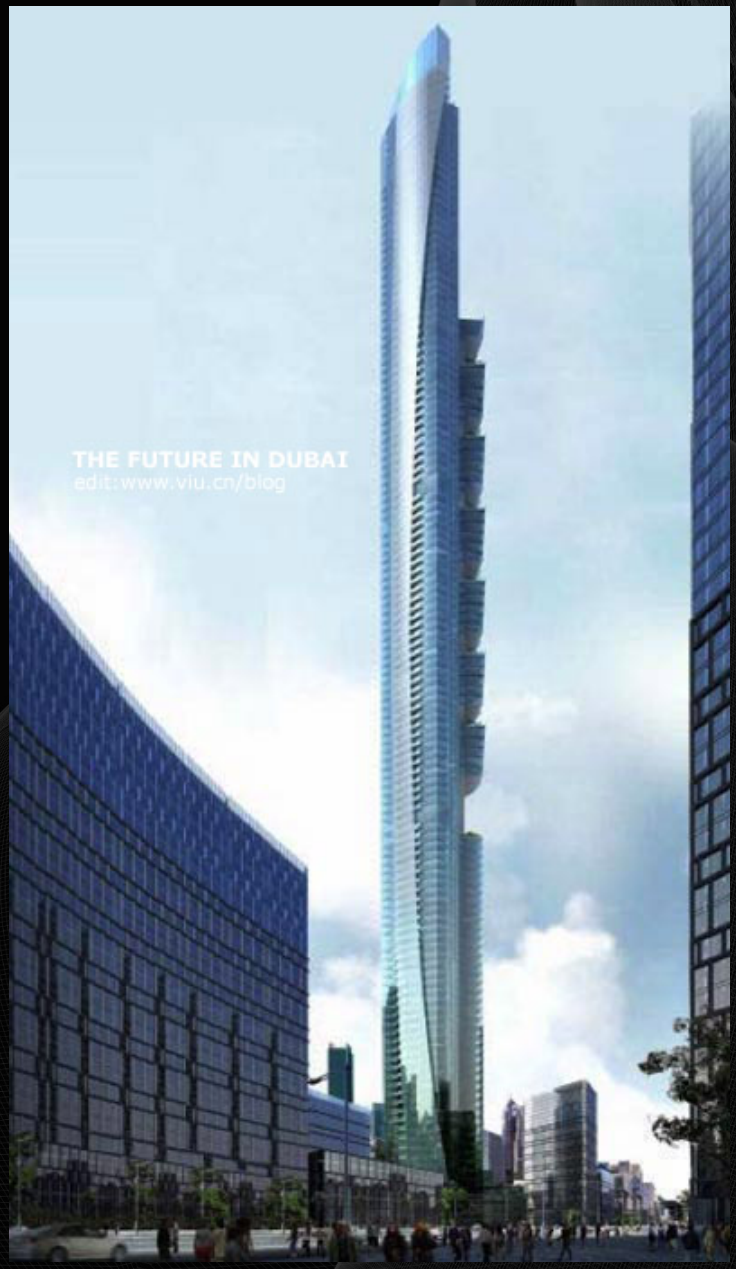


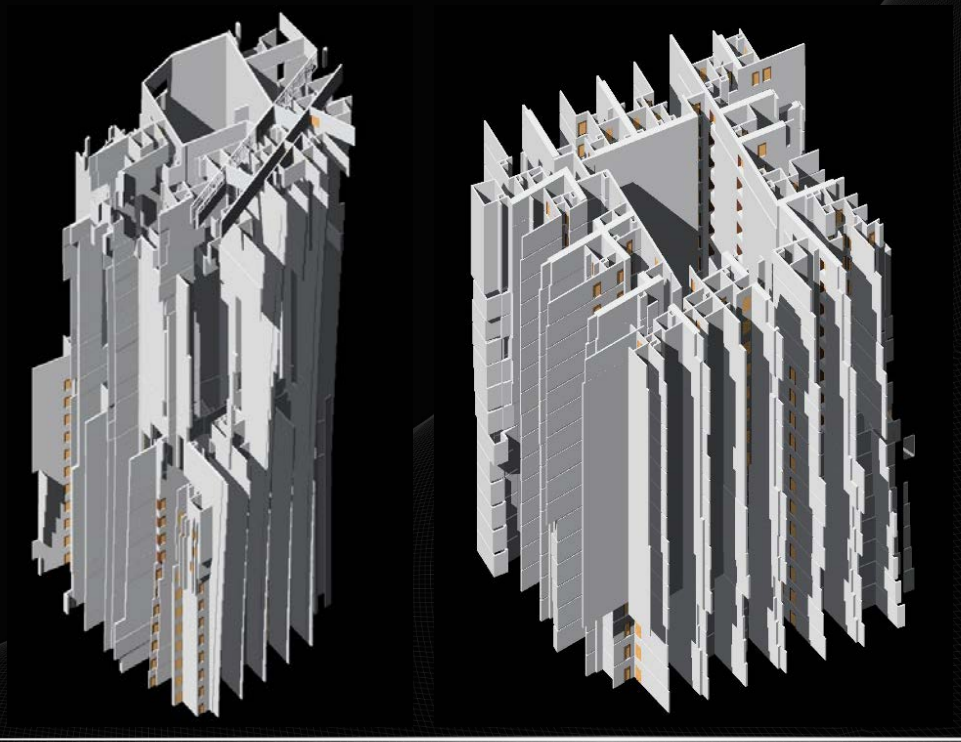
Zaha Hadid





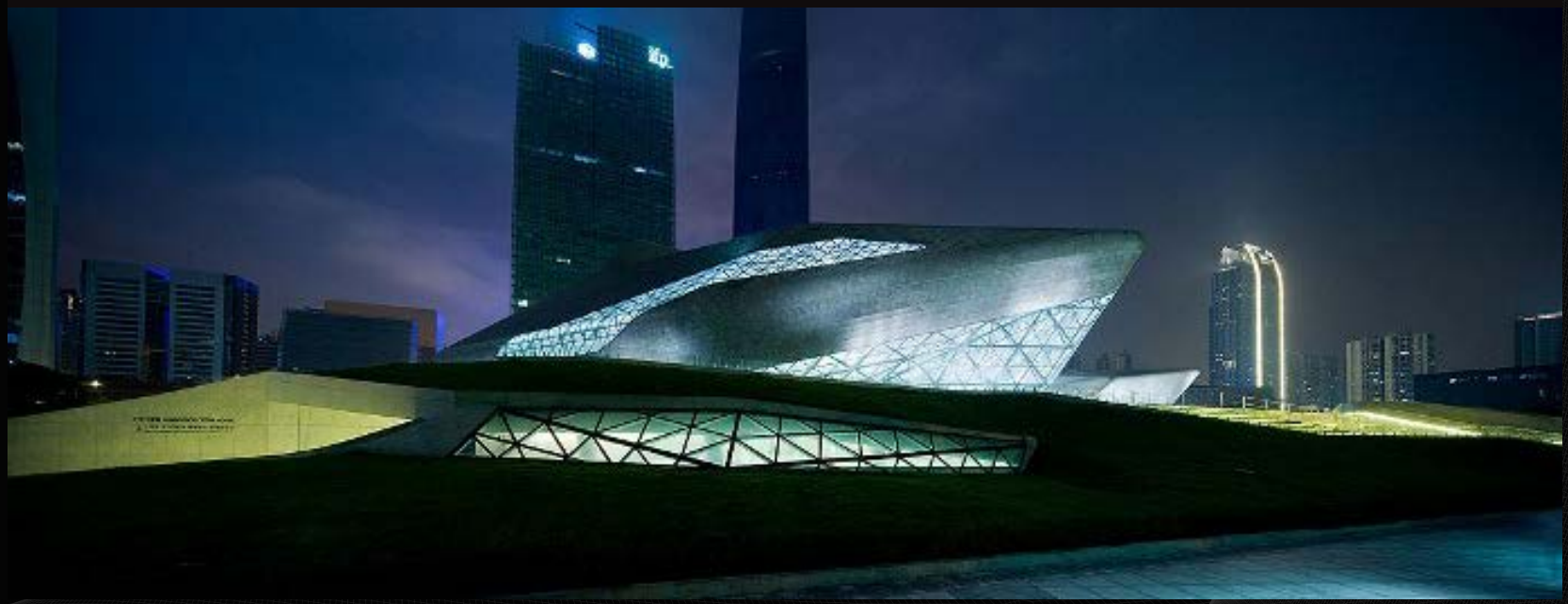


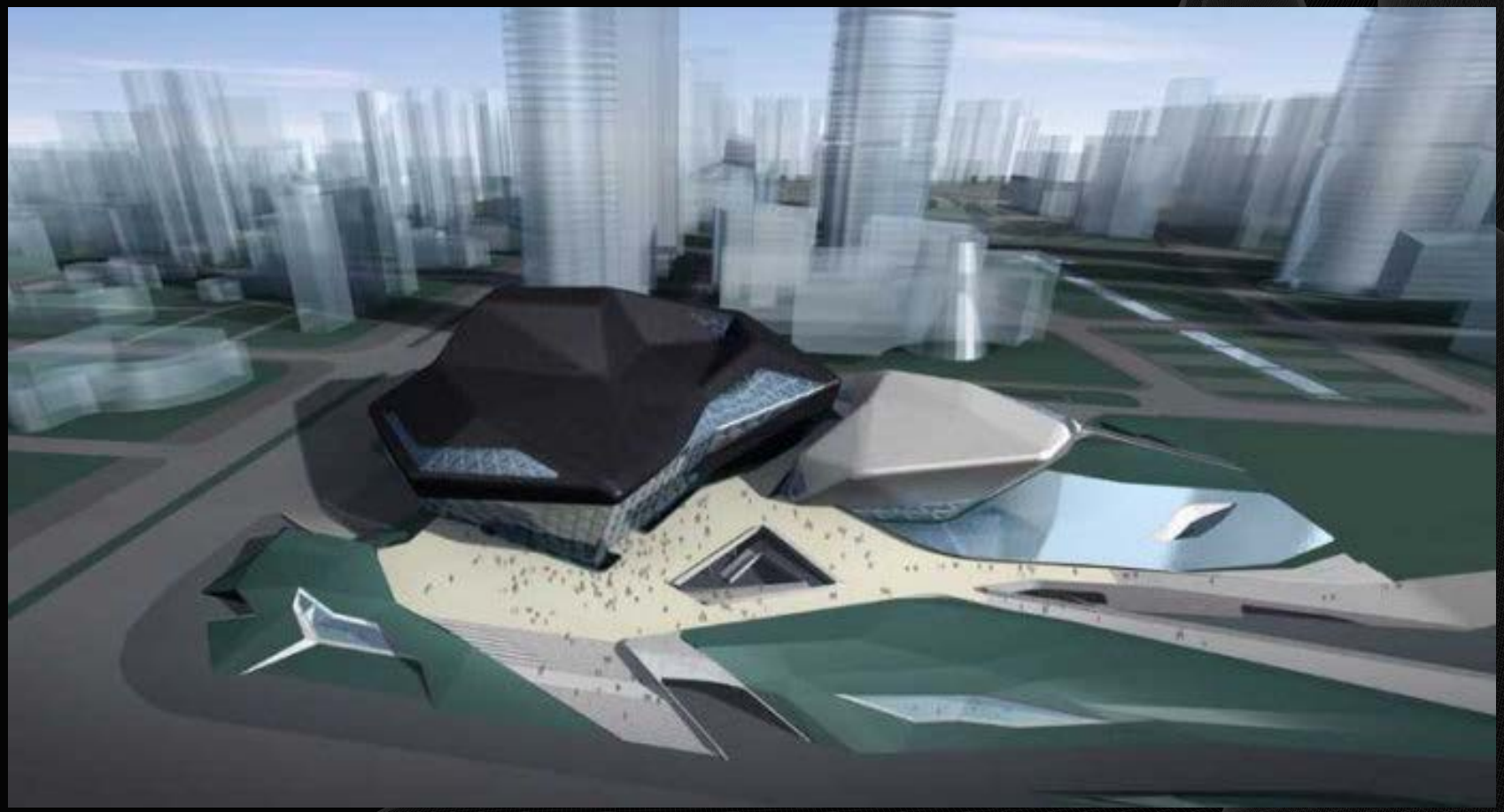

THE FUTURE IN DUBAI
edit:www.viu.cn/blog



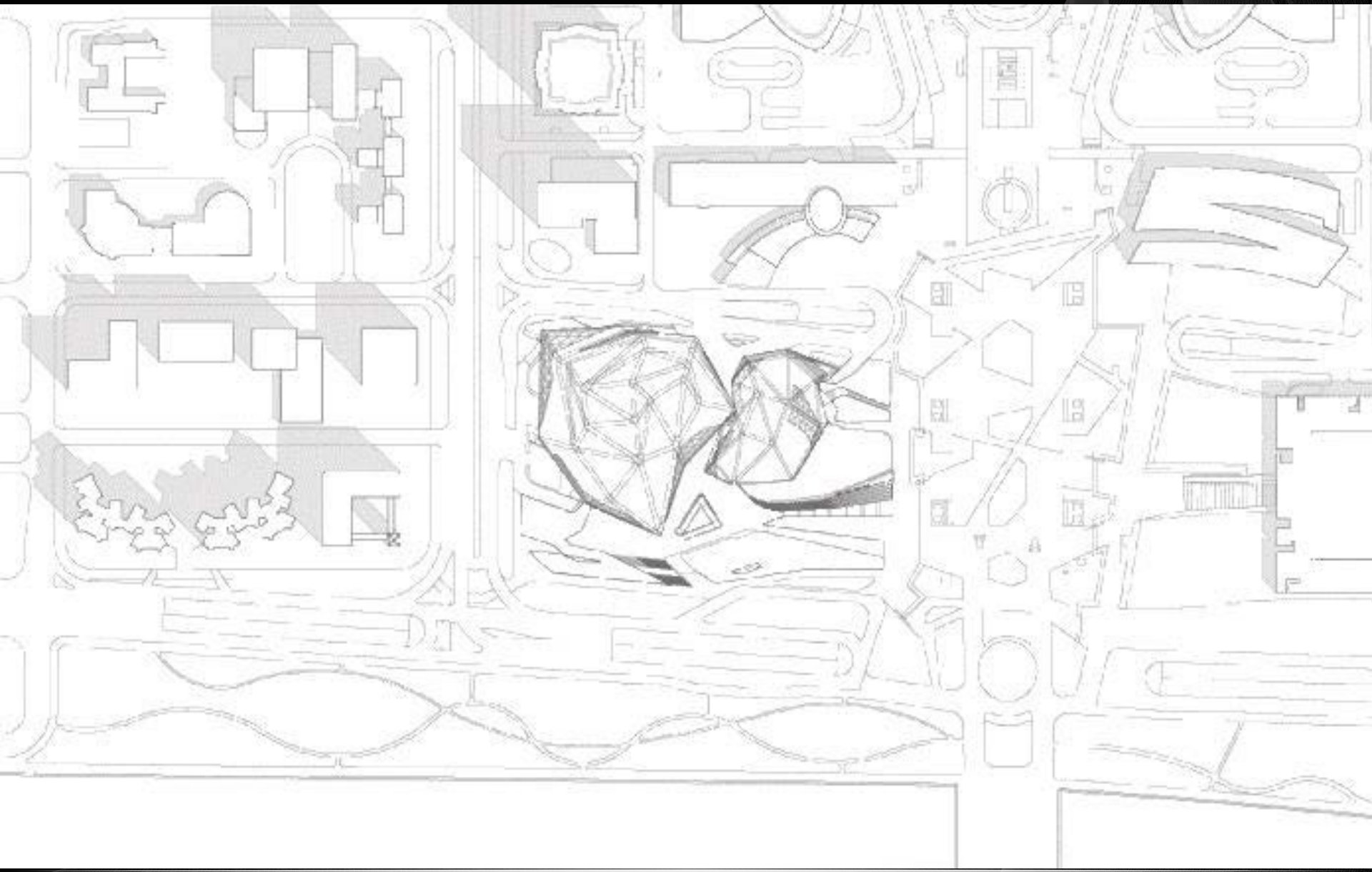
OCEAN HEIGHTS

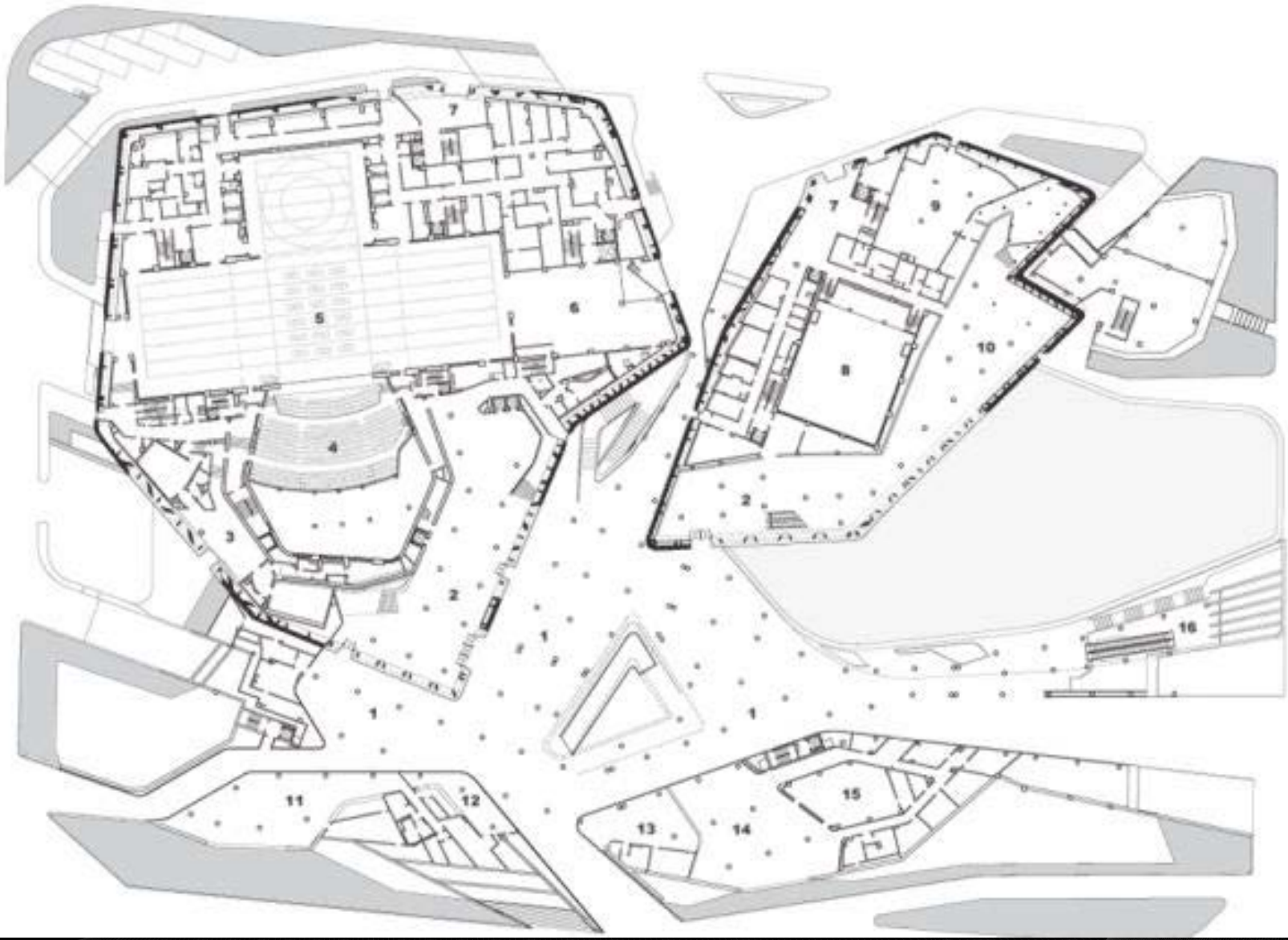
Dubai Construction Update
ImreSolt.com - 2010 ©





Zaha Hadid Guangzhou Opera House

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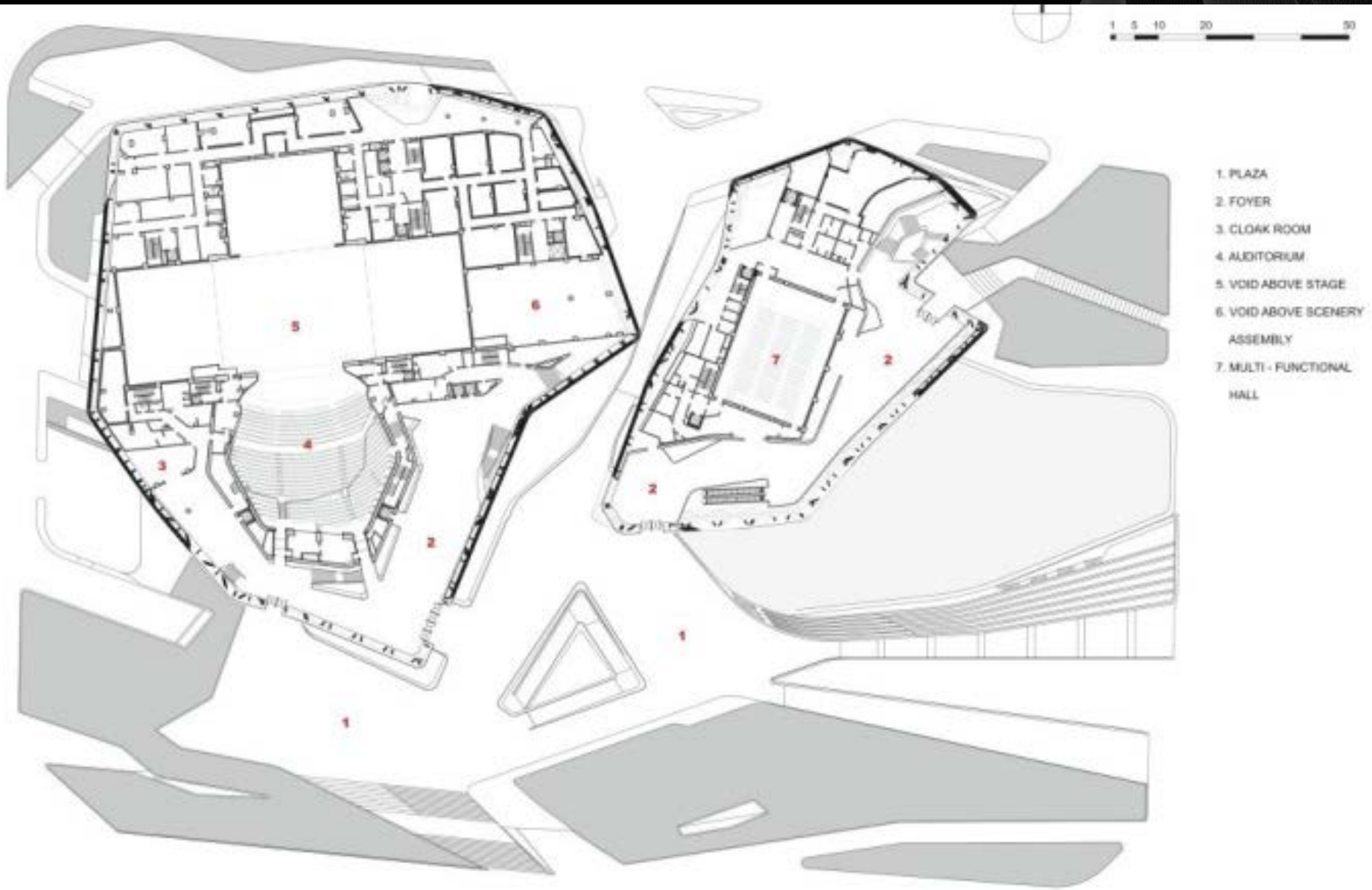
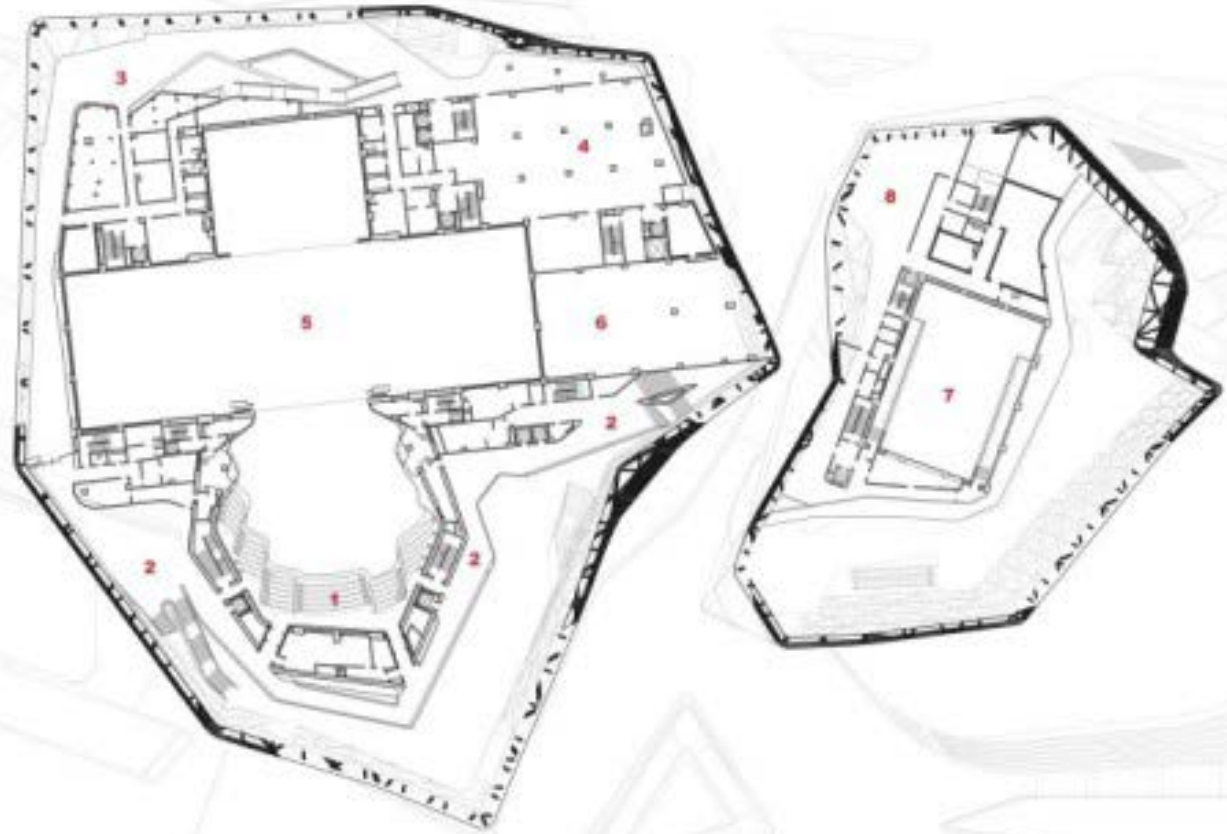
2. ENTRANCE LOBBY
3. VIP LOUNGE
4. AUDITORIUM
5. STAGE
6. SCENERY ASSEMBLY
7. STAFF ENTRANCE
8. STAGE STORAGE
9. KITCHEN
10. DINING AREA
11. CAFETERIA
12. TICKET OFFICE
13. GIFT SHOP
14. RESEARCH CENTER
15. PRESS CONFERENCE ROOM
16. UNDERGROUND ACCESS

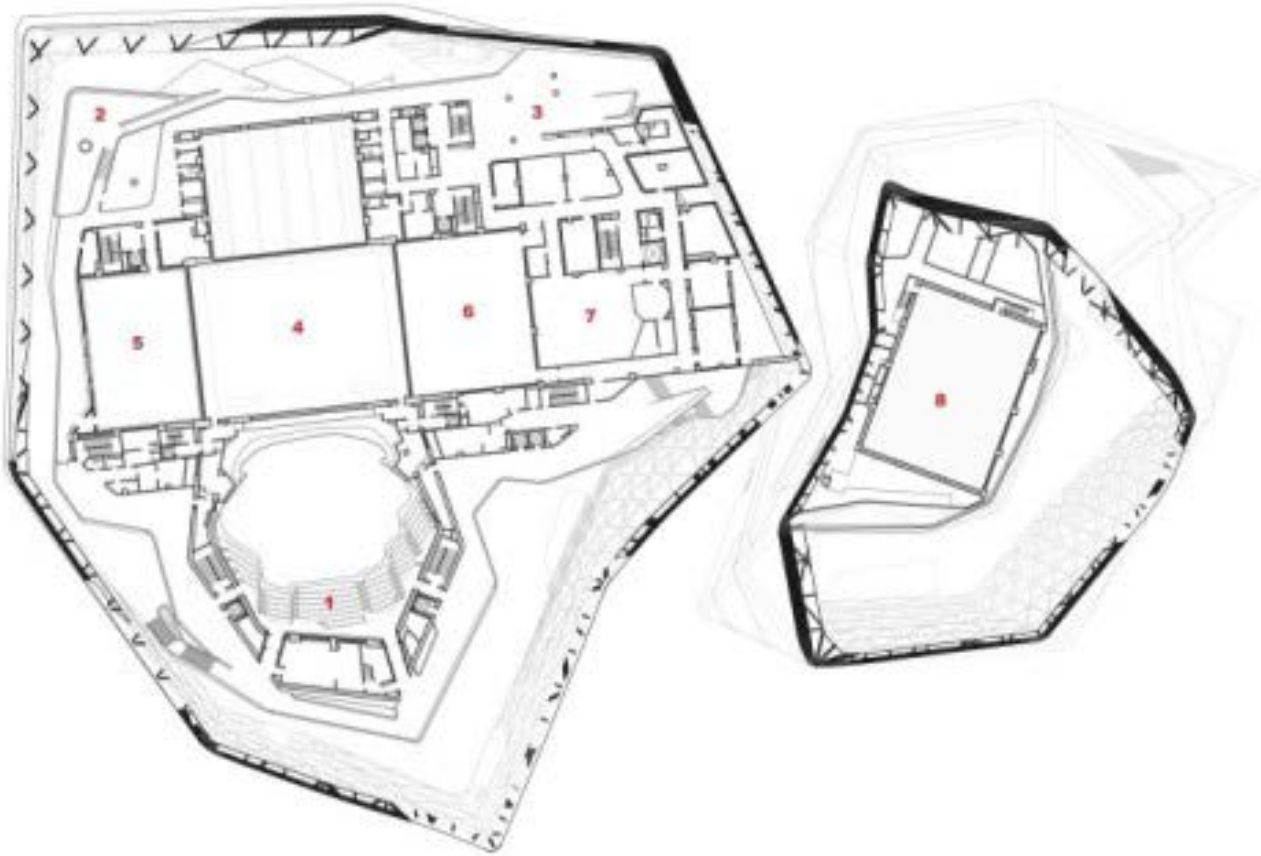

1 5 10 20 50
1. PLAZA
2. FOYER
3. CLOAK ROOM
4. AUDITORIUM
5. VOID ABOVE STAGE
6. VOID ABOVE SCENERY ASSEMBLY
7. MULTI - FUNCTIONAL HALL


GUANGZHOU OPERA HOUSE
PLAN LEVEL 11.00M
1 5 10 20 50
1. AUDITORIUM
2. REFRESHMENTS AREA
3. SKY RESTAURANT
4. KITCHEN
5. VOID ABOVE STAGE
6. VOID ABOVE SCENERY ASSEMBLY
7. VOID ABOVE MULTI-FUNCTIONAL HALL
8. OFFICES

GUANGZHOU OPERA HOUSE

PLAN LEVEL 16.00M

1 5 10 20 50

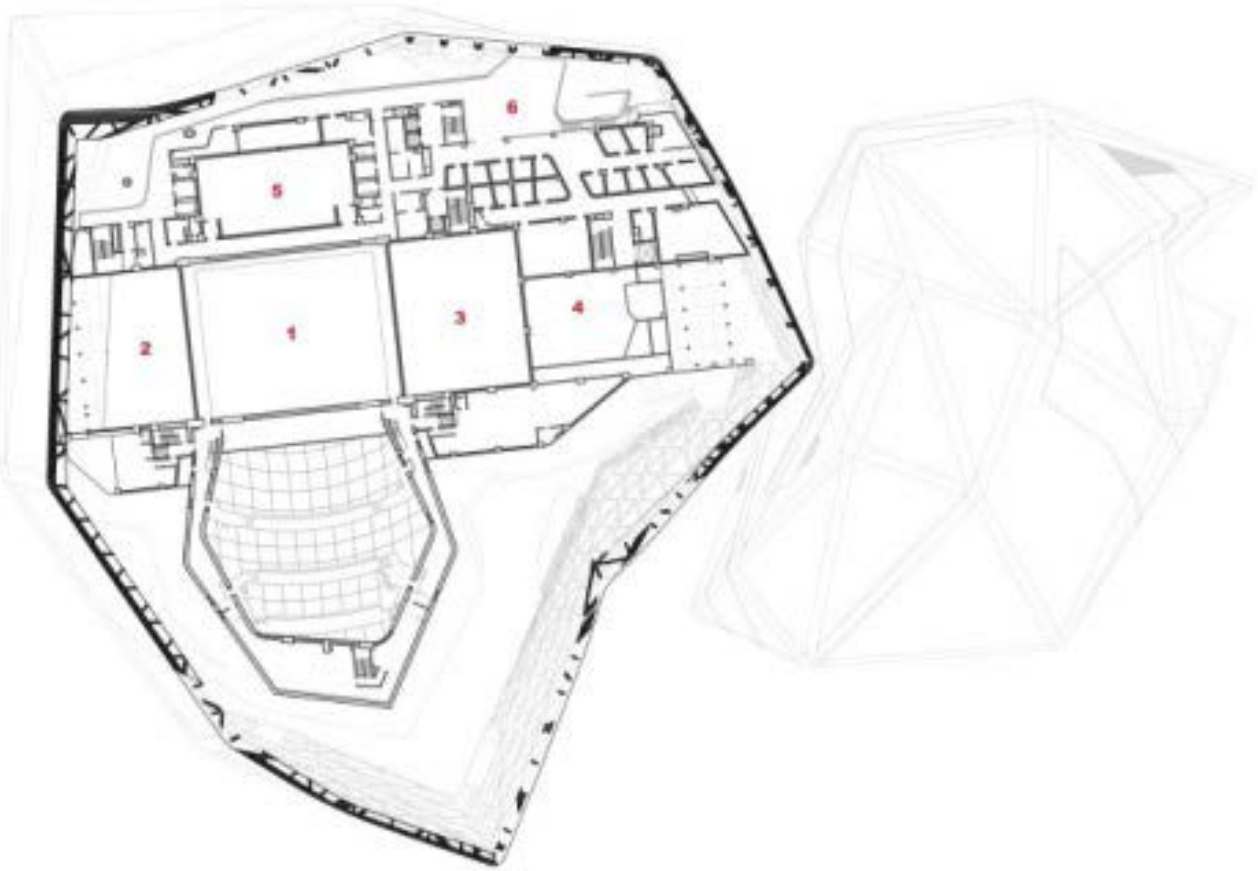


1. AUDITORIUM
2. SKY RESTAURANT
3. PERFORMER'S LOUNGE
4. VOID ABOVE STAGE
5. BALLET REHEARSAL ROOM
6. OPERATIC REHEARSAL ROOM
7. RECORDING STUDIO
8. VOID ABOVE MULTI-FUNCTIONAL HALL

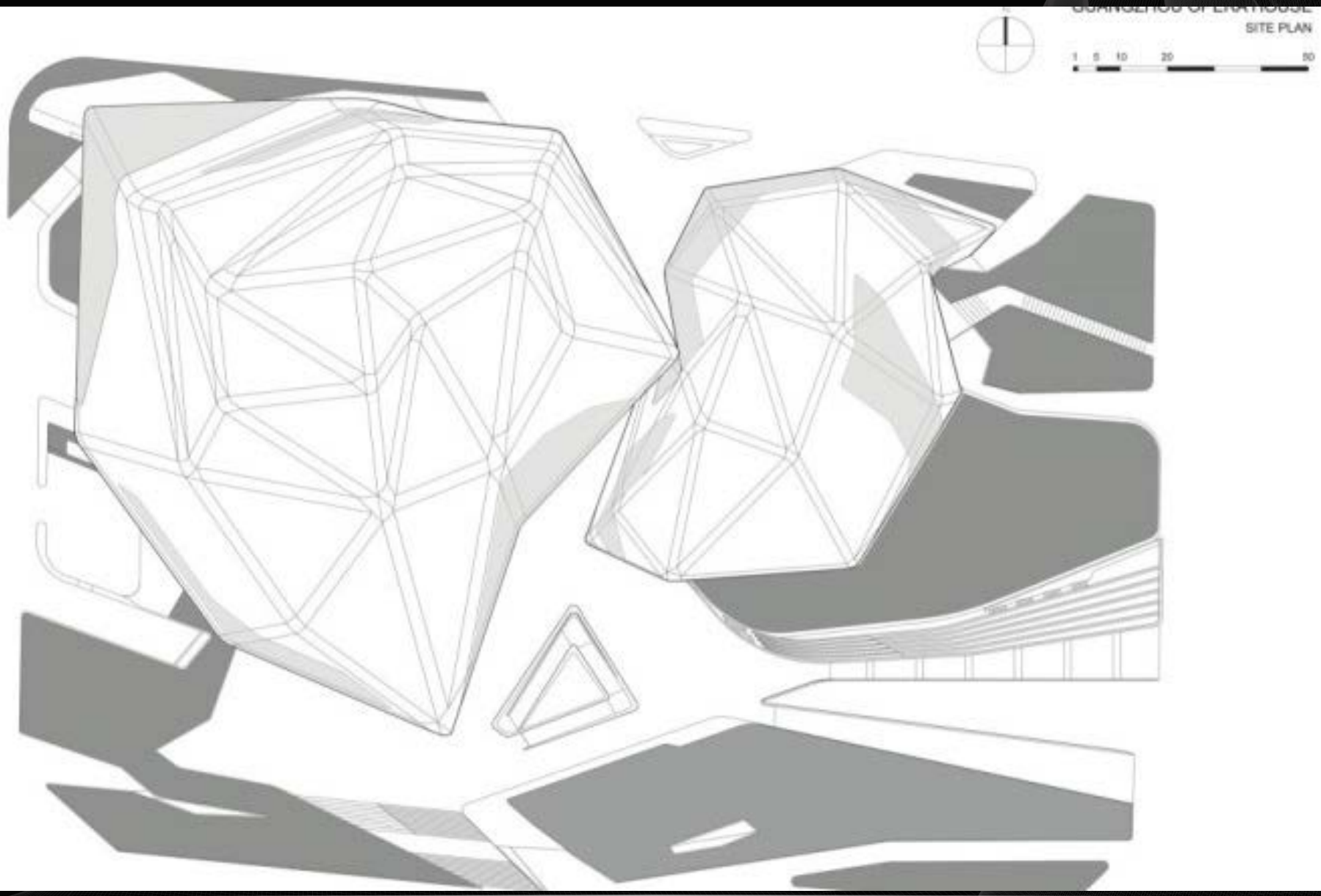
GUANGZHOU OPERA HOUSE

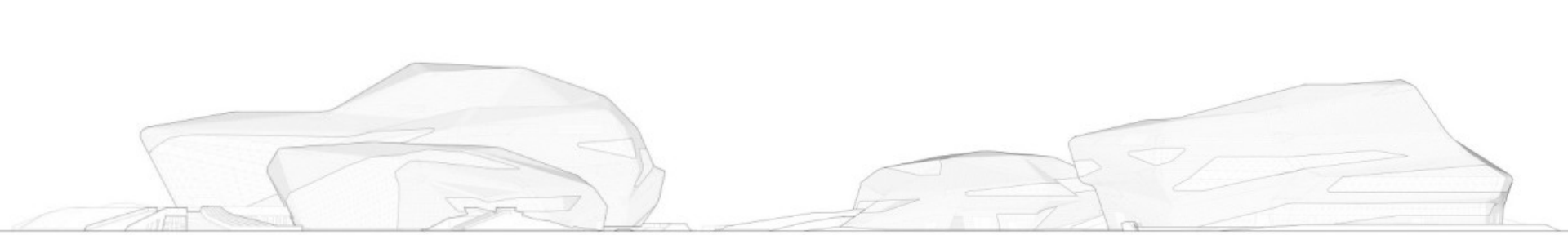
PLAN LEVEL 20.50M

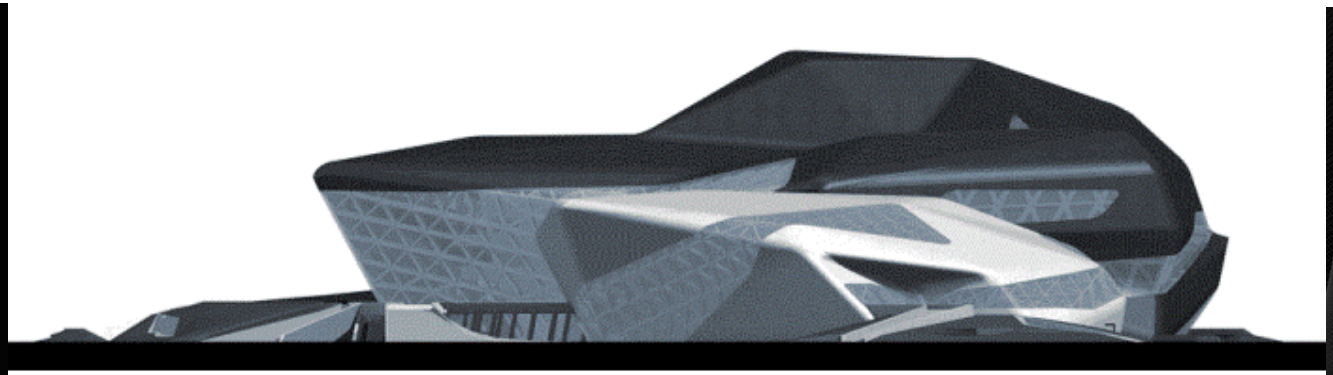
1 5 10 20 50

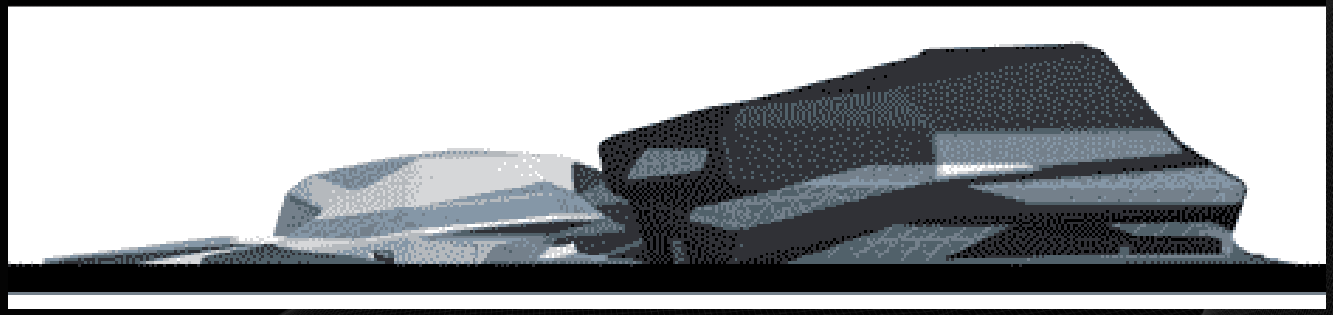


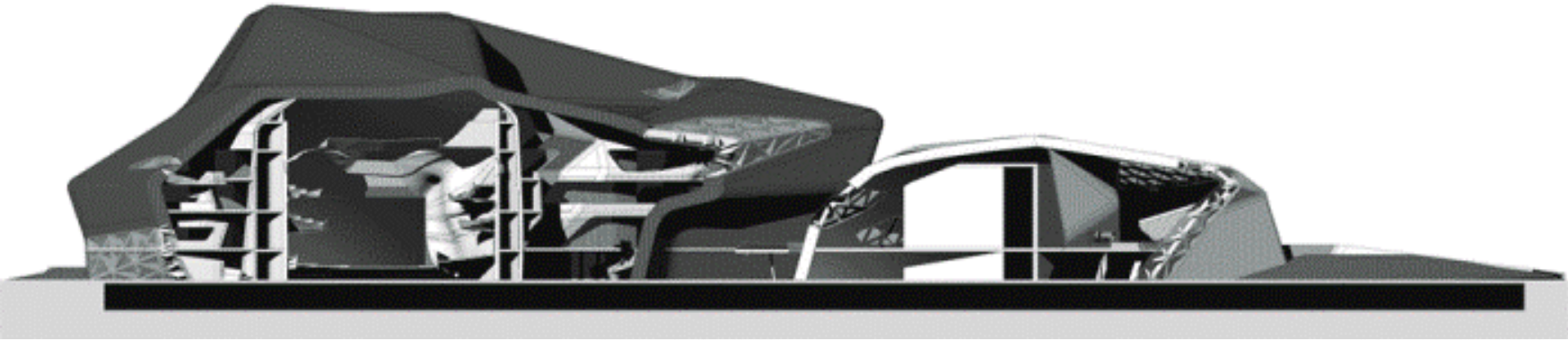
1. VOID ABOVE STAGE
2. VOID ABOVE BALLET REHEARSAL
3. VOID ABOVE OPERATIC REHEARSAL
4. VOID ABOVE RECORDING STUDIO
5. ORCHESTRA REHEARSAL ROOM
6. PERFORMERS' LOUNGE

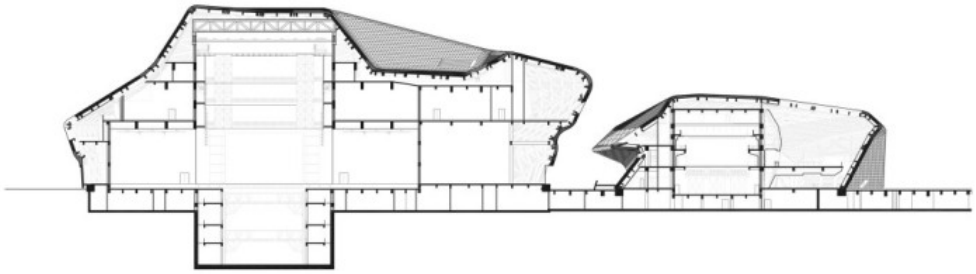

SITE PLAN
1 5 10 20 50

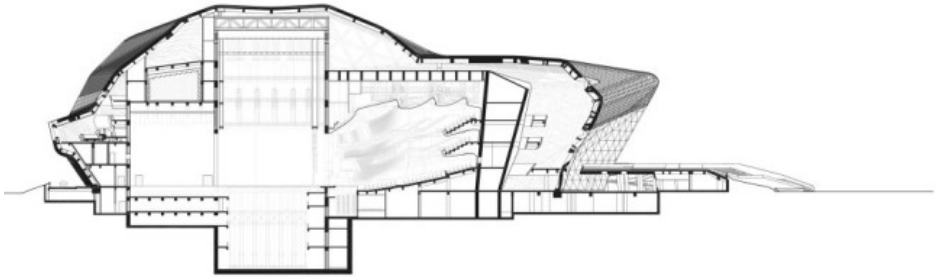


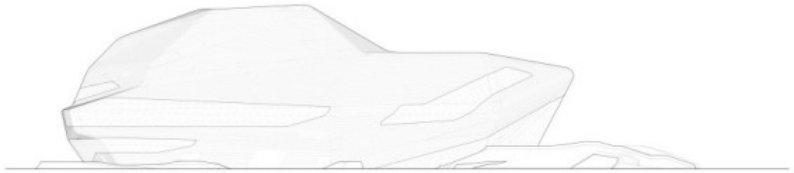


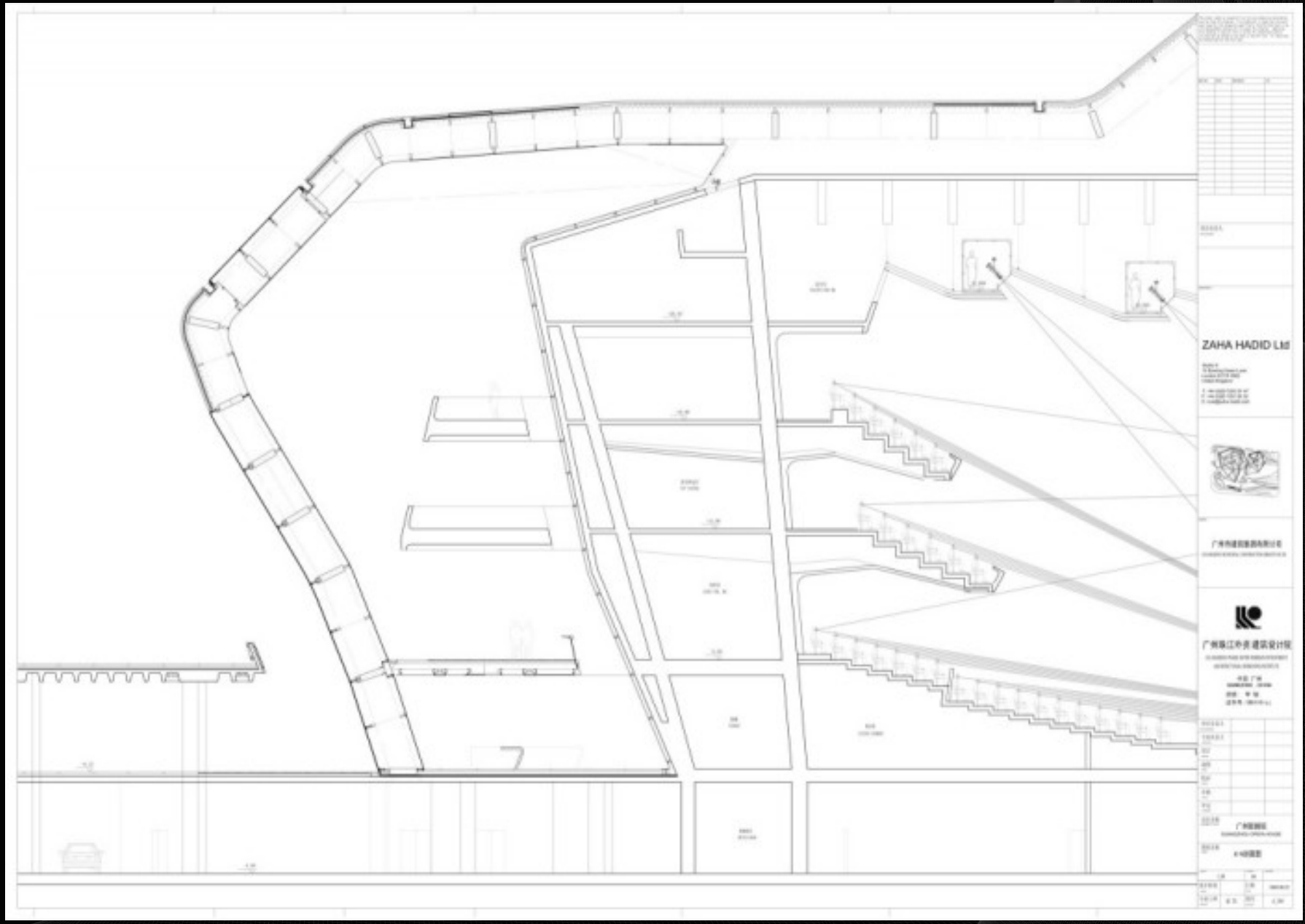






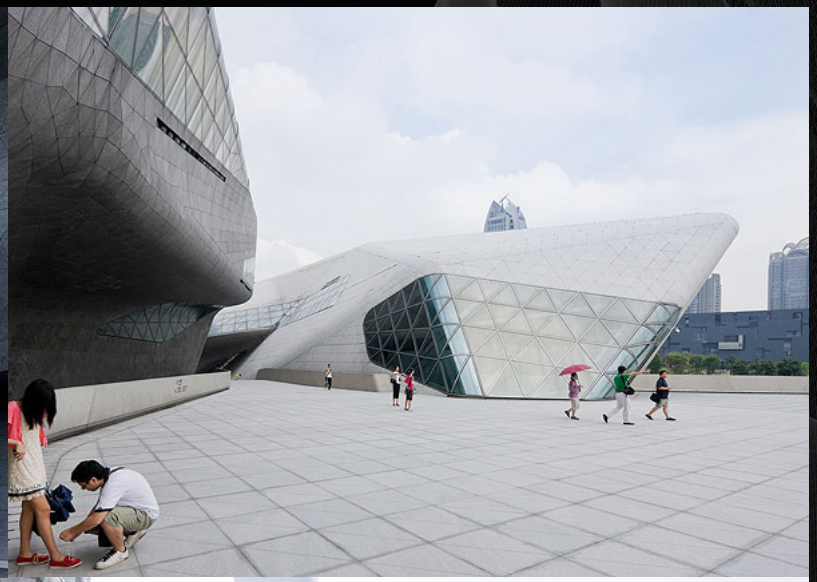


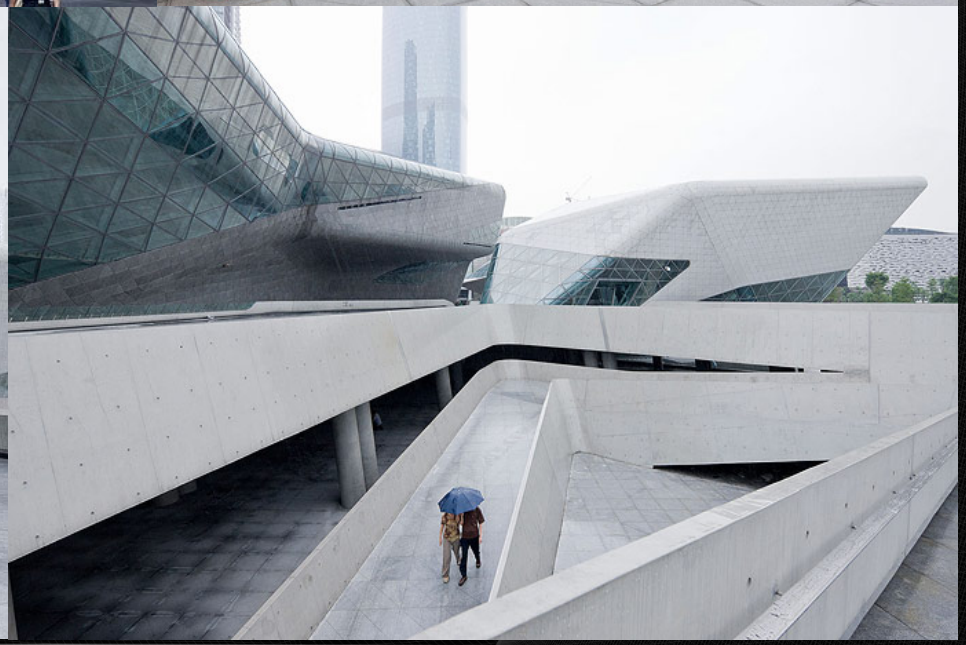



ZAHA HADID Ltd

Zaha Hadid Guangzhou Opera House

Zaha Hadid Guangzhou Opera House





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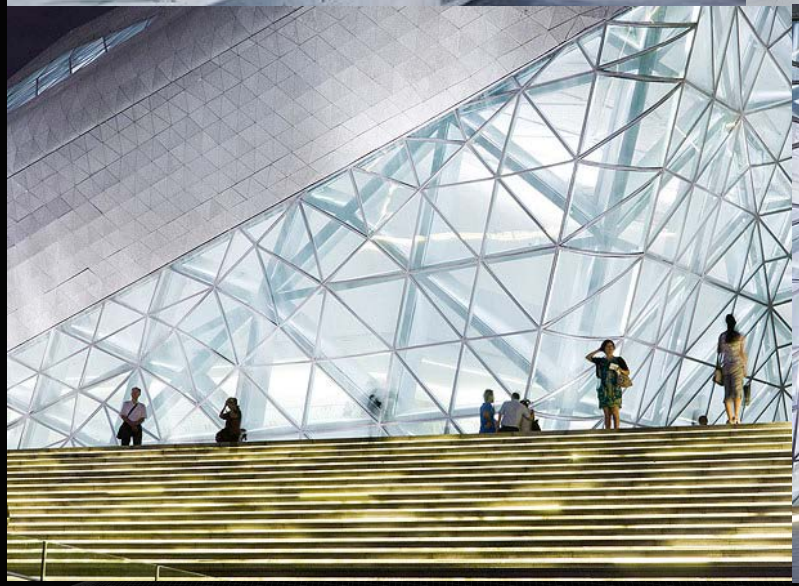
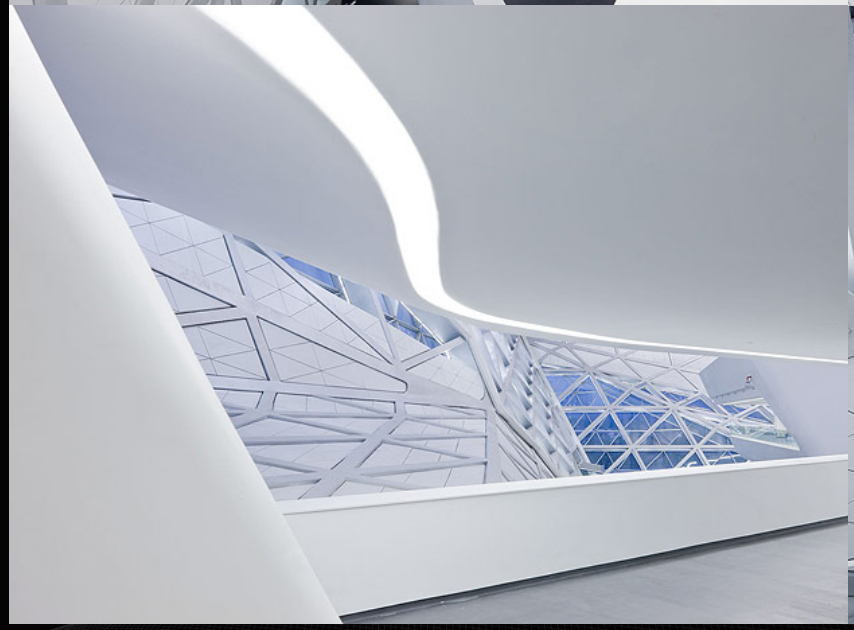
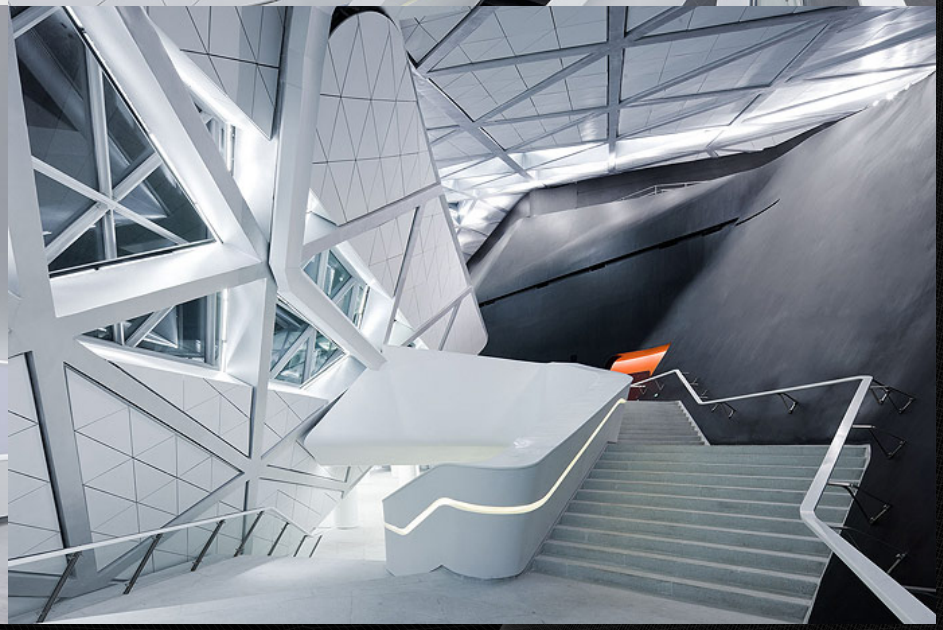


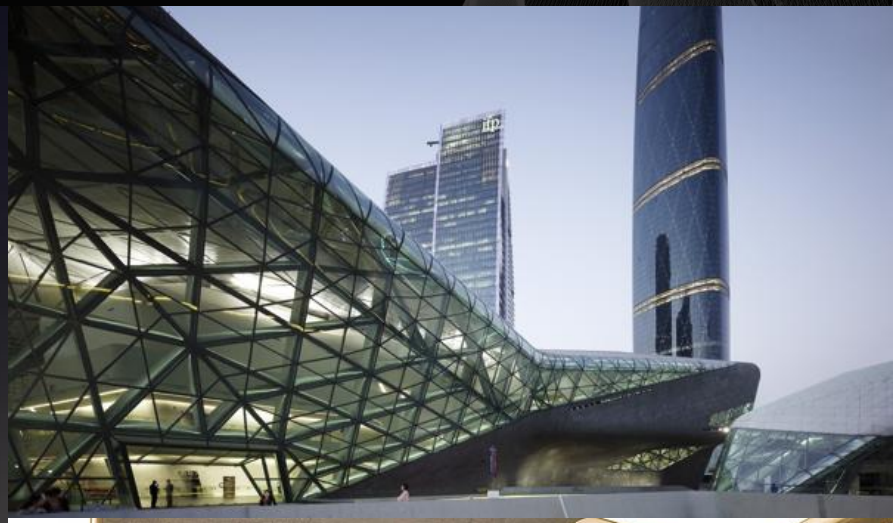
Zaha Hadid Guangzhou Opera House

Zaha Hadid Guangzhou Opera House



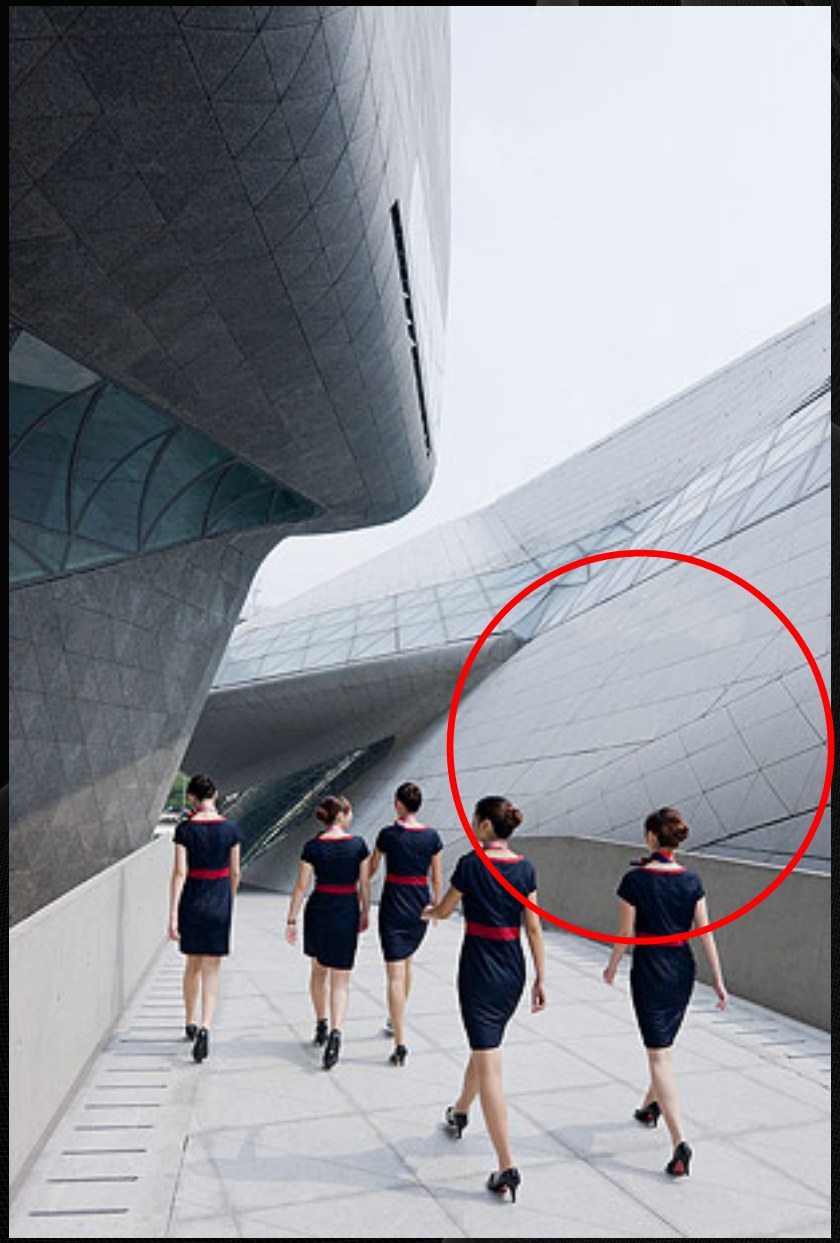


Zaha Hadid Guangzhou Opera House



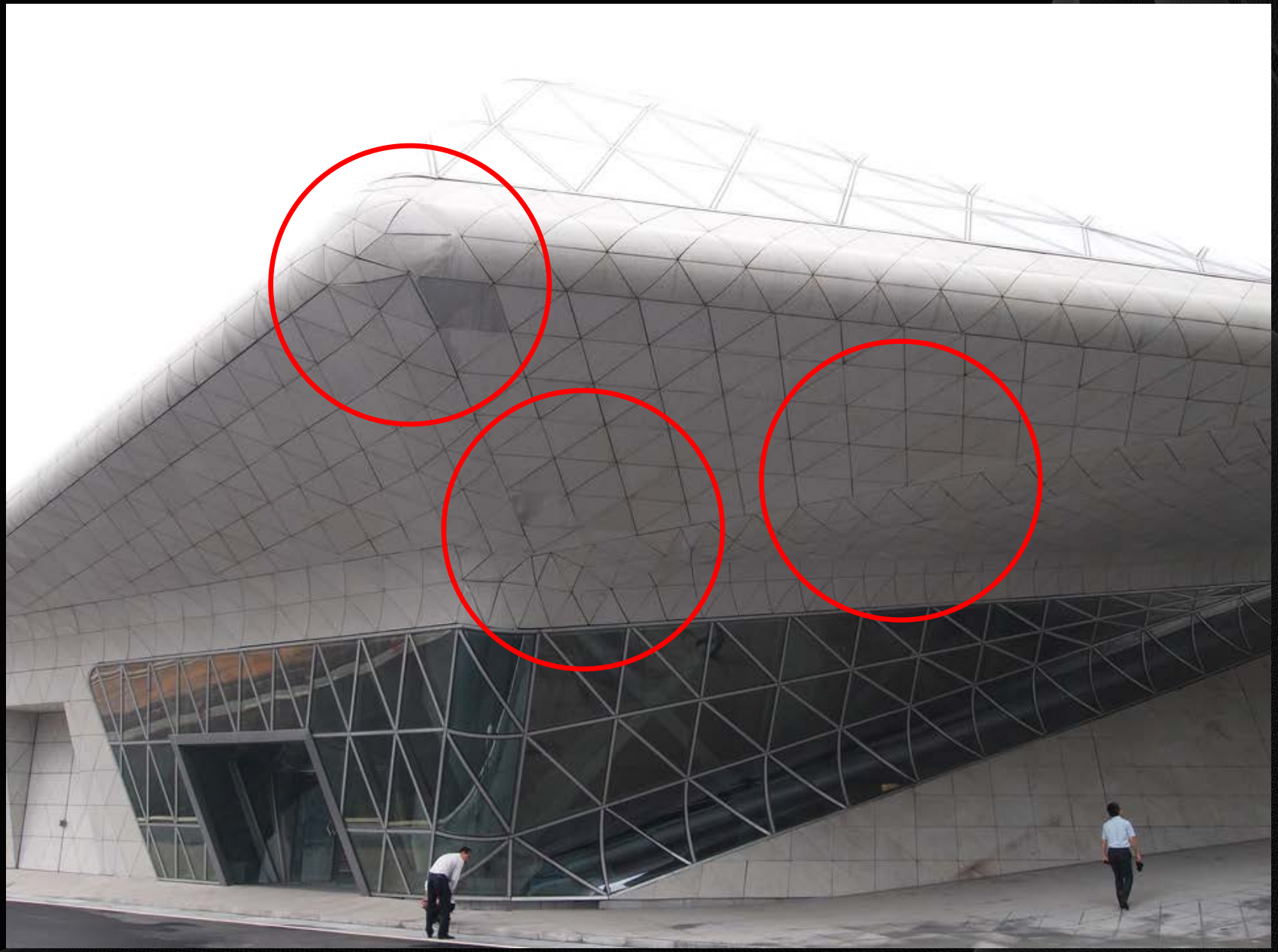
Excited? But wait…….

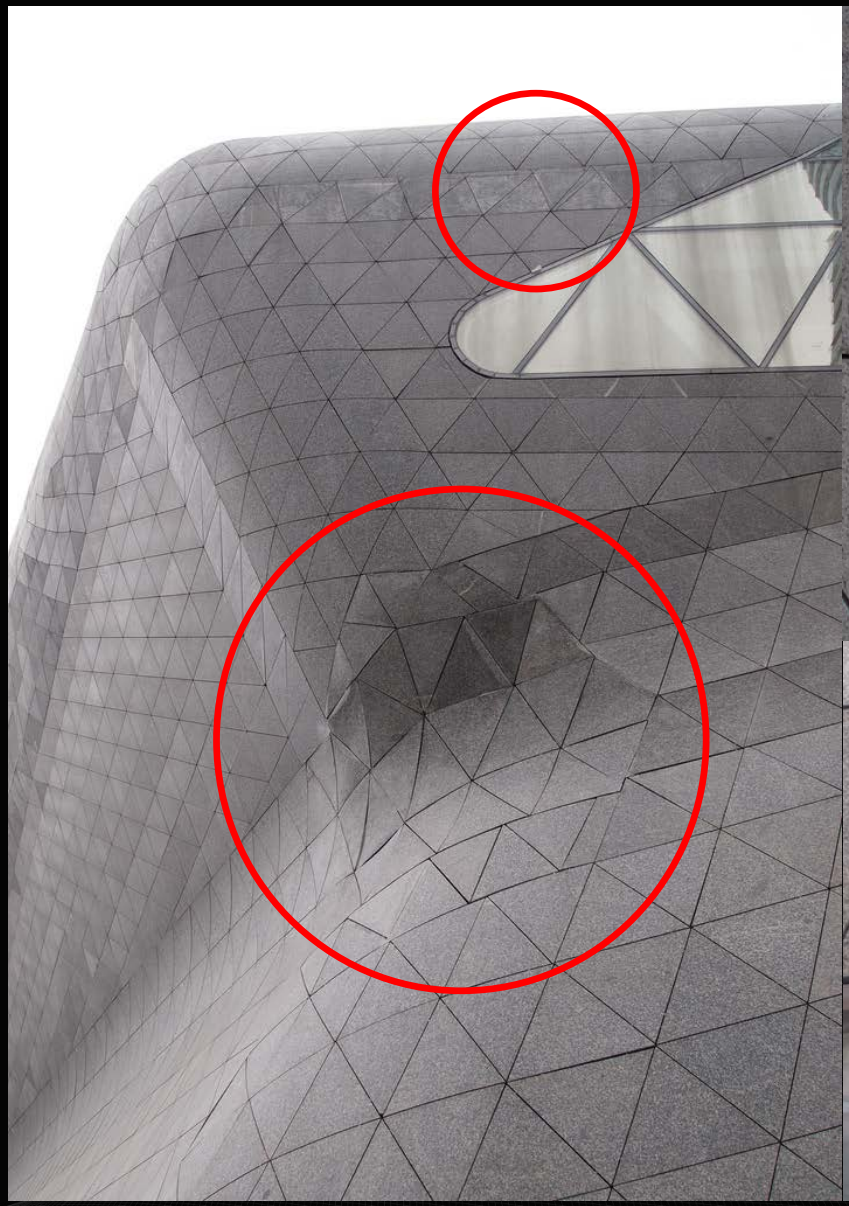
Zaha Hadid Guangzhou Opera House

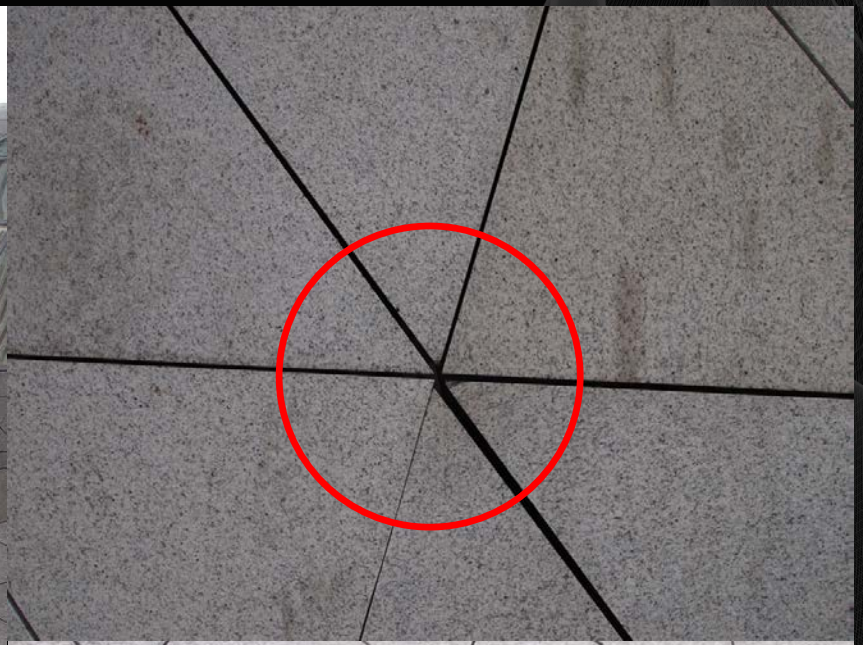


Zaha Hadid Guangzhou Opera House

International Finance Place



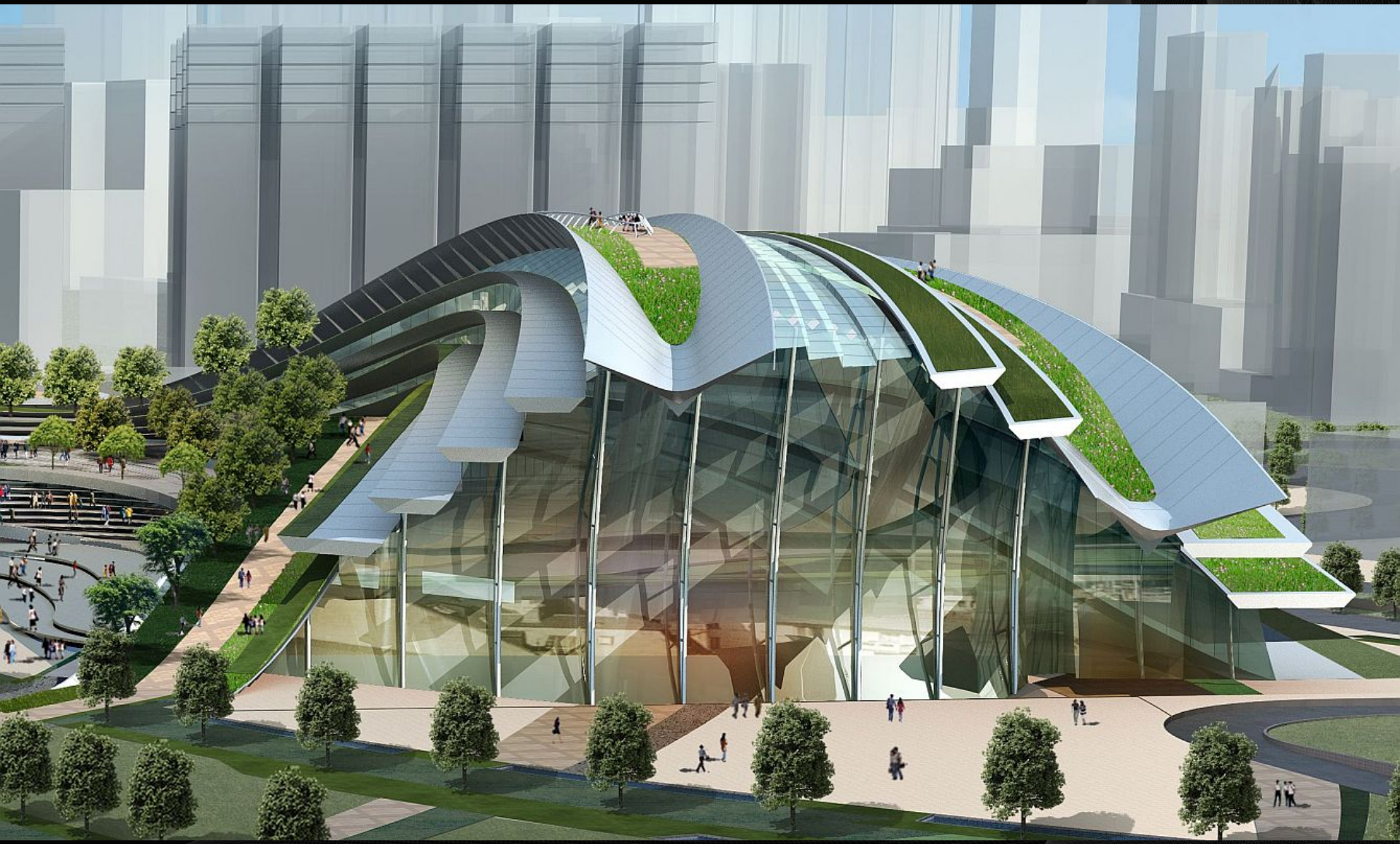


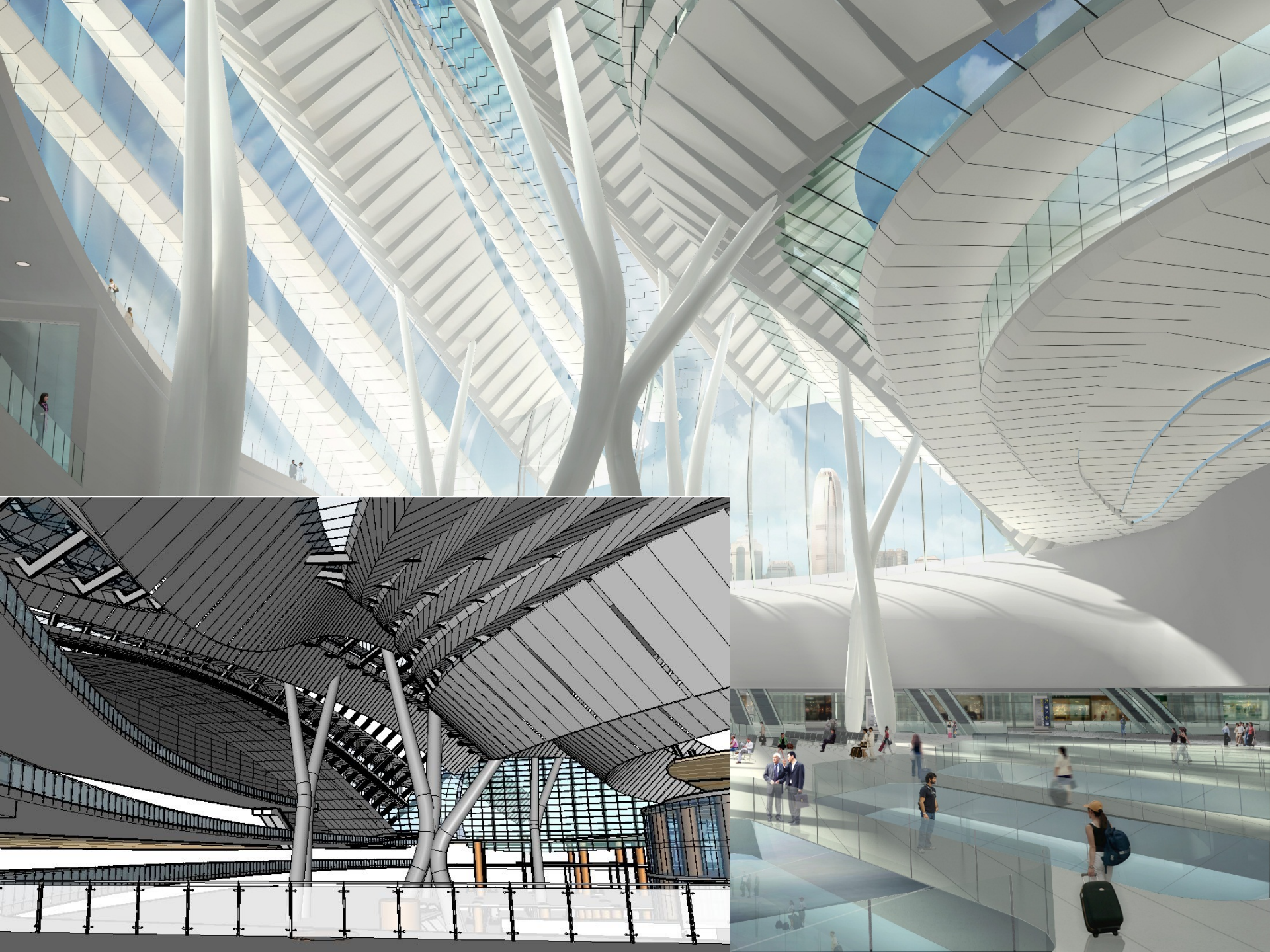


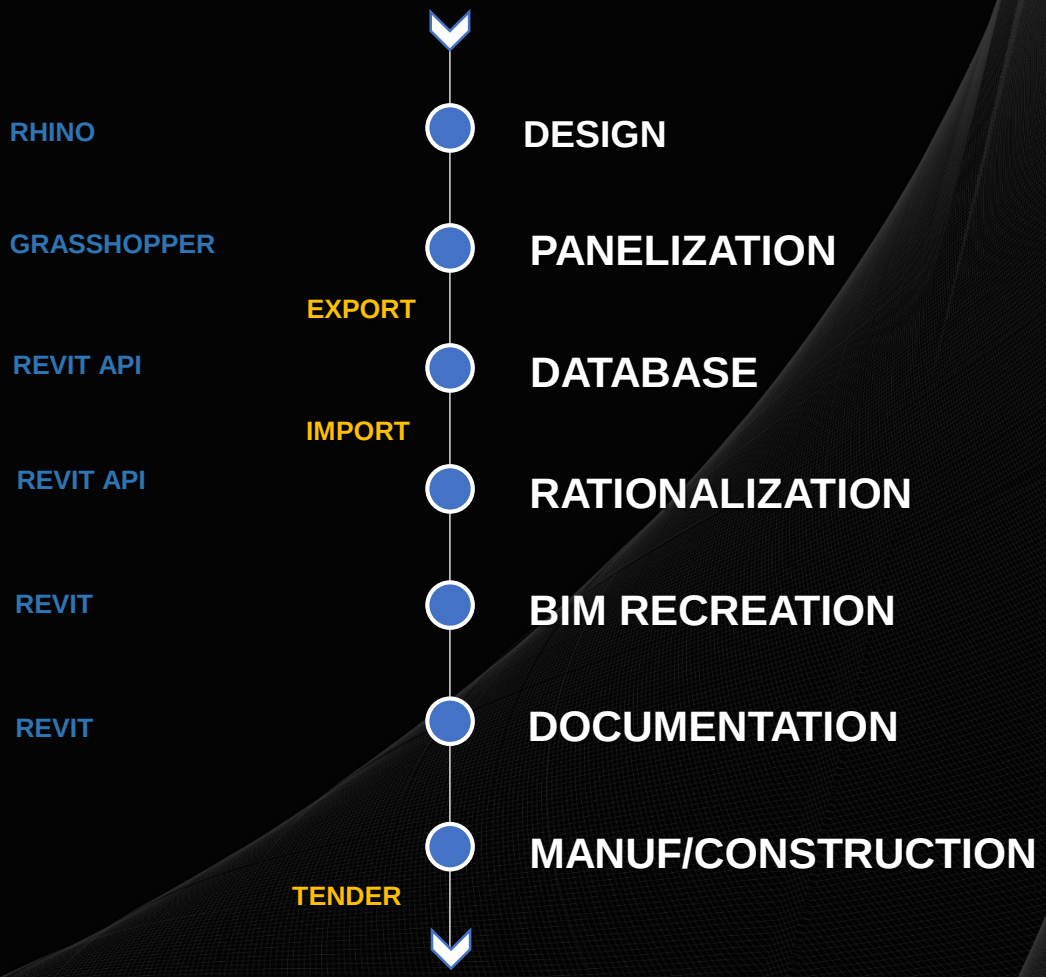
SCULPTURE vs ARCHITECTURE

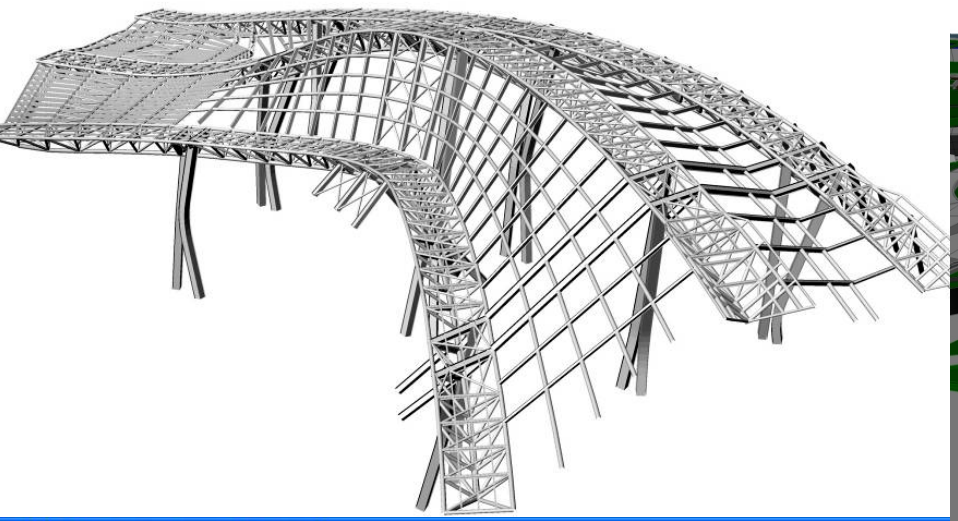
SCULPTURE	ARCHITECTURE
Purely decorative, NO accommodation	Accommodations - area, uses, clear height, travel distance constraints
Built by Sculptor (Designer)	Built by Workers (Not Designer)
Materials freedom of choice - malleable	Large size, material built up by sticks, sheets
Direct production	Drawings – form of communications
Changes as one thinks fit	Record of Changes => $ and Time

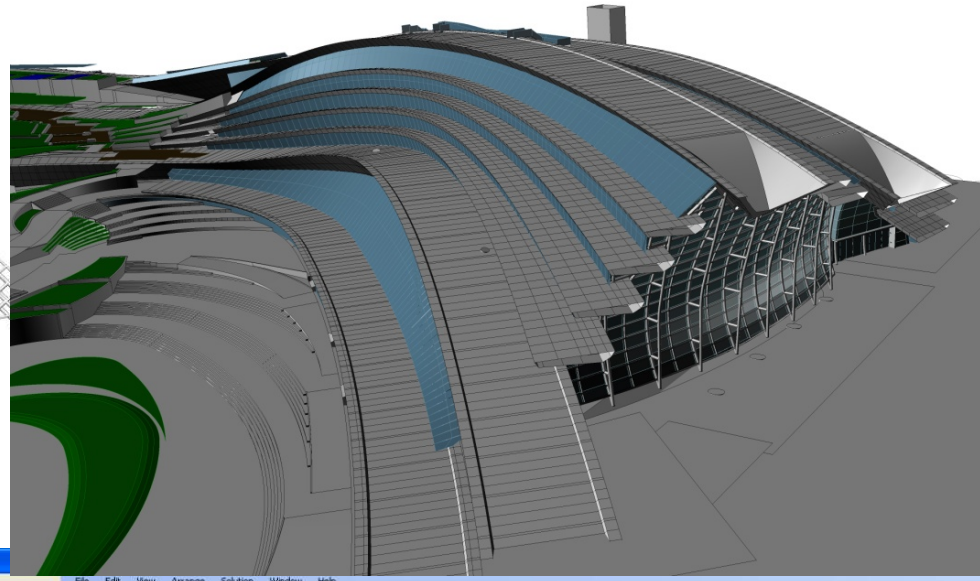
PHILIPS
SAMSUNG
MAERSK

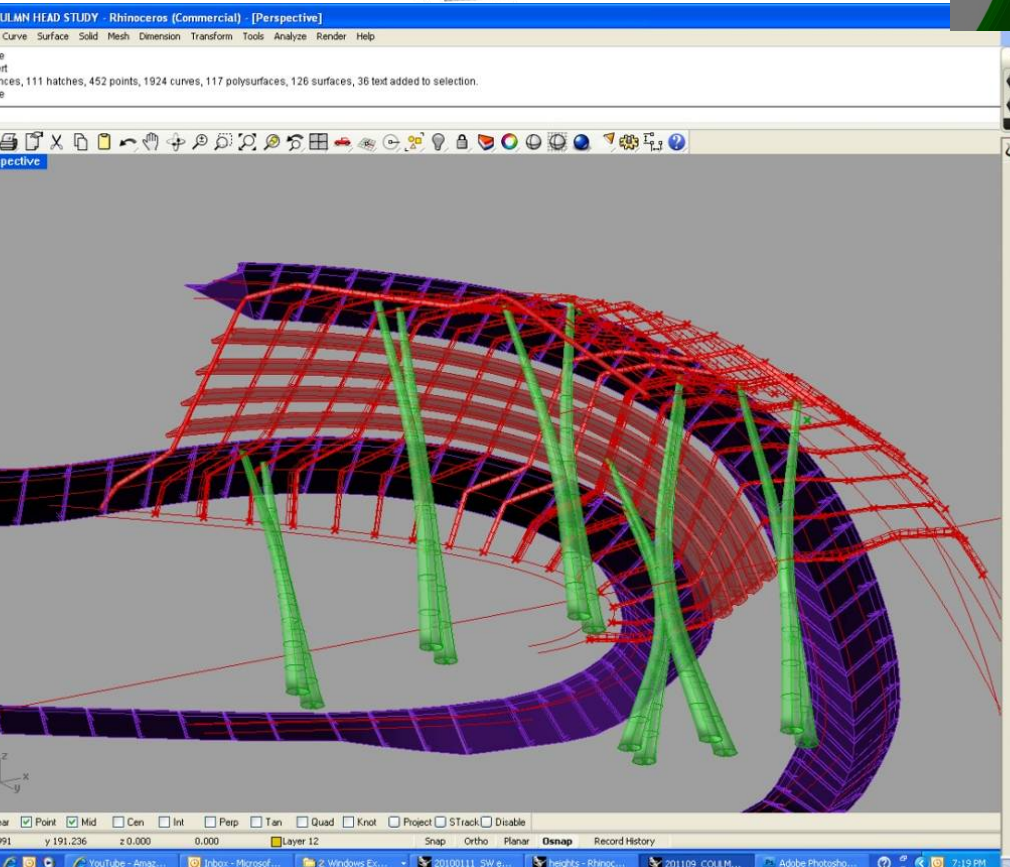


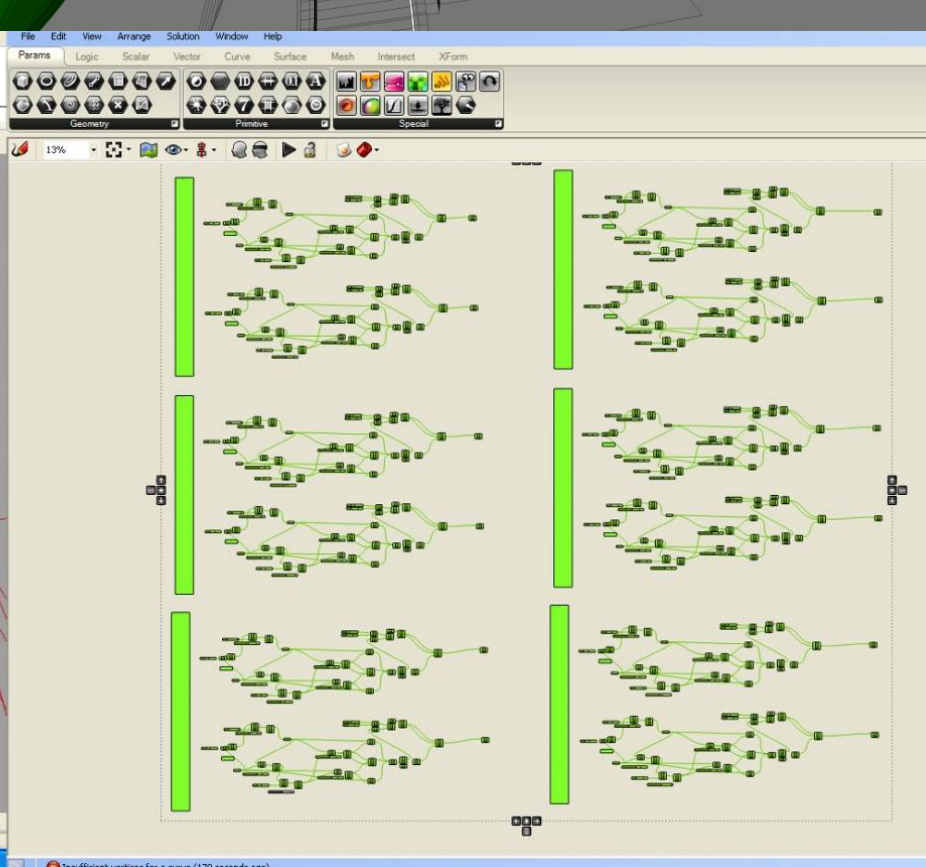


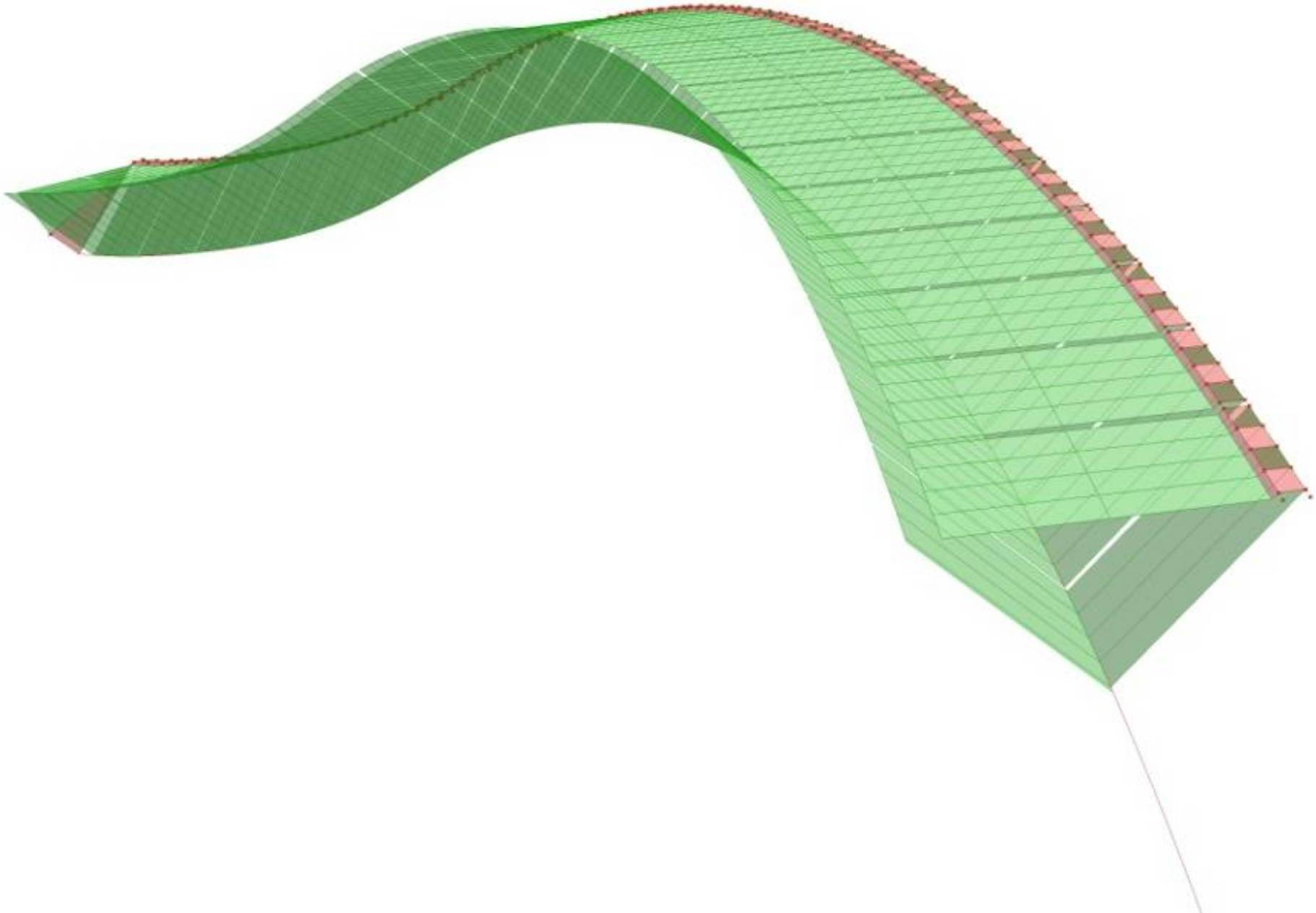

RHINO
DESIGN
GRASSHOPPER
PANELIZATION
EXPORT
REVIT API
DATABASE
IMPORT
REVIT API
RATIONALIZATION
REVIT
BIM RECREATION
REVIT
DOCUMENTATION
MANUF/CONSTRUCTION
TENDER

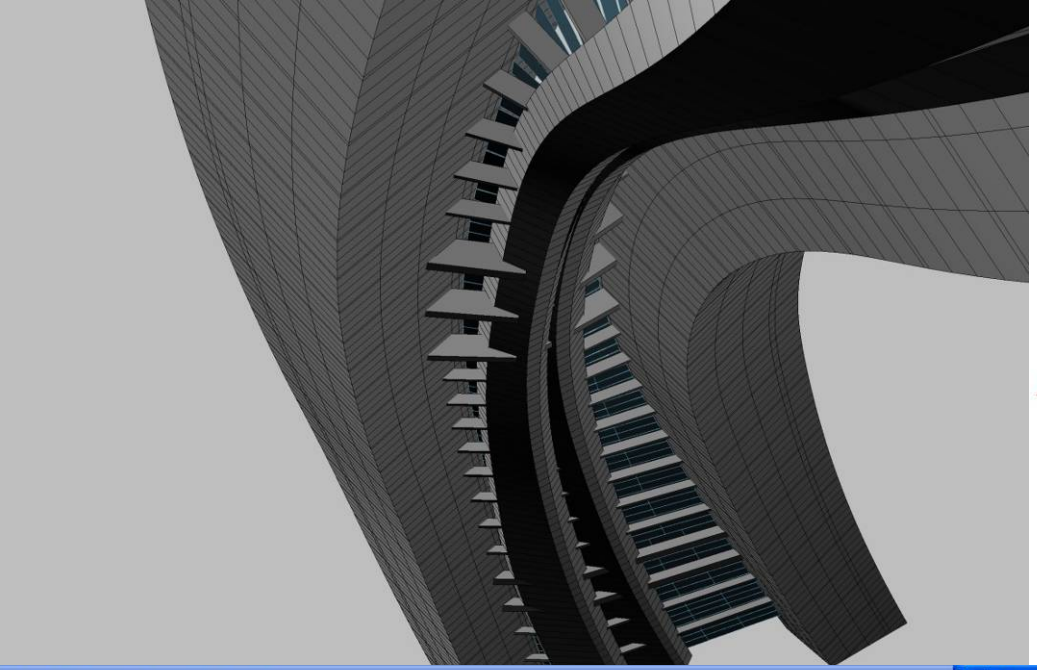


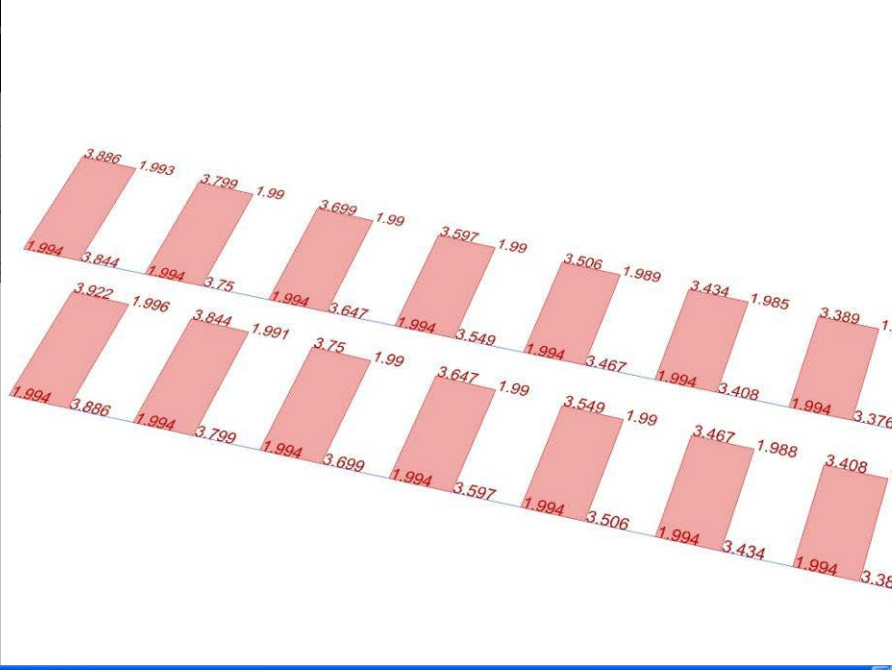



ULMN HEAD STUDY - Rhinoceros (Commercial) - [Perspective]
Curve Surface Solid Mesh Dimension Transform Tools Analyze Render Help
nces, 111 hatches, 452 points, 1924 curves, 117 polysurfaces, 126 surfaces, 36 text added to selection.
pective
Point Mid Cen Int Perp Tan Quad Knot Project STrack Disable
y 191.236 z 0.000 0.000 Layer 12 Snap Ortho Planar Osnap Record History


File Edit View Arrange Solution Window Help
Params Logic Scalar Vector Curve Surface Mesh Intersect XForm
Geometry Primitive Special
13%



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1.994 3.844 1.994 3.75 1.994 3.647 1.994 3.549 1.994 3.467 1.994 3.408 1.994 3.376
3.922 1.996 3.844 1.991 3.75 1.99 3.647 1.99 3.549 1.99 3.467 1.988 3.408
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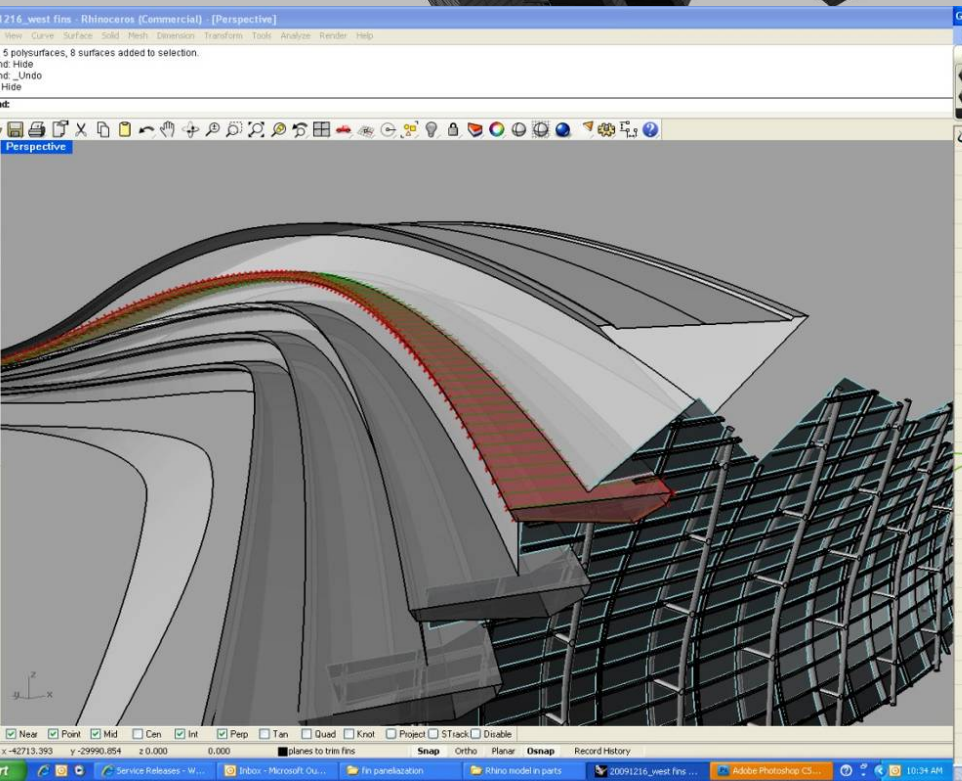
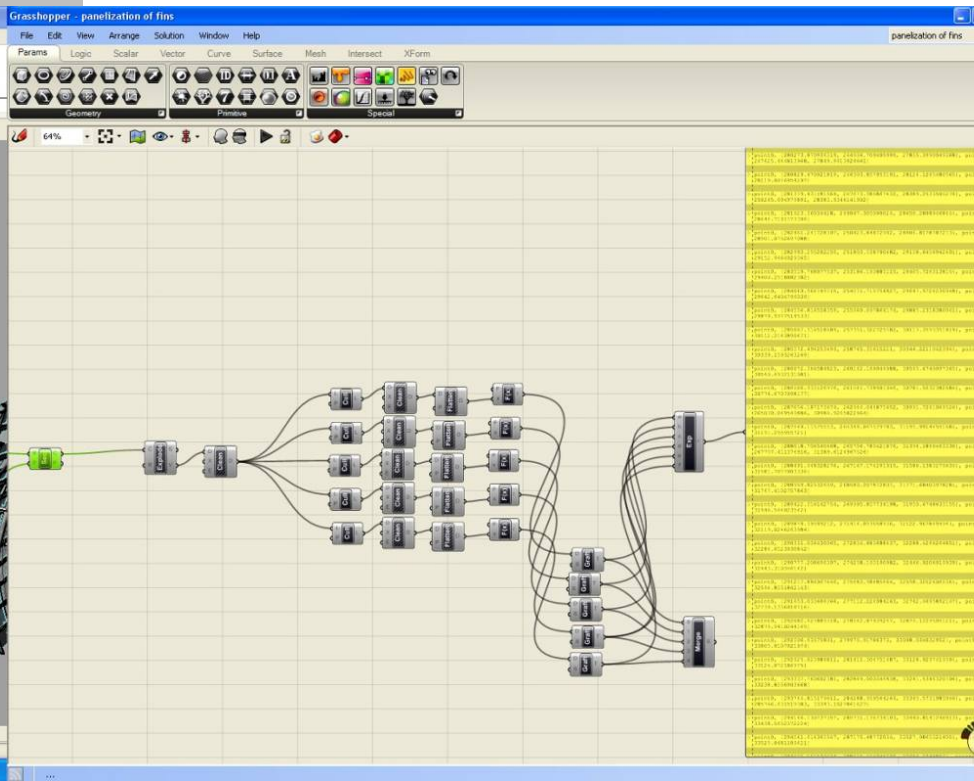
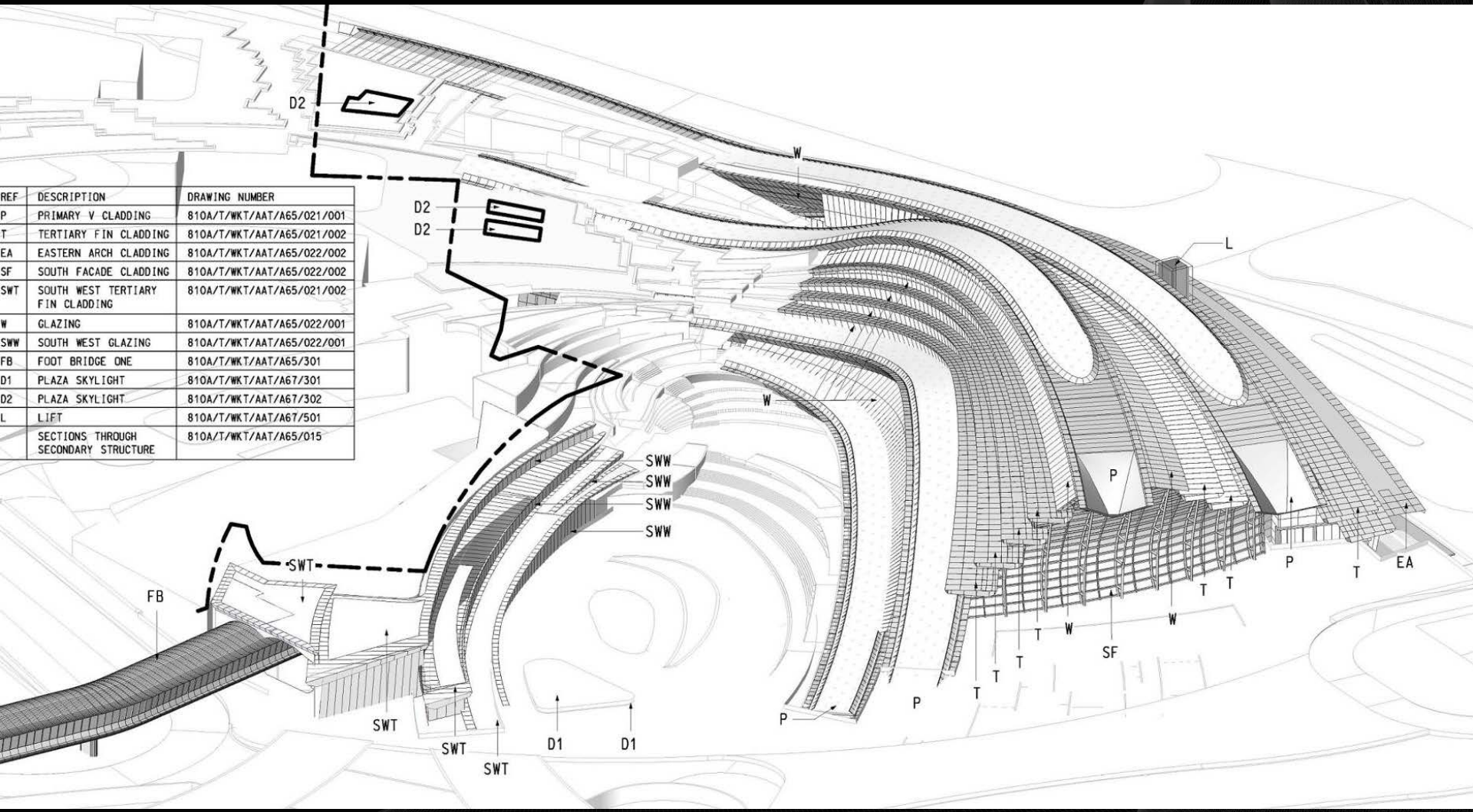
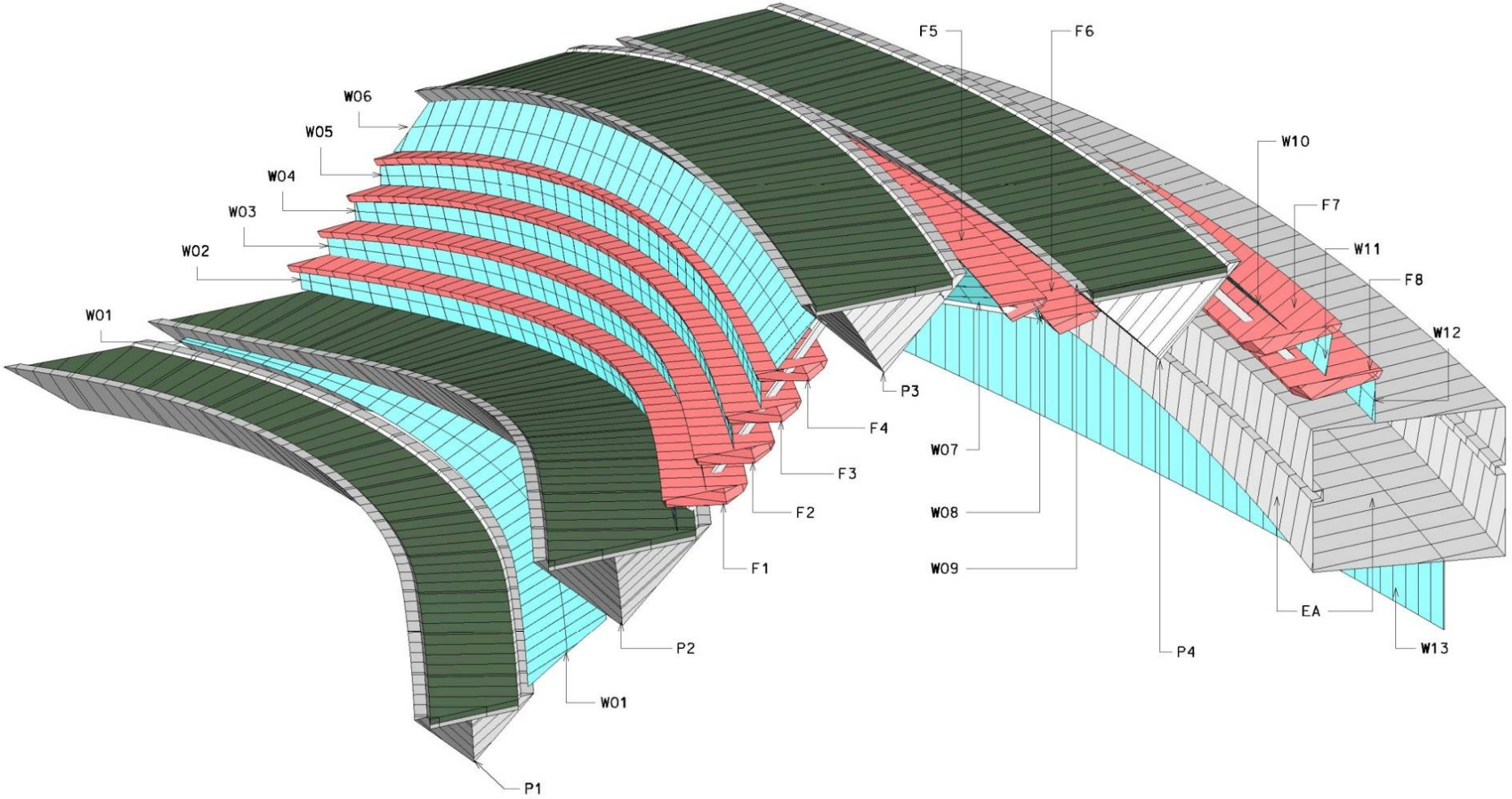
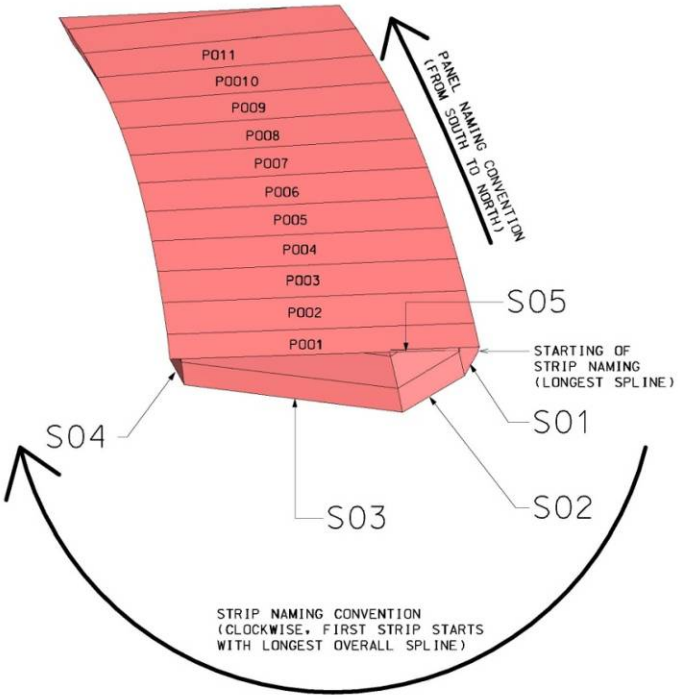

1216_west fins - Rhinoceros (Commercial) - [Perspective]
5 polysurfaces, 8 surfaces added to selection.
Perspective


Grasshopper - panelization of fins
Params
Geometry
Primitive
Special

REF	DESCRIPTION	DRAWING NUMBER
P	PRIMARY V CLADDING	810A/T/WKT/AAT/A65/021/001
T	TERTIARY FIN CLADDING	810A/T/WKT/AAT/A65/021/002
EA	EASTERN ARCH CLADDING	810A/T/WKT/AAT/A65/022/002
SF	SOUTH FACADE CLADDING	810A/T/WKT/AAT/A65/022/002
SWT	SOUTH WEST TERTIARY FIN CLADDING	810A/T/WKT/AAT/A65/021/002
W	GLAZING	810A/T/WKT/AAT/A65/022/001
SWW	SOUTH WEST GLAZING	810A/T/WKT/AAT/A65/022/001
FB	FOOT BRIDGE ONE	810A/T/WKT/AAT/A65/301
D1	PLAZA SKYLIGHT	810A/T/WKT/AAT/A67/301
D2	PLAZA SKYLIGHT	810A/T/WKT/AAT/A67/302
L	LIFT	810A/T/WKT/AAT/A67/501
	SECTIONS THROUGH SECONDARY STRUCTURE	810A/T/WKT/AAT/A65/015

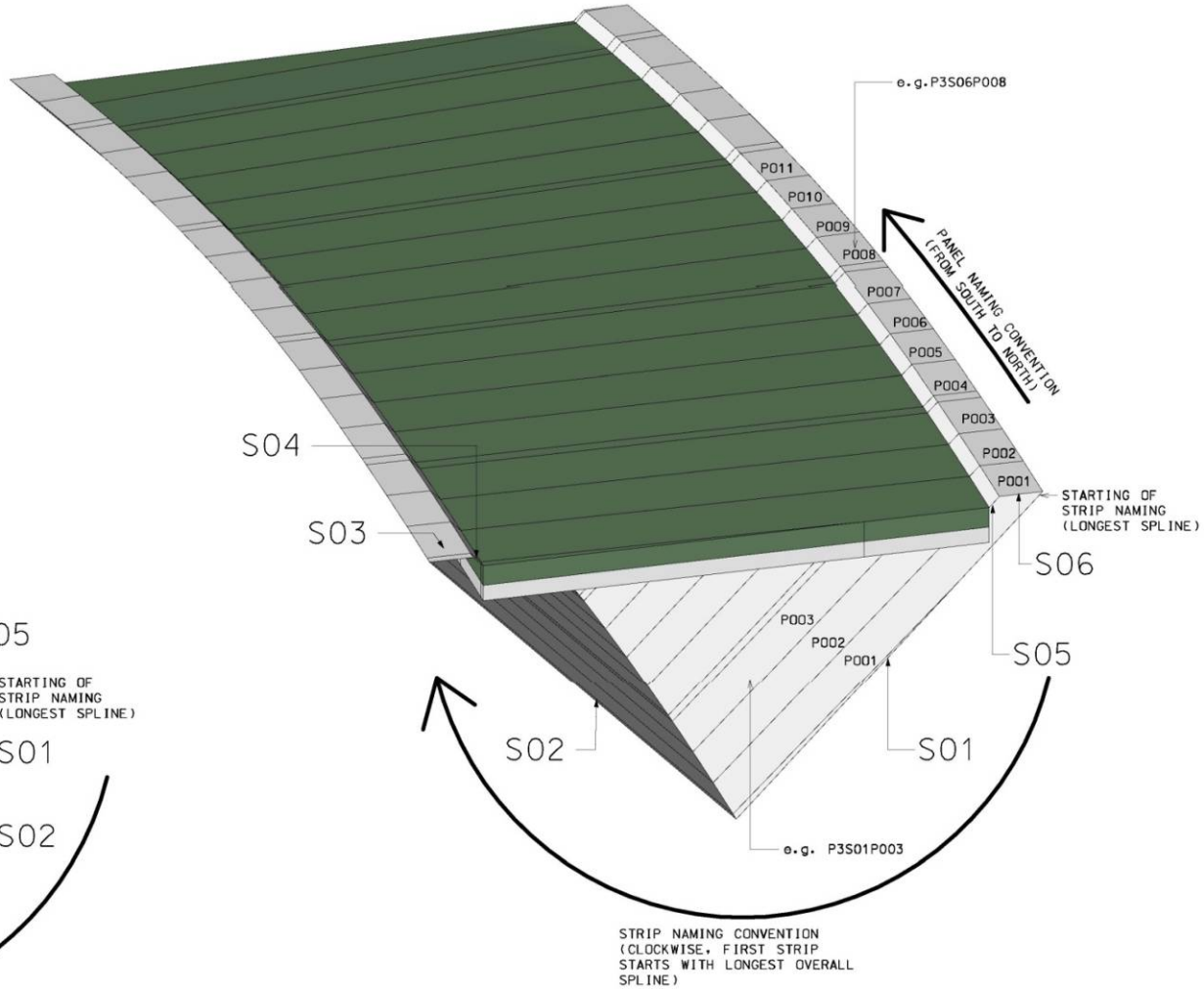



F5
F6
W06
W05
W04
W03
W02
W01
W10
F7
W11
F8
W12
P3
F4
F3
F2
F1
W07
W08
W09
P2
W01
P1
P4
EA
W13



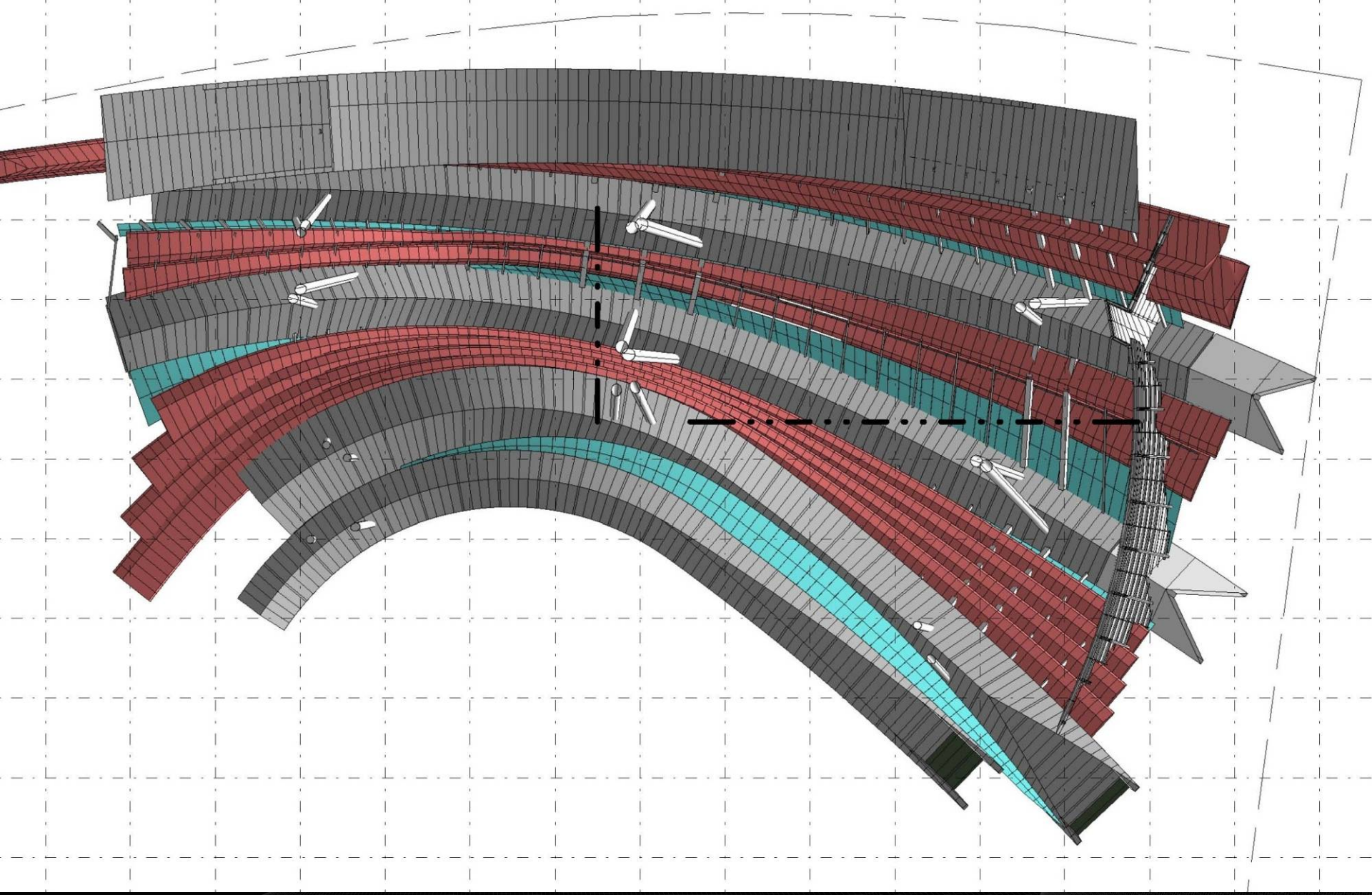
2 Nomenclature - Fin Cladding
e.g. F1

NAMING CONVENTION:
ELEMENT/ STRIP(S) / PANEL(P)
E.G. F1/ SXX / PXXX
F1S03P078



1 Nomenclature - V Cladding
e.g. P3

NAMING CONVENTION:
ELEMENT/ STRIP(S) / PANEL(P)
E.G. P3/ SXX / PXXX
P3S17P123



Microsoft Excel - 20100127_V3_S6.xls

EN English (United States)

File Edit View Insert Format Tools Data Window Help

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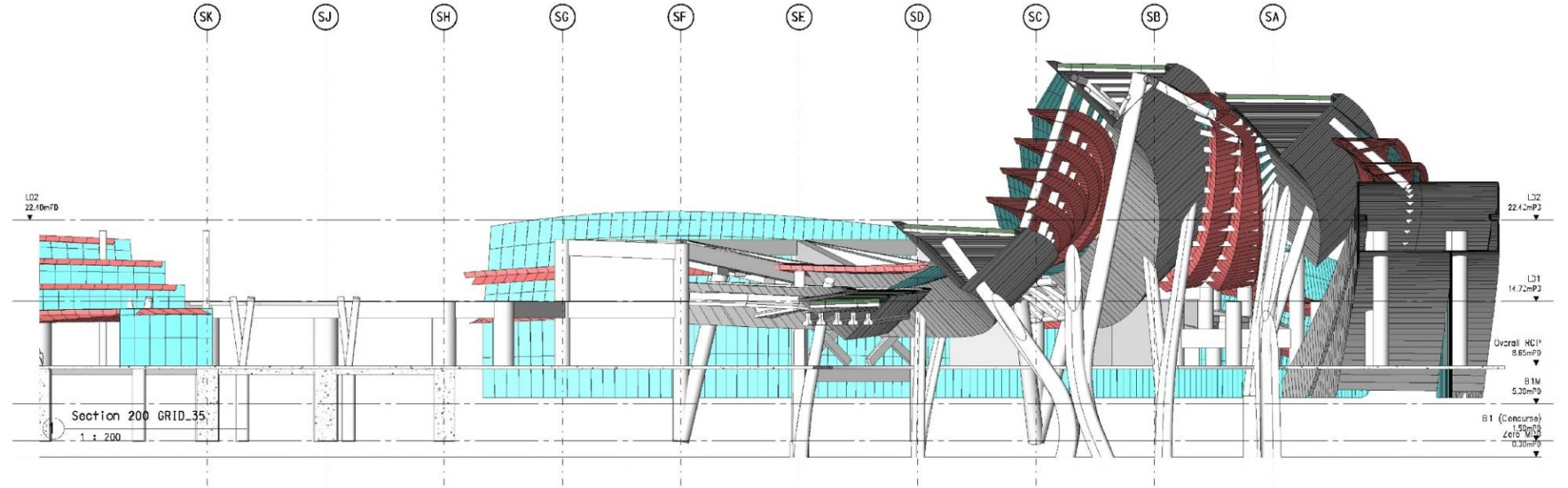
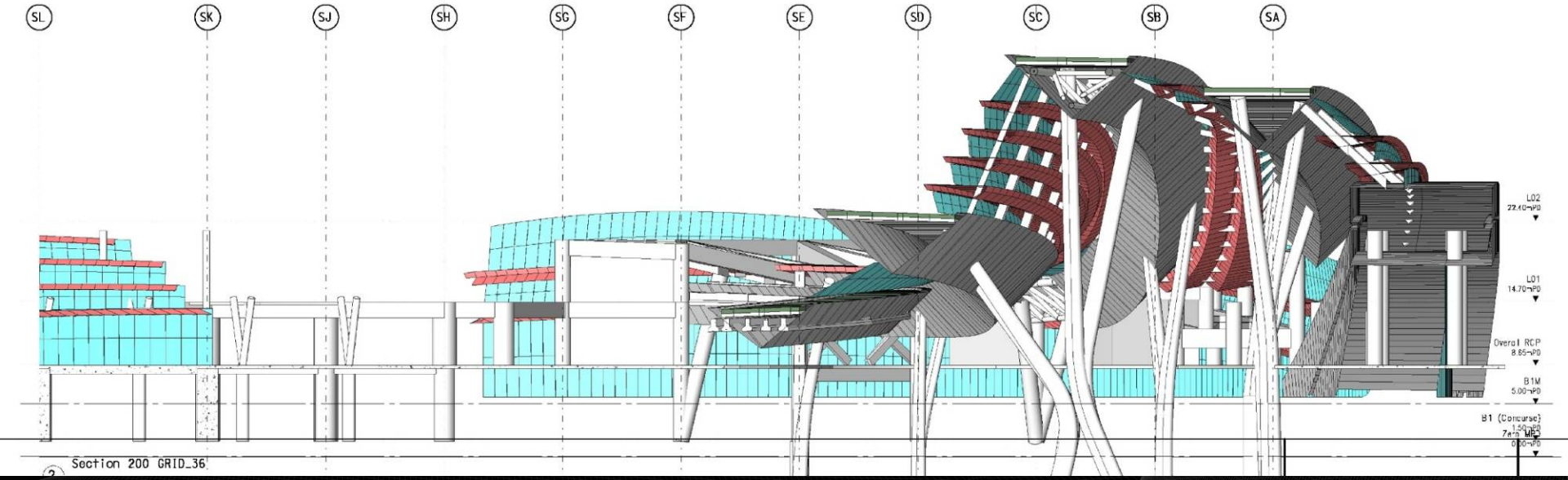
R30

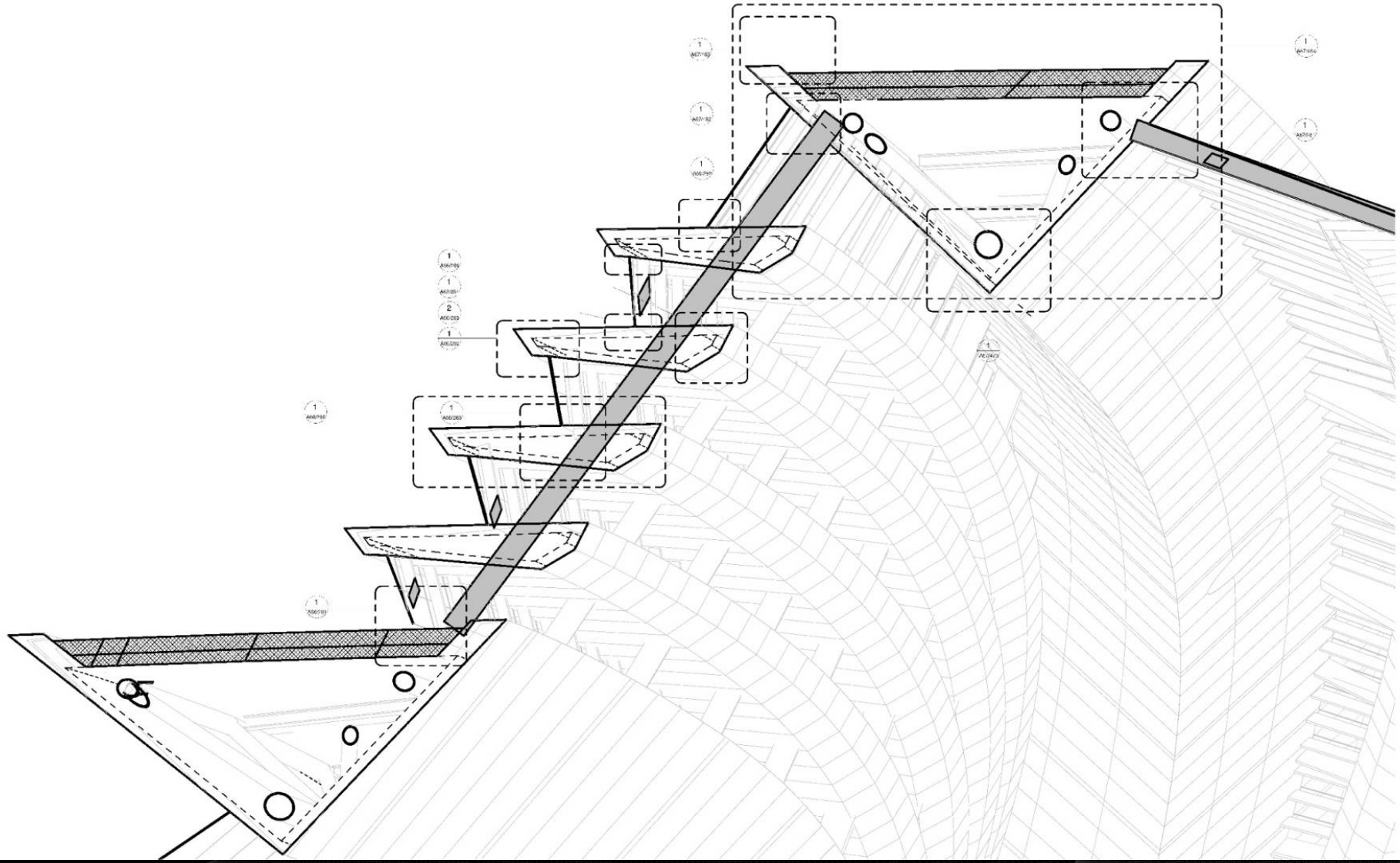
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1		P01x## lengt	P01y## lengt	P01z## lengt	P02x## lengt	P02y## lengt	P02z## lengt	P03x## lengt	P03y## lengt	P03z## lengt	P04x## lengt	P04y## lengt	P04z## lengt	Panel Type##ot
2	P3S06P001	149572.632	43124.1138	30997.4089	150034.096	44497.0923	31201.1007	151479.165	44220.6936	29756.4955	151017.994	42846.0425	29553.4116	P3S06P001
3	P3S06P002	150034.096	44497.0923	31201.1007	150490.205	45872.5015	31400.2904	151935	45597.7674	29955.086	151479.165	44220.6936	29756.4955	P3S06P002
4	P3S06P003	150490.205	45872.5015	31400.2904	150940.93	47250.3052	31594.9821	152385.473	46977.2334	30149.1841	151935	45597.7674	29955.086	P3S06P003
5	P3S06P004	150940.93	47250.3052	31594.9821	151386.267	48630.4698	31785.1616	152830.57	48359.0618	30338.7828	152385.473	46977.2334	30149.1841	P3S06P004
6	P3S06P005	151386.267	48630.4698	31785.1616	151474.689	48906.7825	31822.6539	152918.944	48635.7079	30376.1616	152830.57	48359.0618	30338.7828	P3S06P005
7	P3S06P006	151474.689	48906.7825	31822.6539	151913.575	50289.7323	32007.3872	153357.585	50020.3276	30560.3477	152918.944	48635.7079	30376.1616	P3S06P006
8	P3S06P007	151913.575	50289.7323	32007.3872	152347.08	51674.9657	32187.576	153790.836	51407.2369	30740.0246	153357.585	50020.3276	30560.3477	P3S06P007
9	P3S06P008	152347.08	51674.9657	32187.576	152775.147	53062.4739	32363.2813	154218.667	52796.4316	30915.2314	153790.836	51407.2369	30740.0246	P3S06P008
10	P3S06P009	152775.147	53062.4739	32363.2813	153197.744	54452.3272	32534.6167	154641.09	54188.0429	31086.0665	154218.667	52796.4316	30915.2314	P3S06P009
11	P3S06P010	153197.744	54452.3272	32534.6167	153281.603	54730.5766	32568.3694	154724.924	54466.654	31119.7184	154641.09	54188.0429	31086.0665	P3S06P010
12	P3S06P011	153281.603	54730.5766	32568.3694	153697.624	56123.188	32734.5715	155140.841	55861.1282	31285.4274	154724.924	54466.654	31119.7184	P3S06P011
13	P3S06P012	153697.624	56123.188	32734.5715	154108.128	57517.7498	32896.4211	155551.199	57257.4509	31446.8027	155140.841	55861.1282	31285.4274	P3S06P012
14	P3S06P013	154108.128	57517.7498	32896.4211	154513.02	58914.0007	33053.6684	155955.863	58655.1793	31603.5689	155551.199	57257.4509	31446.8027	P3S06P013
15	P3S06P014	154513.02	58914.0007	33053.6684	154912.275	60311.9726	33206.0604	156354.833	60054.3601	31755.4605	155955.863	58655.1793	31603.5689	P3S06P014
16	P3S06P015	154912.275	60311.9726	33206.0604	154991.455	60591.8003	33235.9403	156433.956	60334.4167	31785.2395	156354.833	60054.3601	31755.4605	P3S06P015
17	P3S06P016	154991.455	60591.8003	33235.9403	155384.039	61992.164	33382.3144	156826.258	61735.9125	31931.1206	156433.956	60334.4167	31785.2395	P3S06P016
18	P3S06P017	155384.039	61992.164	33382.3144	155771.104	63394.5402	33523.6095	157213.036	63139.4019	32071.9532	156826.258	61735.9125	31931.1206	P3S06P017
19	P3S06P018	155771.104	63394.5402	33523.6095	156152.641	64799.0536	33659.8994	157594.329	64545.1147	32207.8035	157213.036	63139.4019	32071.9532	P3S06P018
20	P3S06P019	156152.641	64799.0536	33659.8994	156528.665	66205.8406	33791.3989	157970.193	65953.318	32338.8909	157594.329	64545.1147	32207.8035	P3S06P019
21	P3S06P020	156528.665	66205.8406	33791.3989	156603.207	66487.4657	33817.1437	158044.711	66235.2527	32364.5566	157970.193	65953.318	32338.8909	P3S06P020
22	P3S06P021	156603.207	66487.4657	33817.1437	156972.591	67896.8372	33943.1573	158414.002	67646.2548	32490.1972	158044.711	66235.2527	32364.5566	P3S06P021
23	P3S06P022	156972.591	67896.8372	33943.1573	157336.329	69307.9002	34064.607	158777.619	69058.83	32611.2857	158414.002	67646.2548	32490.1972	P3S06P022
24	P3S06P023	157336.329	69307.9002	34064.607	157694.338	70720.5482	34181.3772	159135.5	70472.822	32727.6793	158777.619	69058.83	32611.2857	P3S06P023
25	P3S06P024	157694.338	70720.5482	34181.3772	158046.558	72134.4265	34293.1711	159487.514	71887.6646	32839.0806	159135.5	70472.822	32727.6793	P3S06P024
26	P3S06P025	158046.558	72134.4265	34293.1711	158116.297	72417.2914	34314.8748	159557.191	72170.6364	32860.703	159487.514	71887.6646	32839.0806	P3S06P025
27	P3S06P026	158116.297	72417.2914	34314.8748	158461.474	73832.0687	34419.7934	159901.955	73585.5129	32965.2043	159557.191	72170.6364	32860.703	P3S06P026
28	P3S06P027	158461.474	73832.0687	34419.7934	158800.798	75247.6674	34518.1928	160240.723	75000.5299	33063.172	159901.955	73585.5129	32965.2043	P3S06P027
29	P3S06P028	158800.798	75247.6674	34518.1928	159134.34	76664.522	34609.6099	160573.676	76416.4942	33154.1589	160240.723	75000.5299	33063.172	P3S06P028
30	P3S06P029	159134.34	76664.522	34609.6099	159462.105	78082.6818	34693.7628	160900.837	77833.534	33237.8995	160573.676	76416.4942	33154.1589	P3S06P029
31	P3S06P030	159462.105	78082.6818	34693.7628	159526.964	78366.4655	34709.6976	160965.574	78117.0662	33253.7554	160900.837	77833.534	33237.8995	P3S06P030
32	P3S06P031	159526.964	78366.4655	34709.6976	159847.917	79786.6698	34784.8936	161285.941	79536.0393	33328.5833	160965.574	78117.0662	33253.7554	P3S06P031
33	P3S06P032	159847.917	79786.6698	34784.8936	160163.369	81209.1412	34852.7734	161600.864	80957.3769	33396.1369	161285.941	79536.0393	33328.5833	P3S06P032
34	P3S06P033	160163.369	81209.1412	34852.7734	160473.329	82633.6703	34913.5237	161910.348	82380.8678	33456.5958	161600.864	80957.3769	33396.1369	P3S06P033
35	P3S06P034	160473.329	82633.6703	34913.5237	160777.356	84058.5399	34967.1102	162213.944	83804.7494	33509.9212	161910.348	82380.8678	33456.5958	P3S06P034
36	P3S06P035	160777.356	84058.5399	34967.1102	160837.419	84343.4967	34976.9482	162273.925	84089.5132	33519.7114	162213.944	83804.7494	33509.9212	P3S06P035
37	P3S06P036	160837.419	84343.4967	34976.9482	161133.92	85768.179	35021.638	162570.037	85513.2534	33564.1916	162273.925	84089.5132	33519.7114	P3S06P036
38	P3S06P037	161133.92	85768.179	35021.638	161424.472	87194.961	35058.7408	162860.157	86938.7178	33601.1181	162570.037	85513.2534	33564.1916	P3S06P037
39	P3S06P038	161424.472	87194.961	35058.7408	161710.115	88626.5835	35088.1259	163145.242	88368.1089	33630.3397	162860.157	86938.7178	33601.1181	P3S06P038
40	P3S06P039	161710.115	88626.5835	35088.1259	161991.372	90062.1491	35109.5513	163425.853	89800.6144	33651.6209	163145.242	88368.1089	33630.3397	P3S06P039
41	P3S06P040	161991.372	90062.1491	35109.5513	162046.965	90348.8387	35112.8371	163481.328	90086.742	33654.8892	163425.853	89800.6144	33651.6209	P3S06P040
42	P3S06P041	162046.965	90348.8387	35112.8371	162320.456	91777.2531	35124.1735	163754.377	91513.2313	33666.1912	163481.328	90086.742	33654.8892	P3S06P041
43	P3S06P042	162320.456	91777.2531	35124.1735	162582.475	93187.6147	35126.9896	164016.659	92925.0915	33668.9867	163754.377	91513.2313	33666.1912	P3S06P042

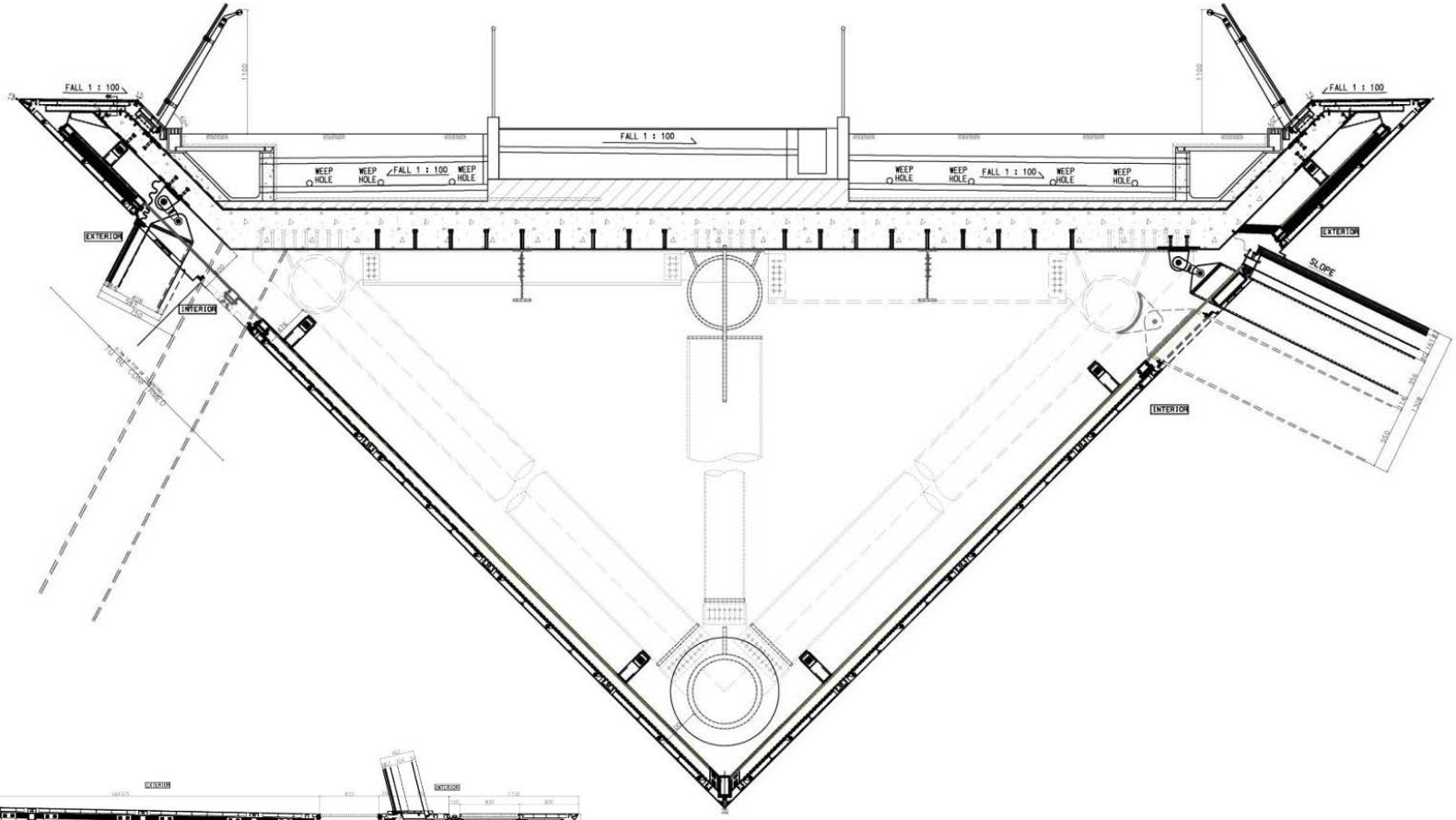
```
                {
                    case 'x':
                        p[index].x = System.Convert.ToDouble(para.AsValueString());
                        break;
                    case 'y':
                        p[index].y = System.Convert.ToDouble(para.AsValueString());
                        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);
```

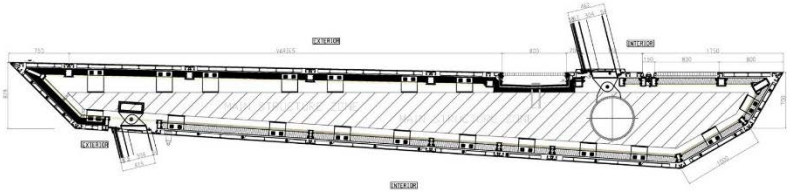
```
    public bool tanbetroupedwith(bladdingPanel nextPanel) double tolerance)
    {
        if
        (
            Math.Abs(nextPanel.G_edge[0] - G_edge[0]) <= tolerance
            &&
            Math.Abs(nextPanel.G_edge[1] - G_edge[1]) <= tolerance
            &&
            Math.Abs(nextPanel.G_edge[2] - 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 groupped panel;
}

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

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

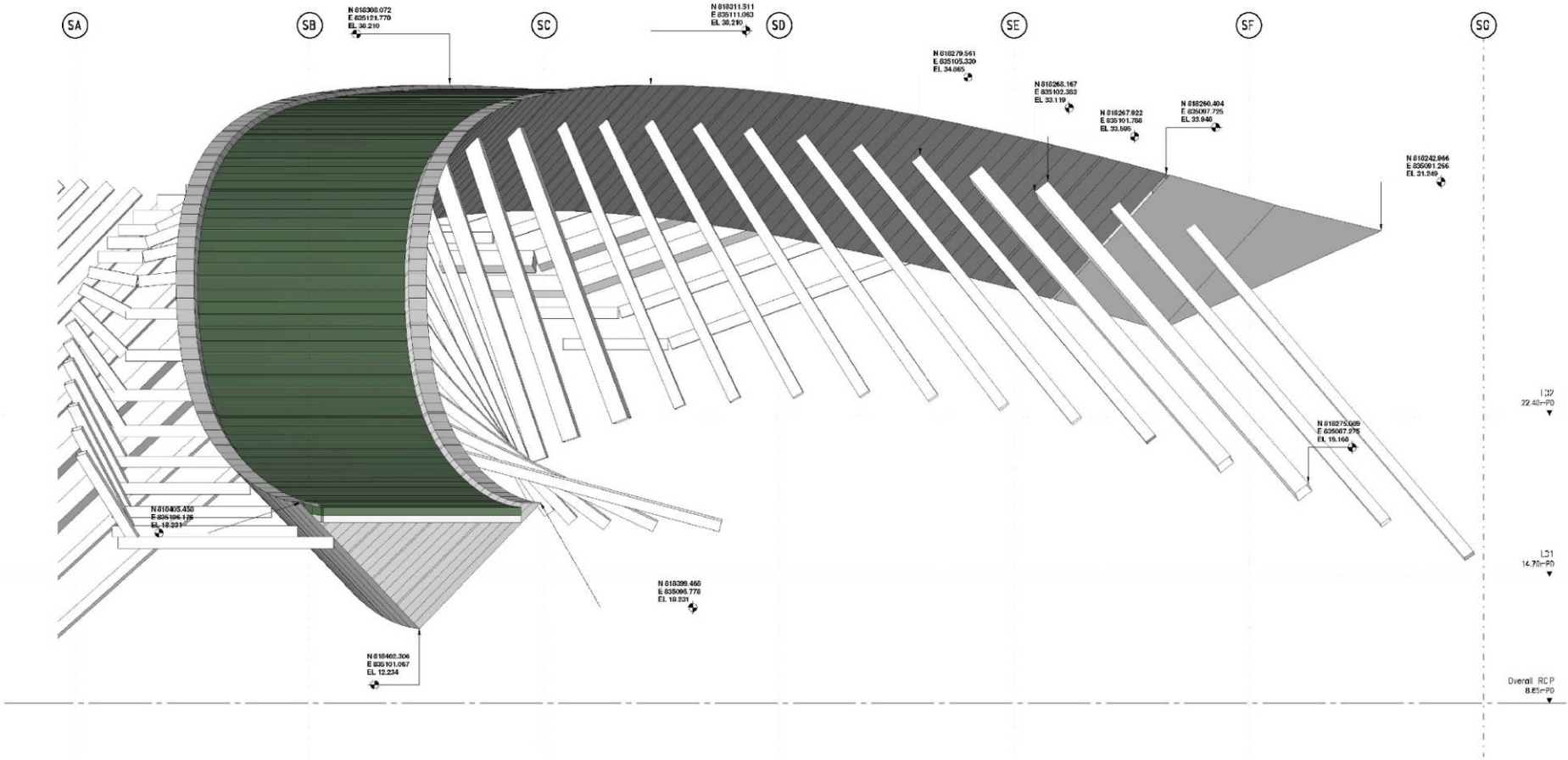

SK
SJ
SH
SG
SF
SE
SD
SC
SB
SA
L02
22.40mPD
L32
22.42mPD
L31
14.72mPD
Overall RCP
8.65mPD
B1M
5.30mPD
B1 (Concourse)
1.50mPD
Zero MP
0.00mPD
Section 200 GRID_35
1 : 200


SL
SK
SJ
SH
SG
SF
SE
SD
SC
SB
SA
L02
22.40mPD
L01
14.70mPD
Overal RCP
8.65mPD
B1M
5.00mPD
B1 (Concourse)
1.50mPD
Zero MP
0.00mPD
Section 200 GRID_36




FALL 1 : 100
WEEP HOLE
EXTERIOR
INTERIOR
SLOPE

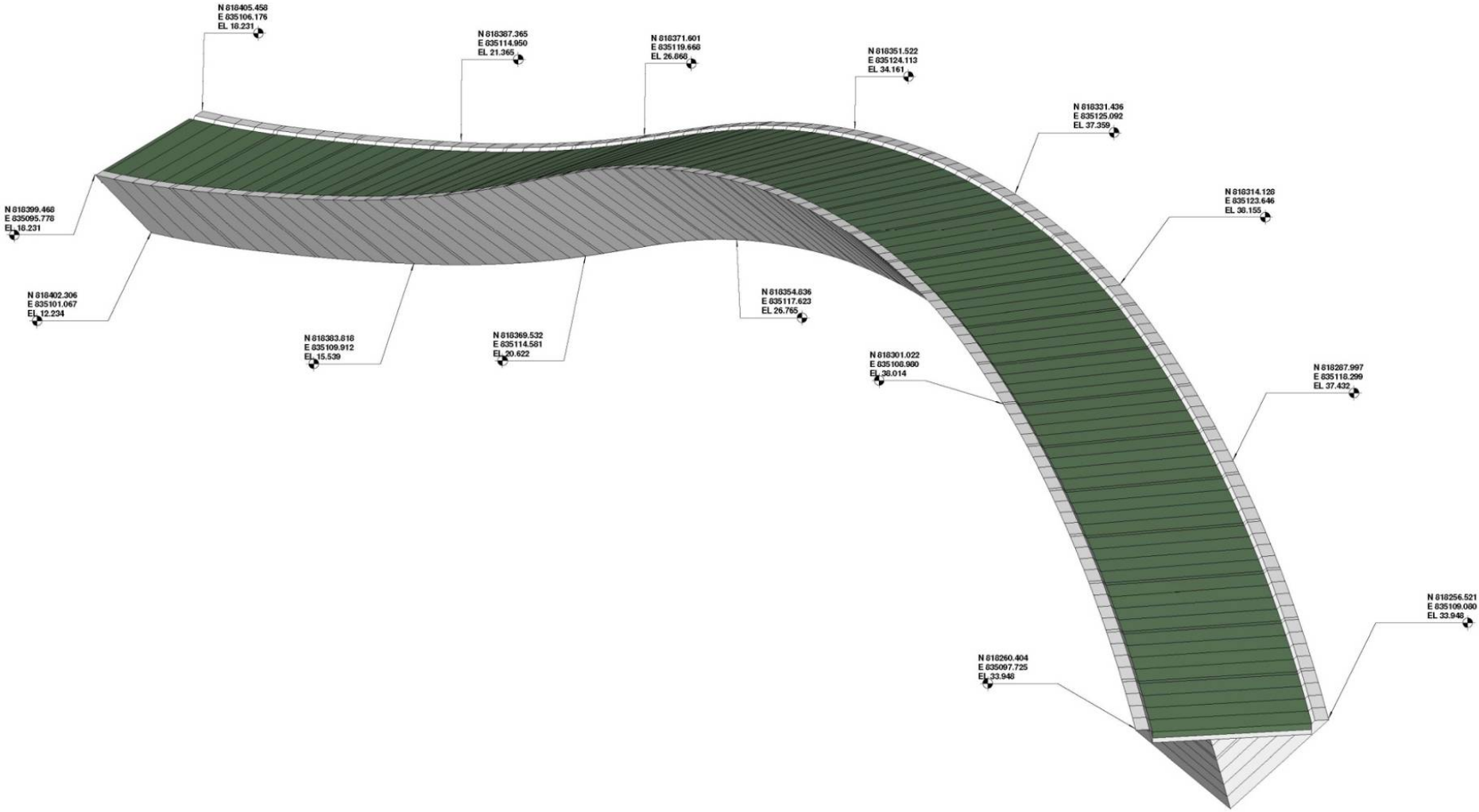




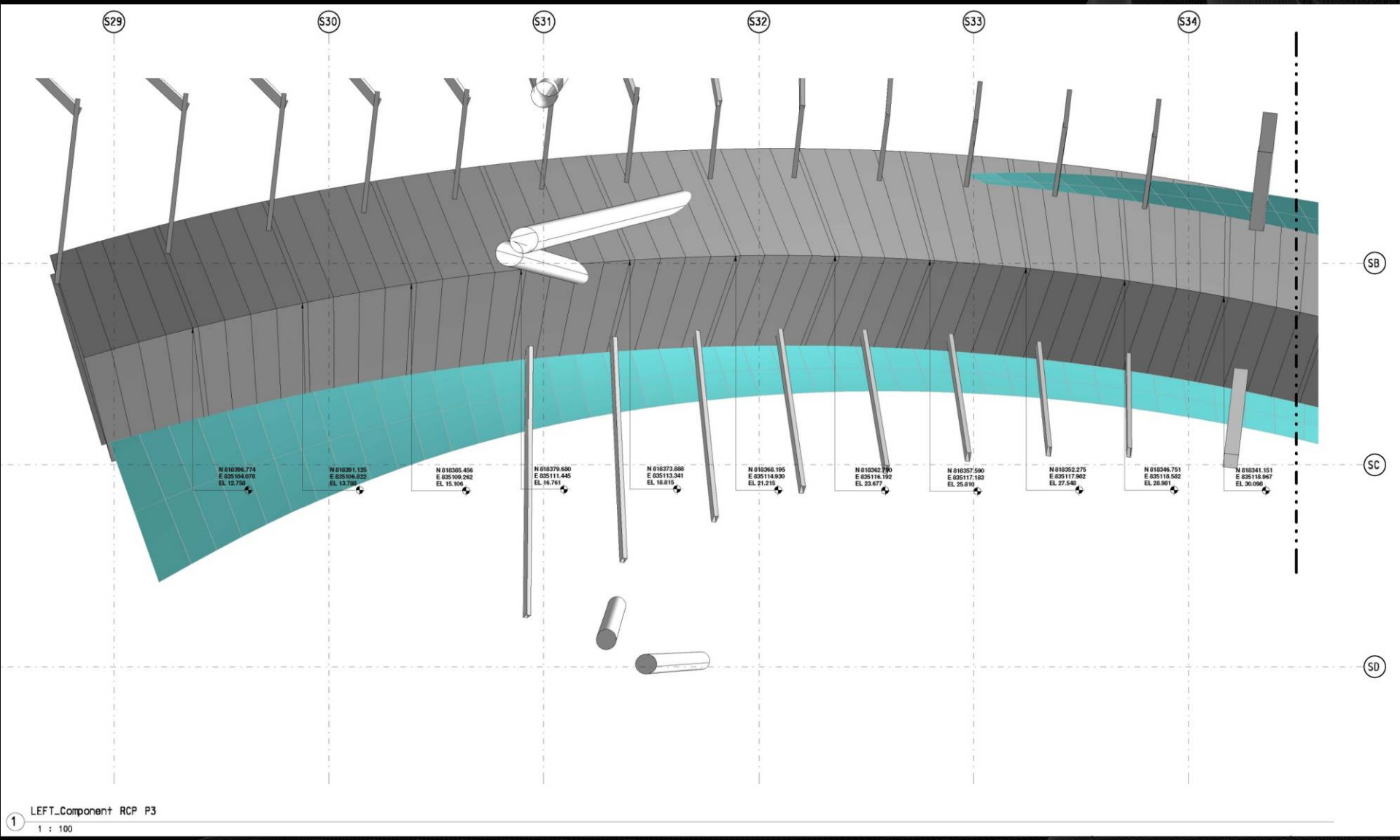
1 Component Elevation P3 North
1 : 100

TRUE ICONIC GATEWAY TO HONG KONG

- CIVIC IN NATURE
- DEFINED BY FUNCTION
- COST EFFICIENT
- EXCEEDING EXPECTATIONS

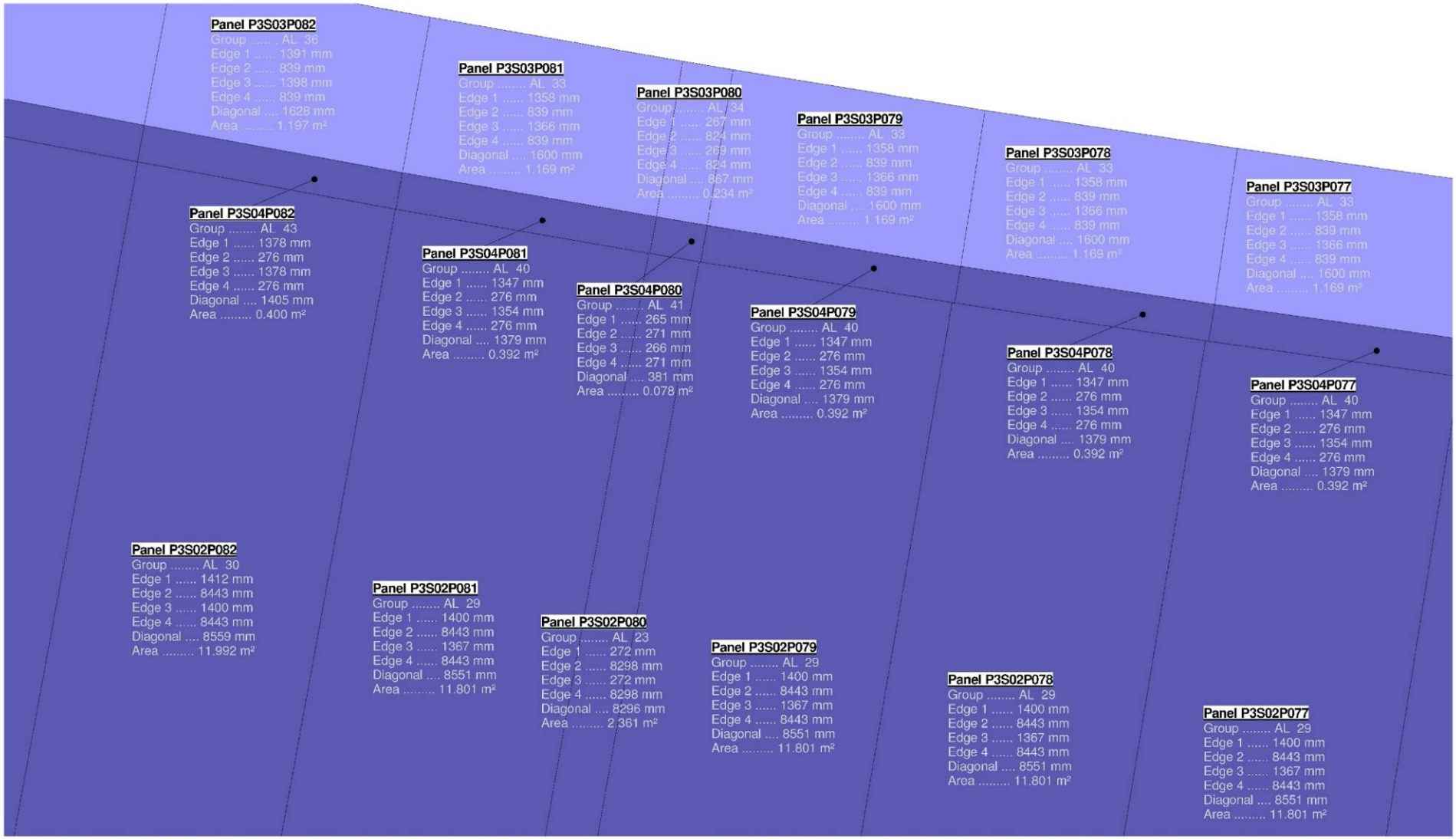

N 818405.458
E 835106.176
EL 18.231
N 818387.365
E 835114.950
EL 21.365
N 818371.601
E 835119.668
EL 26.668
N 818351.522
E 835124.113
EL 34.161
N 818331.436
E 835125.092
EL 37.359
N 818314.128
E 835123.646
EL 38.155
N 818399.468
E 835095.778
EL 18.231
N 818402.306
E 835101.067
EL 12.234
N 818383.818
E 835109.912
EL 15.539
N 818369.532
E 835114.581
EL 20.622
N 818354.636
E 835117.623
EL 26.765
N 818301.022
E 835108.980
EL 38.014
N 818287.997
E 835118.299
EL 37.432
N 818256.521
E 835109.080
EL 33.948
N 818260.404
E 835097.725
EL 33.948

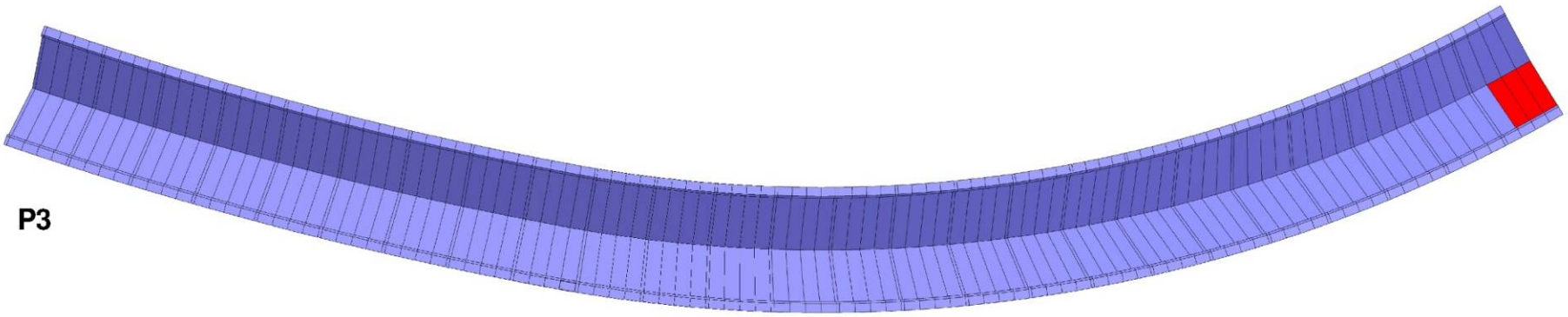
ISO - P3



1 LEFT_Component RCP P3

1 : 100


Panel P3S03P082
Group ..... AL_36
Edge 1 ..... 1391 mm
Edge 2 ..... 839 mm
Edge 3 ..... 1398 mm
Edge 4 ..... 839 mm
Diagonal .... 1628 mm
Area ..... 1.197 m²
Panel P3S03P081
Group ..... AL_33
Edge 1 ..... 1358 mm
Edge 2 ..... 839 mm
Edge 3 ..... 1366 mm
Edge 4 ..... 839 mm
Diagonal .... 1600 mm
Area ..... 1.169 m²
Panel P3S03P080
Group ..... AL_34
Edge 1 ..... 267 mm
Edge 2 ..... 824 mm
Edge 3 ..... 269 mm
Edge 4 ..... 824 mm
Diagonal .... 867 mm
Area ..... 0.234 m²
Panel P3S03P079
Group ..... AL_33
Edge 1 ..... 1358 mm
Edge 2 ..... 839 mm
Edge 3 ..... 1366 mm
Edge 4 ..... 839 mm
Diagonal .... 1600 mm
Area ..... 1.169 m²
Panel P3S03P078
Group ..... AL_33
Edge 1 ..... 1358 mm
Edge 2 ..... 839 mm
Edge 3 ..... 1366 mm
Edge 4 ..... 839 mm
Diagonal .... 1600 mm
Area ..... 1.169 m²
Panel P3S03P077
Group ..... AL_33
Edge 1 ..... 1358 mm
Edge 2 ..... 839 mm
Edge 3 ..... 1366 mm
Edge 4 ..... 839 mm
Diagonal .... 1600 mm
Area ..... 1.169 m²
Panel P3S04P082
Group ..... AL_43
Edge 1 ..... 1378 mm
Edge 2 ..... 276 mm
Edge 3 ..... 1378 mm
Edge 4 ..... 276 mm
Diagonal .... 1405 mm
Area ..... 0.400 m²
Panel P3S04P081
Group ..... AL_40
Edge 1 ..... 1347 mm
Edge 2 ..... 276 mm
Edge 3 ..... 1354 mm
Edge 4 ..... 276 mm
Diagonal .... 1379 mm
Area ..... 0.392 m²
Panel P3S04P080
Group ..... AL_41
Edge 1 ..... 265 mm
Edge 2 ..... 271 mm
Edge 3 ..... 266 mm
Edge 4 ..... 271 mm
Diagonal .... 381 mm
Area ..... 0.078 m²
Panel P3S04P079
Group ..... AL_40
Edge 1 ..... 1347 mm
Edge 2 ..... 276 mm
Edge 3 ..... 1354 mm
Edge 4 ..... 276 mm
Diagonal .... 1379 mm
Area ..... 0.392 m²
Panel P3S04P078
Group ..... AL_40
Edge 1 ..... 1347 mm
Edge 2 ..... 276 mm
Edge 3 ..... 1354 mm
Edge 4 ..... 276 mm
Diagonal .... 1379 mm
Area ..... 0.392 m²
Panel P3S04P077
Group ..... AL_40
Edge 1 ..... 1347 mm
Edge 2 ..... 276 mm
Edge 3 ..... 1354 mm
Edge 4 ..... 276 mm
Diagonal .... 1379 mm
Area ..... 0.392 m²
Panel P3S02P082
Group ..... AL_30
Edge 1 ..... 1412 mm
Edge 2 ..... 8443 mm
Edge 3 ..... 1400 mm
Edge 4 ..... 8443 mm
Diagonal .... 8559 mm
Area ..... 11.992 m²
Panel P3S02P081
Group ..... AL_29
Edge 1 ..... 1400 mm
Edge 2 ..... 8443 mm
Edge 3 ..... 1367 mm
Edge 4 ..... 8443 mm
Diagonal .... 8551 mm
Area ..... 11.801 m²
Panel P3S02P080
Group ..... AL_23
Edge 1 ..... 272 mm
Edge 2 ..... 8298 mm
Edge 3 ..... 272 mm
Edge 4 ..... 8298 mm
Diagonal .... 8296 mm
Area ..... 2.361 m²
Panel P3S02P079
Group ..... AL_29
Edge 1 ..... 1400 mm
Edge 2 ..... 8443 mm
Edge 3 ..... 1367 mm
Edge 4 ..... 8443 mm
Diagonal .... 8551 mm
Area ..... 11.801 m²
Panel P3S02P078
Group ..... AL_29
Edge 1 ..... 1400 mm
Edge 2 ..... 8443 mm
Edge 3 ..... 1367 mm
Edge 4 ..... 8443 mm
Diagonal .... 8551 mm
Area ..... 11.801 m²
Panel P3S02P077
Group ..... AL_29
Edge 1 ..... 1400 mm
Edge 2 ..... 8443 mm
Edge 3 ..... 1367 mm
Edge 4 ..... 8443 mm
Diagonal .... 8551 mm
Area ..... 11.801 m²



Schedule of panels

Panel	Point 1			Point 2			Point 3			Point 4			Center of weight			Edges					Area	Group
	P01 x	P01 y	P01 z	P02 x	P02 y	P02 z	P03 x	P03 y	P03 z	P04 x	P04 y	P04 z	C x	C y	C z	Edge 1	Edge 2	Edge 3	Edge 4	Diagonal		
P3S01P001	835106129	818405541	18228	835101017	818402394	12231	835106871	818404239	18290	835101802	818401012	12299	835103955	818403297	15262	1493	8446	1583	8446	8585	13.111 m²	AL 1
P3S01P002	835106871	818404239	18290	835101802	818401012	12299	835107598	818402931	18391	835102568	818399625	12410	835104710	818401952	15347	1493	8446	1583	8446	8585	13.111 m²	AL 1
P3S01P003	835107598	818402931	18391	835102568	818399625	12410	835108310	818401617	18528	835103312	818398241	12560	835105447	818400604	15472	1493	8446	1583	8446	8585	13.111 m²	AL 1
AL 1: 3																					39.333 m²	
P3S01P004	835108310	818401617	18528	835103312	818398241	12560	835109007	818400300	18698	835104033	818396862	12745	835106166	818399255	15633	1493	8446	1559	8446	8583	13.010 m²	AL 2
AL 2: 1																					13.010 m²	
P3S01P005	835109007	818400300	18698	835104033	818396862	12745	835109144	818400036	18736	835104175	818396588	12786	835106590	818398446	15741	294	8313	305	8313	8318	2.594 m²	AL 3
P3S01P010	835111765	818394722	19674	835106783	818391211	13770	835111890	818394454	19728	835106906	818390943	13826	835109336	818392833	16750	294	8313	305	8313	8318	2.594 m²	AL 3
P3S01P015	835114256	818389075	20934	835109228	818385543	15084	835114368	818388805	21001	835109337	818385271	15154	835111797	818387174	18043	294	8313	305	8313	8318	2.594 m²	AL 3
P3S01P020	835116476	818383392	22499	835111414	818379769	16734	835116575	818383121	22582	835111511	818379492	16822	835113954	818381444	19659	294	8313	305	8313	8318	2.594 m²	AL 3
P3S01P025	835118417	818377721	24432	835113315	818373975	18781	835118503	818377451	24534	835113398	818373701	18888	835115908	818375712	21659	294	8313	305	8313	8318	2.594 m²	AL 3
P3S01P030	835120084	818372092	26716	835114909	818368280	21178	835120157	818371825	26832	835114977	818368015	21297	835117532	818370053	24006	294	8313	305	8313	8318	2.594 m²	AL 3
AL 3: 6																					15.564 m²	
P3S01P006	835109144	818400036	18736	835104175	818396588	12786	835109822	818398714	18942	835104863	818395227	13005	835107001	818397641	15367	1493	8446	1534	8446	8581	12.901 m²	AL 4
P3S01P018	835115454	818386100	21710	835110405	818382531	15899	835115973	818384746	22094	835110918	818381150	16305	835113187	818383632	19002	1493	8446	1534	8446	8581	12.901 m²	AL 4
P3S01P019	835115973	818384746	22094	835110918	818381150	16305	835116476	818383392	22499	835111414	818379769	16734	835113955	818382264	19408	1493	8446	1534	8446	8581	12.901 m²	AL 4
P3S01P021	835116575	818383121	22582	835111511	818379492	16822	835117059	818381769	23013	835111987	818378111	17278	835114263	818380623	19924	1493	8446	1534	8446	8581	12.901 m²	AL 4
P3S01P022	835117059	818381769	23013	835111987	818378111	17278	835117528	818380417	23465	835112447	818376730	17757	835114755	818379257	20378	1493	8446	1534	8446	8581	12.901 m²	AL 4
P3S01P023	835117528	818380417	23465	835112447	818376730	17757	835117980	818379068	23938	835112890	818375351	18258	835115211	818377891	20855	1493	8446	1534	8446	8581	12.901 m²	AL 4
P3S01P024	835117980	818379068	23938	835112890	818375351	18258	835118417	818377721	24432	835113315	818373675	18781	835115550	818376529	21353	1493	8446	1534	8446	8581	12.901 m²	AL 4
P3S01P026	835118503	818377451	24534	835113398	818373701	18888	835118921	818376108	25052	835113802	818372332	19436	835116156	818374898	21978	1493	8446	1534	8446	8581	12.901 m²	AL 4
AL 4: 8																					103.208 m²	
P3S01P007	835109822	818398714	18942	835104863	818395227	13005	835110485	818397388	19170	835105522	818393885	13245	835107673	818396303	16090	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P008	835110485	818397388	19170	835105522	818393885	13245	835111132	818396057	19414	835106161	818392551	13500	835108325	818394970	16332	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P009	835111132	818396057	19414	835106161	818392551	13500	835111765	818394722	19674	835106783	818391211	13770	835108960	818393635	16590	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P011	835111890	818394454	19728	835106906	818390943	13826	835112504	818393115	20006	835107510	818389599	14116	835109702	818392028	16919	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P012	835112504	818393115	20006	835107510	818389599	14116	835113103	818391771	20300	835108097	818388252	14422	835110304	818390684	17211	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P013	835113103	818391771	20300	835108097	818388252	14422	835113688	818390425	20609	835108670	818386900	14745	835110890	818389337	17519	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P014	835113688	818390425	20609	835108670	818386900	14745	835114256	818389075	20934	835109228	818385543	15084	835111460	818387966	17843	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P016	835114368	818388805	21001	835109337	818385271	15154	835114919	818387453	21346	835109878	818383806	15516	835112126	818386359	18254	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P017	835114919	818387453	21346	835109878	818383806	15516	835115454	818386100	21710	835110405	818382531	15899	835112664	818384998	18618	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P027	835118921	818376108	25052	835113802	818372332	19436	835119324	818374765	25590	835114189	818370971	20002	835116559	818373544	22520	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P028	835119324	818374766	25590	835114189	818370971	20002	835119711	818373428	26145	835114559	818369618	20585	835116946	818372196	23081	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P029	835119711	818373428	26145	835114559	818369618	20585	835120084	818372092	26716	835114909	818368280	21178	835117316	818370855	23656	1493	8445	1507	8445	8578	12.786 m²	AL 5
AL 5: 12																					153.433 m²	
P3S01P031	835120157	818371825	26832	835114977	818368015	21297	835120513	818370490	27416	835115304	818366697	21896	835117738	818369257	24360	1493	8445	1477	8445	8574	12.661 m²	AL 6
AL 6: 1																					12.661 m²	

Panel P3S02P002
Group ..... AL 14
Edge 1 ..... 1583 mm
Edge 2 ..... 8445 mm
Edge 3 ..... 1367 mm
Edge 4 ..... 8445 mm
Diagonal .... 8568 mm
Area ..... 12.573 m²

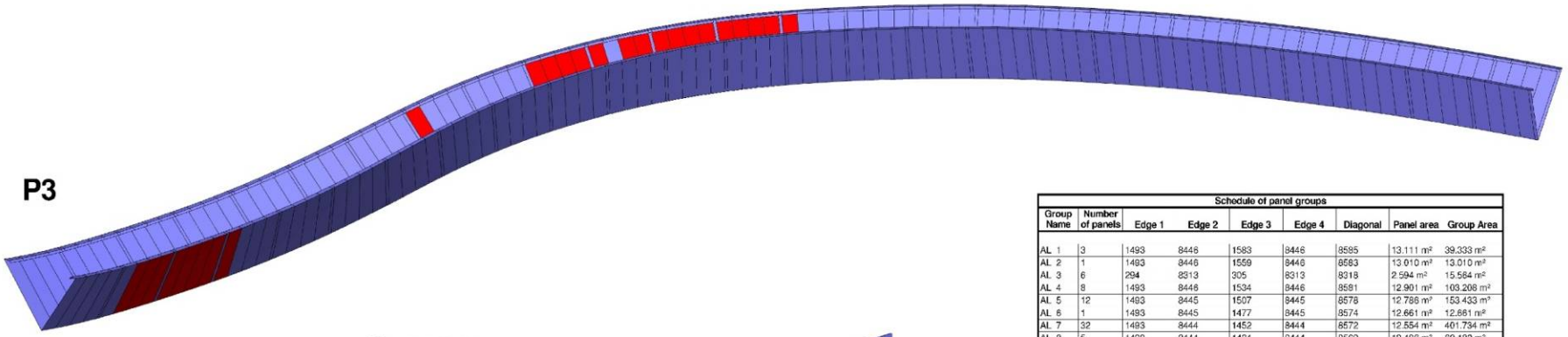
N 818401012
E 835101802
EL 12299

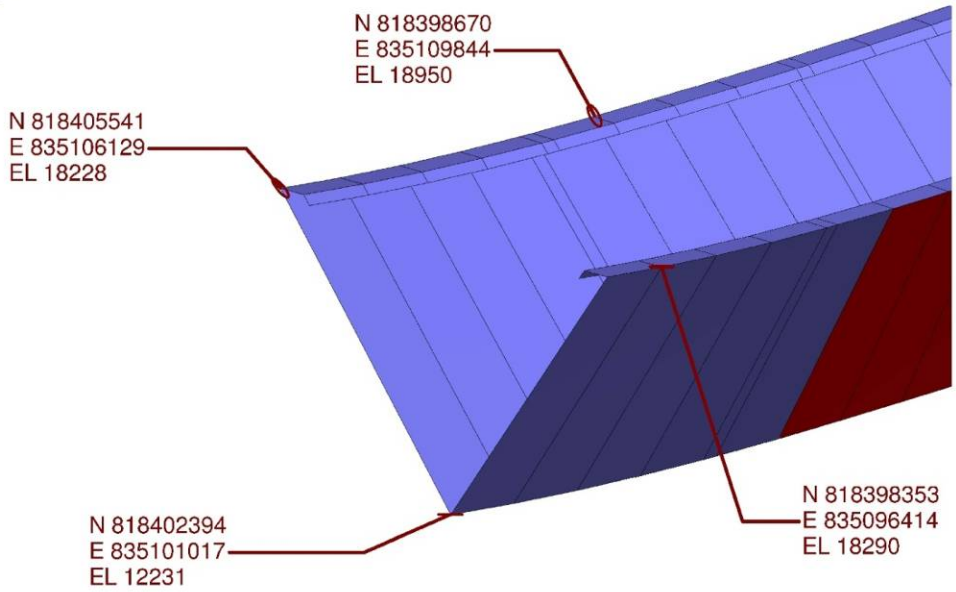
N 818404239
E 835106871
EL 18290

Panel P3S01P002
Group ..... AL 1
Edge 1 ..... 1493 mm
Edge 2 ..... 8446 mm
Edge 3 ..... 1583 mm
Edge 4 ..... 8446 mm
Diagonal .... 8585 mm
Area ..... 13.111 m²

Panel P3S01P009
Group ..... AL 5
Edge 1 ..... 1493 mm
Edge 2 ..... 8445 mm
Edge 3 ..... 1507 mm
Edge 4 ..... 8445 mm
Diagonal .... 8578 mm
Area ..... 12.786 m²

Remark: An above table is a portion extracted for presentation purpose from the full schedule of panels included in the BIM model.

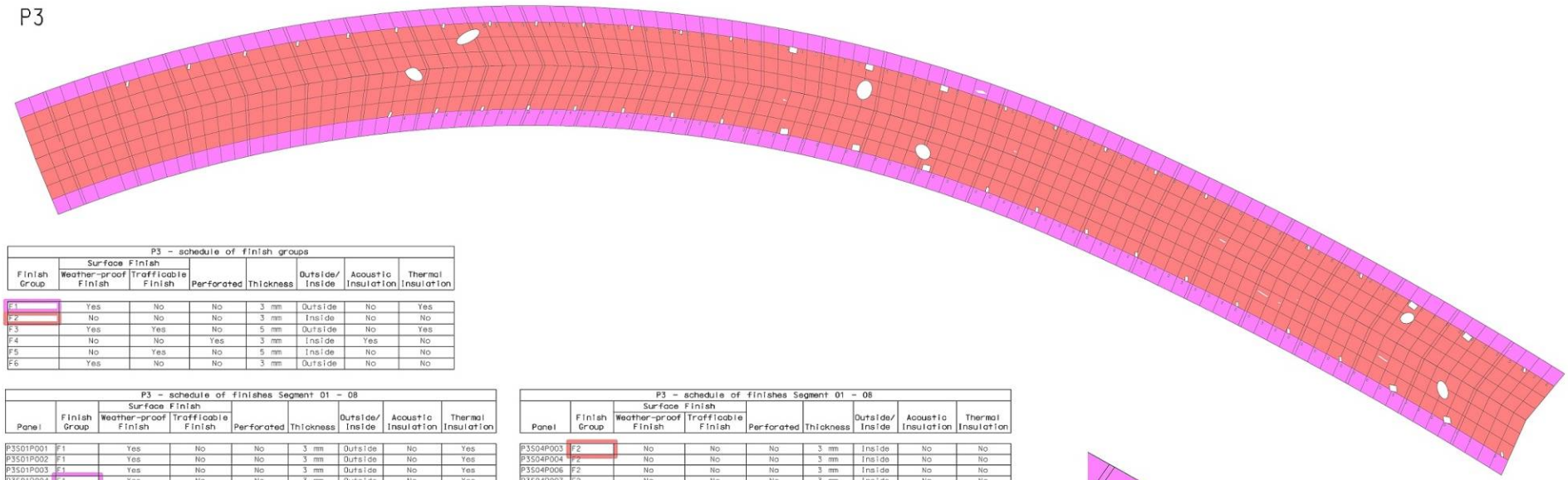




Schedule of panel groups

Group Name	Number of panels	Edge 1	Edge 2	Edge 3	Edge 4	Diagonal	Panel area	Group Area
AL 1	3	1493	8446	1583	8446	8585	13.111 m²	39.333 m²
AL 2	1	1493	8446	1559	8446	8563	13.010 m²	13.010 m²
AL 3	6	294	8313	305	8313	8318	2.594 m²	15.564 m²
AL 4	8	1493	8446	1534	8446	8581	12.901 m²	103.208 m²
AL 5	12	1493	8445	1507	8445	8578	12.786 m²	153.433 m²
AL 6	1	1493	8445	1477	8445	8574	12.661 m²	12.661 m²
AL 7	32	1493	8444	1452	8444	8572	12.554 m²	401.734 m²
AL 8	5	1493	8444	1424	8444	8569	12.436 m²	62.180 m²
AL 9	13	1493	8444	1398	8444	8567	12.325 m²	160.227 m²
AL 10	33	294	8303	272	8302	8307	2.453 m²	80.933 m²
AL 11	25	1493	8443	1359	8443	8564	12.199 m²	304.979 m²
AL 12	5	1493	8445	1554	8445	8582	12.156 m²	60.878 m²
AL 13	3	1493	8443	1338	8443	8560	12.069 m²	36.208 m²
AL 14	3	1583	8445	1367	8445	8568	12.573 m²	37.718 m²
AL 15	1	1559	8445	1368	8445	8560	12.479 m²	12.479 m²
AL 16	8	1533	8445	1369	8445	8556	12.372 m²	98.979 m²
AL 17	3	1513	8445	1374	8445	8547	12.311 m²	36.932 m²
AL 18	1	1497	8446	1385	8445	8536	12.290 m²	12.290 m²
AL 19	1	1477	8445	1387	8445	8534	12.209 m²	12.209 m²
AL 20	1	1452	8445	1387	8445	8531	12.102 m²	12.102 m²
AL 21	1	1424	8445	1387	8445	8529	11.984 m²	11.984 m²
AL 22	1	1398	8444	1386	8444	8527	11.871 m²	11.871 m²
AL 23	11	272	8298	272	8298	8296	2.361 m²	25.974 m²
AL 24	6	1369	8444	1385	8444	8524	11.742 m²	70.452 m²
AL 25	7	1354	8444	1384	8444	8524	11.674 m²	81.716 m²
AL 26	3	1338	8443	1381	8443	8524	11.595 m²	34.788 m²
AL 27	8	1362	8442	1389	8442	8539	11.648 m²	93.185 m²
AL 28	3	1380	8442	1367	8442	8548	11.714 m²	35.143 m²
AL 29	10	1400	8443	1367	8443	8551	11.801 m²	118.005 m²
AL 30	1	1412	8443	1400	8443	8559	11.992 m²	11.992 m²
AL 31	10	1427	8444	1431	8444	8564	12.187 m²	121.867 m²
AL 32	24	1440	8444	1453	8444	8568	12.334 m²	296.014 m²
AL 33	52	1358	839	1366	839	1600	1.169 m²	60.791 m²
AL 34	16	267	824	269	824	867	0.234 m²	3.746 m²
AL 35	13	1372	839	1379	839	1611	1.181 m²	15.348 m²
AL 36	1	1391	839	1398	839	1628	1.197 m²	1.197 m²
AL 37	31	1422	839	1428	839	1653	1.222 m²	37.880 m²
AL 38	3	1444	839	1447	839	1671	1.240 m²	3.720 m²
AL 39	34	284	825	285	825	873	0.248 m²	8.446 m²
AL 40	64	1347	276	1354	276	1379	0.392 m²	21.163 m²
AL 41	24	265	271	266	271	381	0.078 m²	1.883 m²
AL 42	11	1361	276	1366	276	1396	0.396 m²	4.353 m²
AL 43	1	1378	276	1378	276	1405	0.400 m²	0.400 m²
AL 44	32	1406	276	1406	276	1432	0.408 m²	13.052 m²
AL 45	2	1426	276	1425	276	1452	0.414 m²	0.827 m²
AL 46	26	281	271	281	271	390	0.083 m²	2.154 m²
AL 47	100	1456	276	1453	276	1481	0.422 m²	42.209 m²
AL 48	100	1474	839	1483	839	1700	1.269 m²	126.892 m²
Grand total: 750								2923.908 m²

P3



P3 - schedule of finish groups

Finish Group	Surface Finish: Weather-proof Finish	Surface Finish: Trafficable Finish	Perforated	Thickness	Outside/ Inside	Acoustic Insulation	Thermal Insulation
F1	Yes	No	No	3 mm	Outside	No	Yes
F2	No	No	No	3 mm	Inside	No	No
F3	Yes	Yes	No	5 mm	Outside	No	Yes
F4	No	No	Yes	3 mm	Inside	Yes	No
F5	No	Yes	No	5 mm	Inside	No	No
F6	Yes	No	No	3 mm	Outside	No	No

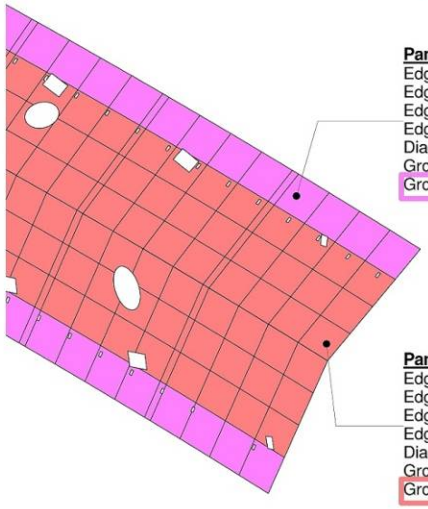
P3 - schedule of finishes Segment 01 - 08

Panel	Finish Group	Surface Finish: Weather-proof Finish	Surface Finish: Trafficable Finish	Perforated	Thickness	Outside/ Inside	Acoustic Insulation	Thermal Insulation
P3S01P001	F1	Yes	No	No	3 mm	Outside	No	Yes
P3S01P002	F1	Yes	No	No	3 mm	Outside	No	Yes
P3S01P003	F1	Yes	No	No	3 mm	Outside	No	Yes
P3S01P004	F1	Yes	No	No	3 mm	Outside	No	Yes
P3S01P005	F1	Yes	No	No	3 mm	Outside	No	Yes
P3S01P006	F1	Yes	No	No	3 mm	Outside	No	Yes
P3S01P007	F1	Yes	No	No	3 mm	Outside	No	Yes
P3S01P008	F1	Yes	No	No	3 mm	Outside	No	Yes
P3S01P009	F1	Yes	No	No	3 mm	Outside	No	Yes
P3S08P001	F1	Yes	No	No	3 mm	Outside	No	Yes
P3S08P002	F1	Yes	No	No	3 mm	Outside	No	Yes
P3S08P003	F1	Yes	No	No	3 mm	Outside	No	Yes
P3S08P004	F1	Yes	No	No	3 mm	Outside	No	Yes
P3S08P005	F1	Yes	No	No	3 mm	Outside	No	Yes
P3S08P006	F1	Yes	No	No	3 mm	Outside	No	Yes
P3S08P007	F1	Yes	No	No	3 mm	Outside	No	Yes
P3S08P008	F1	Yes	No	No	3 mm	Outside	No	Yes
F 1: 17								
P3S02P001	F2	No	No	No	3 mm	Inside	No	No
P3S02P002	F2	No	No	No	3 mm	Inside	No	No
P3S02P003	F2	No	No	No	3 mm	Inside	No	No
P3S02P004	F2	No	No	No	3 mm	Inside	No	No
P3S02P005	F2	No	No	No	3 mm	Inside	No	No
P3S02P006	F2	No	No	No	3 mm	Inside	No	No
P3S02P007	F2	No	No	No	3 mm	Inside	No	No
P3S02P008	F2	No	No	No	3 mm	Inside	No	No
P3S02P009	F2	No	No	No	3 mm	Inside	No	No
P3S03P001	F2	No	No	No	3 mm	Inside	No	No
P3S03P002	F2	No	No	No	3 mm	Inside	No	No
P3S03P003	F2	No	No	No	3 mm	Inside	No	No
P3S03P004	F2	No	No	No	3 mm	Inside	No	No
P3S03P006	F2	No	No	No	3 mm	Inside	No	No
P3S03P007	F2	No	No	No	3 mm	Inside	No	No
P3S03P008	F2	No	No	No	3 mm	Inside	No	No
P3S03P009	F2	No	No	No	3 mm	Inside	No	No
P3S04P001	F2	No	No	No	3 mm	Inside	No	No
P3S04P002	F2	No	No	No	3 mm	Inside	No	No

P3 - schedule of finishes Segment 01 - 08

Panel	Finish Group	Surface Finish: Weather-proof Finish	Surface Finish: Trafficable Finish	Perforated	Thickness	Outside/ Inside	Acoustic Insulation	Thermal Insulation
P3S04P003	F2	No	No	No	3 mm	Inside	No	No
P3S04P004	F2	No	No	No	3 mm	Inside	No	No
P3S04P006	F2	No	No	No	3 mm	Inside	No	No
P3S04P007	F2	No	No	No	3 mm	Inside	No	No
P3S04P008	F2	No	No	No	3 mm	Inside	No	No
P3S04P009	F2	No	No	No	3 mm	Inside	No	No
F 2: 25								
P3S03P005	F2	No	No	No	3 mm	Inside	No	No
P3S04P005	F2	No	No	No	3 mm	Inside	No	No
P3S05P001	F2	No	No	No	3 mm	Inside	No	No
P3S05P002	F2	No	No	No	3 mm	Inside	No	No
P3S05P003	F2	No	No	No	3 mm	Inside	No	No
P3S05P004	F2	No	No	No	3 mm	Inside	No	No
P3S05P005	F2	No	No	No	3 mm	Inside	No	No
P3S05P006	F2	No	No	No	3 mm	Inside	No	No
P3S05P007	F2	No	No	No	3 mm	Inside	No	No
P3S05P008	F2	No	No	No	3 mm	Inside	No	No
P3S05P009	F2	No	No	No	3 mm	Inside	No	No
P3S06P001	F2	No	No	No	3 mm	Inside	No	No
P3S06P002	F2	No	No	No	3 mm	Inside	No	No
P3S06P003	F2	No	No	No	3 mm	Inside	No	No
P3S06P004	F2	No	No	No	3 mm	Inside	No	No
P3S06P005	F2	No	No	No	3 mm	Inside	No	No
P3S06P006	F2	No	No	No	3 mm	Inside	No	No
P3S06P007	F2	No	No	No	3 mm	Inside	No	No
P3S06P008	F2	No	No	No	3 mm	Inside	No	No
P3S06P009	F2	No	No	No	3 mm	Inside	No	No
P3S07P001	F2	No	No	No	3 mm	Inside	No	No
P3S07P002	F2	No	No	No	3 mm	Inside	No	No
P3S07P003	F2	No	No	No	3 mm	Inside	No	No
P3S07P004	F2	No	No	No	3 mm	Inside	No	No
P3S07P005	F2	No	No	No	3 mm	Inside	No	No
P3S07P006	F2	No	No	No	3 mm	Inside	No	No
P3S07P007	F2	No	No	No	3 mm	Inside	No	No
P3S07P008	F2	No	No	No	3 mm	Inside	No	No
P3S07P009	F2	No	No	No	3 mm	Inside	No	No
F 6: 29								

Remark: An above is a portion extracted for presentation purpose the full schedule of panels included in the BIM model.



Panel P3S01P004
Edge 1 ..... 1488 mm
Edge 2 ..... 2279 mm
Edge 3 ..... 1476 mm
Edge 4 ..... 2279 mm
Diagonal ..... 2720 mm
Group(Size) .... A 1
Group(Finish)... F 1

Panel P3S04P001
Edge 1 ..... 1460 mm
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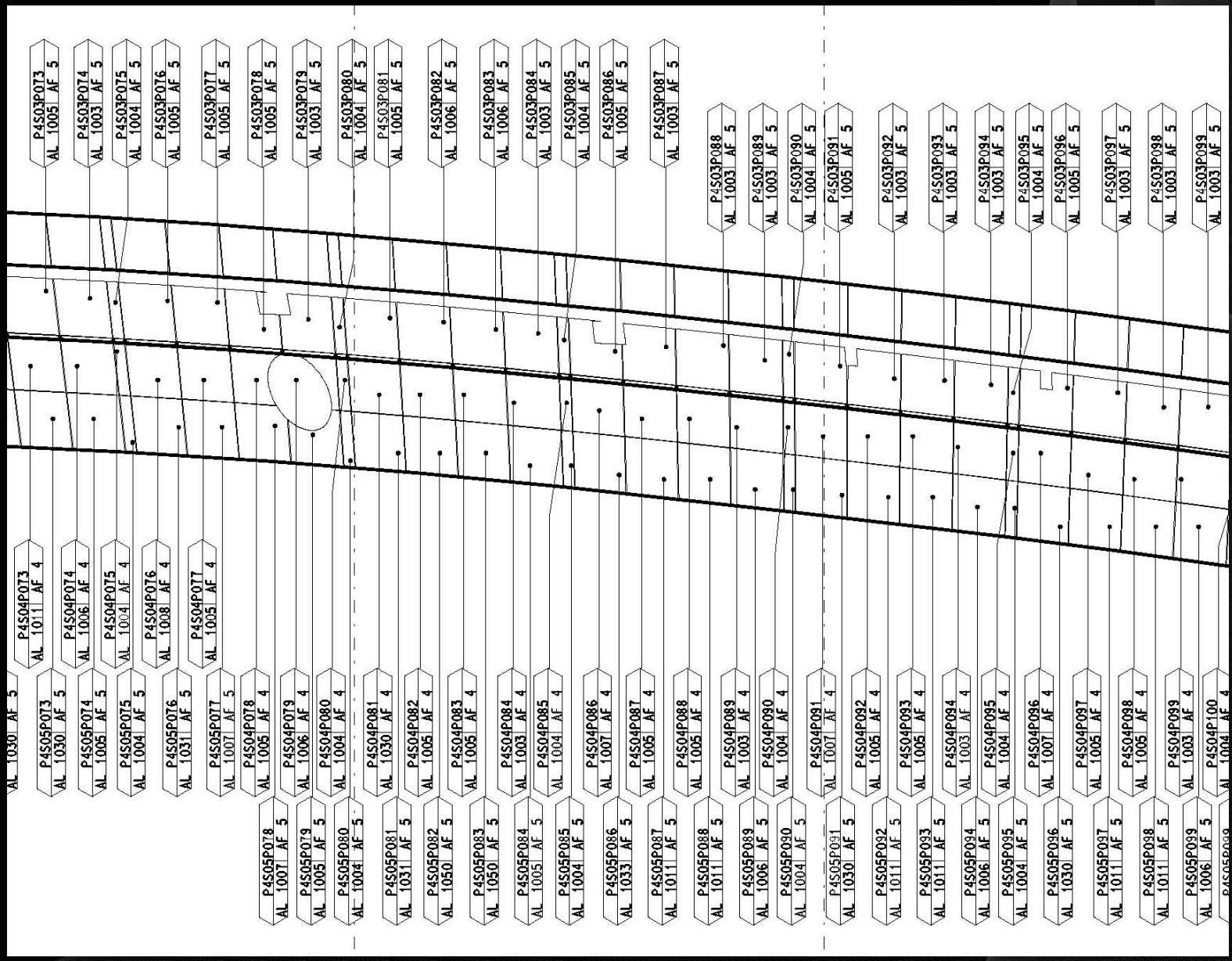
Edge 3 ..... 1445 mm
Edge 4 ..... 2042 mm
Diagonal ..... 2508 mm
Group(Size) .... A 13
Group(Finish)... F 2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P4S03P078 AL 1005 AF 5
P4S03P079 AL 1003 AF 5
P4S03P080 AL 1004 AF 5
P4S03P081 AL 1005 AF 5
P4S03P082 AL 1006 AF 5
P4S03P083 AL 1006 AF 5
P4S03P084 AL 1003 AF 5
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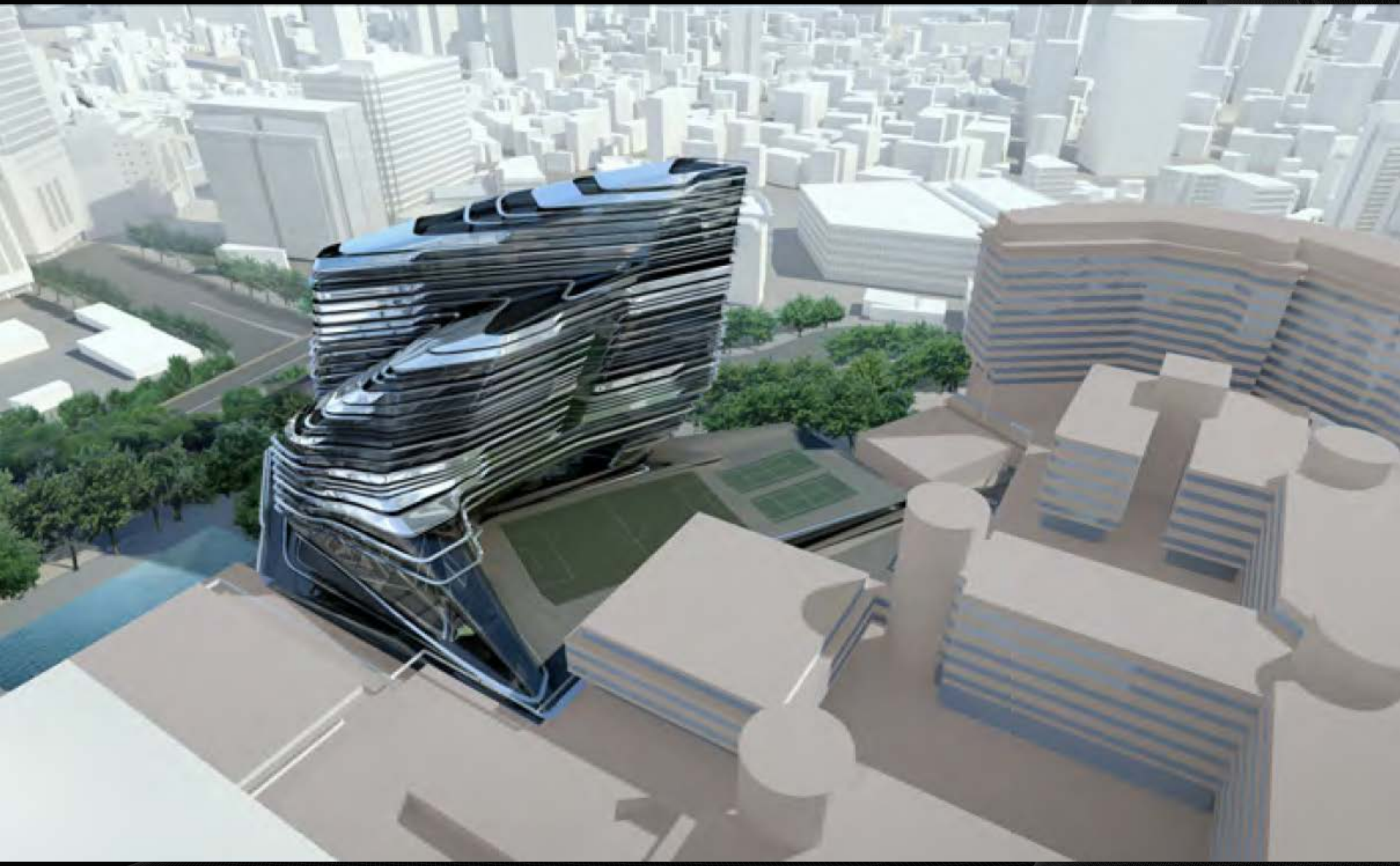

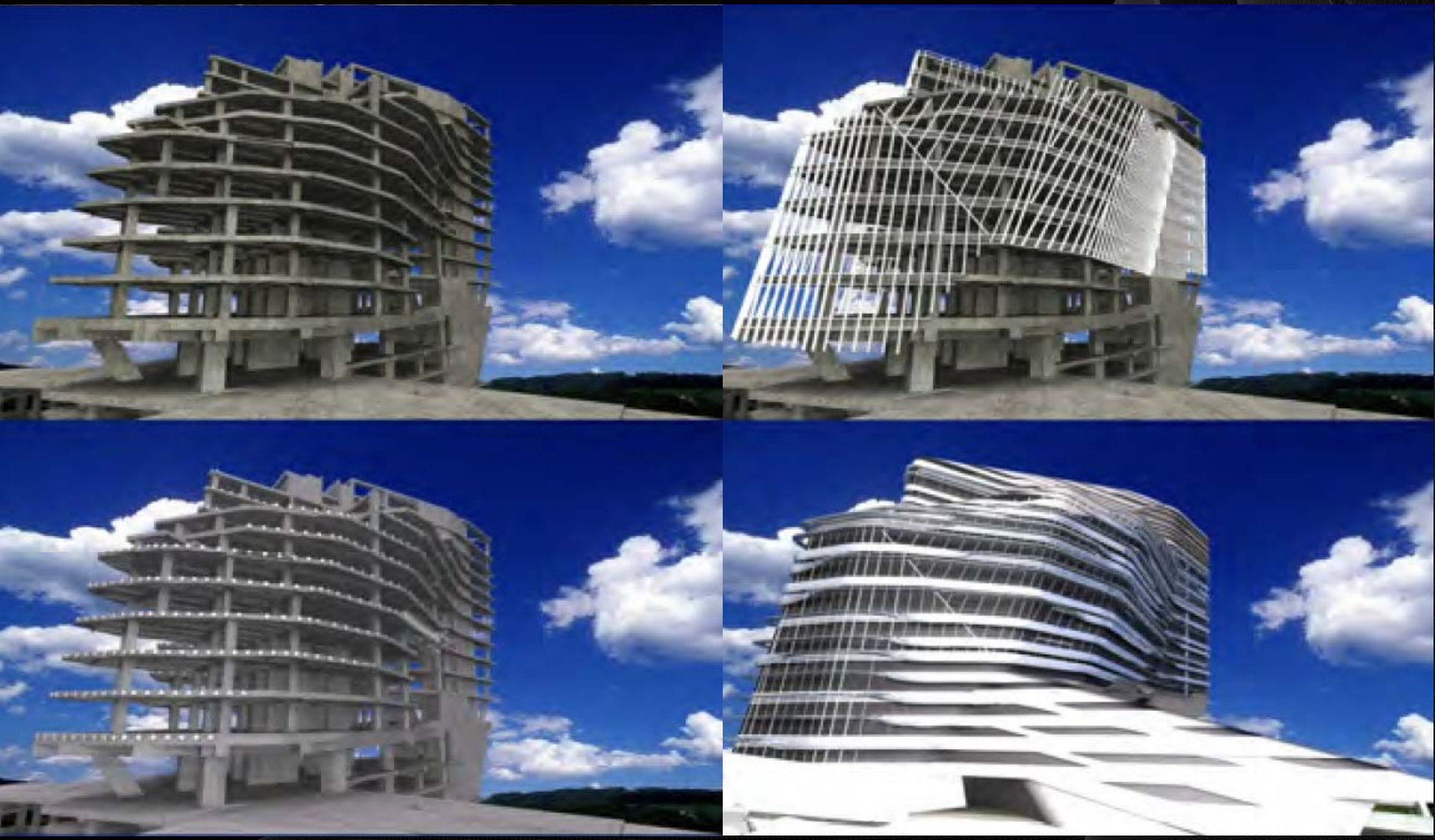

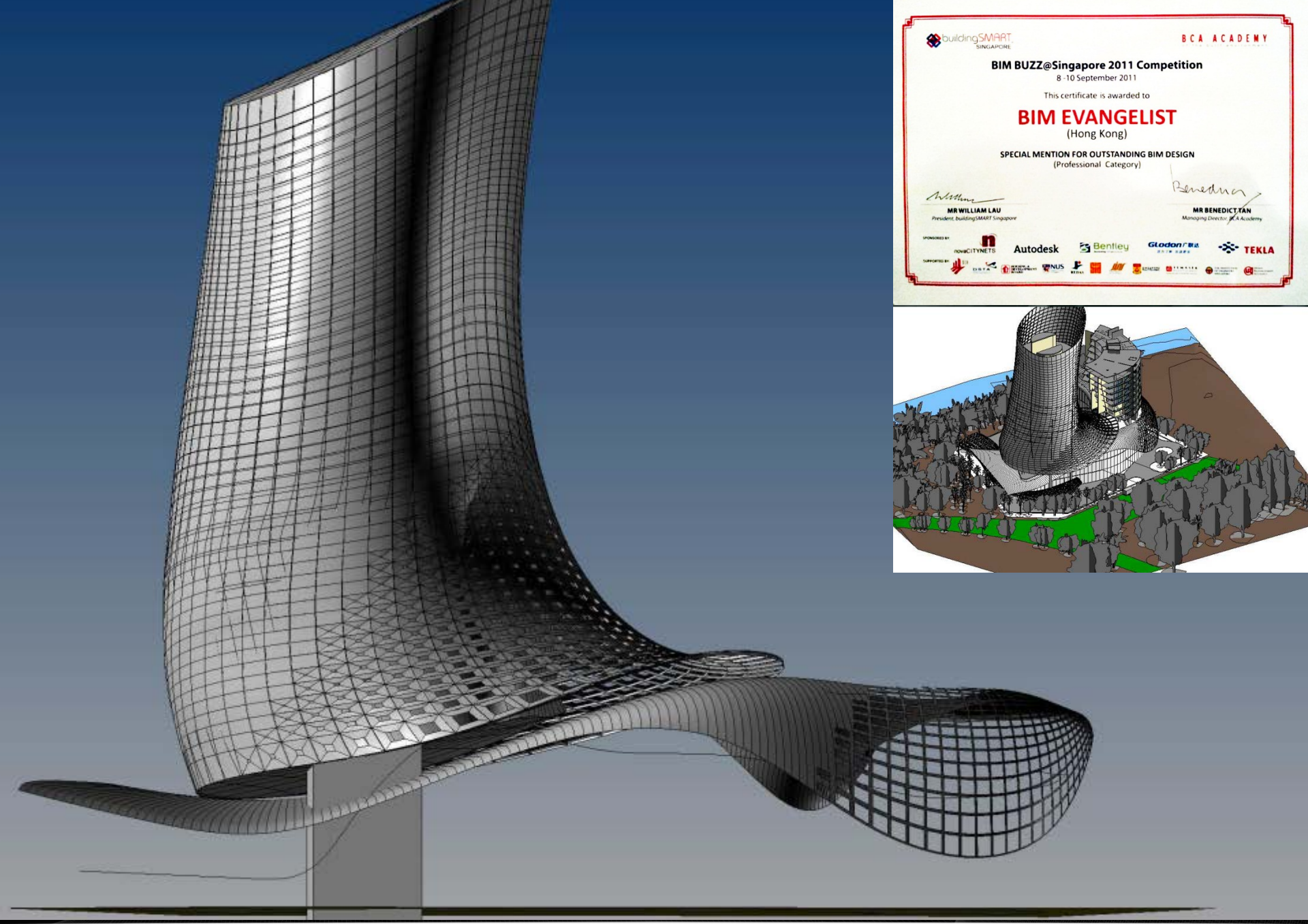

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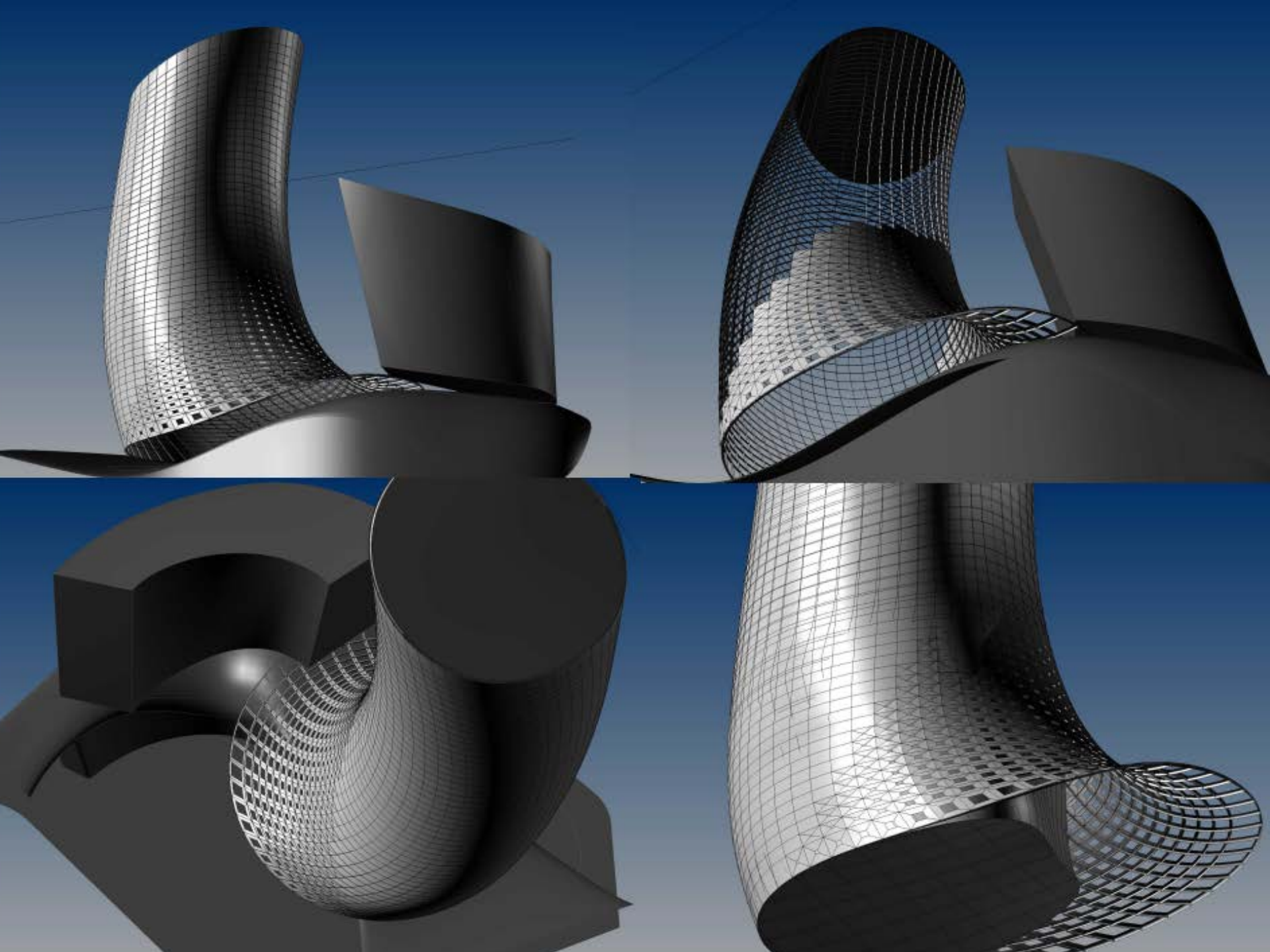

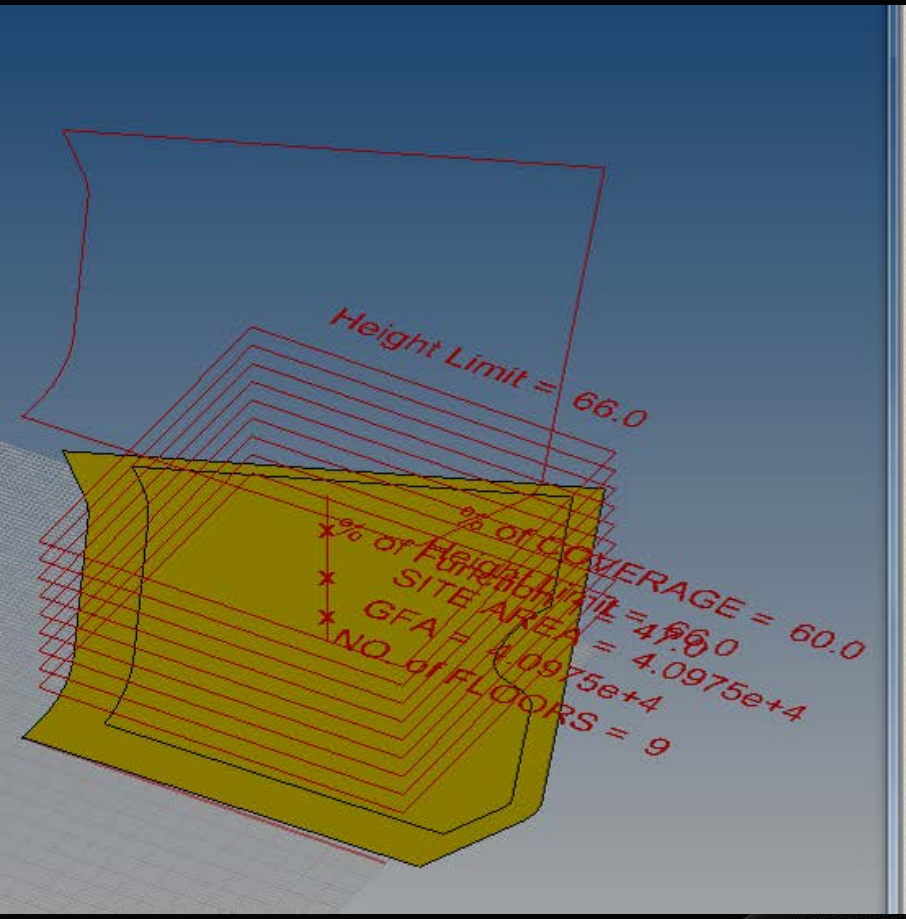
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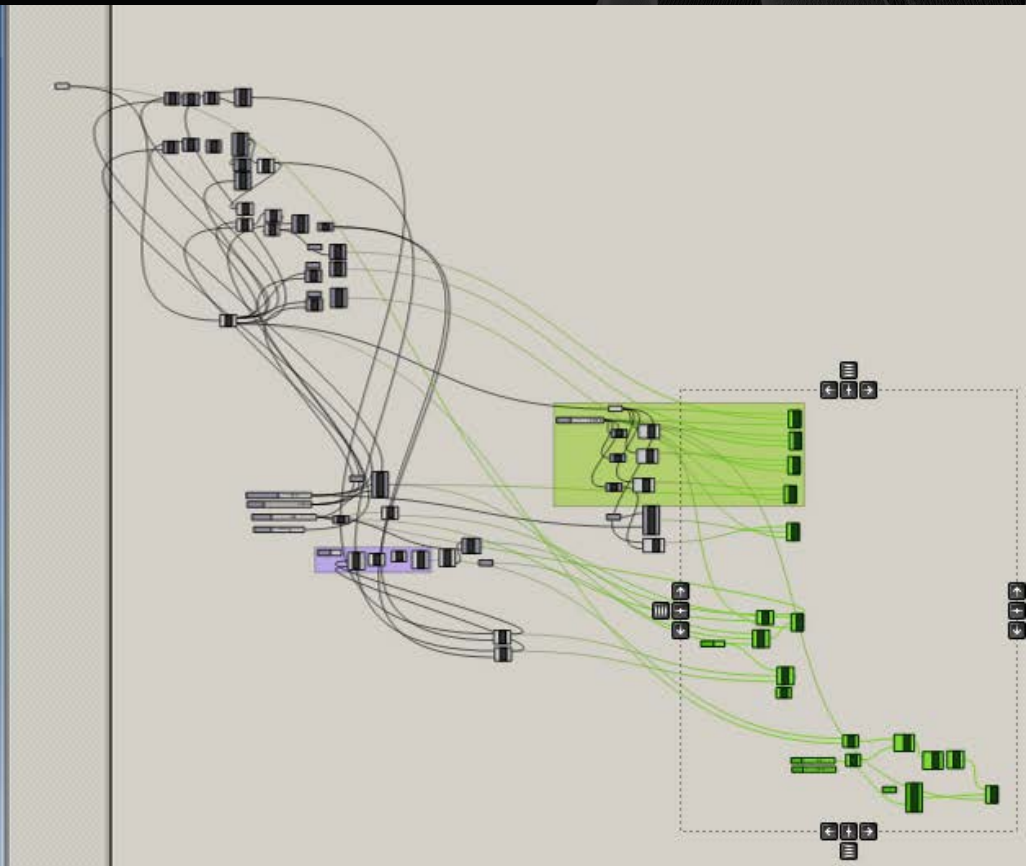

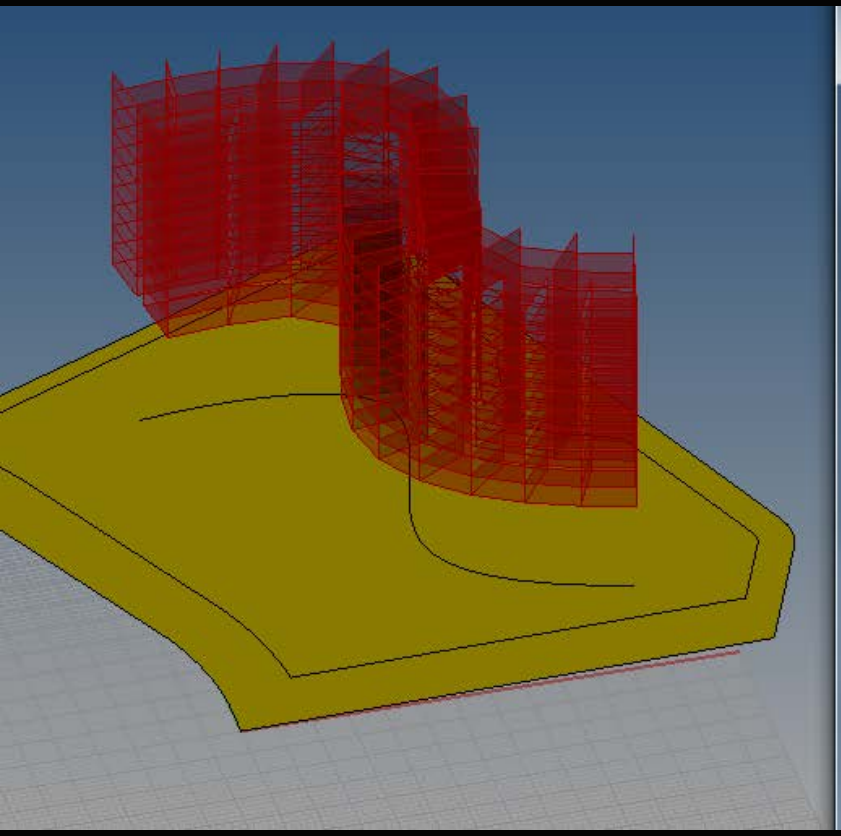

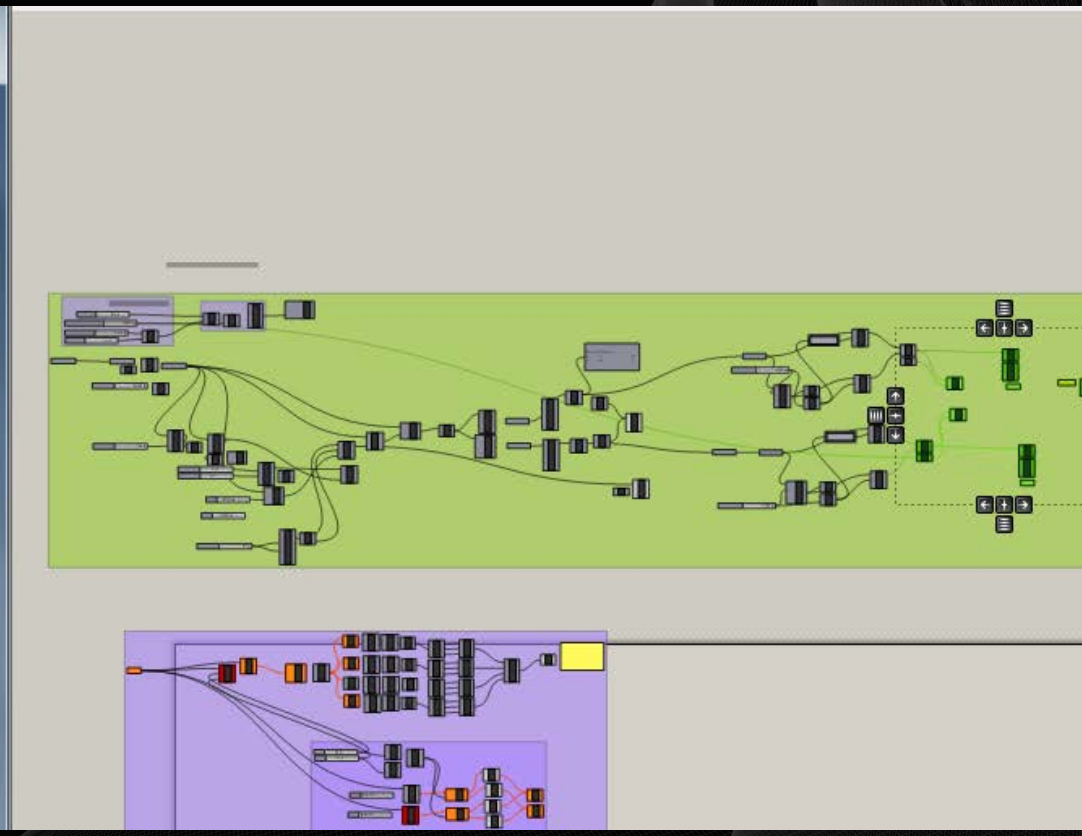

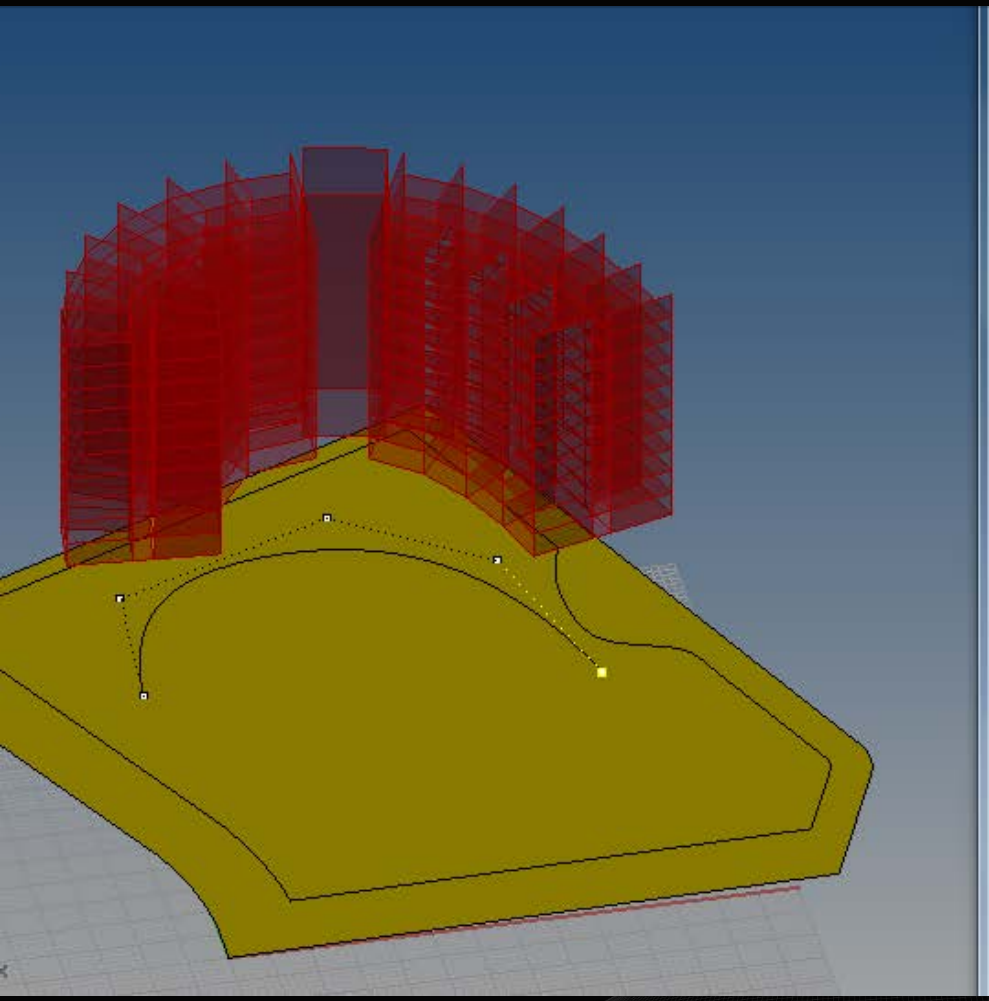

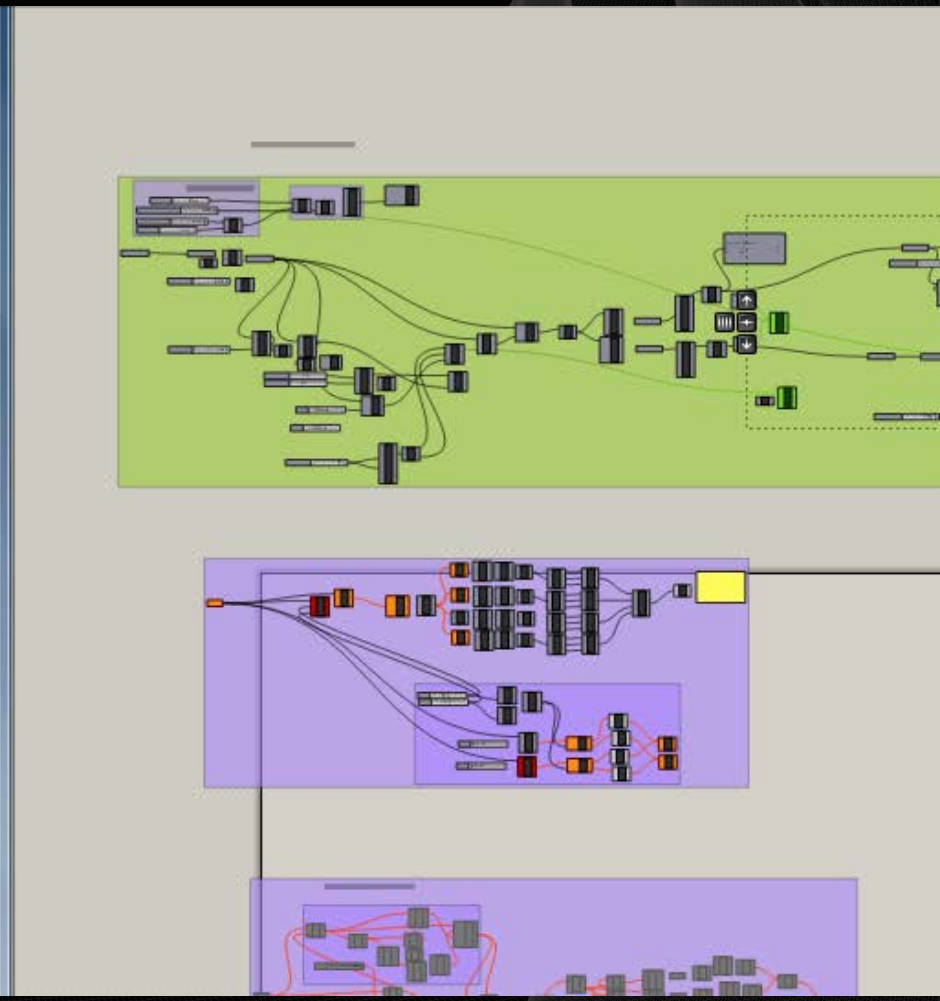

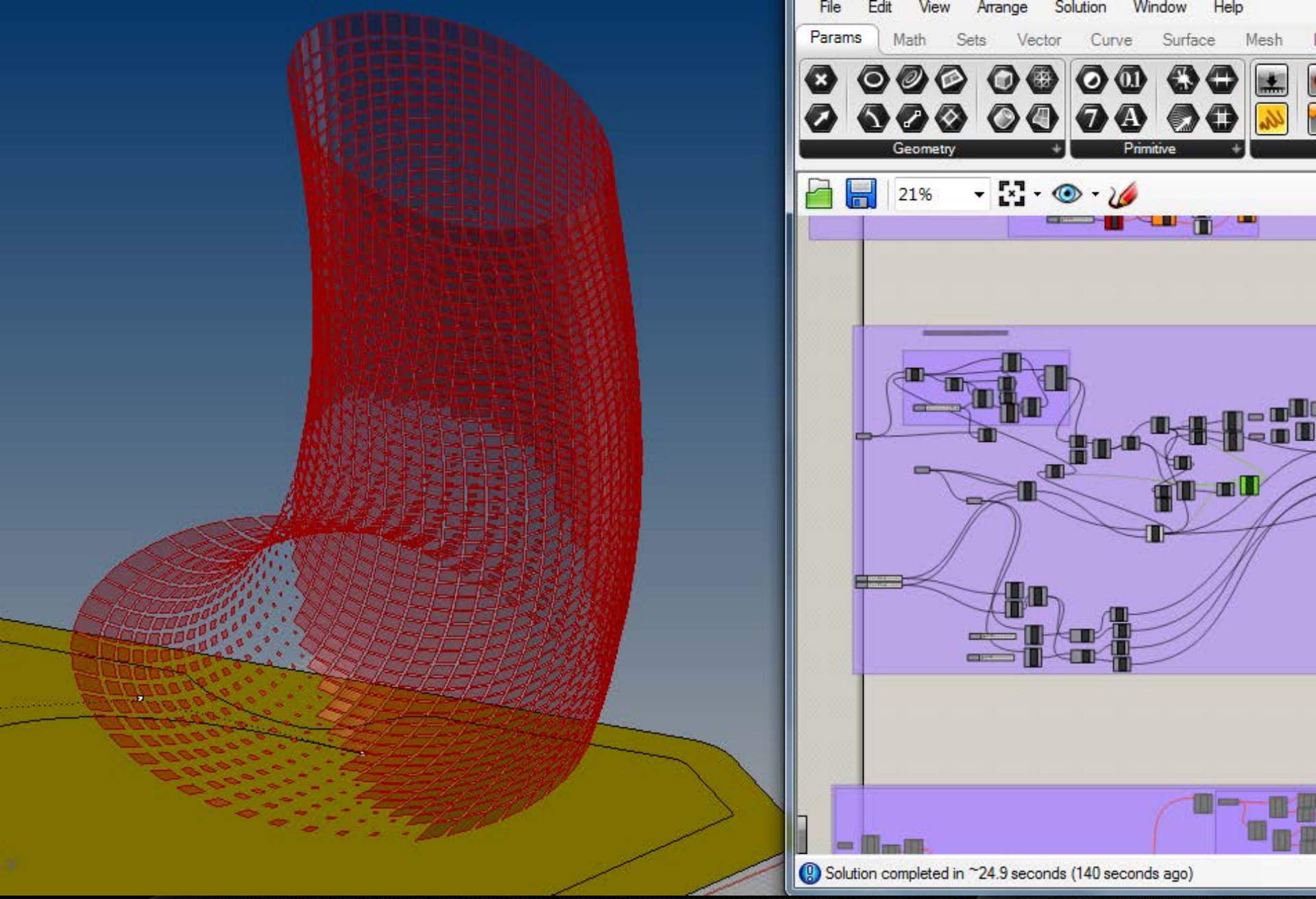
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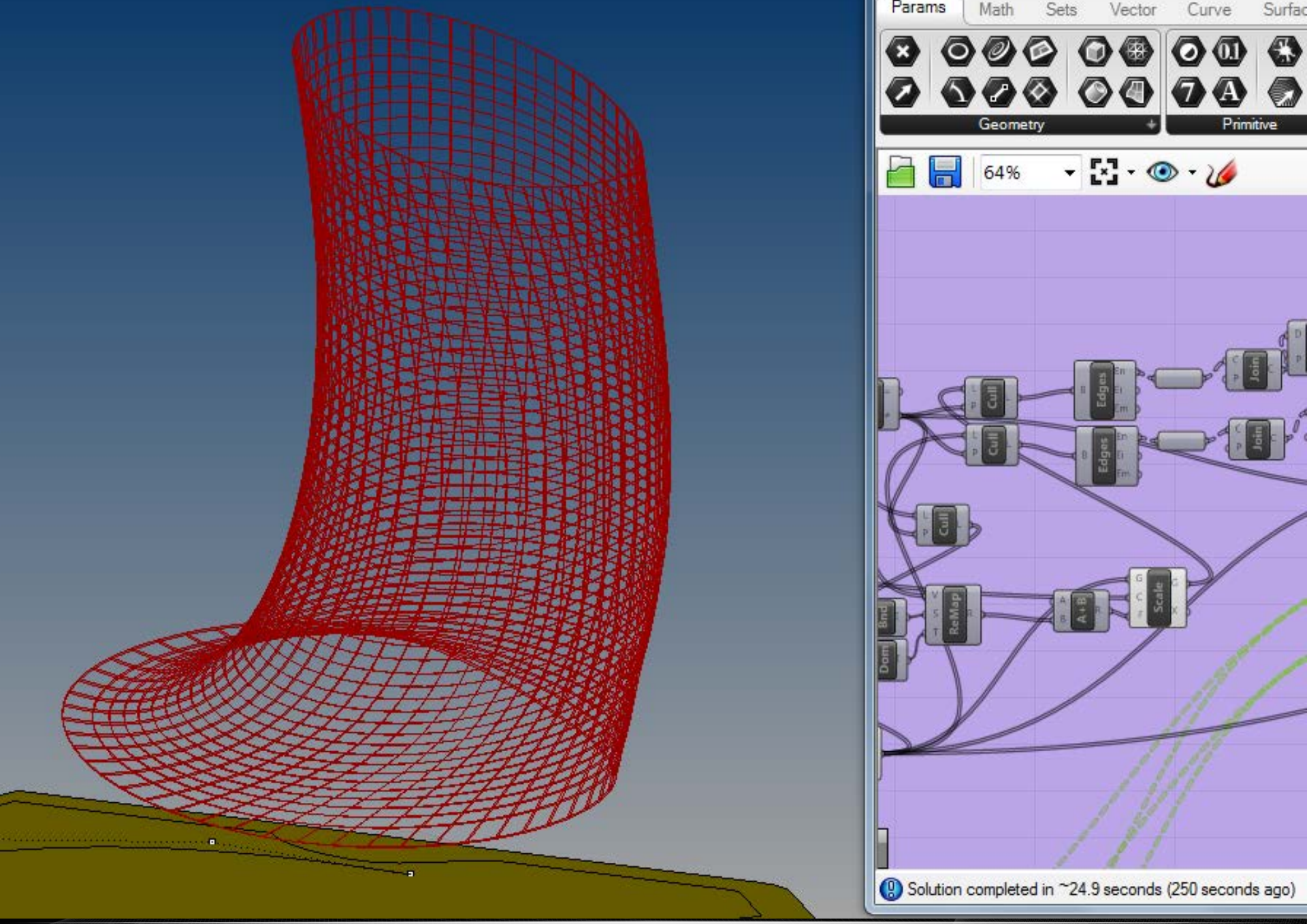
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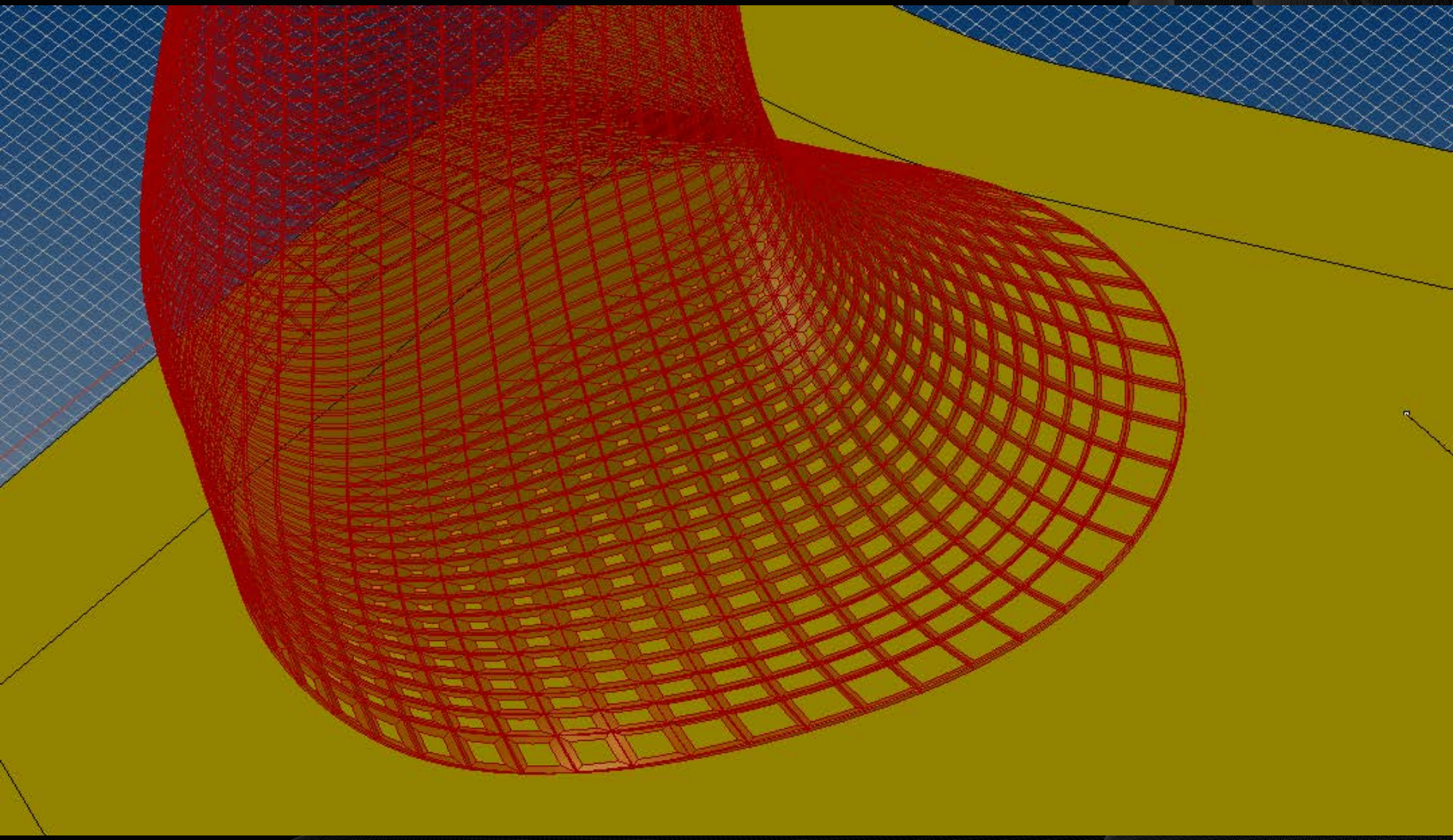

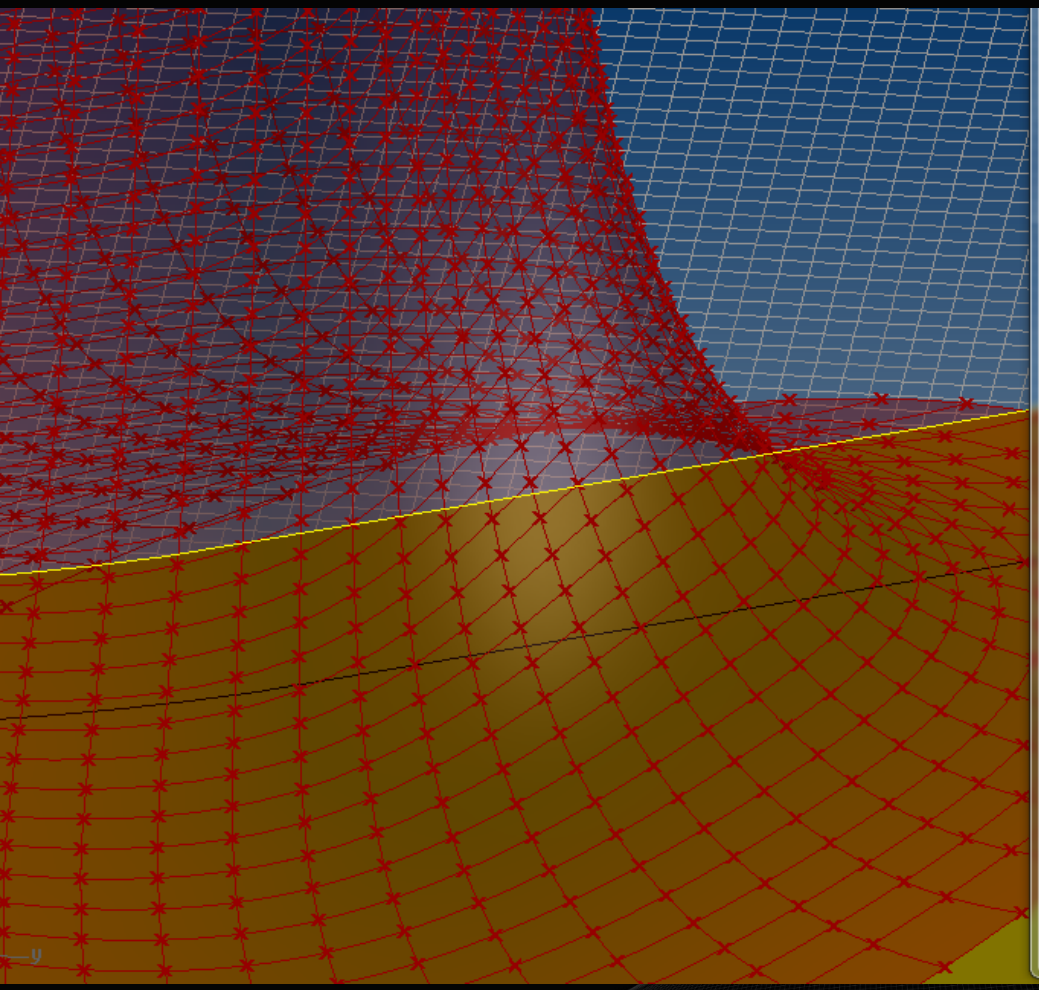

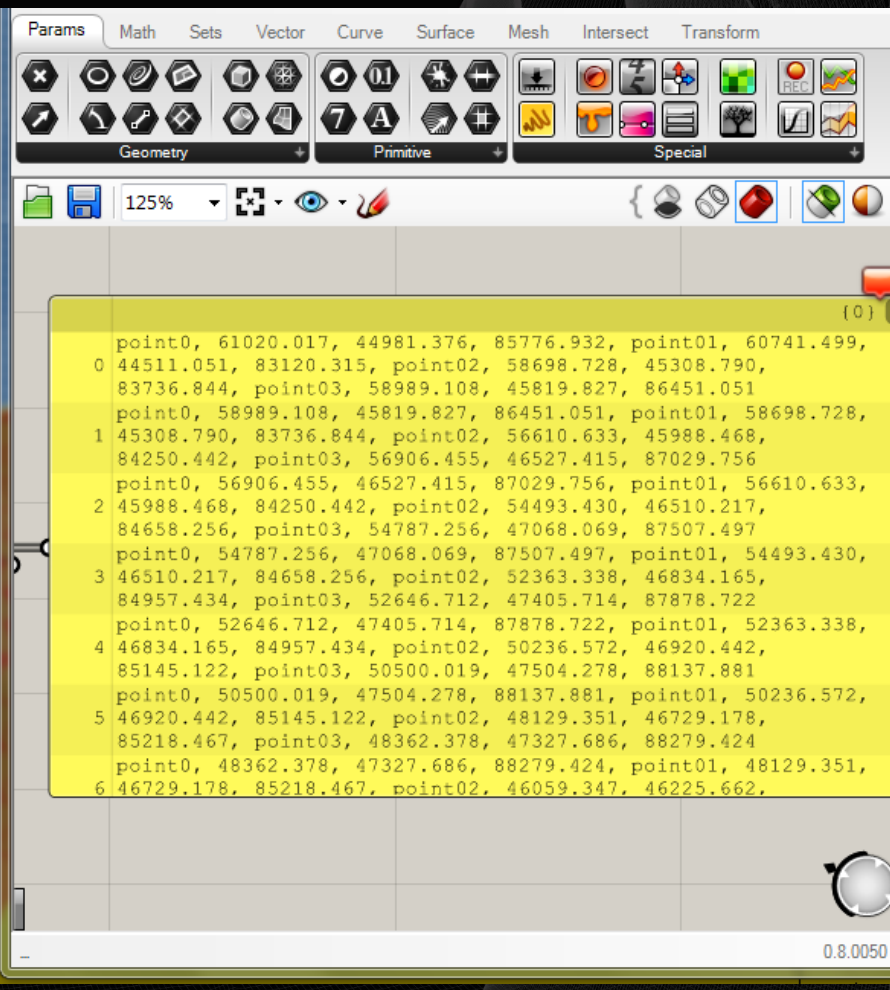
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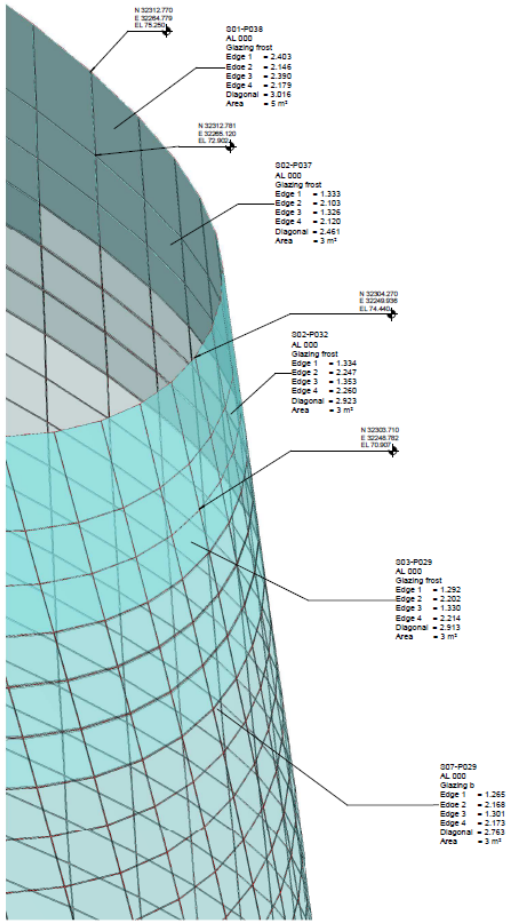


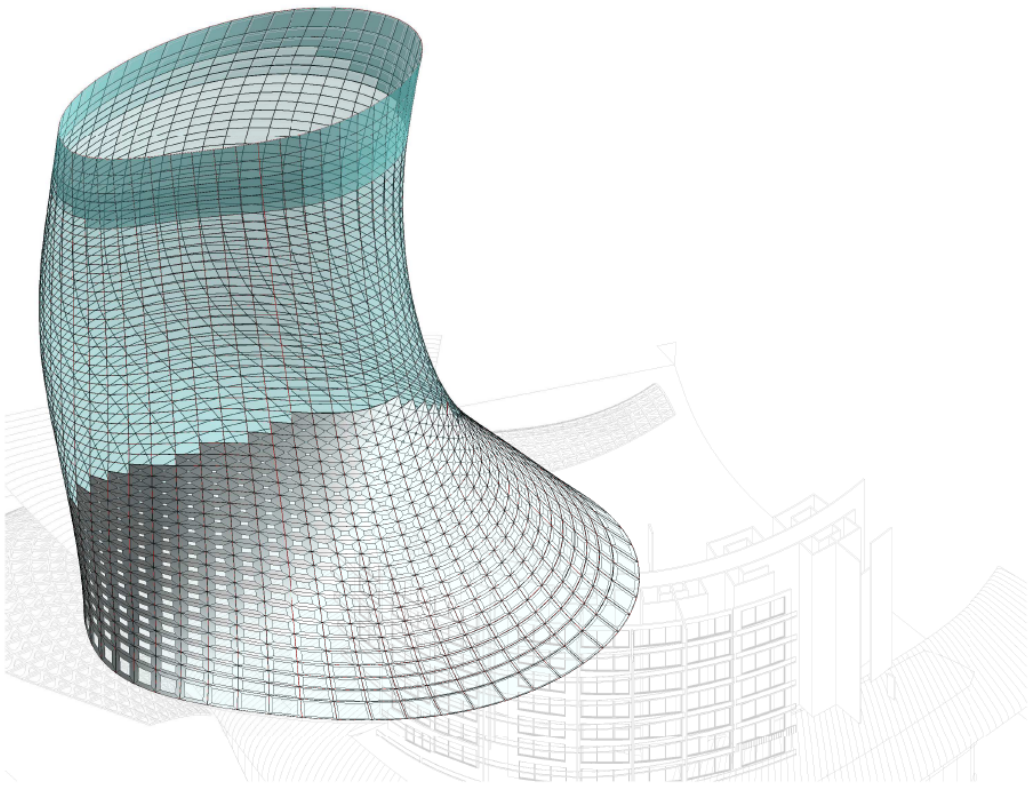
1 TAG & ANNOTATION

Panelisation Schedule (Partial)

Panel Type	Material	P01x	P01y	P01z	P02x	P02y	P02z	P03x	P03y	P03z	P04x	P04y	P04z	Edge 1	Edge 2	Edge 3	Edge 4	Diagonal	Area
S04-P024	Glazing b	41.228	19.153	71.590	41.563	18.877	70.124	43.351	17.800	69.607	42.999	18.053	71.034	1.491	2.150	1.529	2.157	3.204	2.787 m²
S04-P025	Glazing b	42.999	18.053	71.034	43.351	17.800	69.607	45.270	16.975	69.189	44.908	17.201	70.575	1.451	2.131	1.491	2.140	3.119	2.759 m²
S04-P026	Glazing b	44.908	17.201	70.575	45.270	16.975	69.189	47.293	16.420	68.877	46.928	16.620	70.222	1.408	2.120	1.451	2.131	3.030	2.742 m²
S04-P027	Glazing b	46.928	16.620	70.222	47.293	16.420	68.877	49.394	16.126	68.658	49.032	16.297	69.963	1.365	2.133	1.408	2.145	2.962	2.736 m²
S04-P028	Glazing b	49.032	16.297	69.963	49.394	16.126	68.658	51.548	16.069	68.512	51.194	16.213	69.780	1.324	2.160	1.365	2.172	2.914	2.736 m²
S04-P029	Glazing b	51.194	16.213	69.780	51.548	16.069	68.512	53.730	16.231	68.418	53.388	16.347	69.662	1.286	2.190	1.324	2.202	2.879	2.727 m²
S04-P030	Glazing b	53.388	16.347	69.662	53.730	16.231	68.418	55.917	16.590	68.357	55.589	16.681	69.564	1.254	2.216	1.286	2.227	2.851	2.708 m²
S04-P031	Glazing b	55.589	16.681	69.564	55.917	16.590	68.357	58.082	17.124	68.309	57.768	17.193	69.495	1.229	2.231	1.254	2.240	2.826	2.679 m²
S04-P032	Glazing b	57.768	17.193	69.495	58.082	17.124	68.309	60.200	17.817	68.256	59.901	17.868	69.431	1.214	2.229	1.229	2.238	2.800	2.643 m²
S04-P033	Glazing b	59.901	17.868	69.431	60.200	17.817	68.256	62.239	18.666	68.212	61.953	18.703	69.385	1.207	2.208	1.214	2.216	2.754	2.607 m²
S04-P034	Glazing b	61.953	18.703	69.385	62.239	18.666	68.212	64.159	19.680	68.206	63.886	19.706	69.382	1.207	2.171	1.207	2.179	2.685	2.576 m²
S04-P035	Glazing b	63.888	19.706	69.382	64.159	19.680	68.206	65.923	20.867	68.267	65.669	20.885	69.450	1.210	2.127	1.207	2.137	2.595	2.551 m²
S04-P036	Glazing b	65.669	20.885	69.450	65.923	20.867	68.267	67.492	22.238	68.421	67.260	22.248	69.615	1.217	2.089	1.210	2.101	2.493	2.537 m²
S04-P037	Glazing b	67.260	22.248	69.615	67.492	22.238	68.421	68.831	23.798	68.699	68.623	23.803	69.905	1.223	2.075	1.217	2.088	2.390	2.539 m²
S04-P038	Glazing b	68.623	23.803	69.905	68.831	23.798	68.699	69.900	25.557	69.128	69.724	25.556	70.344	1.229	2.102	1.223	2.116	2.304	2.566 m²
S04-P039	Glazing b	69.724	25.556	70.344	69.900	25.557	69.128	70.678	27.482	69.708	70.539	27.477	70.934	1.234	2.156	1.229	2.168	2.241	2.598 m²
S05-P022	Glazing b	38.504	21.666	71.395	38.781	21.350	69.660	40.239	19.877	69.225	39.938	20.176	70.725	1.559	2.166	1.591	2.174	3.305	2.866 m²
S05-P023	Glazing b	39.938	20.176	70.725	40.239	19.877	69.225	41.885	18.599	68.661	41.563	18.877	70.124	1.523	2.158	1.559	2.165	3.246	2.839 m²
S05-P024	Glazing b	41.563	18.877	70.124	41.885	18.599	68.661	43.687	17.546	68.184	43.351	17.800	69.607	1.485	2.141	1.523	2.150	3.170	2.807 m²
S05-P025	Glazing b	43.351	17.800	69.607	43.687	17.546	68.184	45.615	16.746	67.807	45.270	16.975	69.189	1.443	2.121	1.485	2.131	3.079	2.774 m²
Glazing b: 20																			53.780 m²
S04-P001	Glazing frost	60.436	44.022	80.251	60.289	43.797	78.882	58.234	44.622	79.403	58.385	44.769	80.802	1.429	2.241	1.396	2.252	2.413	3.113 m²
S04-P002	Glazing frost	58.385	44.769	80.802	58.234	44.522	79.403	56.144	45.147	79.808	56.296	45.411	81.242	1.466	2.219	1.429	2.228	2.481	3.188 m²
S04-P003	Glazing frost	56.296	45.411	81.242	56.144	45.147	79.808	54.035	45.627	80.101	54.186	45.903	81.571	1.503	2.183	1.466	2.192	2.542	3.236 m²
S04-P004	Glazing frost	54.186	45.903	81.571	54.035	45.627	80.101	51.923	45.919	80.284	52.070	46.204	81.790	1.540	2.140	1.503	2.149	2.604	3.262 m²
S04-P005	Glazing frost	52.070	46.204	81.790	51.923	45.919	80.284	49.624	45.978	80.358	49.964	46.272	81.901	1.576	2.101	1.540	2.110	2.673	3.278 m²
S04-P006	Glazing frost	49.964	46.272	81.901	49.824	45.978	80.358	47.755	45.762	80.327	47.883	46.063	81.902	1.609	2.081	1.576	2.092	2.760	3.303 m²
S04-P007	Glazing frost	47.883	46.063	81.902	47.755	45.762	80.327	45.732	45.230	80.192	45.844	45.542	81.797	1.639	2.096	1.609	2.107	2.871	3.361 m²
S04-P008	Glazing frost	45.844	45.542	81.797	45.732	45.230	80.192	43.786	44.395	79.959	43.877	44.718	81.589	1.665	2.131	1.639	2.142	2.988	3.433 m²
S04-P009	Glazing frost	43.877	44.718	81.589	43.786	44.395	79.959	41.954	43.290	79.632	42.021	43.626	81.283	1.686	2.165	1.665	2.176	3.094	3.488 m²
S04-P010	Glazing frost	42.021	43.626	81.283	41.954	43.290	79.632	40.271	41.951	79.218	40.312	42.299	80.885	1.704	2.190	1.686	2.200	3.183	3.514 m²
S04-P011	Glazing frost	40.312	42.299	80.885	40.271	41.951	79.218	38.775	40.413	78.722	38.789	40.772	80.401	1.717	2.201	1.704	2.211	3.255	3.502 m²
S04-P012	Glazing frost	38.789	40.772	80.401	38.775	40.413	78.722	37.503	38.712	78.150	37.487	39.081	79.835	1.725	2.199	1.717	2.208	3.311	3.451 m²
S04-P013	Glazing frost	37.487	39.081	79.835	37.503	38.712	78.150	36.491	36.884	77.508	36.445	37.258	79.195	1.729	2.187	1.725	2.195	3.352	3.366 m²
S04-P014	Glazing frost	36.445	37.258	79.195	36.491	36.884	77.508	35.757	34.961	76.805	35.681	35.339	78.488	1.727	2.174	1.729	2.183	3.385	3.271 m²
S04-P015	Glazing frost	35.681	35.339	78.488	35.757	34.961	76.805	35.304	32.979	76.055	35.198	33.356	77.731	1.721	2.167	1.727	2.177	3.411	3.185 m²
S04-P016	Glazing frost	35.198	33.356	77.731	35.304	32.979	76.055	35.133	30.969	75.274	34.997	31.343	76.938	1.710	2.163	1.721	2.173	3.426	3.106 m²
S04-P017	Glazing frost	34.997	31.343	76.938	35.133	30.969	75.274	35.246	28.965	74.476	35.080	29.333	76.122	1.695	2.160	1.710	2.171	3.432	3.034 m²
S04-P018	Glazing frost	35.080	29.333	76.122	35.246	28.965	74.476	35.644	27.000	73.674	35.447	27.359	75.299	1.676	2.189	1.695	2.170	3.428	2.973 m²
S04-P019	Glazing frost	35.447	27.359	75.299	35.644	27.000	73.674	36.329	25.108	72.884	36.101	25.455	74.484	1.653	2.162	1.676	2.172	3.418	2.927 m²
S04-P020	Glazing frost	36.101	25.455	74.484	36.329	25.108	72.884	37.291	23.320	72.119	37.033	23.653	73.690	1.626	2.170	1.653	2.179	3.401	2.898 m²
S04-P021	Glazing frost	37.033	23.653	73.690	37.291	23.320	72.119	38.504	21.666	71.395	38.217	21.983	72.933	1.597	2.175	1.626	2.183	3.374	2.875 m²
S04-P022	Glazing frost	38.217	21.983	72.933	38.504	21.666	71.395	39.938	20.176	70.725	39.625	20.473	72.228	1.564	2.174	1.597	2.181	3.332	2.849 m²
S04-P023	Glazing frost	39.625	20.473	72.228	39.938	20.176	70.725	41.563	18.877	70.124	41.228	19.153	71.590	1.529	2.165	1.564	2.172	3.276	2.819 m²
S04-P040	Glazing frost	70.539	27.477	70.934	70.678	27.482	69.708	71.158	29.506	70.414	71.060	29.499	71.649	1.238	2.197	1.234	2.207	2.184	2.601 m²
S04-P041	Glazing frost	71.060	29.499	71.649	71.158	29.506	70.414	71.334	31.559	71.220	71.278	31.552	72.463	1.244	2.213	1.238	2.220	2.123	2.573 m²
S04-P042	Glazing frost	71.278	31.552	72.463	71.334	31.559	71.220	71.201	33.571	72.099	71.185	33.570	73.349	1.250	2.200	1.244	2.206	2.053	2.518 m²
S04-P043	Glazing frost	71.185	33.570	73.349	71.201	33.571	72.099	70.751	35.472	73.024	70.774	35.483	74.283	1.259	2.161	1.250	2.168	1.978	2.448 m²
S04-P044	Glazing frost	70.774	35.483	74.283	70.751	35.472	73.024	69.980	37.193	73.969	70.036	37.223	75.236	1.269	2.109	1.259	2.117	1.911	2.383 m²
S04-P045	Glazing frost	70.036	37.223	75.236	69.980	37.193	73.969	68.896	38.694	74.910	68.979	38.752	76.187	1.281	2.077	1.269	2.087	1.889	2.370 m²
S04-P046	Glazing frost	68.979	38.752	76.187	68.896	38.694	74.910	67.541	39.998	75.827	67.645	40.088	77.116	1.297	2.092	1.281	2.104	1.936	2.444 m²
S04-P047	Glazing frost	67.645	40.088	77.116	67.541	39.998	75.827	65.959	41.131	76.701	66.079	41.258	78.005	1.316	2.134	1.297	2.147	2.026	2.574 m²
S04-P048	Glazing frost	66.079	41.258	78.005	65.959	41.131	76.701	64.193	42.124	77.514	64.326	42.286	78.836	1.338	2.182	1.316	2.196	2.133	2.726 m²
S04-P049	Glazing frost	64.326	42.286	78.836	64.193	42.124	77.514	62.289	43.003	78.247	62.430	43.199	79.591	1.365	2.222	1.338	2.236	2.238	2.877 m²
S04-P050	Glazing frost	62.430	43.199	79.591	62.289	43.003	78.247	60.289	43.797	78.882	60.436	44.022	80.251	1.395	2.243	1.365	2.256	2.333	3.009 m²
S05-P001	Glazing frost	60.289	43.797	78.882	60.141	43.579	77.512	58.082	44.282	78.002	58.234	44.522	79.403	1.429	2.231	1.395	2.241	2.425	3.108 m²
S05-P002	Glazing frost	58.234	44.522	79.403	58.082	44.282	78.002	55.990	44.891	78.374	56.144	45.147	79.808	1.465	2.210	1.429	2.219	2.496	3.181 m²
S05-P003	Glazing frost	56.144	45.147	79.808	55.990	44.891	78.374	53.882	45.360	78.631	54.035	45.627	80.101	1.502	2.175	1.465	2.183	2.559	3.226 m²
S05-P004	Glazing frost	54.035	45.627	80.101	53.882	45.360	78.631	51.774	45.642	78.777	51.923	45.919	80.284	1.539	2.131	1.502	2.140	2.620	3.247 m²
S05-P005	Glazing frost	51.923	45.919	80.284	51.774	45.642	78.777	49.663	45.694	78.817	49.824	45.978	80.358	1.574	2.092	1.539	2.101	2.687	3.266 m²
S05-P006	Glazing frost	49.824	45.978	80.358	49.683	45.694	78.817	47.625	45.468	78.752	47.755	45.762	80.327	1.607	2.071	1.574	2.081	2.770	3.275 m²
S05-P007	Glazing frost	47.755	45.762	80.327	47.625	45.468	78.752	45.618	44.927	78.589	45.732	45.230	80.192	1.636	2.085	1.607	2.096	2.878	3.328 m²
S05-P008	Glazing frost	45.732	45.230	80.192	45.618	44.927	78.589	43.691	44.079	78.331	43.786	44.395	79.959	1.661	2.121	1.636	2.131	2.992	3.397 m²
S05-P009	Glazing frost	43.786	44.395	79.959	43.691	44.079	78.331	41.881	42.962	77.984	41.954	43.290	79.632	1.682	2.155	1.661	2.165	3.095	3.451 m²
S05-P010	Glazing frost	41.954	43.290	79.632	41.881	42.962	77.984	40.224	41.611	77.555	40.271	41.951	79.218	1.699	2.181	1.682	2.190	3.182	3.477 m²
S05-P011	Glazing frost	40.271	41.951	79.218	40.224	41.611	77.555	38.756	40.062	77.048	38.775	40.413	78.722	1.711	2.194	1.699	2.201	3.252	3.467 m²
S05-P012	Glazing frost	38.775	40.413	78.722	38.756	40.062	77.048	37.512	38.352	76.470	37.503	38.712	78.150	1.719	2.192	1.711	2.199	3.304	3.418 m²
S05-P013	Glazing frost	37.503	38.712	78.150	37.512	38.352	76.470	36.929	36.517	75.826	36.491	36.884	77.508	1.721	2.179	1.719	2.187	3.342	3.335 m²
S05-P014	Glazing frost	36.491	36.884	77.508	36.529	36.517	75.826	35.526	34.591	75.127	35.757	34.961	76.805	1.719	2.166	1.721	2.174	3.371	3.244 m²
S05-P015	Glazing frost	35.757	34.961	76.805	35.526	34.591	75.127	35.403	32.608	74.386	35.304	32.979	76.055	1.713	2.159	1.719	2.167	3.393	3.162 m²
S05-P016	Glazing frost	35.304	32.979	76.055	35.403	32.608	74.386	35.263	30.601	73.618	35.133	30.969	75.274	1.702	2.154	1.713	2.163	3.405	3.087 m²
S05-P017	Glazing frost	35.133	30.969	75.274	35.263	30.601	73.618	35.406	28.603	72.837	35.246	28.965	74.476	1.686	2.151	1.702	2.160	3.408	3.021 m²
S05-P018	Glazing frost	35.246	28.965	74.476	35.406	28.603	72.837	35.835	26.646	72.056	35.644	27.000	73.674	1.668	2.150	1.686	2.159	3.403	2.965 m²
S05-P019	Glazing frost	35.644	27.000	73.674	35.835	26.646	72.056	36.549	24.764	71.290	36.329	25.108	72.884	1.645	2.154	1.668	2.162	3.392	2.926 m²
S05-P020	Glazing frost	36.329	25.108	72.884	36.549	24.764	71.290	37.541	22.989	70.554	37.291	23.320	72.119	1.620	2.163	1.645	2.170	3.375	2.904 m²
S05-P021	Glazing frost	37.291	23.320	72.119	37.541	22.989	70.554	38.781	21.350	69.860	38.504	21.666	71.395	1.591	2.169	1.620	2.175	3.347	2.887 m²
Glazing frost: 55																			169.317 m²
Grand total: 75																			223.097 m²

BIM EVANGELIST

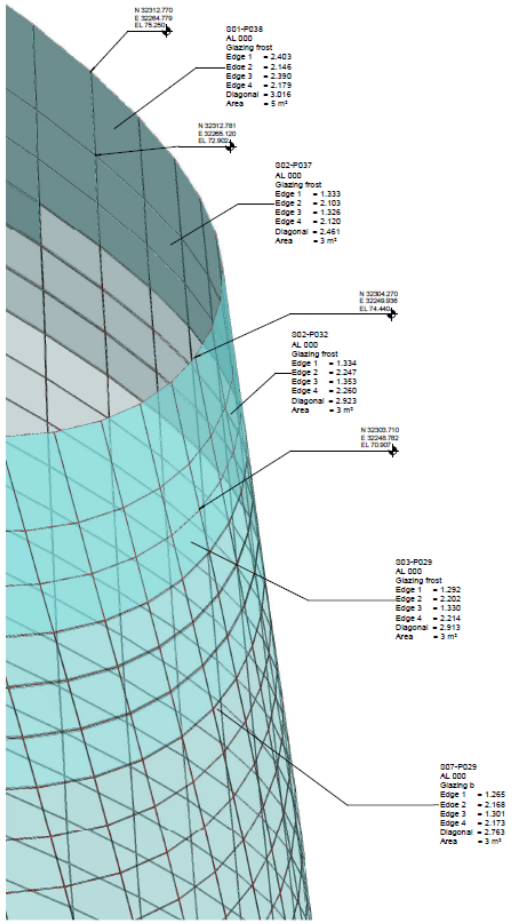
PROJECT NAME	KALLANG RIVERSIDE HOTEL DEVELOPMENT
DRAWING TITLE	PANELISATION ANNOTATION AND SCHEDULE
FILE	Project Name
SCALE	@ A1
DRAWN	Author
CHECK	Checker
DATE	10. SEPT.2011
DRAWING NO.	BIM_A102
REVISION	



1 TOWER FACADE

BIM EVANGELIST

PROJECT NAME	KALLANG RIVERSIDE HOTEL DEVELOPMENT	FILE Project Name	SCALE @ A1	
DRAWING TITLE	TOWER ON PANELISATION	DRAWN Author / CHECK Checker	DATE 10. SEPT.2011	
		DRAWING NO. BIM_A101	REVISION	



1 TAG & ANNOTATION

Panelisation Schedule (Partial)

Panel Type	Material	P01x	P01y	P01z	P02x	P02y	P02z	P03x	P03y	P03z	P04x	P04y	P04z	Edge 1	Edge 2	Edge 3	Edge 4	Diagonal	Area
S04-P024	Glazing b	41.228	19.153	71.590	41.563	18.877	70.124	43.351	17.800	69.607	42.999	18.053	71.034	1.491	2.150	1.529	2.157	3.204	2.787 m²
S04-P025	Glazing b	42.999	18.053	71.034	43.351	17.800	69.607	45.270	16.975	69.189	44.908	17.201	70.575	1.451	2.131	1.491	2.140	3.119	2.759 m²
S04-P026	Glazing b	44.908	17.201	70.575	45.270	16.975	69.189	47.293	16.420	68.877	46.928	16.620	70.222	1.408	2.120	1.451	2.131	3.030	2.742 m²
S04-P027	Glazing b	46.928	16.620	70.222	47.293	16.420	68.877	49.394	16.126	68.658	49.032	16.297	69.963	1.365	2.133	1.408	2.145	2.962	2.736 m²
S04-P028	Glazing b	49.032	16.297	69.963	49.394	16.126	68.658	51.548	16.069	68.512	51.194	16.213	69.780	1.324	2.160	1.365	2.172	2.914	2.736 m²
S04-P029	Glazing b	51.194	16.213	69.780	51.548	16.069	68.512	53.730	16.231	68.418	53.388	16.347	69.662	1.286	2.190	1.324	2.202	2.879	2.727 m²
S04-P030	Glazing b	53.388	16.347	69.662	53.730	16.231	68.418	55.917	16.590	68.357	55.589	16.681	69.564	1.254	2.216	1.286	2.227	2.851	2.708 m²
S04-P031	Glazing b	55.589	16.681	69.564	55.917	16.590	68.357	58.082	17.124	68.309	57.768	17.193	69.495	1.229	2.231	1.254	2.240	2.826	2.679 m²
S04-P032	Glazing b	57.768	17.193	69.495	58.082	17.124	68.309	60.200	17.817	68.256	59.901	17.868	69.431	1.214	2.229	1.229	2.238	2.800	2.643 m²
S04-P033	Glazing b	59.901	17.868	69.431	60.200	17.817	68.256	62.239	18.666	68.212	61.953	18.703	69.385	1.207	2.208	1.214	2.216	2.754	2.607 m²
S04-P034	Glazing b	61.953	18.703	69.385	62.239	18.666	68.212	64.159	19.680	68.206	63.886	19.706	69.382	1.207	2.171	1.207	2.179	2.685	2.576 m²
S04-P035	Glazing b	63.888	19.706	69.382	64.159	19.680	68.206	65.923	20.867	68.267	65.669	20.885	69.450	1.210	2.127	1.207	2.137	2.595	2.551 m²
S04-P036	Glazing b	65.669	20.885	69.450	65.923	20.867	68.267	67.492	22.238	68.421	67.260	22.248	69.615	1.217	2.089	1.210	2.101	2.493	2.537 m²
S04-P037	Glazing b	67.260	22.248	69.615	67.492	22.238	68.421	68.831	23.798	68.699	68.623	23.803	69.905	1.223	2.075	1.217	2.088	2.390	2.539 m²
S04-P038	Glazing b	68.623	23.803	69.905	68.831	23.798	68.699	69.900	25.557	69.128	69.724	25.556	70.344	1.229	2.102	1.223	2.116	2.304	2.566 m²
S04-P039	Glazing b	69.724	25.556	70.344	69.900	25.557	69.128	70.678	27.482	69.708	70.539	27.477	70.934	1.234	2.156	1.229	2.168	2.241	2.598 m²
S05-P022	Glazing b	38.504	21.666	71.395	38.781	21.350	69.660	40.239	19.877	69.225	39.938	20.176	70.725	1.559	2.166	1.591	2.174	3.305	2.866 m²
S05-P023	Glazing b	39.938	20.176	70.725	40.239	19.877	69.225	41.885	18.599	68.661	41.563	18.877	70.124	1.523	2.158	1.559	2.165	3.246	2.839 m²
S05-P024	Glazing b	41.563	18.877	70.124	41.885	18.599	68.661	43.687	17.546	68.184	43.351	17.800	69.607	1.485	2.141	1.523	2.150	3.170	2.807 m²
S05-P025	Glazing b	43.351	17.800	69.607	43.687	17.546	68.184	45.615	16.746	67.807	45.270	16.975	69.189	1.443	2.121	1.485	2.131	3.079	2.774 m²
Glazing b: 20																			53.780 m²
S04-P001	Glazing frost	60.436	44.022	80.251	60.289	43.797	78.882	58.234	44.622	79.403	58.385	44.769	80.802	1.429	2.241	1.396	2.252	2.413	3.113 m²
S04-P002	Glazing frost	58.385	44.769	80.802	58.234	44.522	79.403	56.144	45.147	79.808	56.296	45.411	81.242	1.466	2.219	1.429	2.228	2.481	3.188 m²
S04-P003	Glazing frost	56.296	45.411	81.242	56.144	45.147	79.808	54.035	45.627	80.101	54.186	45.903	81.571	1.503	2.183	1.466	2.192	2.542	3.236 m²
S04-P004	Glazing frost	54.186	45.903	81.571	54.035	45.627	80.101	51.923	45.919	80.284	52.070	46.204	81.790	1.540	2.140	1.503	2.149	2.604	3.262 m²
S04-P005	Glazing frost	52.070	46.204	81.790	51.923	45.919	80.284	49.624	45.978	80.358	49.964	46.272	81.901	1.576	2.101	1.540	2.110	2.673	3.278 m²
S04-P006	Glazing frost	49.964	46.272	81.901	49.824	45.978	80.358	47.755	45.762	80.327	47.883	46.063	81.902	1.609	2.081	1.576	2.092	2.760	3.303 m²
S04-P007	Glazing frost	47.883	46.063	81.902	47.755	45.762	80.327	45.732	45.230	80.192	45.844	45.542	81.797	1.639	2.096	1.609	2.107	2.871	3.361 m²
S04-P008	Glazing frost	45.844	45.542	81.797	45.732	45.230	80.192	43.786	44.395	79.959	43.877	44.718	81.589	1.665	2.131	1.639	2.142	2.988	3.433 m²
S04-P009	Glazing frost	43.877	44.718	81.589	43.786	44.395	79.959	41.954	43.290	79.632	42.021	43.626	81.283	1.686	2.165	1.665	2.176	3.094	3.488 m²
S04-P010	Glazing frost	42.021	43.626	81.283	41.954	43.290	79.632	40.271	41.951	79.218	40.312	42.299	80.885	1.704	2.190	1.686	2.200	3.183	3.514 m²
S04-P011	Glazing frost	40.312	42.299	80.885	40.271	41.951	79.218	38.775	40.413	78.722	38.789	40.772	80.401	1.717	2.201	1.704	2.211	3.255	3.502 m²
S04-P012	Glazing frost	38.789	40.772	80.401	38.775	40.413	78.722	37.503	38.712	78.150	37.487	39.081	79.835	1.725	2.199	1.717	2.208	3.311	3.451 m²
S04-P013	Glazing frost	37.487	39.081	79.835	37.503	38.712	78.150	36.491	36.884	77.508	36.445	37.258	79.195	1.729	2.187	1.725	2.195	3.352	3.366 m²
S04-P014	Glazing frost	36.445	37.258	79.195	36.491	36.884	77.508	35.757	34.961	76.805	35.681	35.339	78.488	1.727	2.174	1.729	2.183	3.385	3.271 m²
S04-P015	Glazing frost	35.681	35.339	78.488	35.757	34.961	76.805	35.304	32.979	76.055	35.198	33.356	77.731	1.721	2.167	1.727	2.177	3.411	3.185 m²
S04-P016	Glazing frost	35.198	33.356	77.731	35.304	32.979	76.055	35.133	30.969	75.274	34.997	31.343	76.938	1.710	2.163	1.721	2.173	3.426	3.106 m²
S04-P017	Glazing frost	34.997	31.343	76.938	35.133	30.969	75.274	35.246	28.965	74.476	35.080	29.333	76.122	1.695	2.160	1.710	2.171	3.432	3.034 m²
S04-P018	Glazing frost	35.080	29.333	76.122	35.246	28.965	74.476	35.644	27.000	73.674	35.447	27.359	75.299	1.676	2.189	1.695	2.170	3.428	2.973 m²
S04-P019	Glazing frost	35.447	27.359	75.299	35.644	27.000	73.674	36.329	25.108	72.884	36.101	25.455	74.484	1.653	2.162	1.676	2.172	3.418	2.927 m²
S04-P020	Glazing frost	36.101	25.455	74.484	36.329	25.108	72.884	37.291	23.320	72.119	37.033	23.653	73.690	1.626	2.170	1.653	2.179	3.401	2.898 m²
S04-P021	Glazing frost	37.033	23.653	73.690	37.291	23.320	72.119	38.504	21.666	71.395	38.217	21.983	72.933	1.597	2.175	1.626	2.183	3.374	2.875 m²
S04-P022	Glazing frost	38.217	21.983	72.933	38.504	21.666	71.395	39.938	20.176	70.725	39.625	20.473	72.228	1.564	2.174	1.597	2.181	3.332	2.849 m²
S04-P023	Glazing frost	39.625	20.473	72.228	39.938	20.176	70.725	41.563	18.877	70.124	41.228	19.153	71.590	1.529	2.165	1.564	2.172	3.276	2.819 m²
S04-P040	Glazing frost	70.539	27.477	70.934	70.678	27.482	69.708	71.158	29.506	70.414	71.060	29.499	71.649	1.238	2.197	1.234	2.207	2.184	2.601 m²
S04-P041	Glazing frost	71.060	29.499	71.649	71.158	29.506	70.414	71.334	31.559	71.220	71.278	31.552	72.463	1.244	2.213	1.238	2.220	2.123	2.573 m²
S04-P042	Glazing frost	71.278	31.552	72.463	71.334	31.559	71.220	71.201	33.571	72.099	71.185	33.570	73.349	1.250	2.200	1.244	2.206	2.053	2.518 m²
S04-P043	Glazing frost	71.185	33.570	73.349	71.201	33.571	72.099	70.751	35.472	73.024	70.774	35.483	74.283	1.259	2.161	1.250	2.168	1.978	2.448 m²
S04-P044	Glazing frost	70.774	35.483	74.283	70.751	35.472	73.024	69.980	37.193	73.969	70.036	37.223	75.236	1.269	2.109	1.259	2.117	1.911	2.383 m²
S04-P045	Glazing frost	70.036	37.223	75.236	69.980	37.193	73.969	68.896	38.694	74.910	68.979	38.752	76.187	1.281	2.077	1.269	2.087	1.889	2.370 m²
S04-P046	Glazing frost	68.979	38.752	76.187	68.896	38.694	74.910	67.541	39.998	75.827	67.645	40.088	77.116	1.297	2.092	1.281	2.104	1.936	2.444 m²
S04-P047	Glazing frost	67.645	40.088	77.116	67.541	39.998	75.827	65.959	41.131	76.701	66.079	41.258	78.005	1.316	2.134	1.297	2.147	2.026	2.574 m²
S04-P048	Glazing frost	66.079	41.258	78.005	65.959	41.131	76.701	64.193	42.124	77.514	64.326	42.286	78.836	1.338	2.182	1.316	2.196	2.133	2.726 m²
S04-P049	Glazing frost	64.326	42.286	78.836	64.193	42.124	77.514	62.289	43.003	78.247	62.430	43.199	79.591	1.365	2.222	1.338	2.236	2.238	2.877 m²
S04-P050	Glazing frost	62.430	43.199	79.591	62.289	43.003	78.247	60.289	43.797	78.882	60.436	44.022	80.251	1.395	2.243	1.365	2.256	2.333	3.009 m²
S05-P001	Glazing frost	60.289	43.797	78.882	60.141	43.579	77.512	58.082	44.282	78.002	58.234	44.522	79.403	1.429	2.231	1.395	2.241	2.425	3.108 m²
S05-P002	Glazing frost	58.234	44.522	79.403	58.082	44.282	78.002	55.990	44.891	78.374	56.144	45.147	79.808	1.465	2.210	1.429	2.219	2.496	3.181 m²
S05-P003	Glazing frost	56.144	45.147	79.808	55.990	44.891	78.374	53.882	45.360	78.631	54.035	45.627	80.101	1.502	2.175	1.465	2.183	2.559	3.226 m²
S05-P004	Glazing frost	54.035	45.627	80.101	53.882	45.360	78.631	51.774	45.642	78.777	51.923	45.919	80.284	1.539	2.131	1.502	2.140	2.620	3.247 m²
S05-P005	Glazing frost	51.923	45.919	80.284	51.774	45.642	78.777	49.663	45.694	78.817	49.824	45.978	80.358	1.574	2.092	1.539	2.101	2.687	3.266 m²
S05-P006	Glazing frost	49.824	45.978	80.358	49.683	45.694	78.817	47.625	45.468	78.752	47.755	45.762	80.327	1.607	2.071	1.574	2.081	2.770	3.275 m²
S05-P007	Glazing frost	47.755	45.762	80.327	47.625	45.468	78.752	45.618	44.927	78.589	45.732	45.230	80.192	1.636	2.085	1.607	2.096	2.878	3.328 m²
S05-P008	Glazing frost	45.732	45.230	80.192	45.618	44.927	78.589	43.691	44.079	78.331	43.786	44.395	79.959	1.661	2.121	1.636	2.131	2.992	3.397 m²
S05-P009	Glazing frost	43.786	44.395	79.959	43.691	44.079	78.331	41.881	42.962	77.984	41.954	43.290	79.632	1.682	2.155	1.661	2.165	3.095	3.451 m²
S05-P010	Glazing frost	41.954	43.290	79.632	41.881	42.962	77.984	40.224	41.611	77.555	40.271	41.951	79.218	1.699	2.181	1.682	2.190	3.182	3.477 m²
S05-P011	Glazing frost	40.271	41.951	79.218	40.224	41.611	77.555	38.756	40.062	77.048	38.775	40.413	78.722	1.711	2.194	1.699	2.201	3.252	3.467 m²
S05-P012	Glazing frost	38.775	40.413	78.722	38.756	40.062	77.048	37.512	38.352	76.470	37.503	38.712	78.150	1.719	2.192	1.711	2.199	3.304	3.418 m²
S05-P013	Glazing frost	37.503	38.712	78.150	37.512	38.352	76.470	36.929	36.517	75.826	36.491	36.884	77.508	1.721	2.179	1.719	2.187	3.342	3.335 m²
S05-P014	Glazing frost	36.491	36.884	77.508	36.529	36.517	75.826	35.526	34.591	75.127	35.757	34.961	76.805	1.719	2.166	1.721	2.174	3.371	3.244 m²
S05-P015	Glazing frost	35.757	34.961	76.805	35.526	34.591	75.127	35.403	32.608	74.386	35.304	32.979	76.055	1.713	2.159	1.719	2.167	3.393	3.162 m²
S05-P016	Glazing frost	35.304	32.979	76.055	35.403	32.608	74.386	35.263	30.601	73.618	35.133	30.969	75.274	1.702	2.154	1.713	2.163	3.405	3.087 m²
S05-P017	Glazing frost	35.133	30.969	75.274	35.263	30.601	73.618	35.406	28.603	72.837	35.246	28.965	74.476	1.686	2.151	1.702	2.160	3.408	3.021 m²
S05-P018	Glazing frost	35.246	28.965	74.476	35.406	28.603	72.837	35.835	26.646	72.056	35.644	27.000	73.674	1.668	2.150	1.686	2.159	3.403	2.965 m²
S05-P019	Glazing frost	35.644	27.000	73.674	35.835	26.646	72.056	36.549	24.764	71.290	36.329	25.108	72.884	1.645	2.154	1.668	2.162	3.392	2.926 m²
S05-P020	Glazing frost	36.329	25.108	72.884	36.549	24.764	71.290	37.541	22.989	70.554	37.291	23.320	72.119	1.620	2.163	1.645	2.170	3.375	2.904 m²
S05-P021	Glazing frost	37.291	23.320	72.119	37.541	22.989	70.554	38.781	21.350	69.860	38.504	21.666	71.395	1.591	2.169	1.620	2.175	3.347	2.887 m²
Glazing frost: 55																			169.317 m²
Grand total: 75																			223.097 m²

BIM EVANGELIST

PROJECT NAME	KALLANG RIVERSIDE HOTEL DEVELOPMENT
DRAWING TITLE	PANELISATION ANNOTATION AND SCHEDULE
FILE	Project Name
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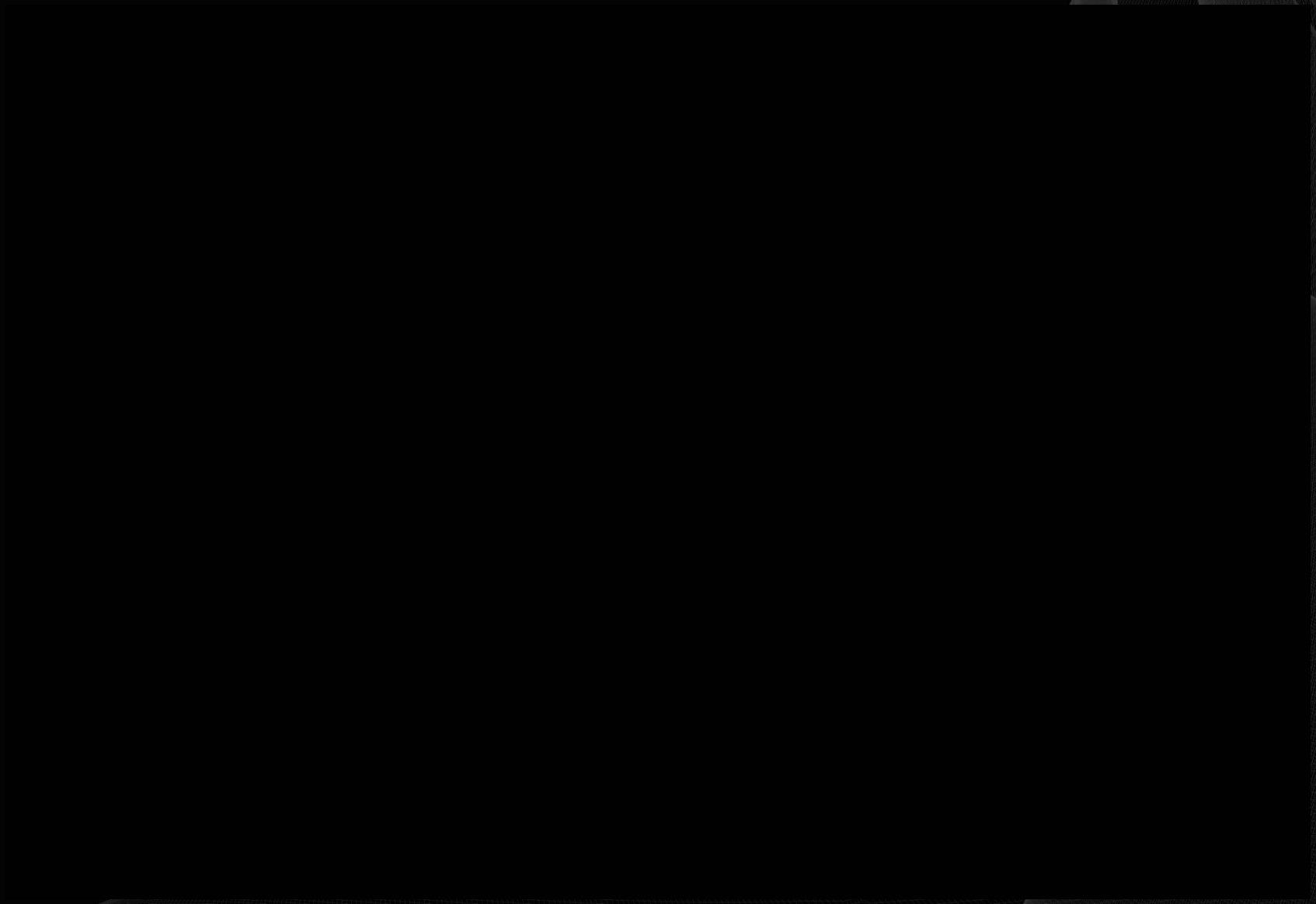
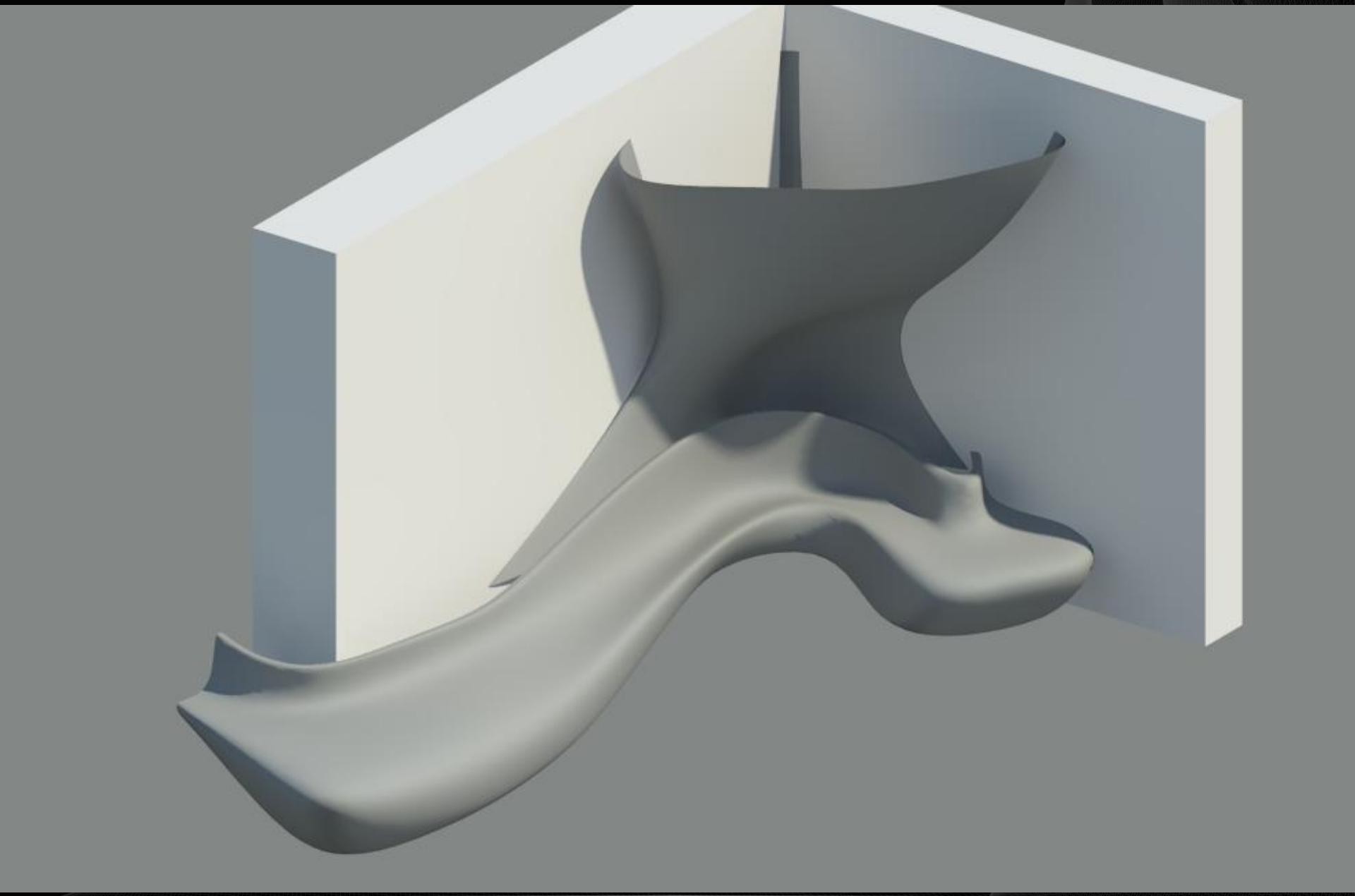
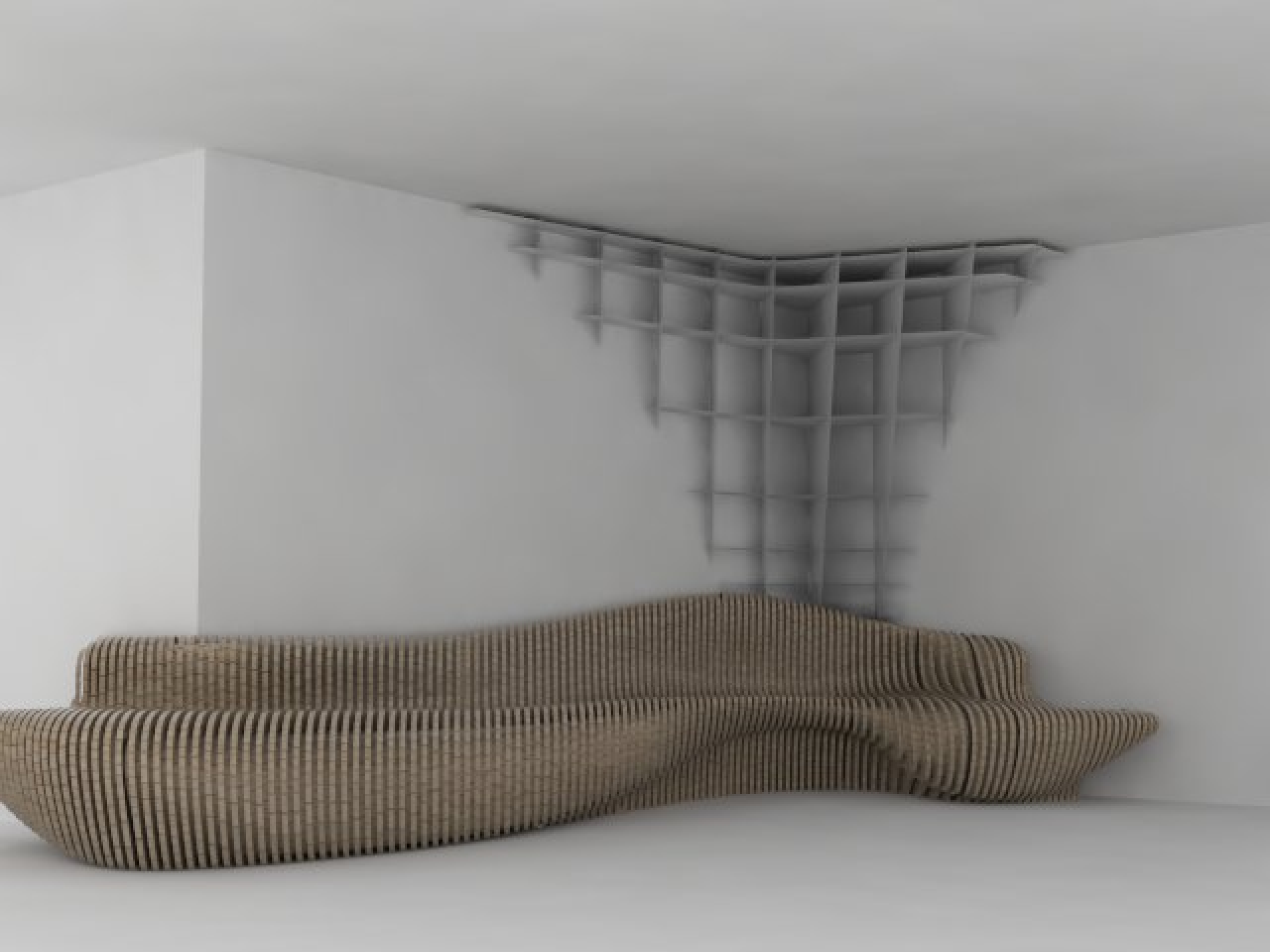
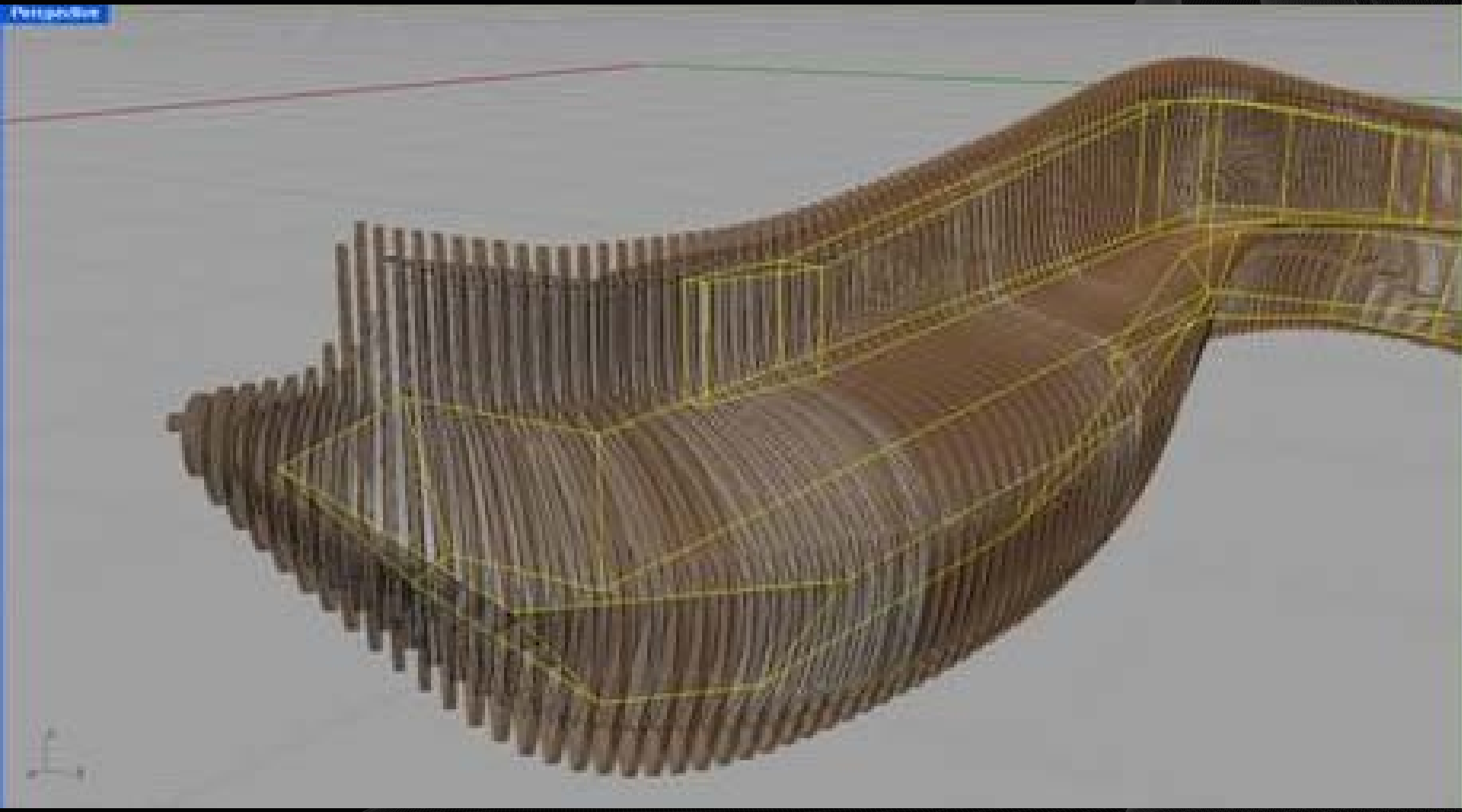
DRAWN	Author
CHECK	Checker
DATE	10. SEPT.2011
DRAWING NO.	BIM_A102
REVISION	

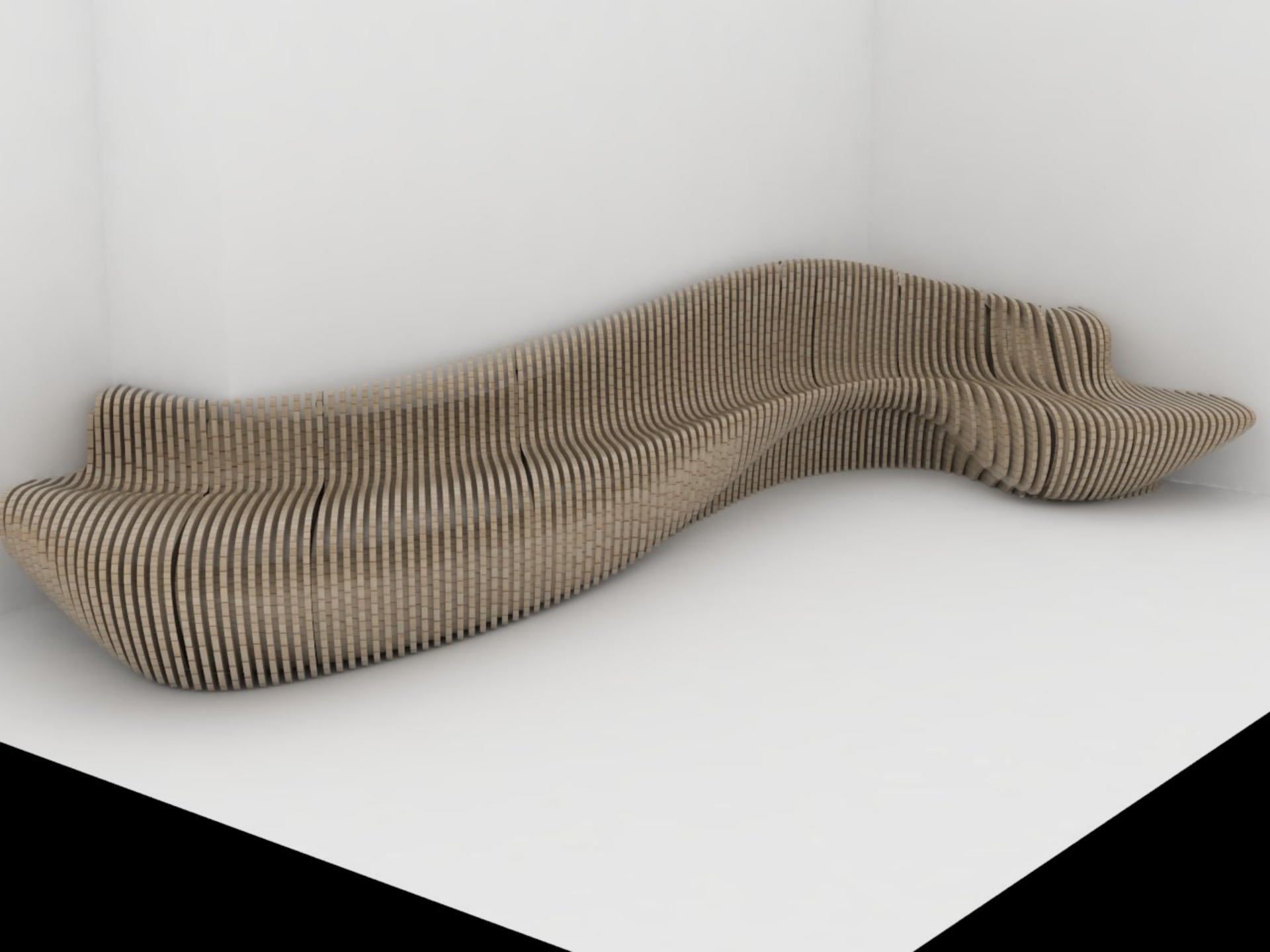


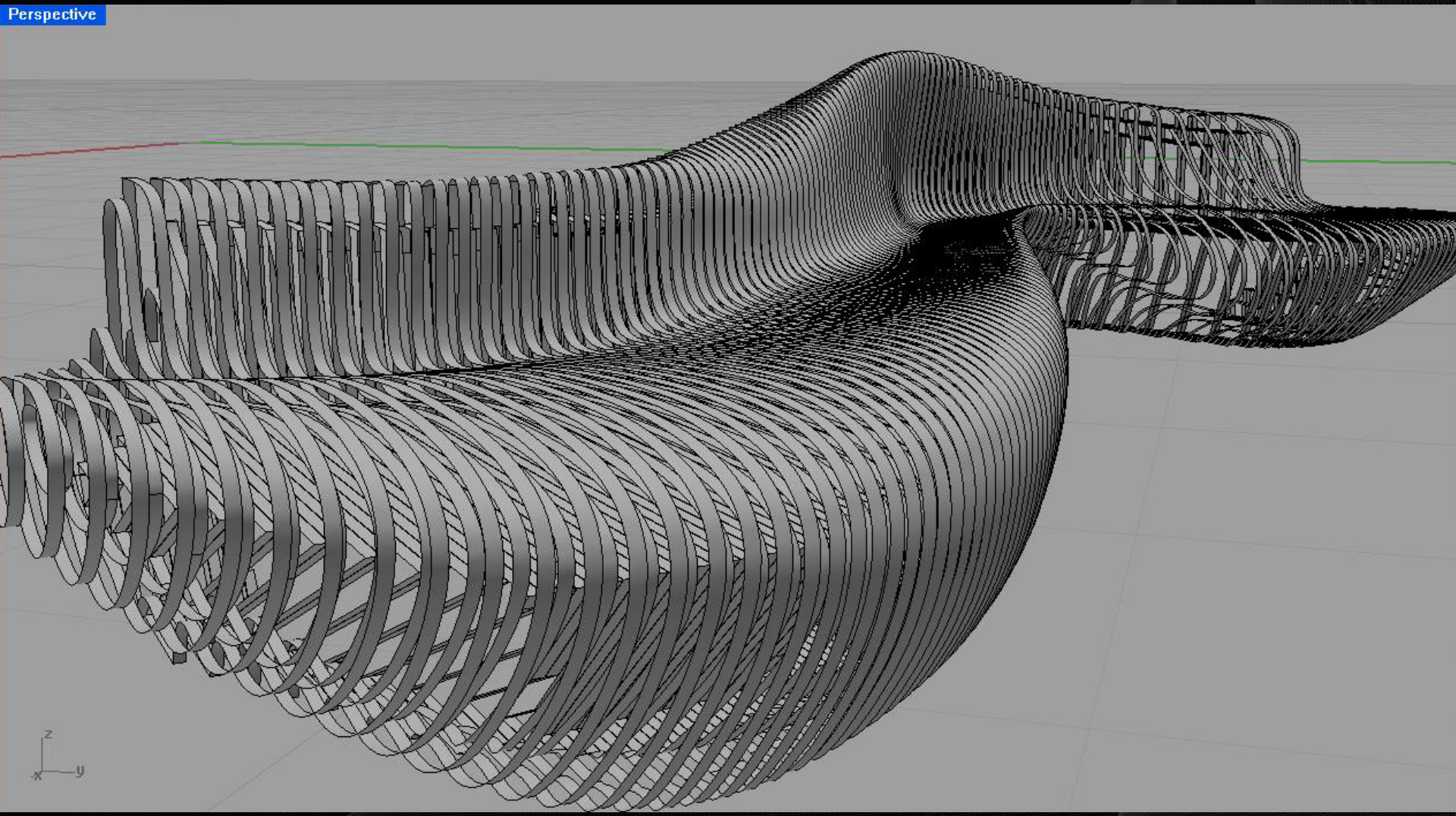
- **Direct from Design to Manufacturing / Construction**







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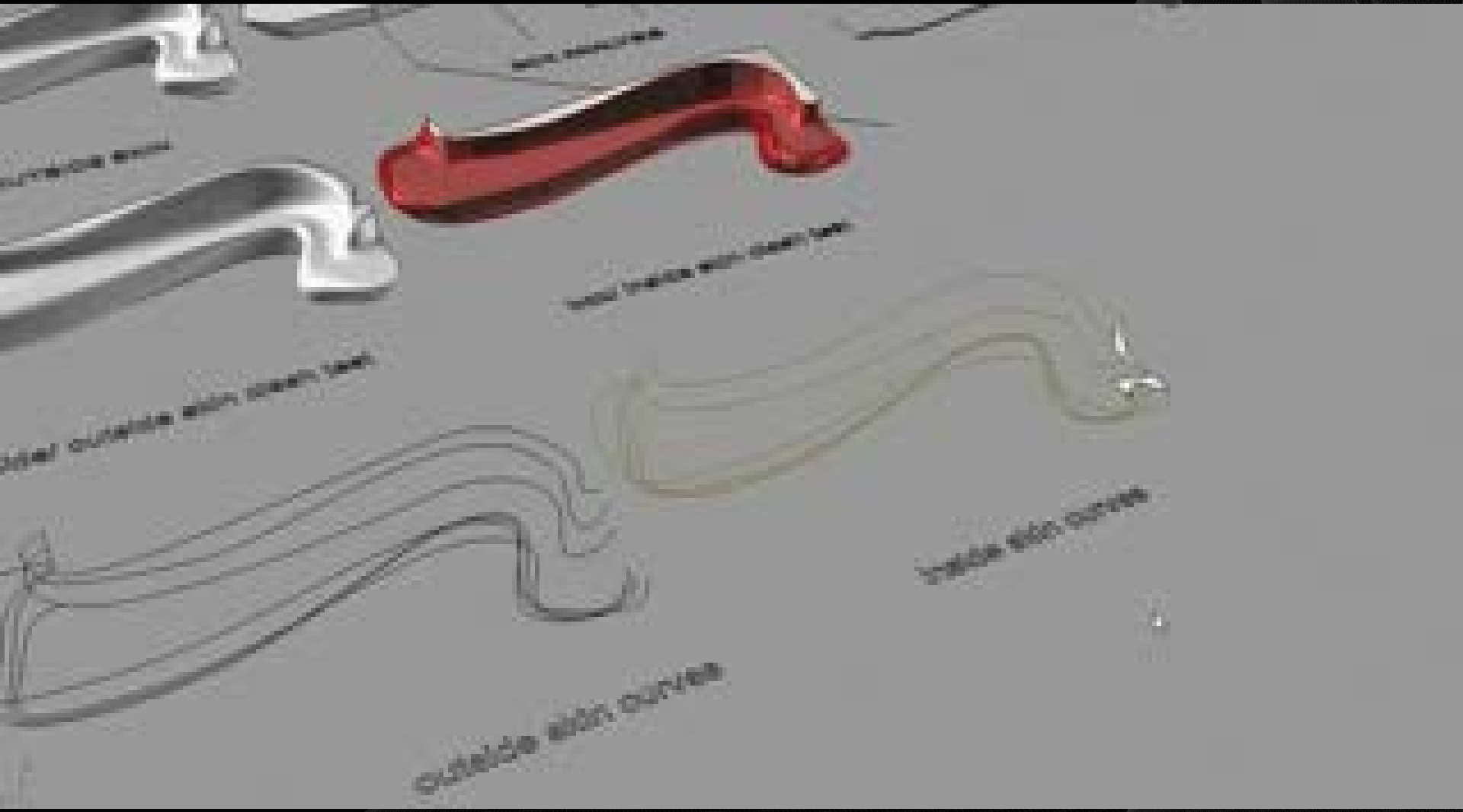
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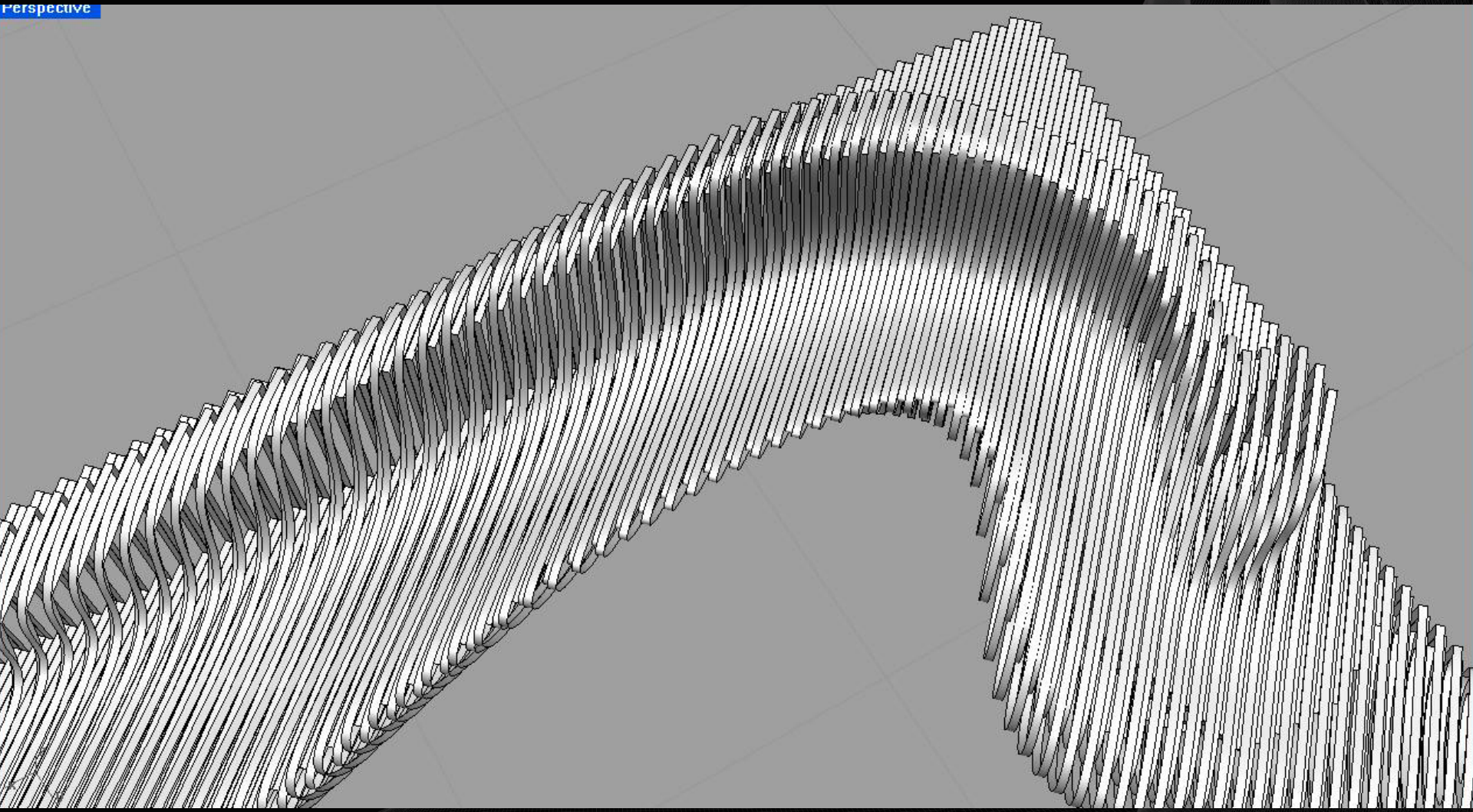
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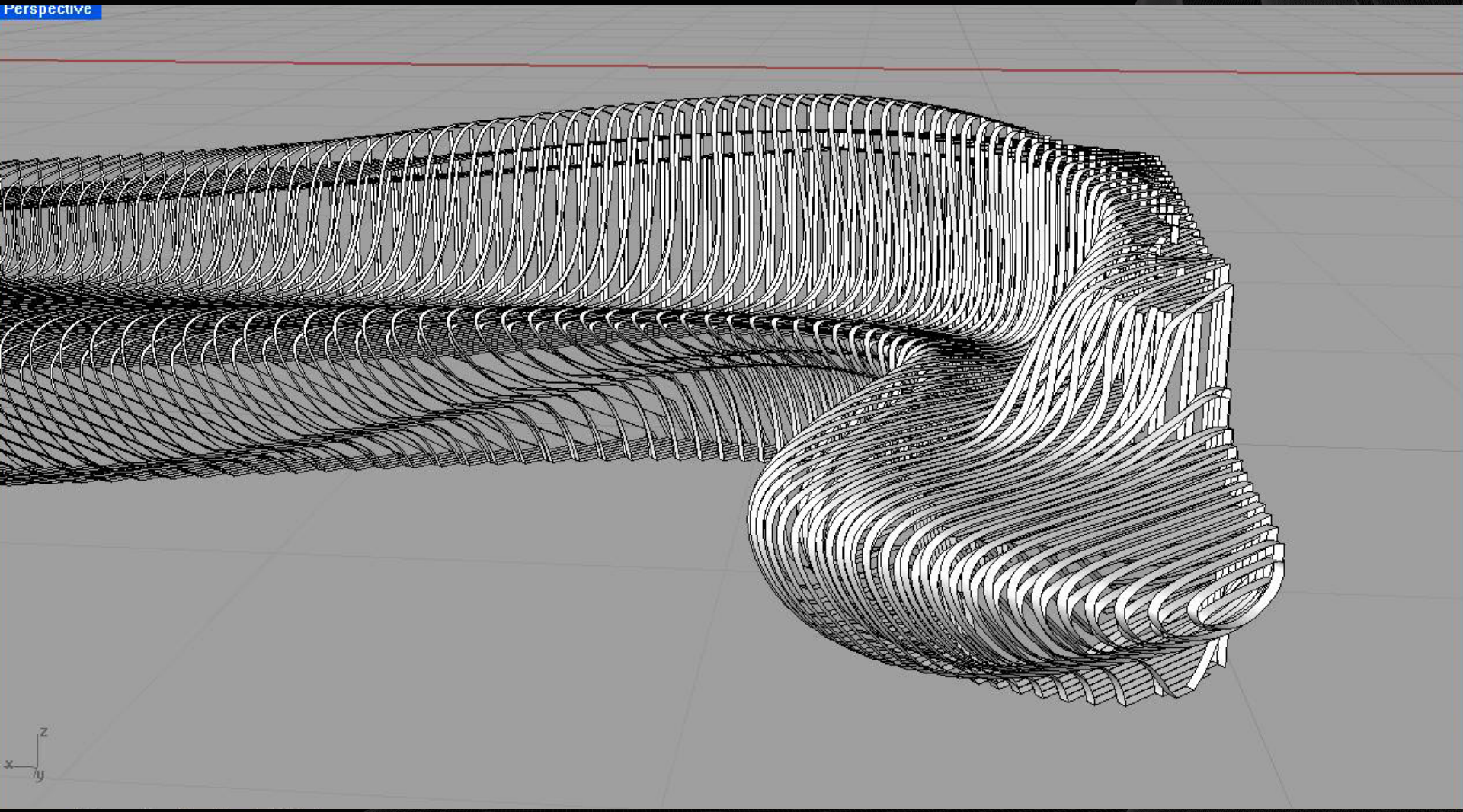
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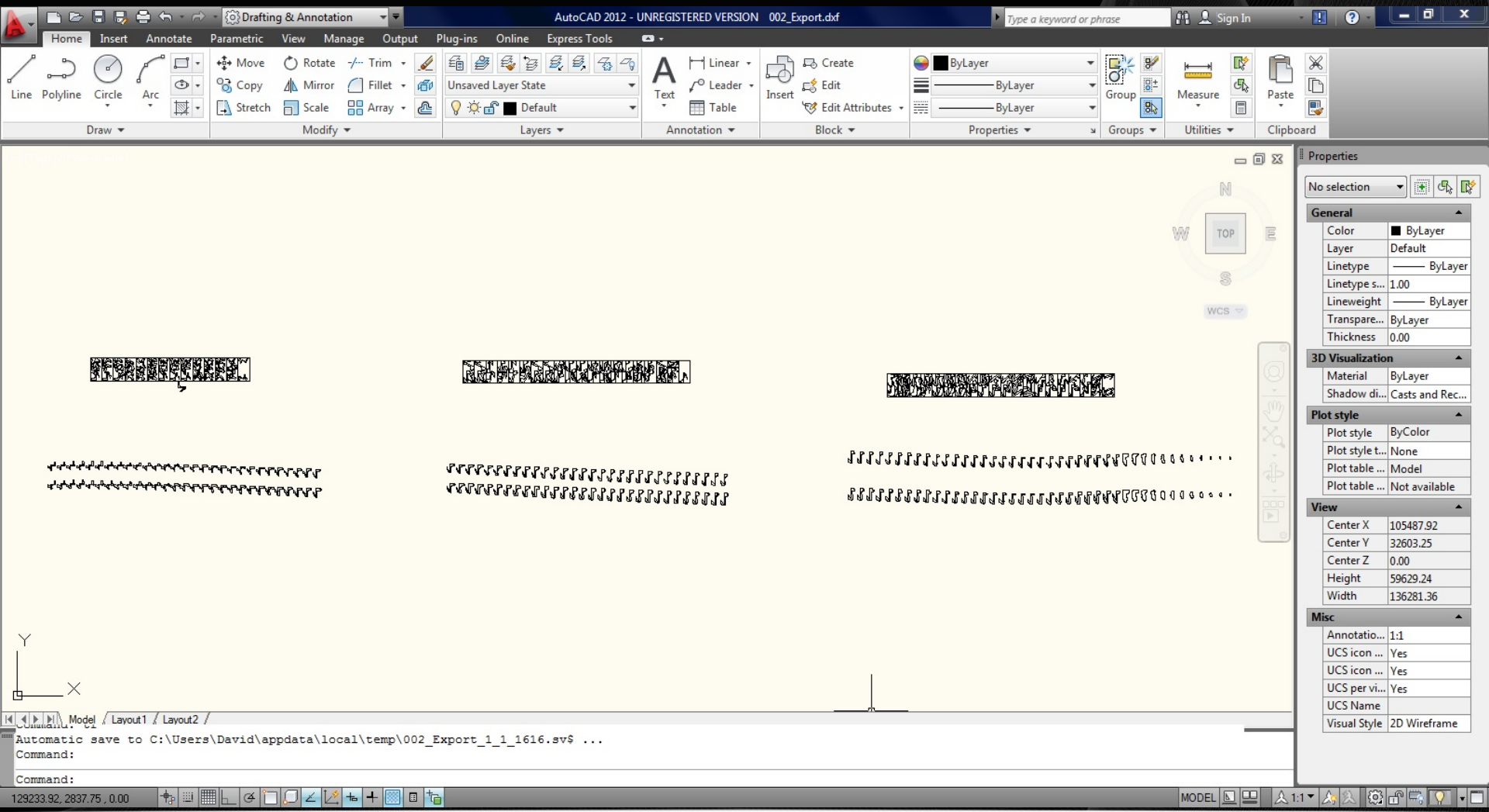
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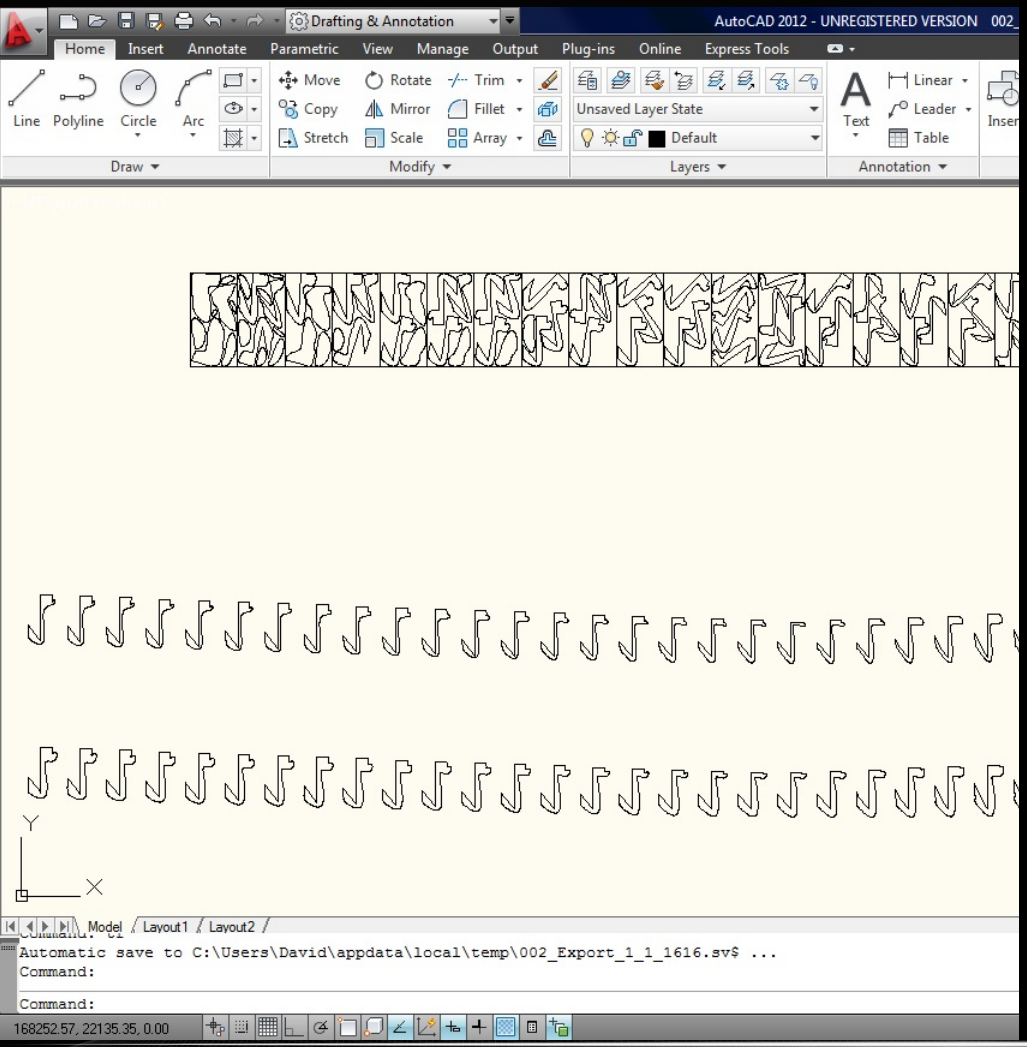
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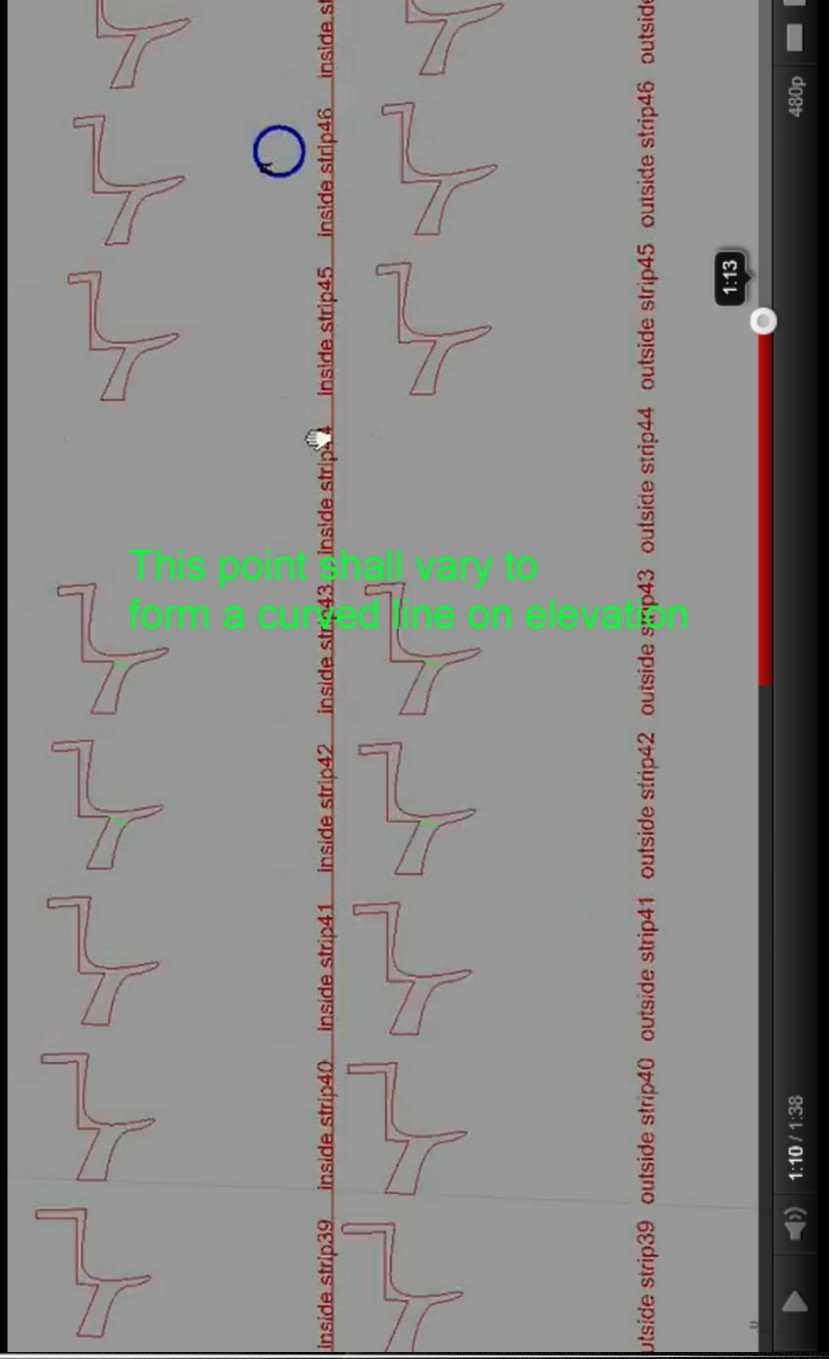
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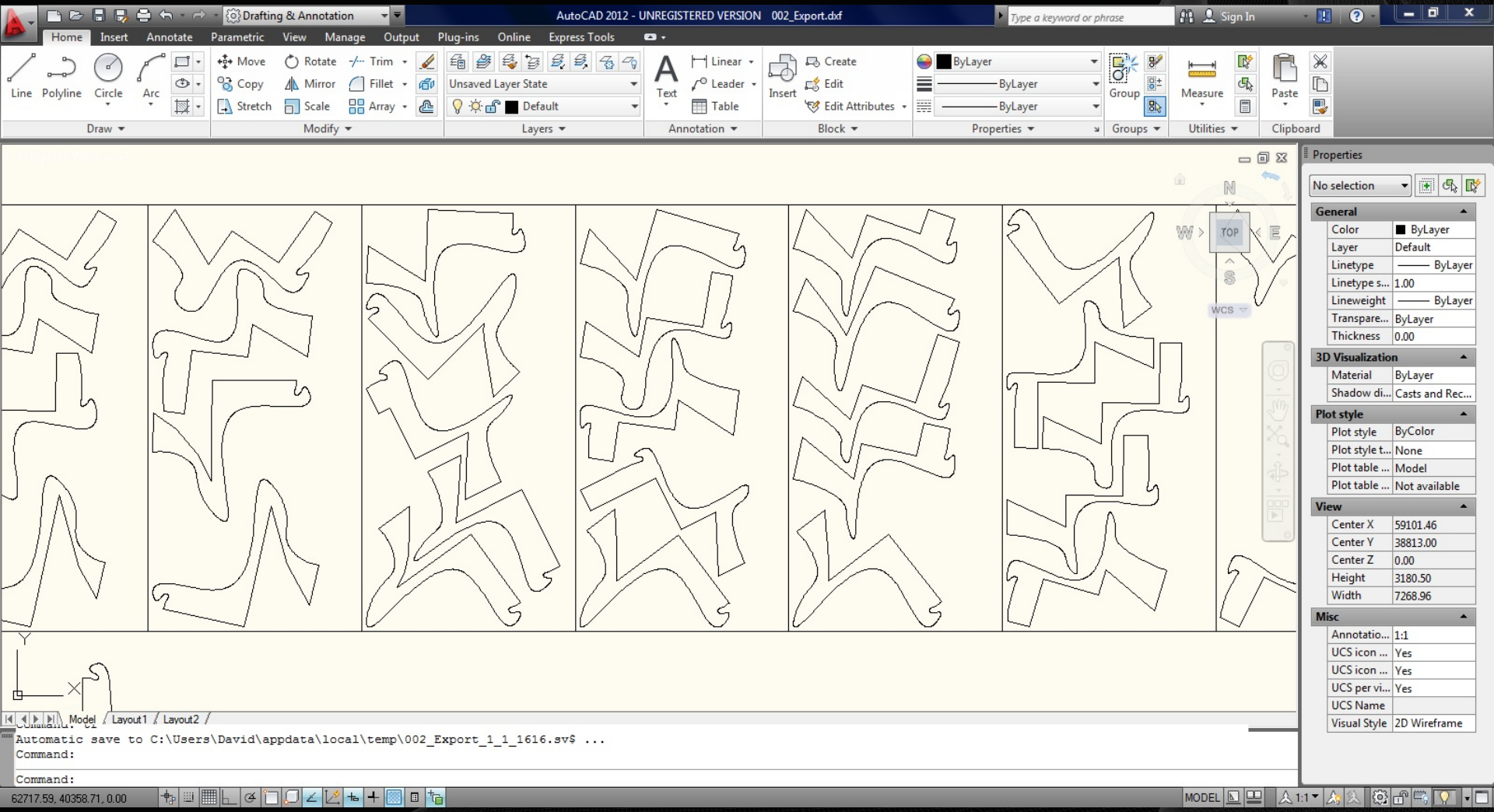
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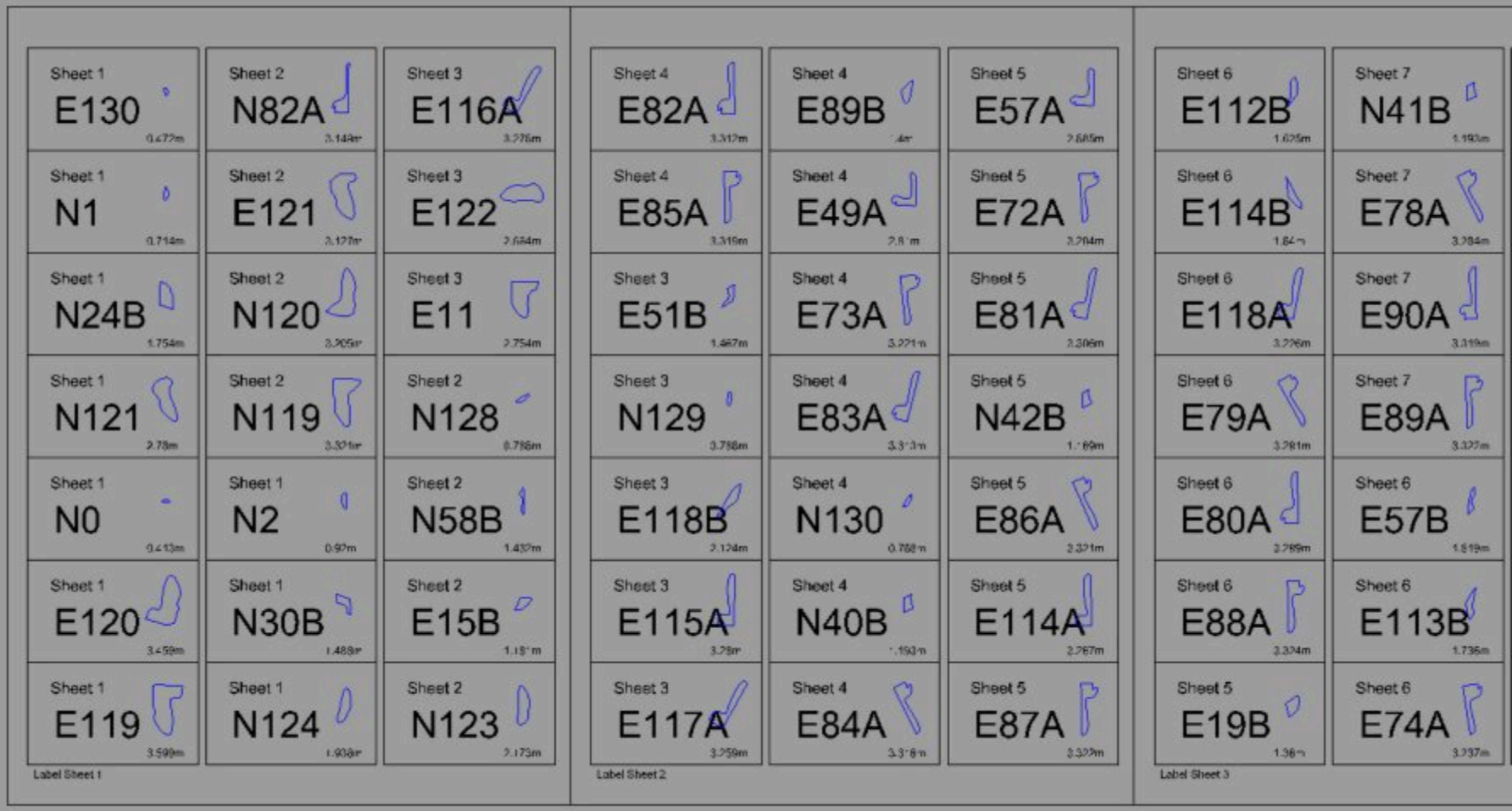
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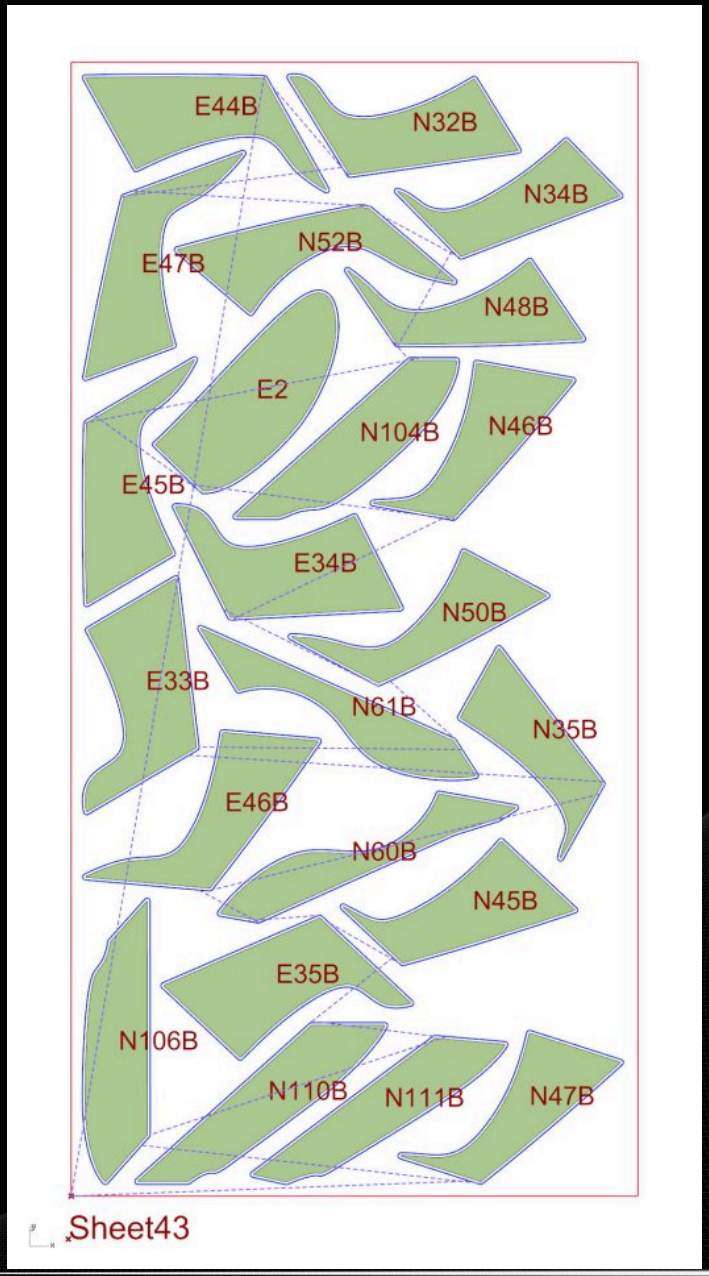
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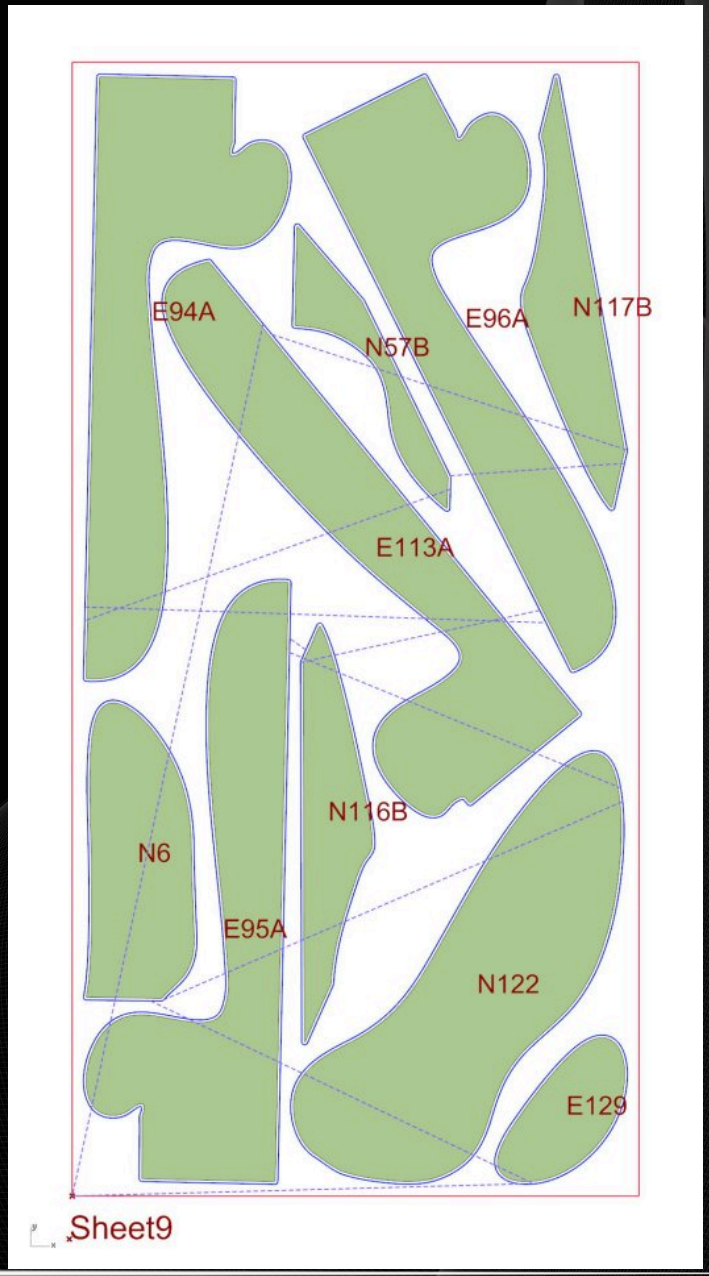
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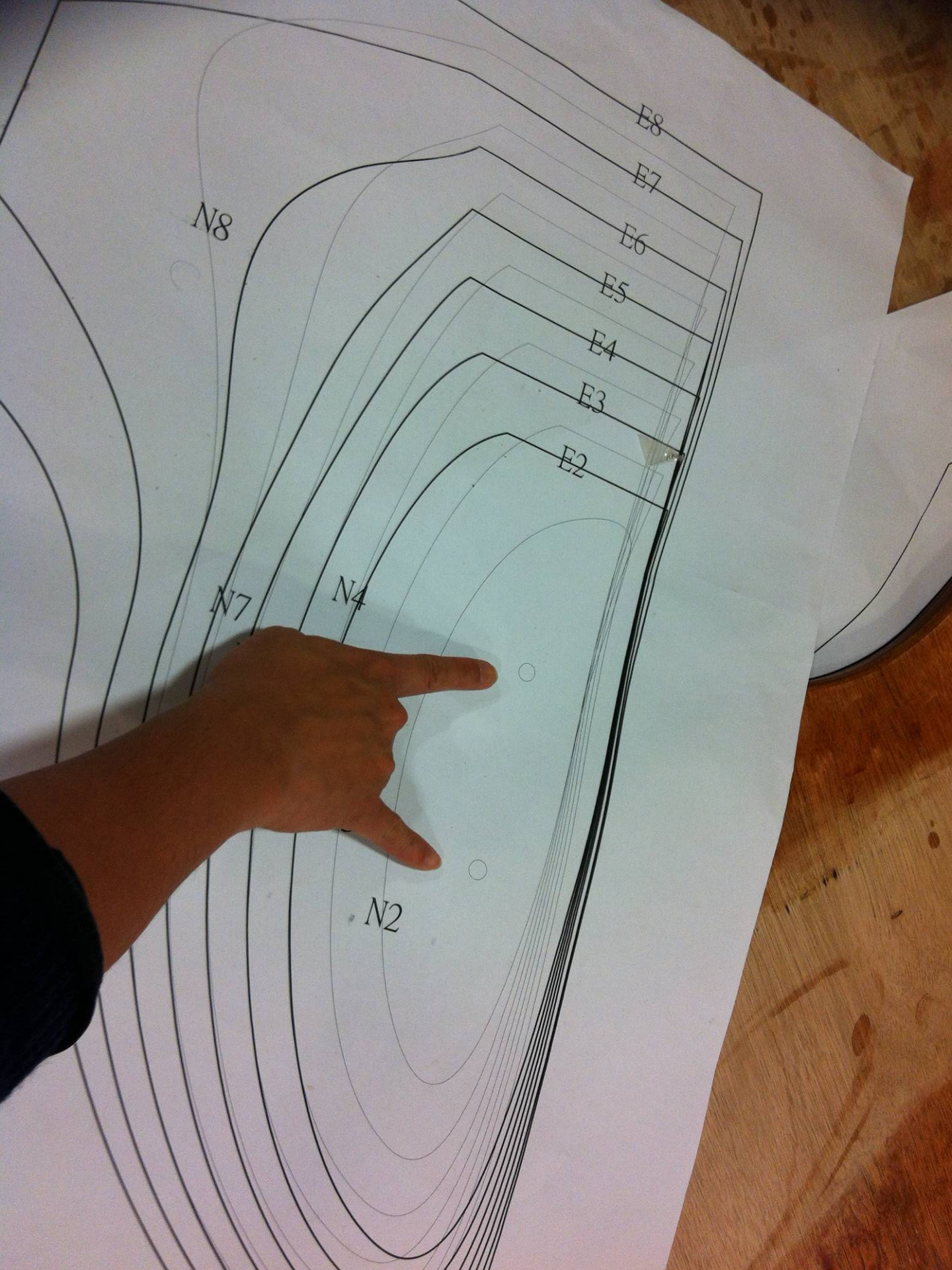
E8
E7
E6
E5
E4
E3
E2
N8
N7
N4
N2

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Building & Construction

ARScaleModel

ARWebCam

ARPhone

ARonPDA

Google Earth
“on Earth”

AROnSite

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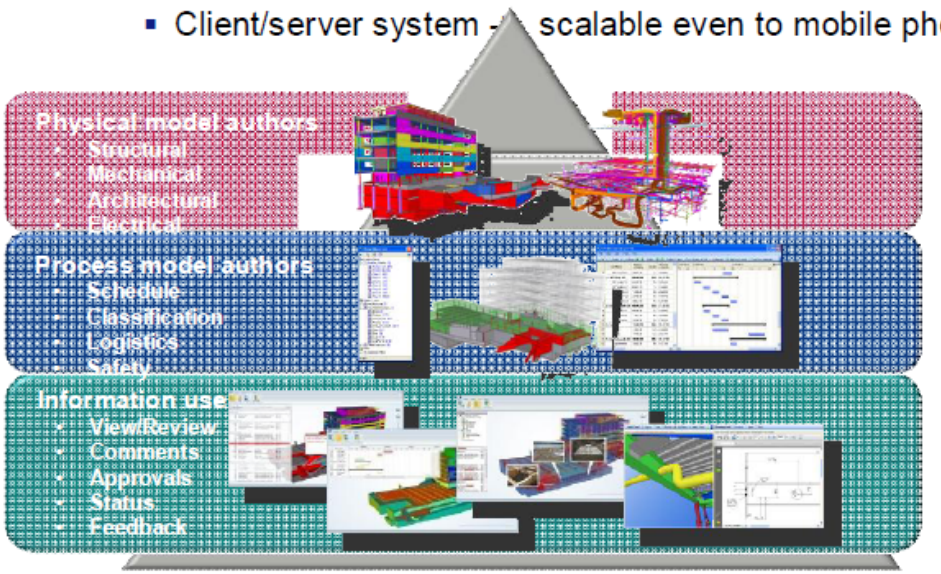
Project "AR4BC"

Augmented Reality for Building and Construction

- Compare project plans (4D BIM) with situation on site
- Provide real time mobile feedback from site to BIM system
- Client/server system - scalable even to mobile phones



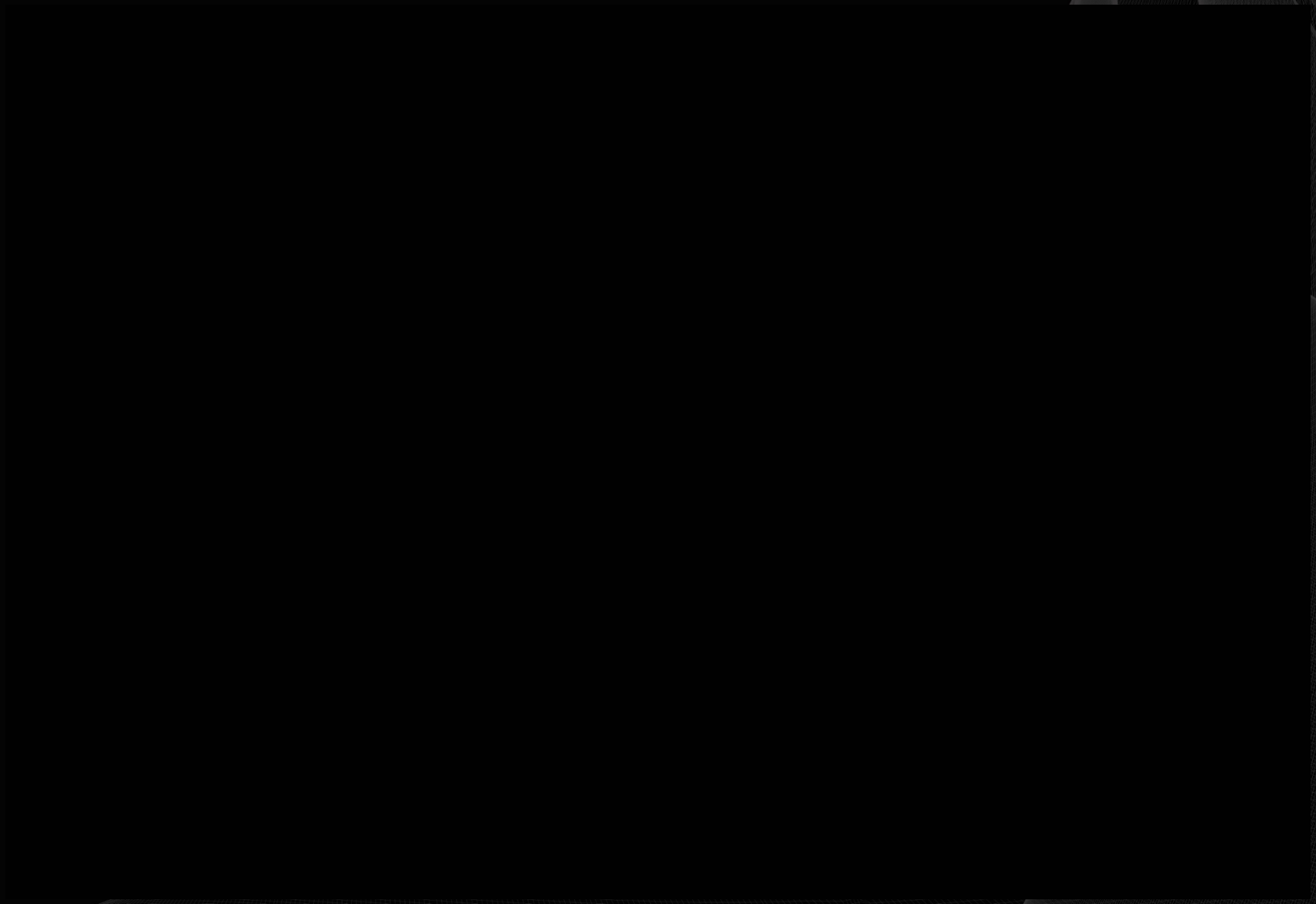
Building Information Models (BIM)

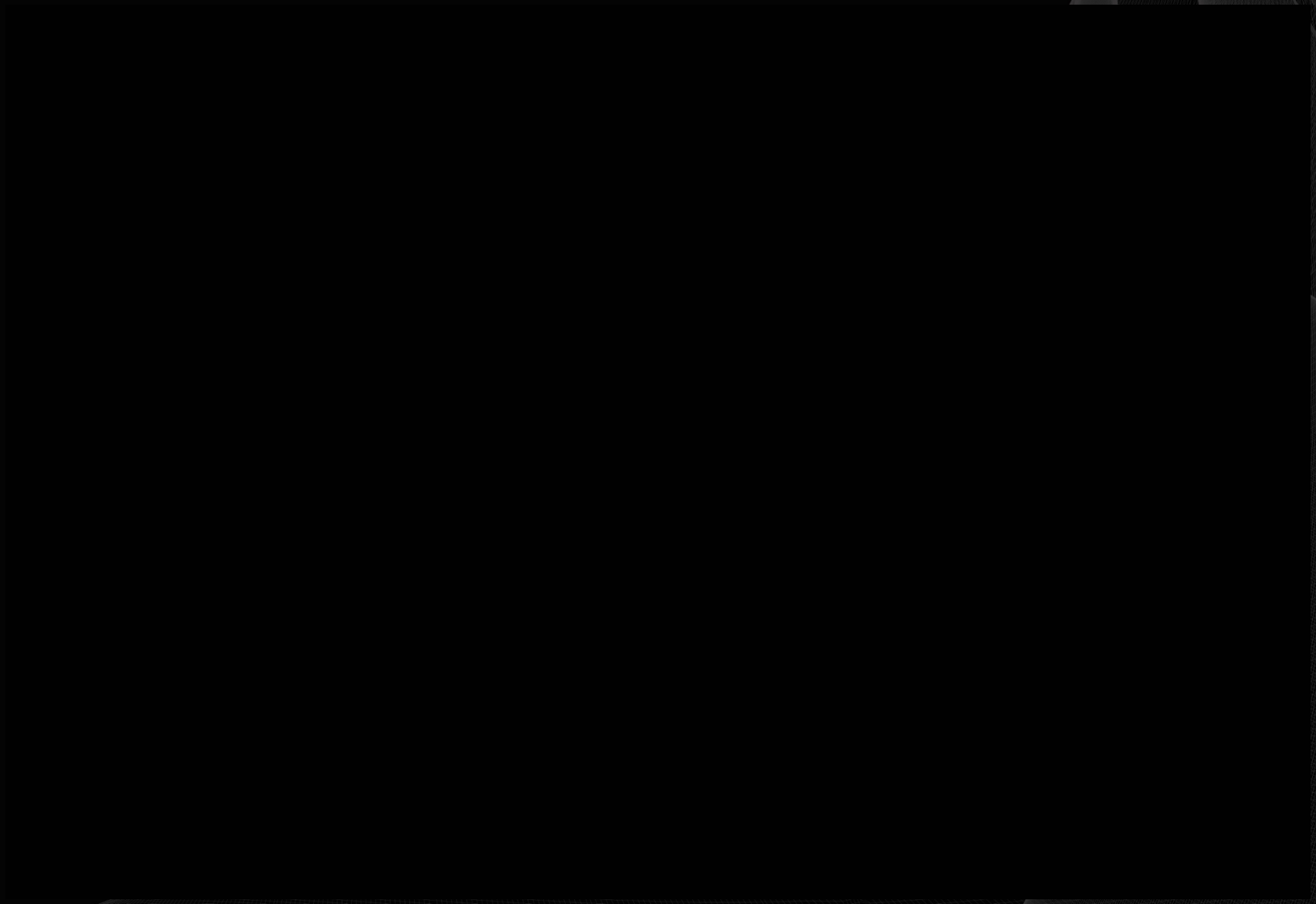
Mixed Reality

atelier

TOTAL IMMERSION
TOTAL
IMMERSION

TOTAL
IMMERSION





- **Organic Architecture is far more common due to technology.**
- **Organic architecture extends beyond the traditional design/ documentation/ construction methodology**
- **BIM facilitates all processes**

Thank you !