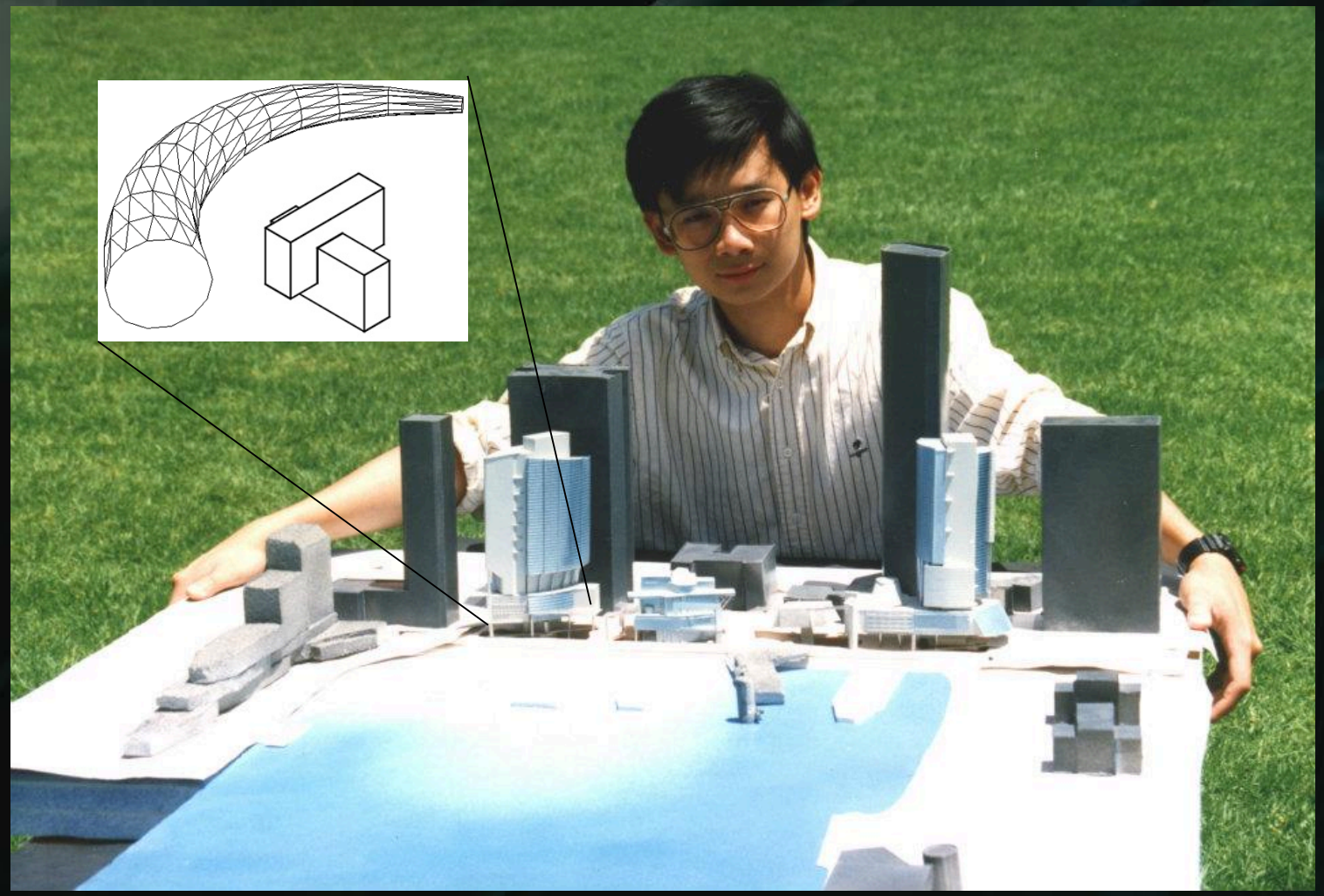
真BIM， 假BIM，半BIM

冯树坚

香港建筑信息模拟学会主席 香港註冊建築師
香港大学BIM 课程讲师
A.C.I.D. 董事總經理

1990 – 3D AutoCAD



2002 – Revit (BIM)

B = Building 建築

I = Information 資訊

M = Modelling 模型/ 模擬

真耶, 假耶? 不在乎平台，在於BIM 的應用程度和方法。

假BIM

M + ?

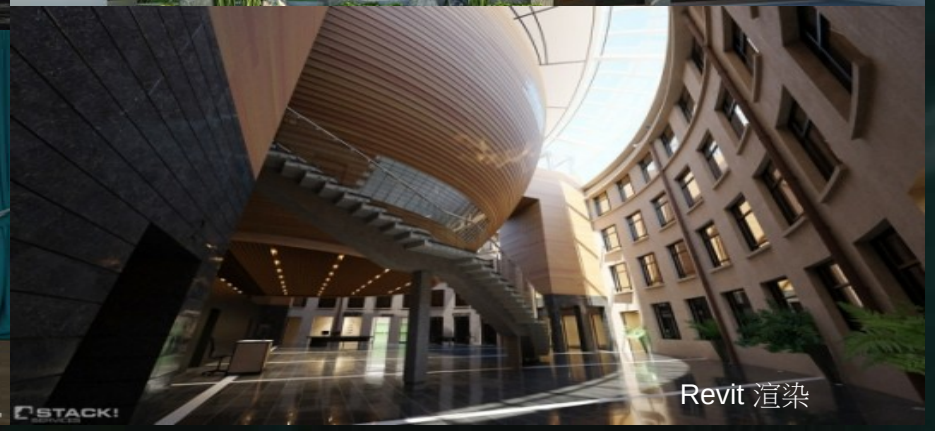
三维模 - 非BIM也

假BIM


AutoCAD 渲染


3D Max 渲染


SketchUp 渲染


Revit 渲染

假BIM

- CG (Computer Graphic) - 非BIM也
- 有其型而没其神 - 非BIM也

用 BIM 工具非等如用 BIM!!!

動態展示

互動展示

半BIM

I <> M

- 有型, 有量, 能碰; 乃半BIM 矣

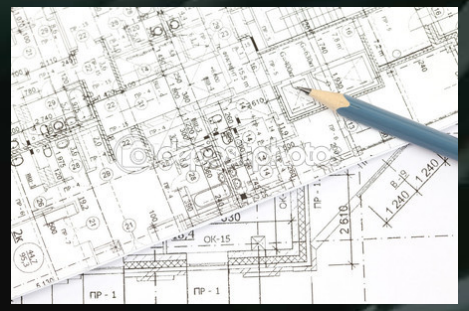
半BIM

DESIGN

CAD

CAD

REVIT / NAVISWORKS



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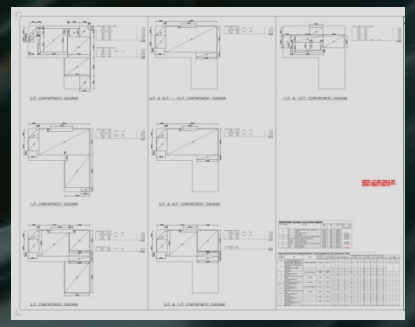

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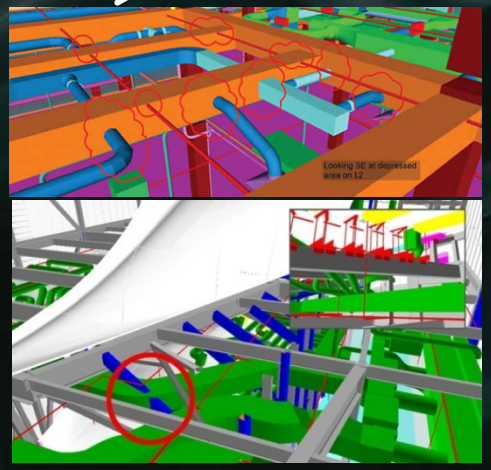
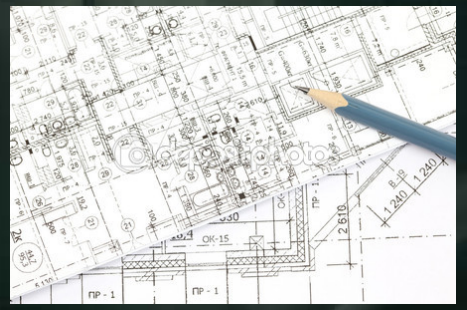


建築圖

審批圖

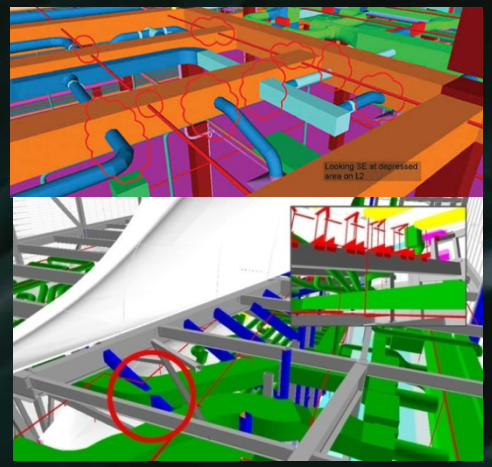
碰撞檢查

真BIM

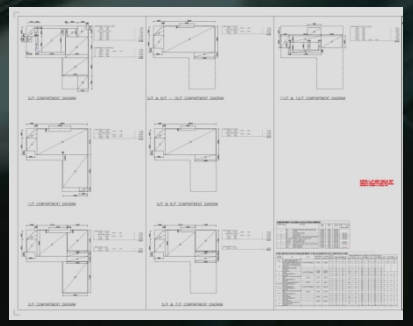


建築圖

BIM 設計
(單一來源數字庫)



碰撞檢查



審批圖

真BIM

有型, 有神, 有务; 乃真BIM 也

I = M

I > M

真BIM

B I M

Modelling Information Business

模型/模擬 信息 業務

真BIM

M + I = B

有型, 有神, 有务; 乃真BIM 也

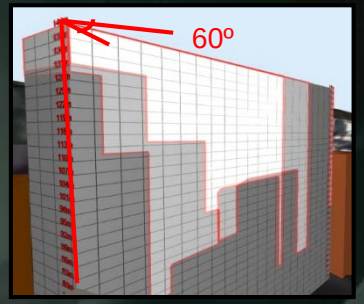
案例一

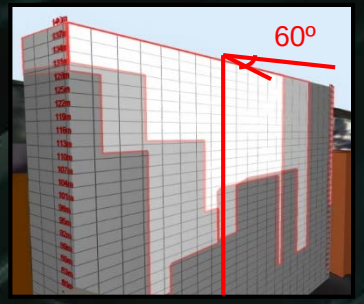
真BIM (设计阶段)

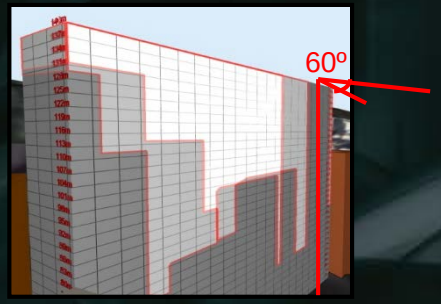
M + I = B (发展成本)

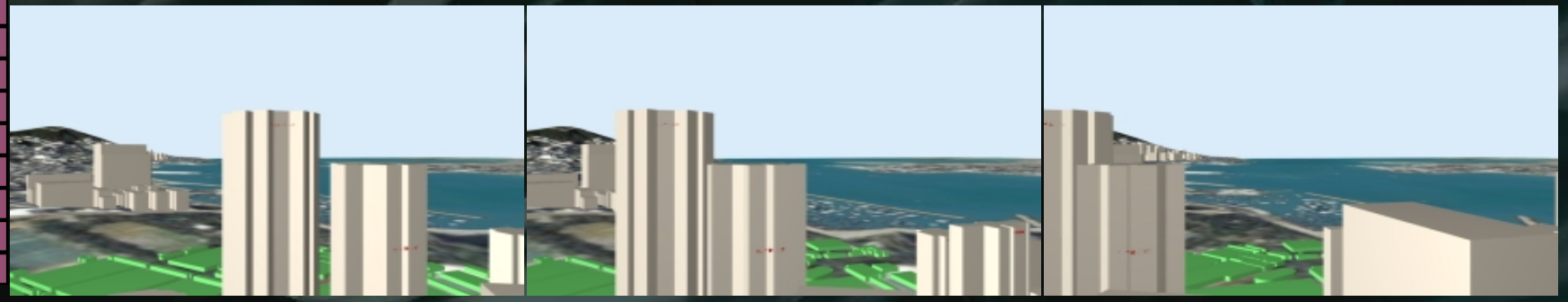
140m

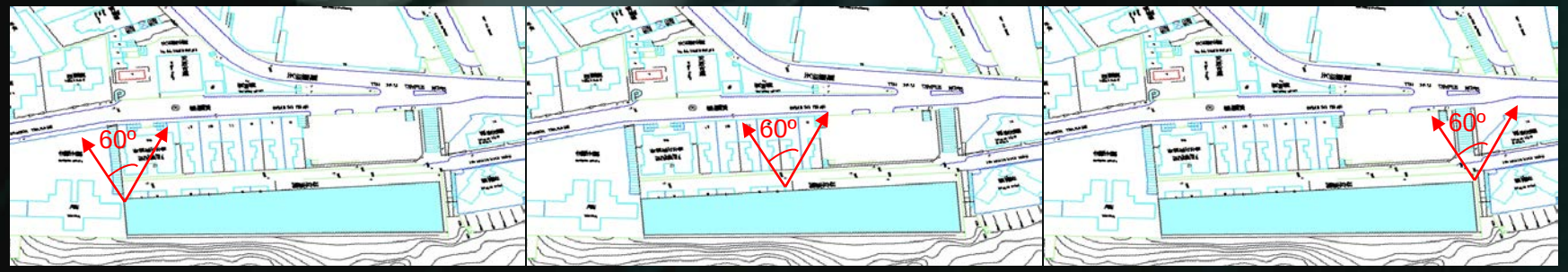
140m
135m
130m
125m
120m
115m
110m
105m
100m
95m
90m
85m
80m











135m

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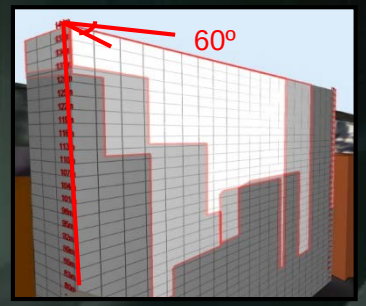
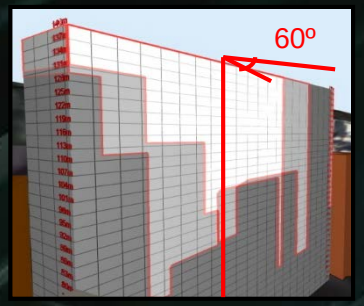
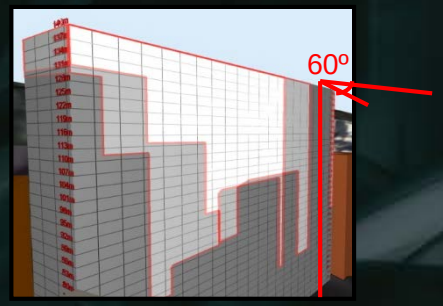
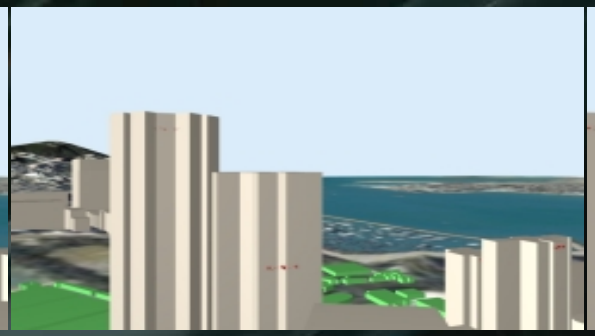
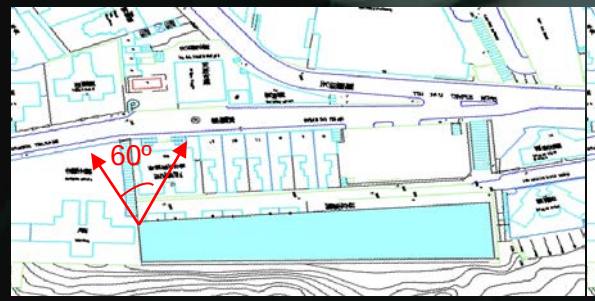
100m
95m
90m
85m
80m

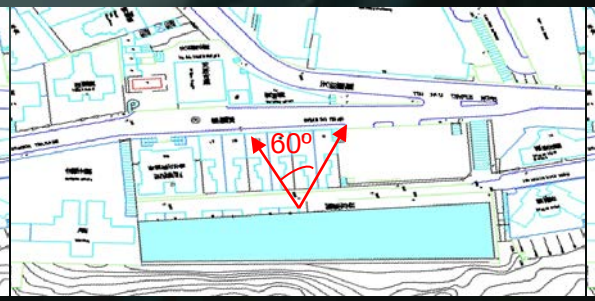












130m

Tin Hau Temple Road No.1

140m
135m
130m
125m
120m
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105m
100m
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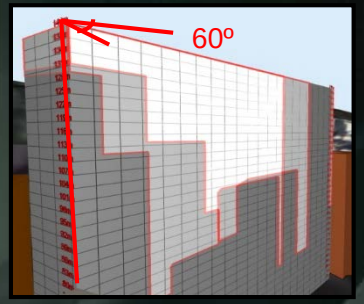
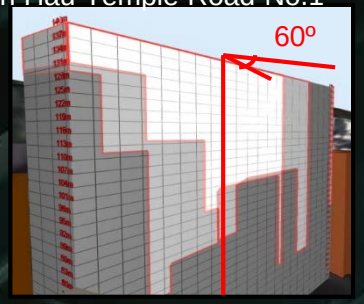
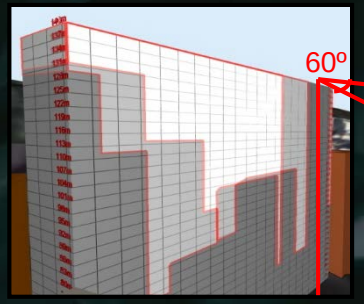
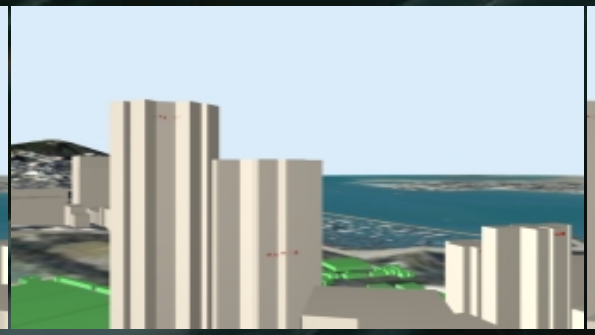
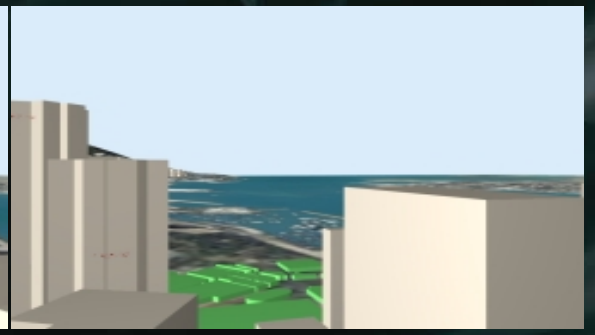
90m
85m
80m

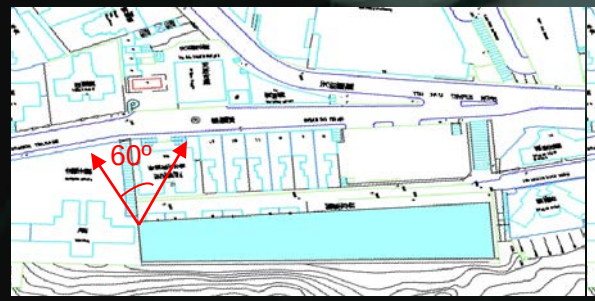


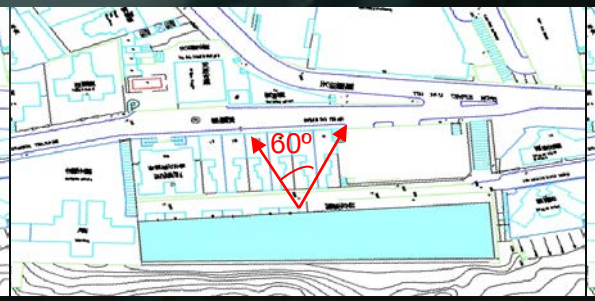












125m

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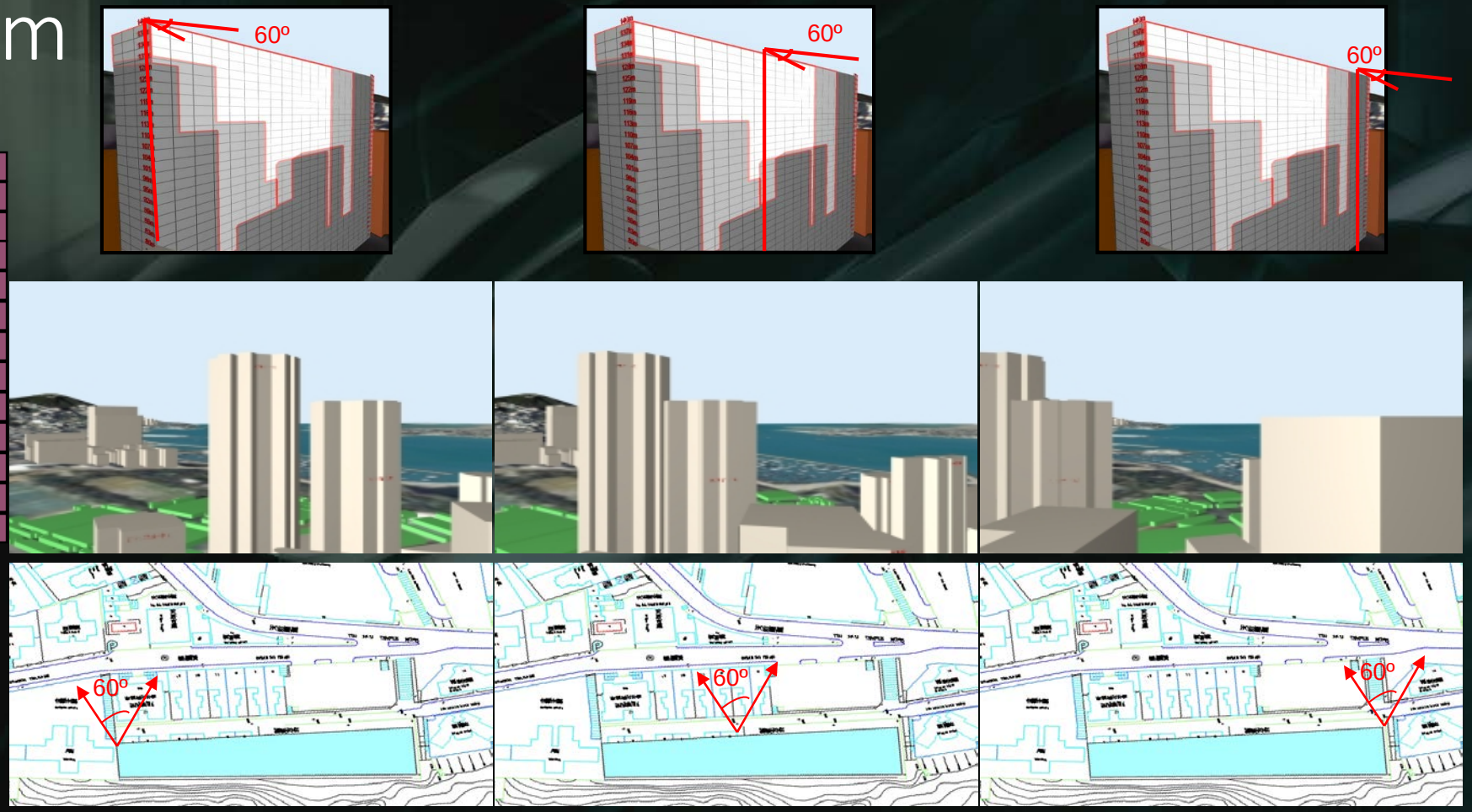

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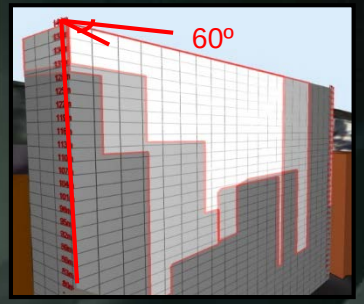

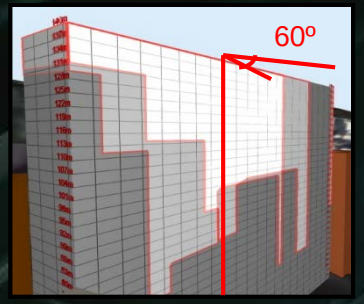

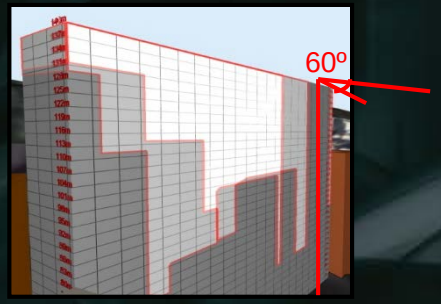

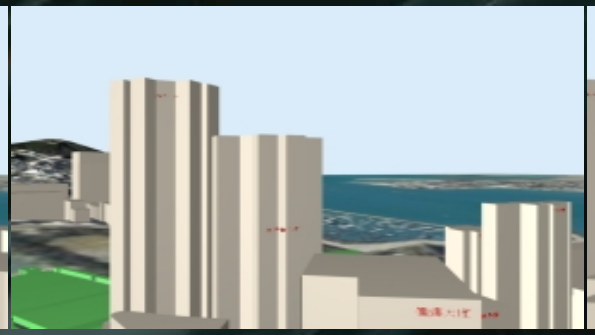

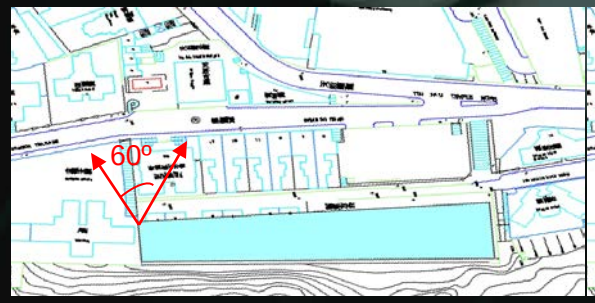

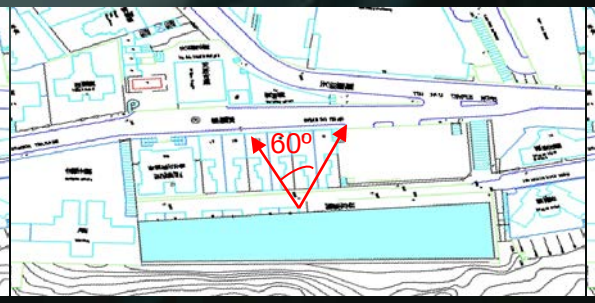

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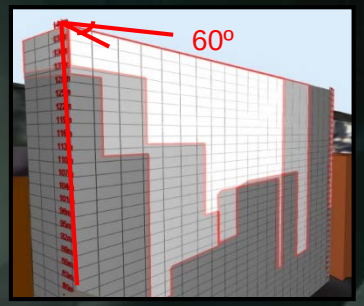

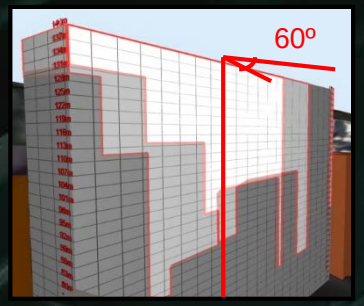

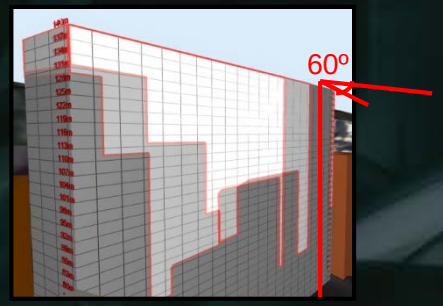

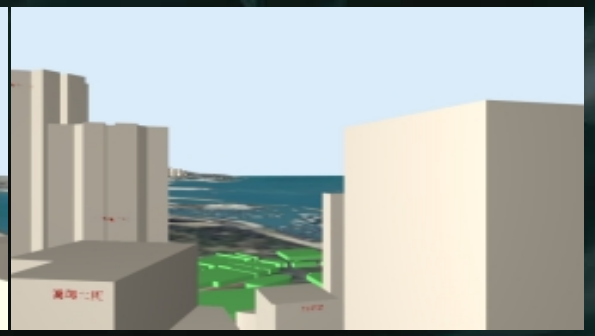

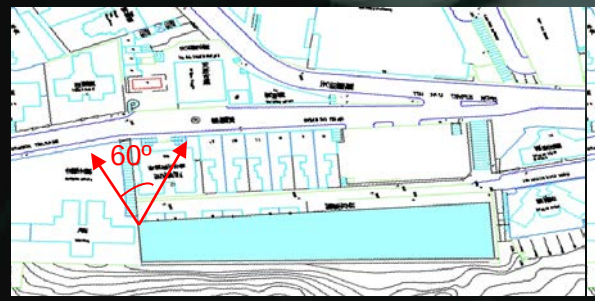

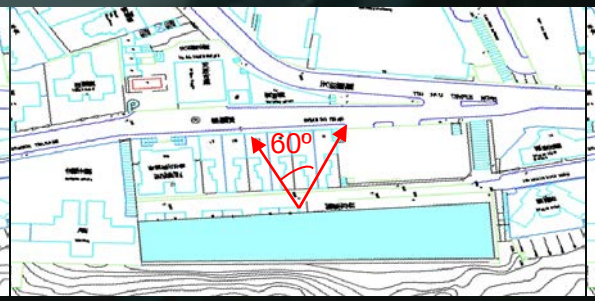

110m

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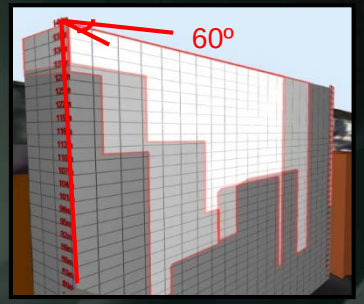
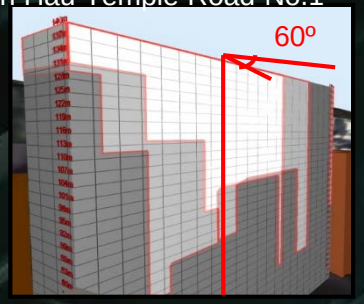
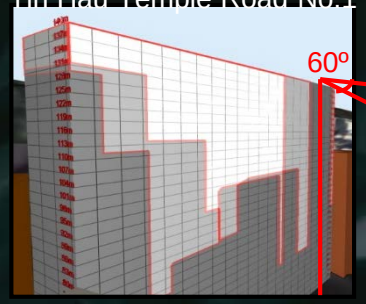
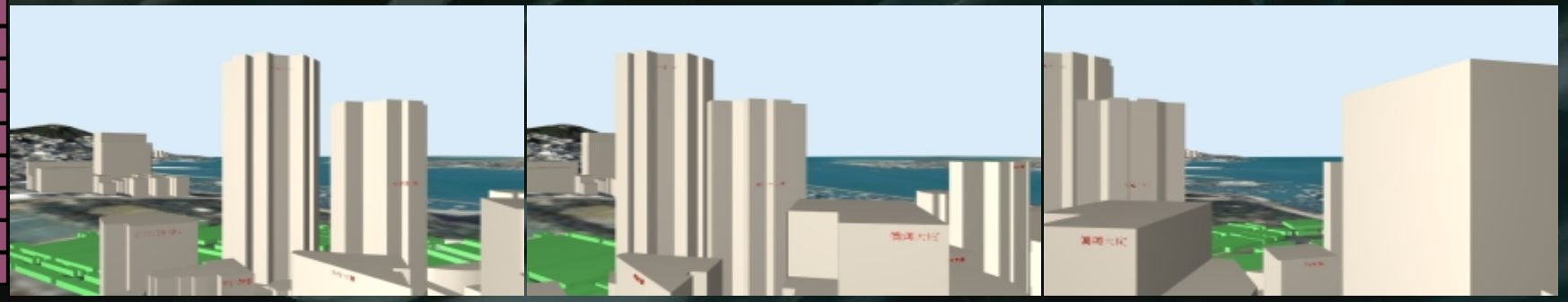


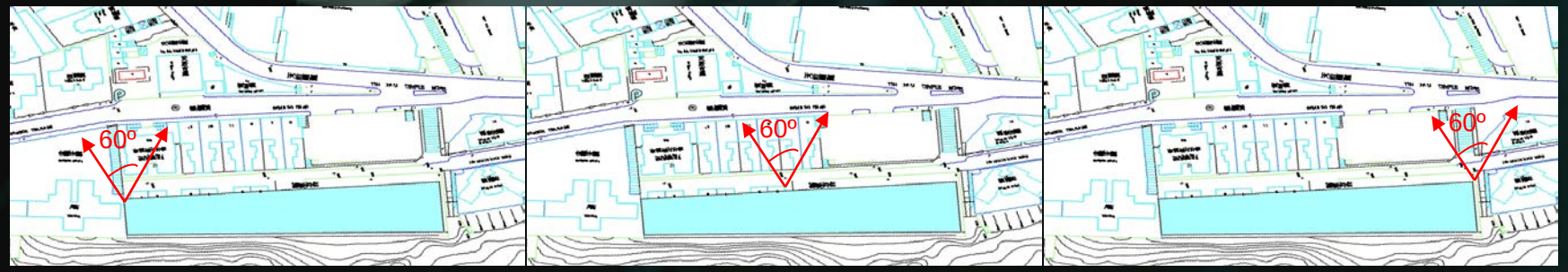
Tin Hau Temple Road No.1



Tin Hau Temple Road No.1







105m

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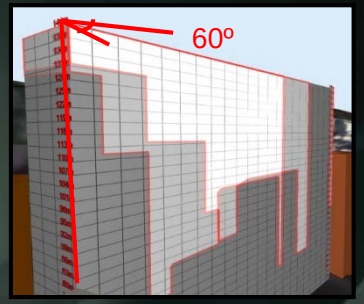

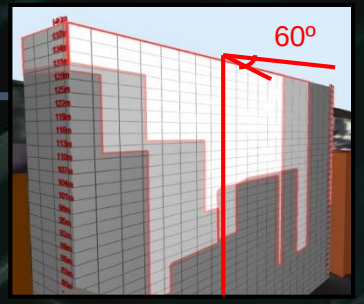

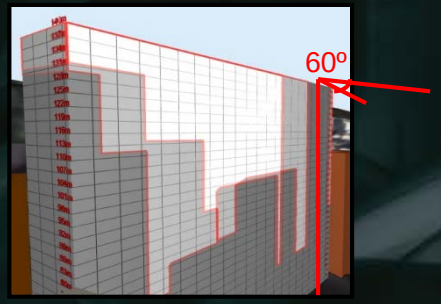

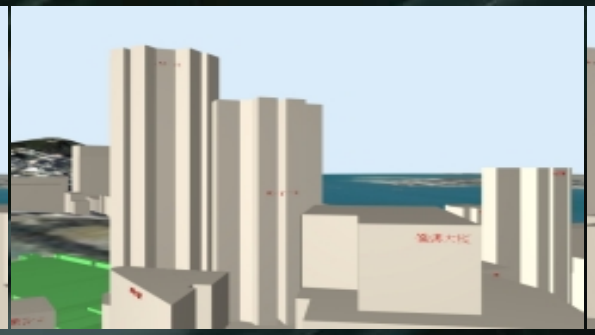

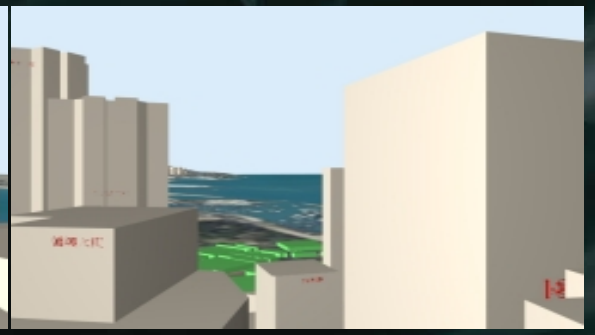

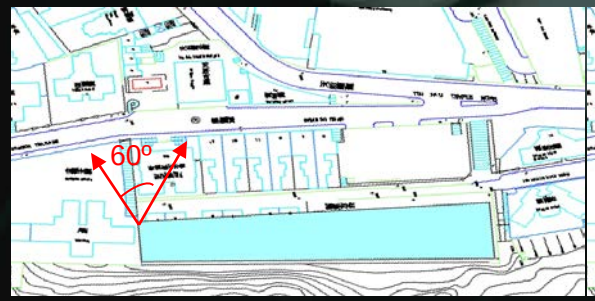

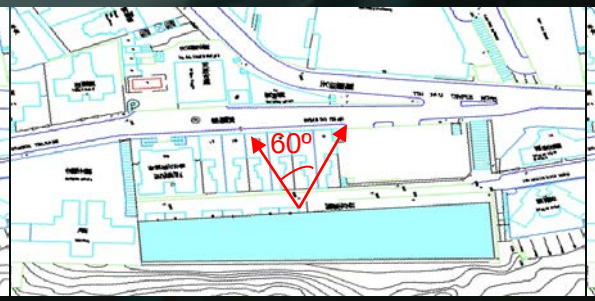

100m

1

140m
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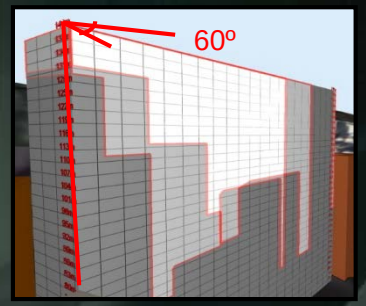

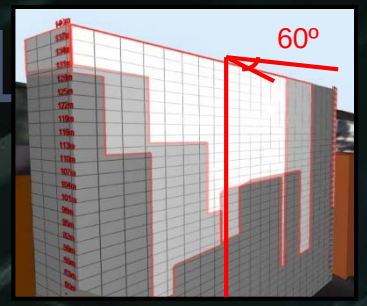

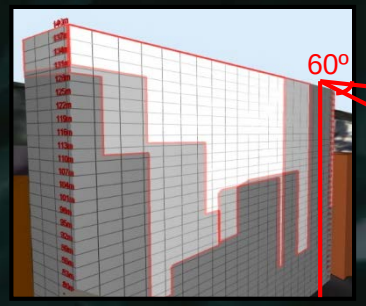

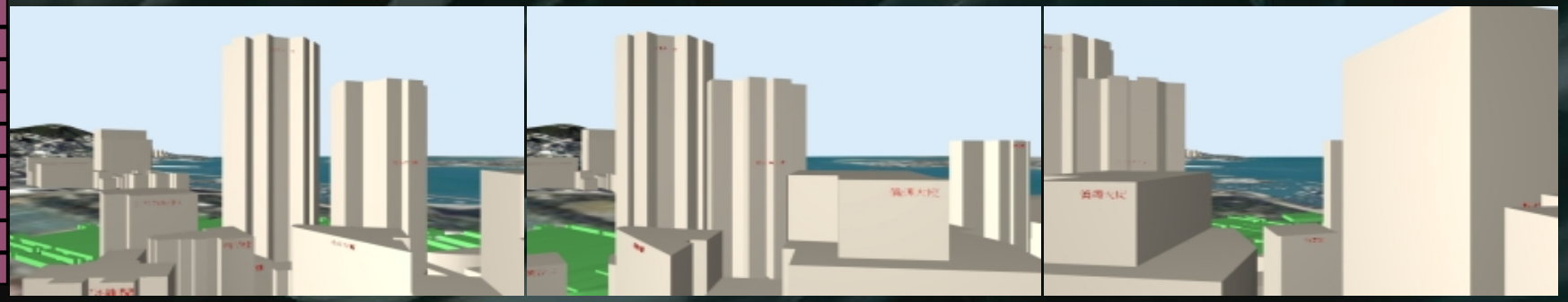

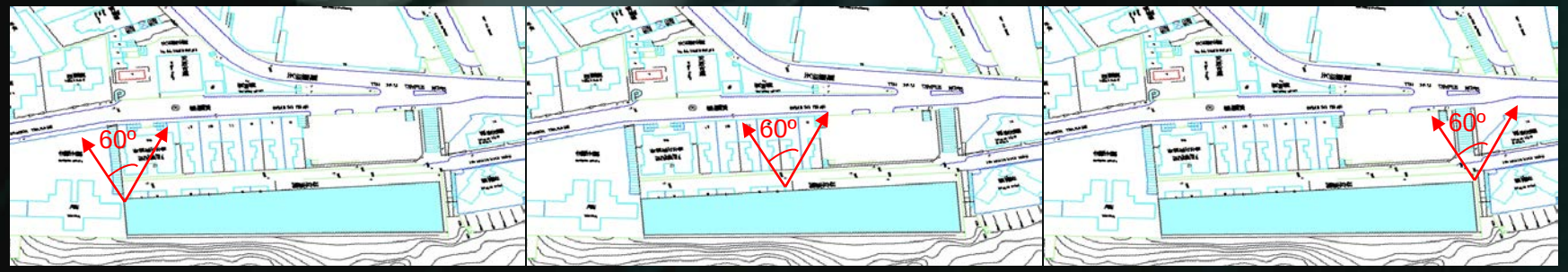

95m

140m
135m
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125m
120m
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105m
100m
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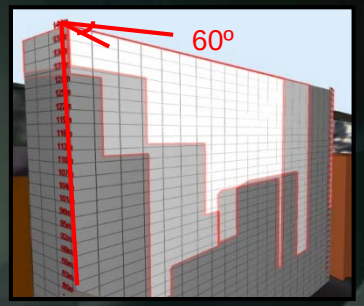
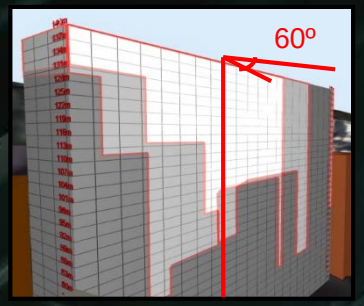
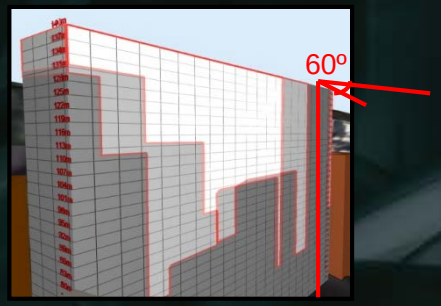
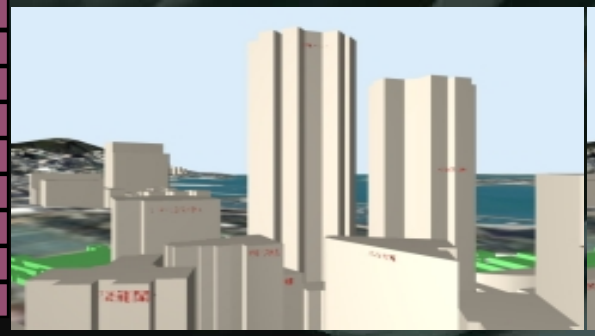
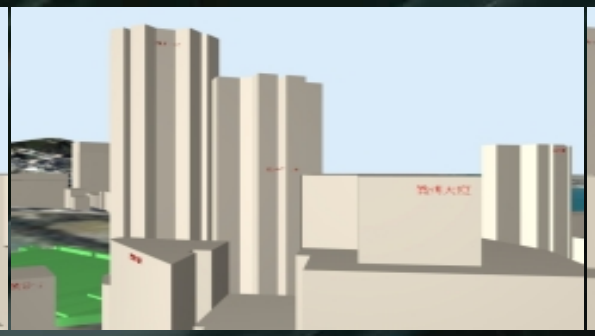
85m
80m

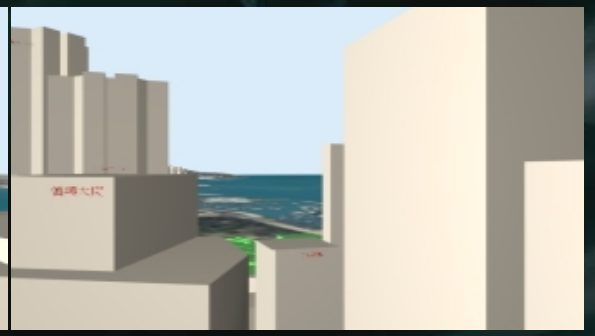


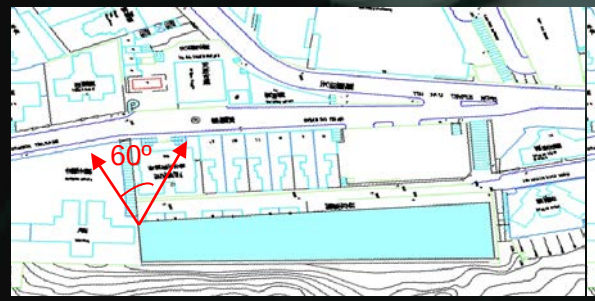


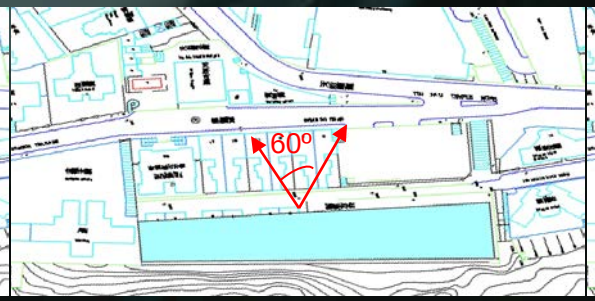












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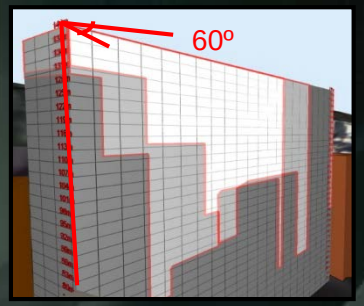

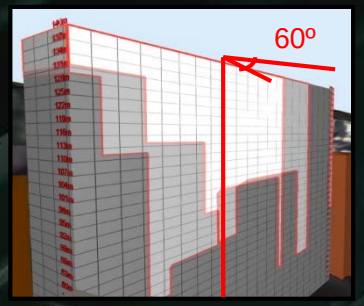

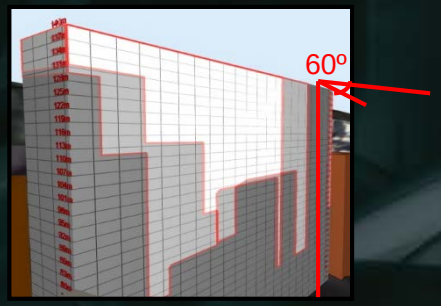

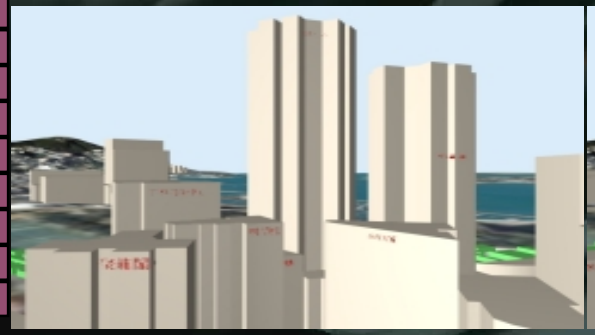

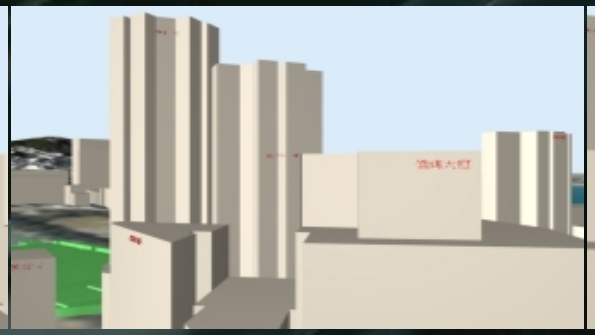

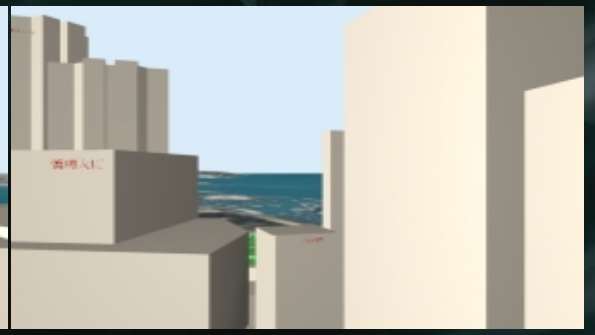

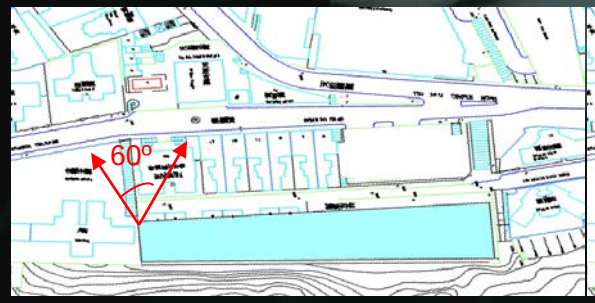

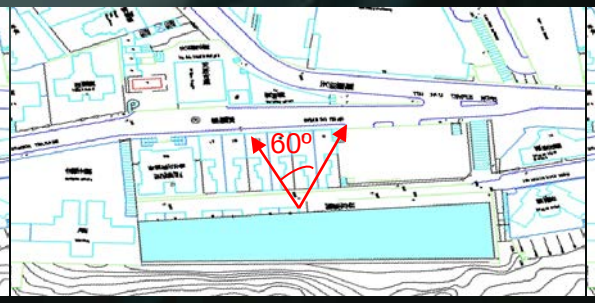

85m

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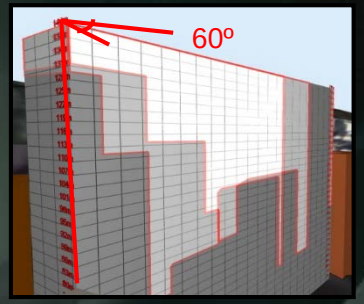

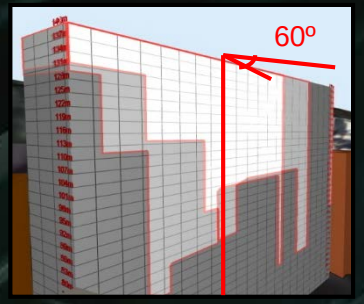

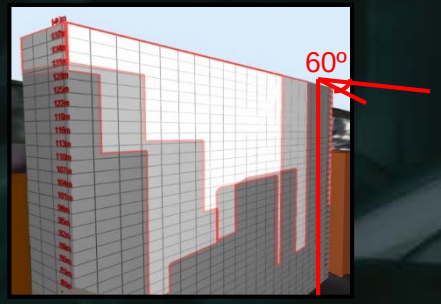

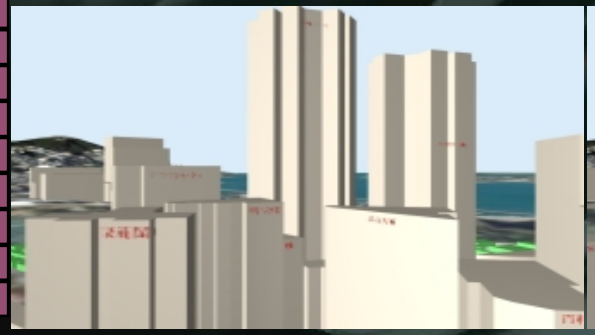

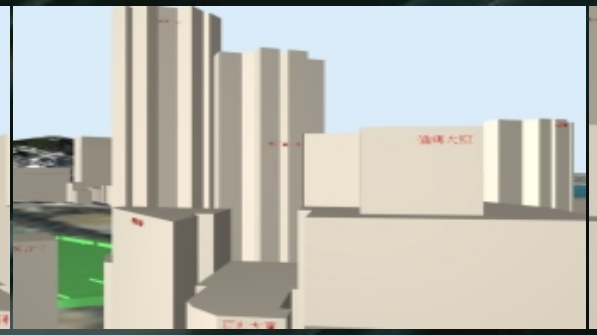

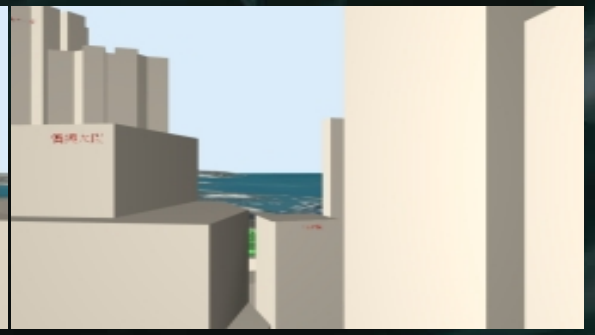

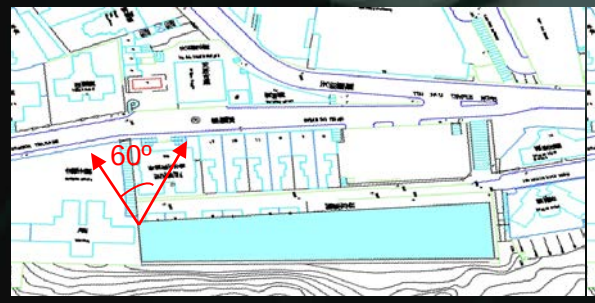

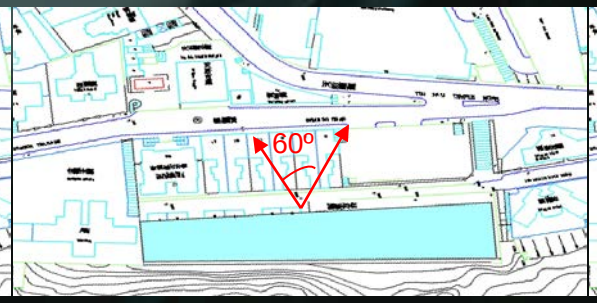

80m

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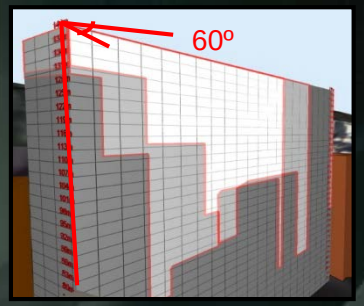
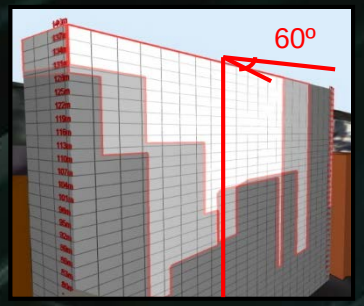
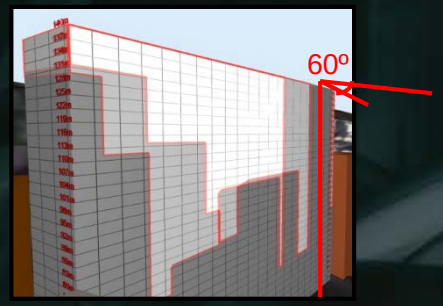
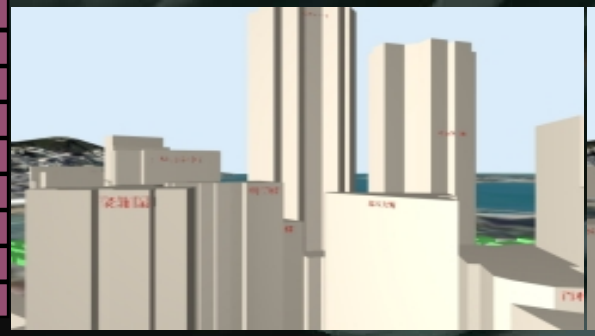
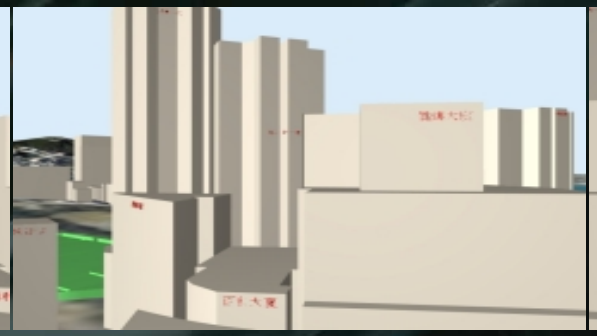
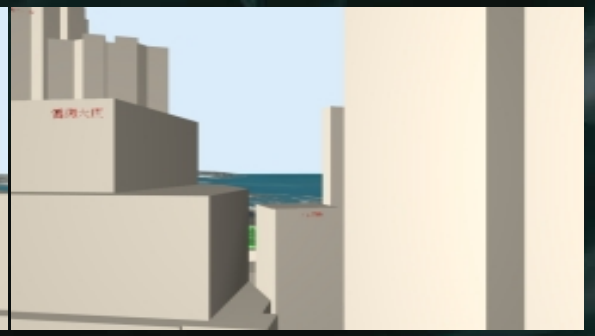


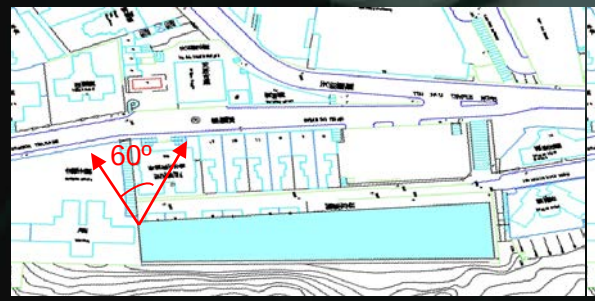


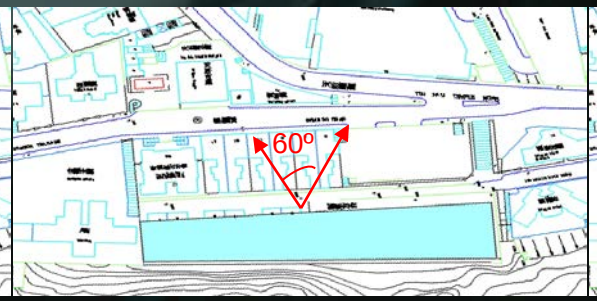




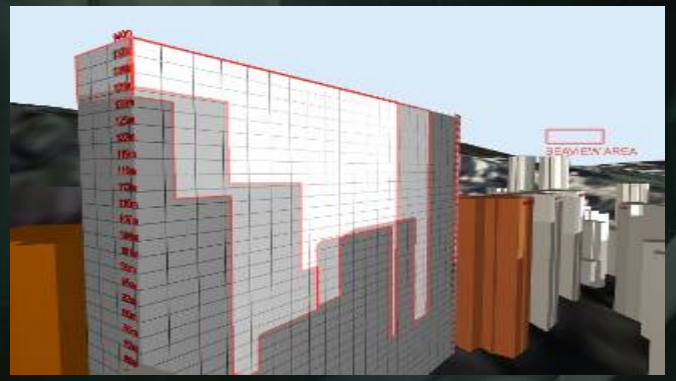








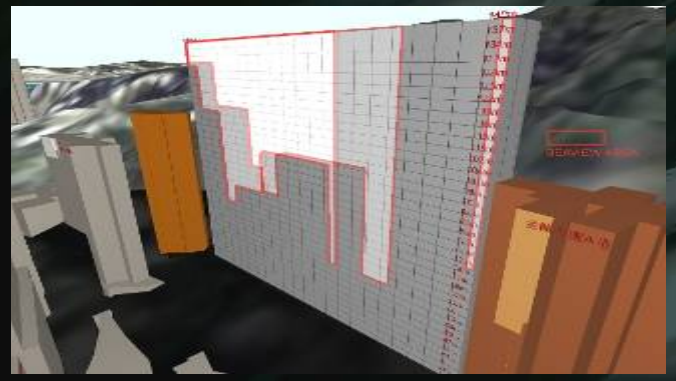
方案 A

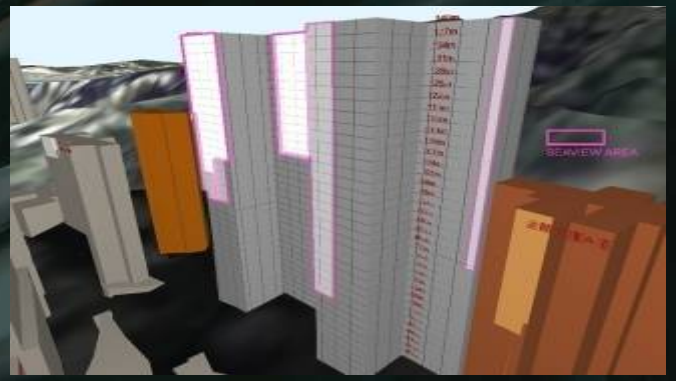


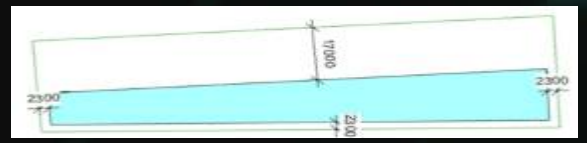
方案 B

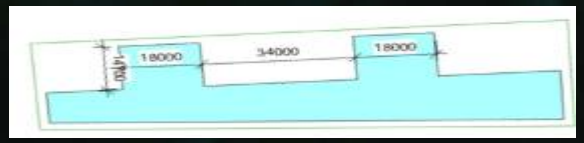
方案 A 海景

方案 B 海景

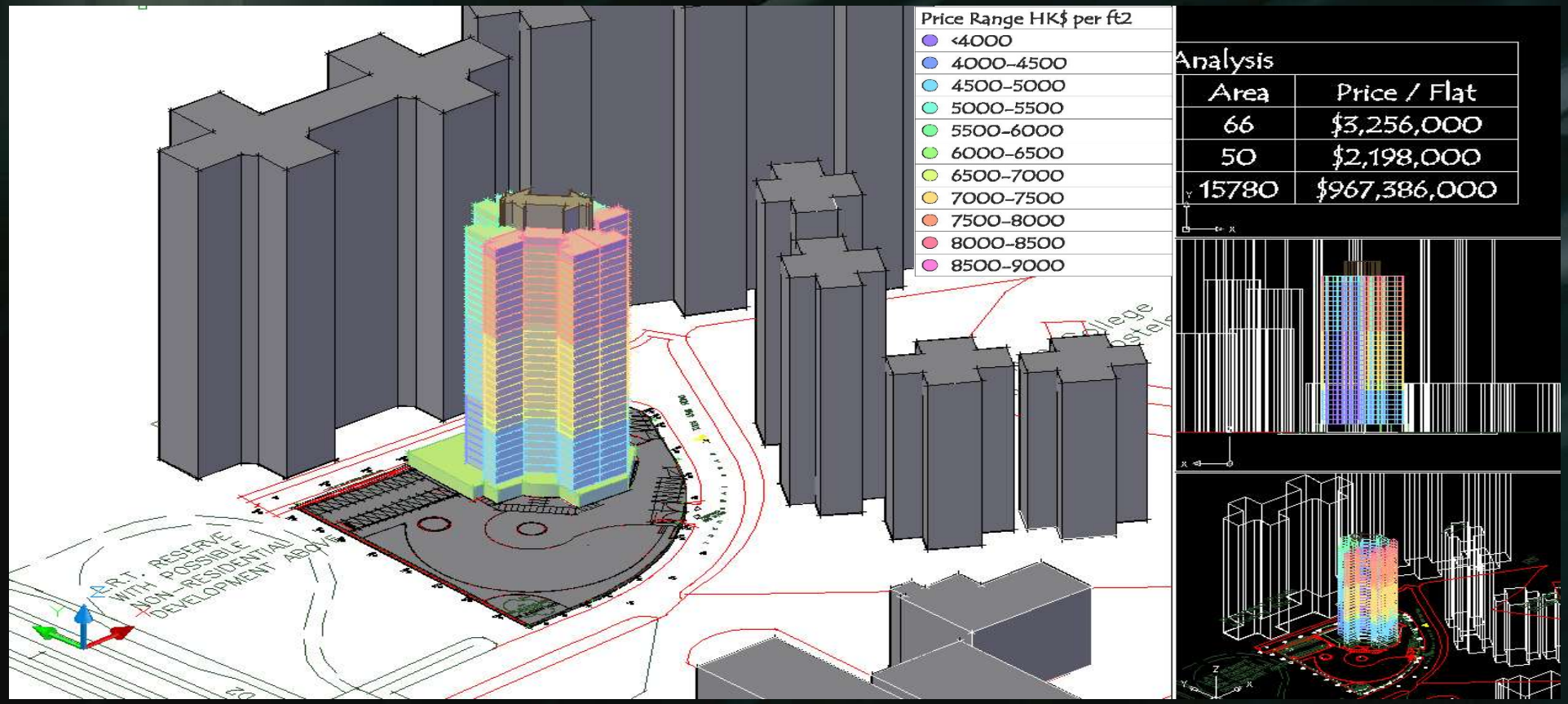


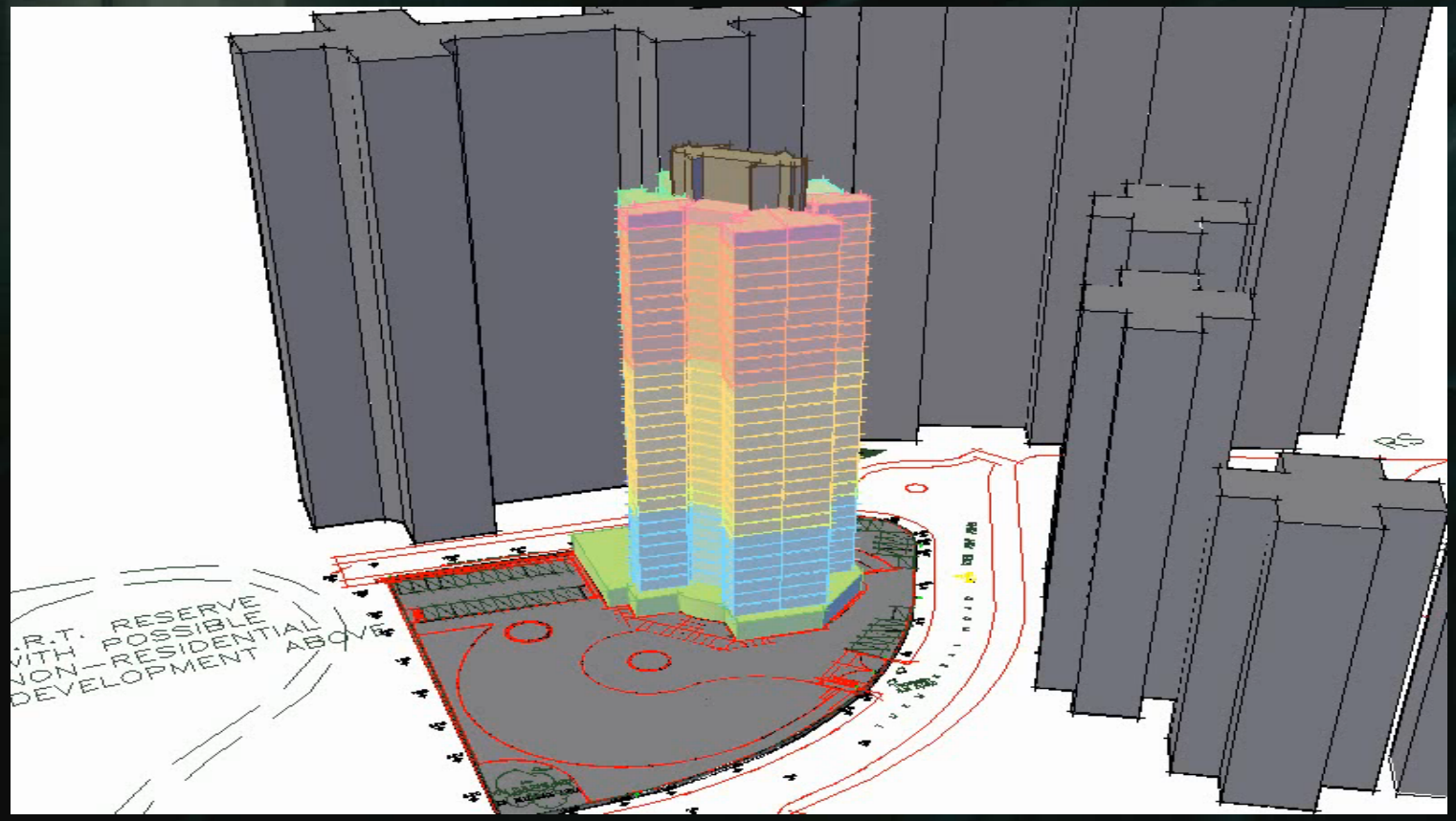






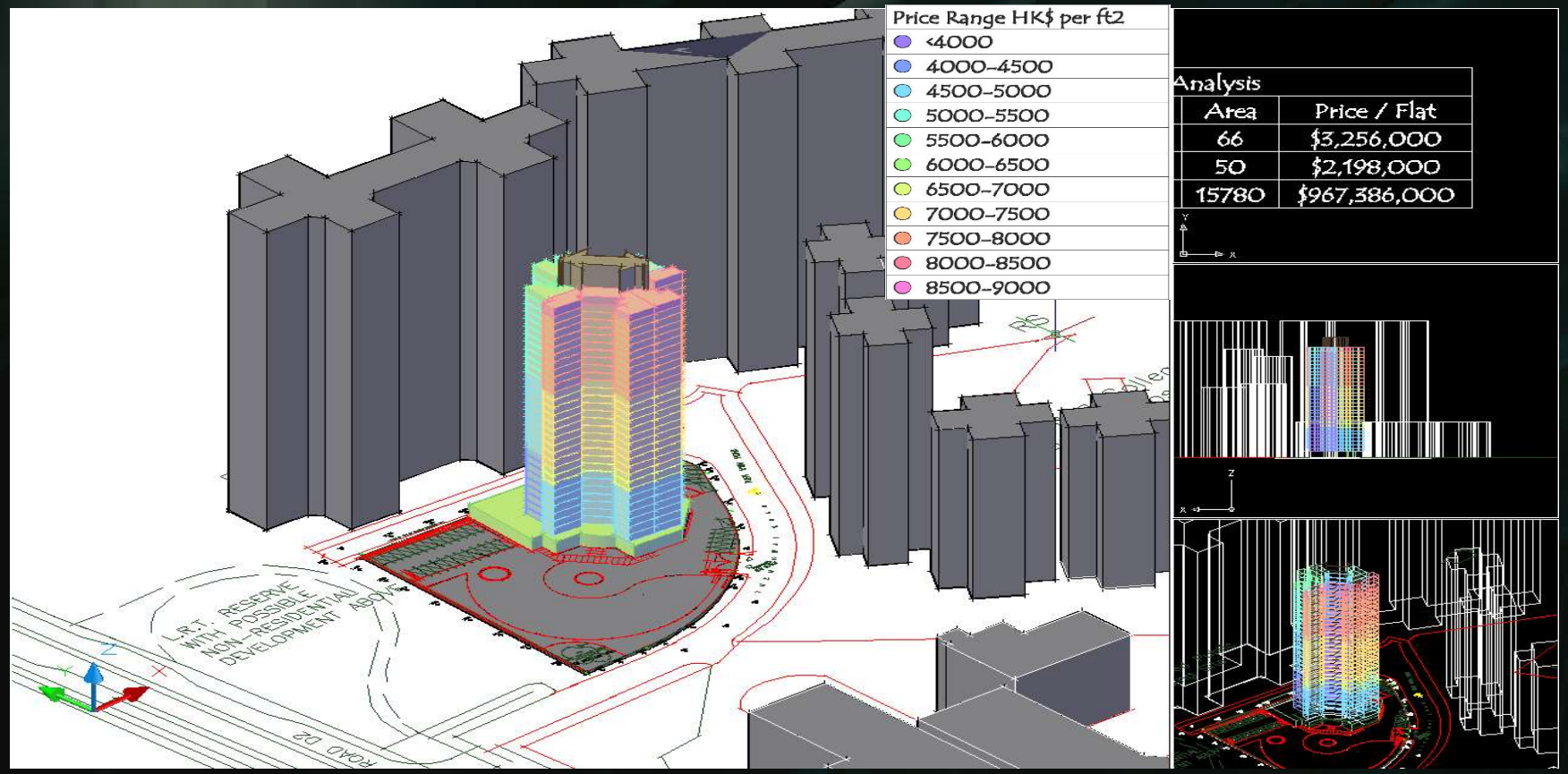
可研通設計平台
網上整合佈置,收益,景觀,成本,等等數據





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

可研通設計平台
網上整合佈置,收益,景觀,成本,等等數據



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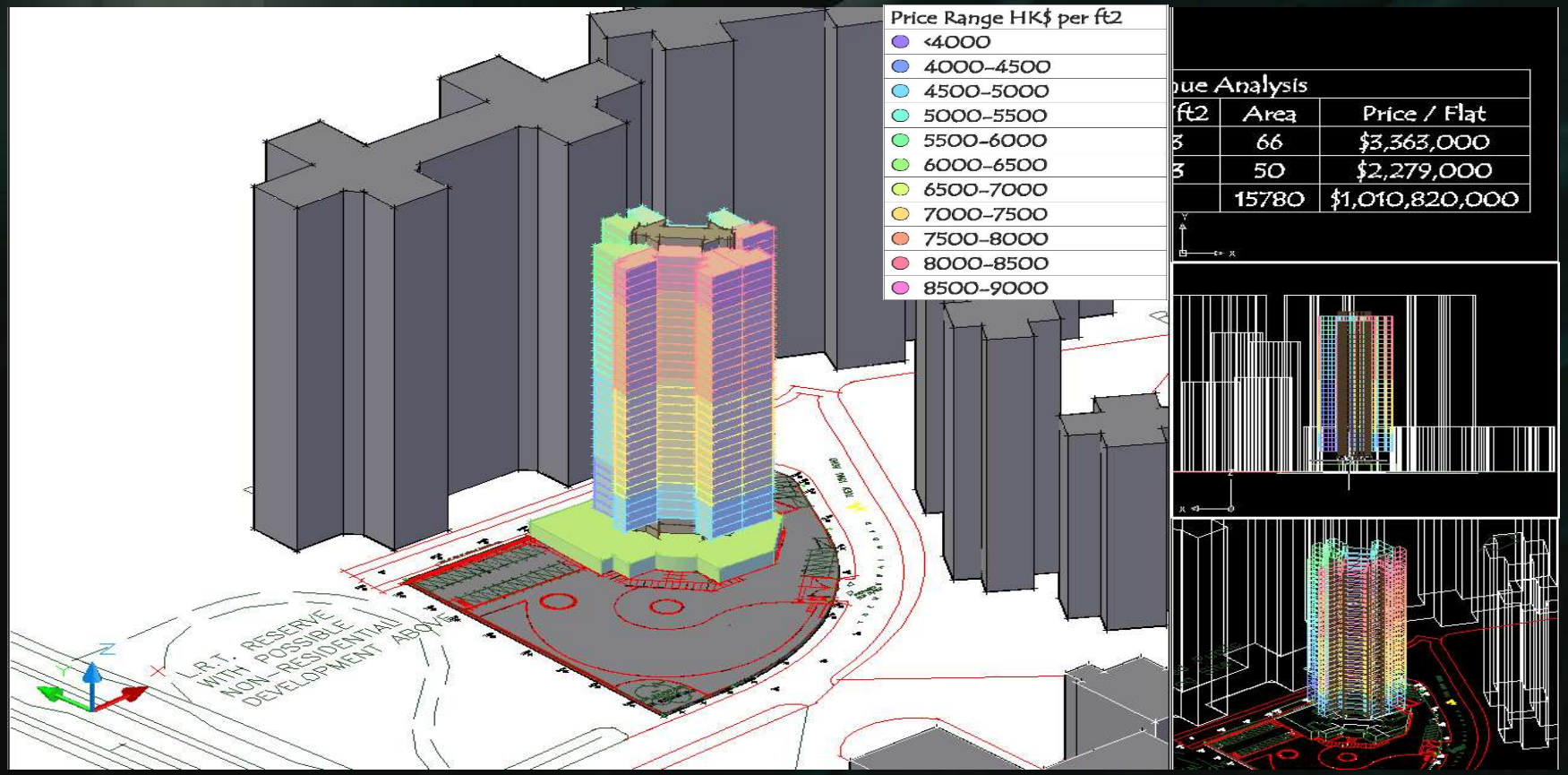

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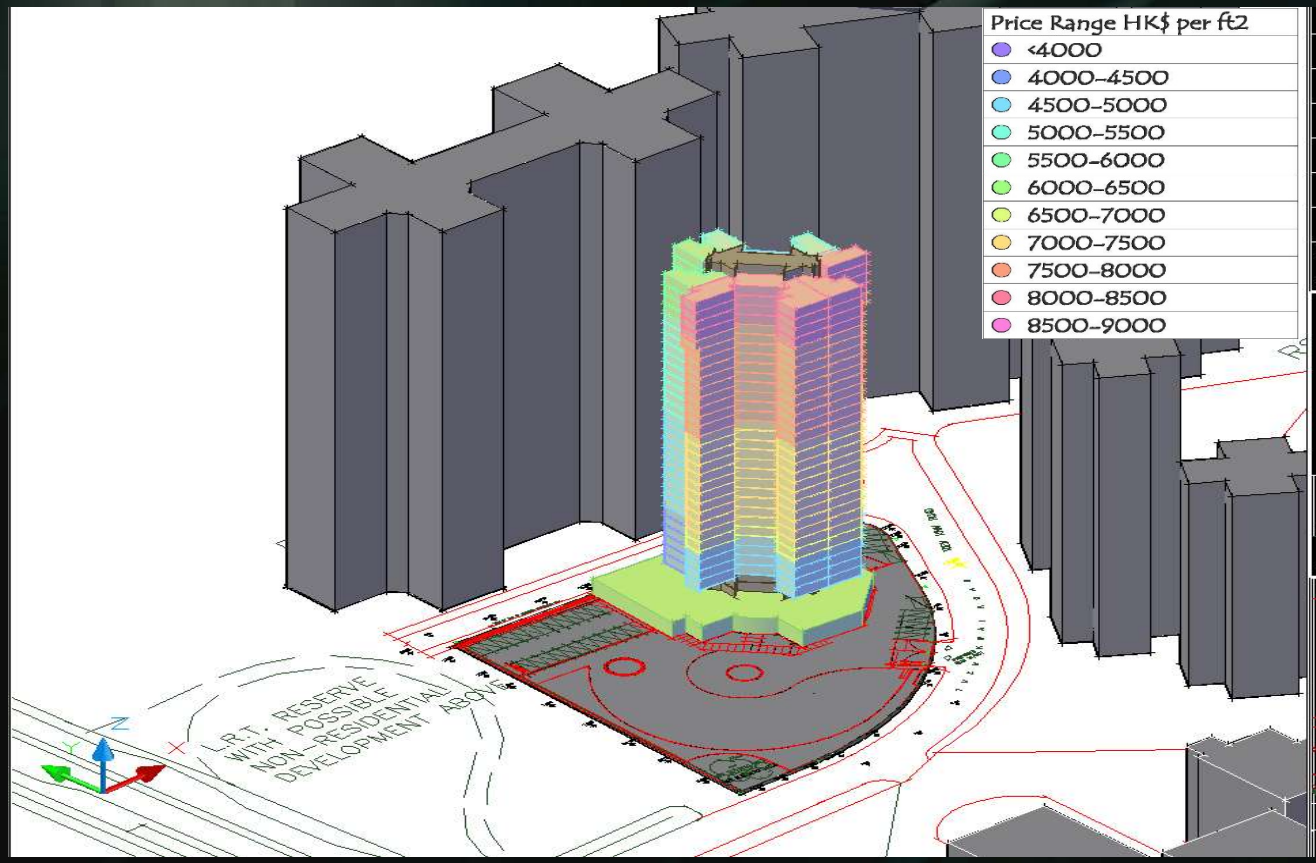
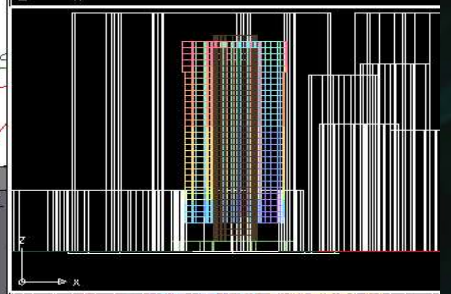
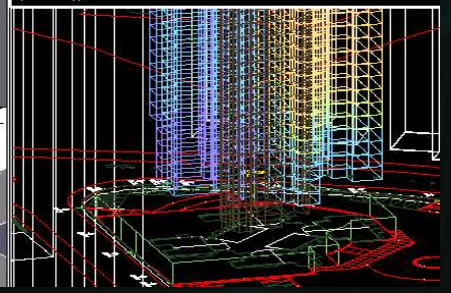


45	$2,051,000
50	$2,010,000
65	$3,312,000
66	$3,363,000
46	$1,849,000
50	$2,279,000
15780	$1,012,542,000

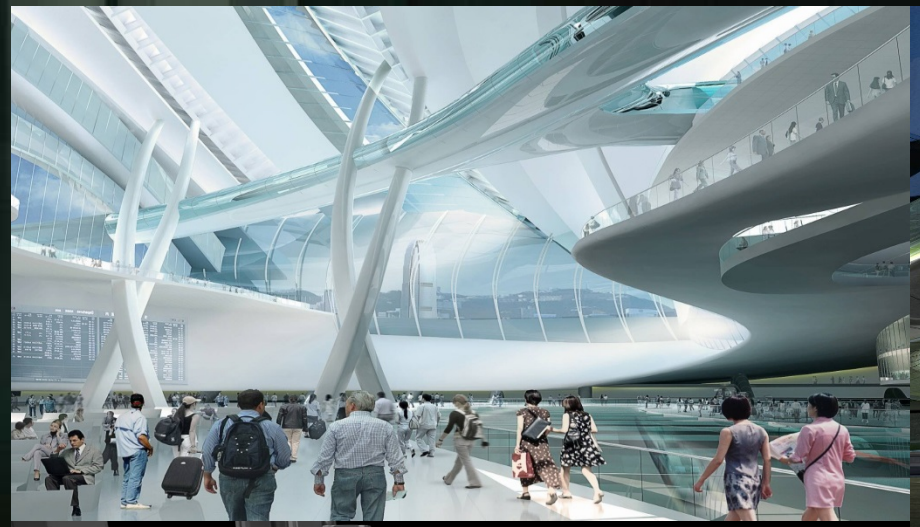
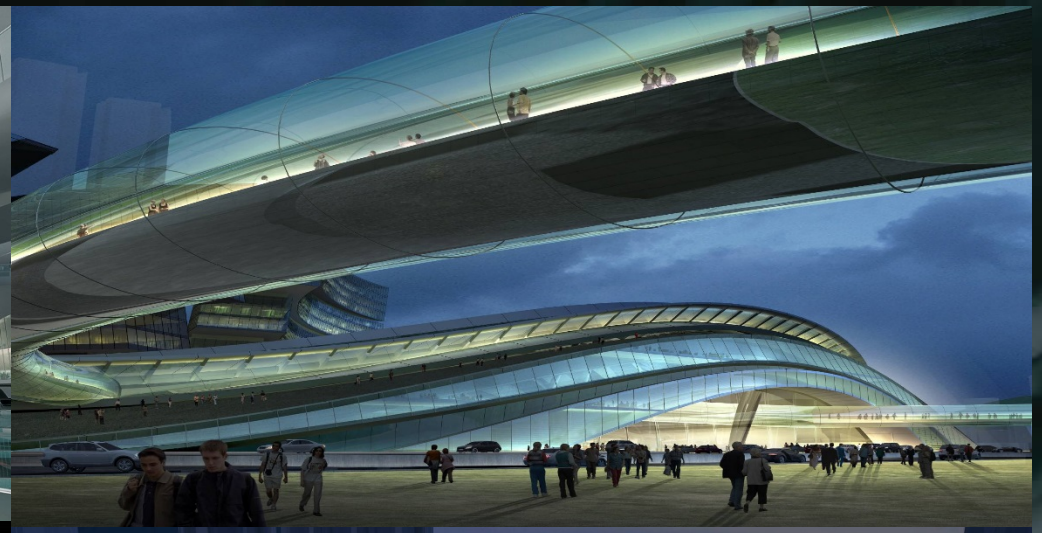
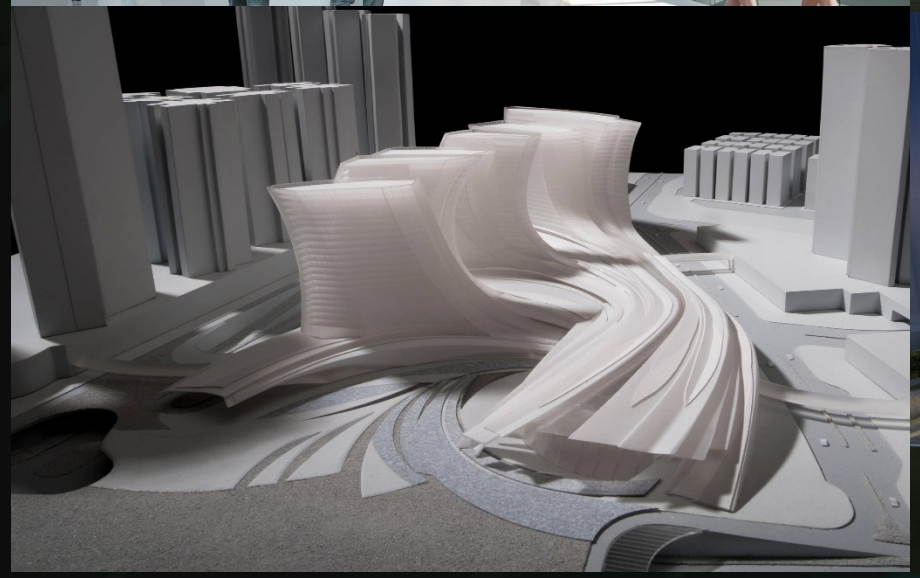




案例二

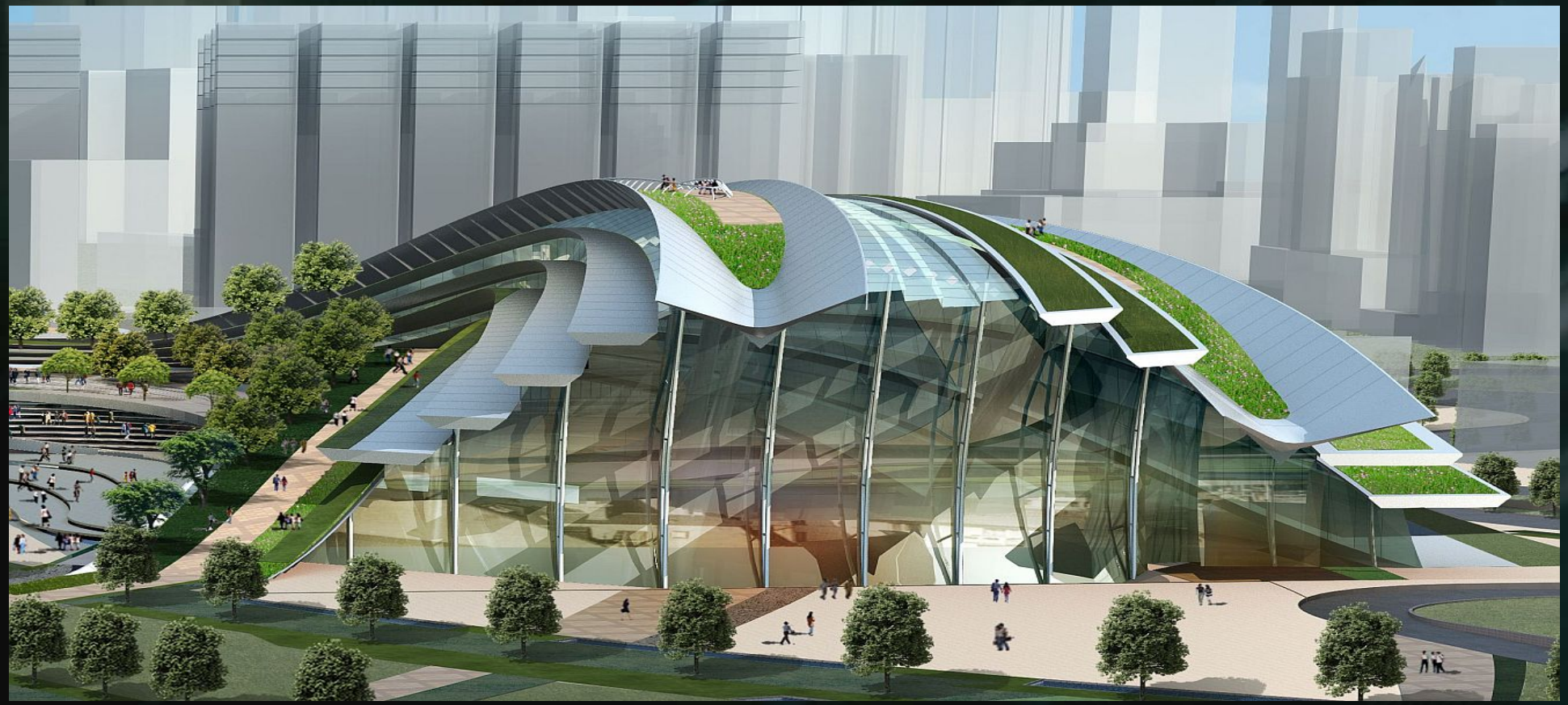
真BIM (施工阶段)

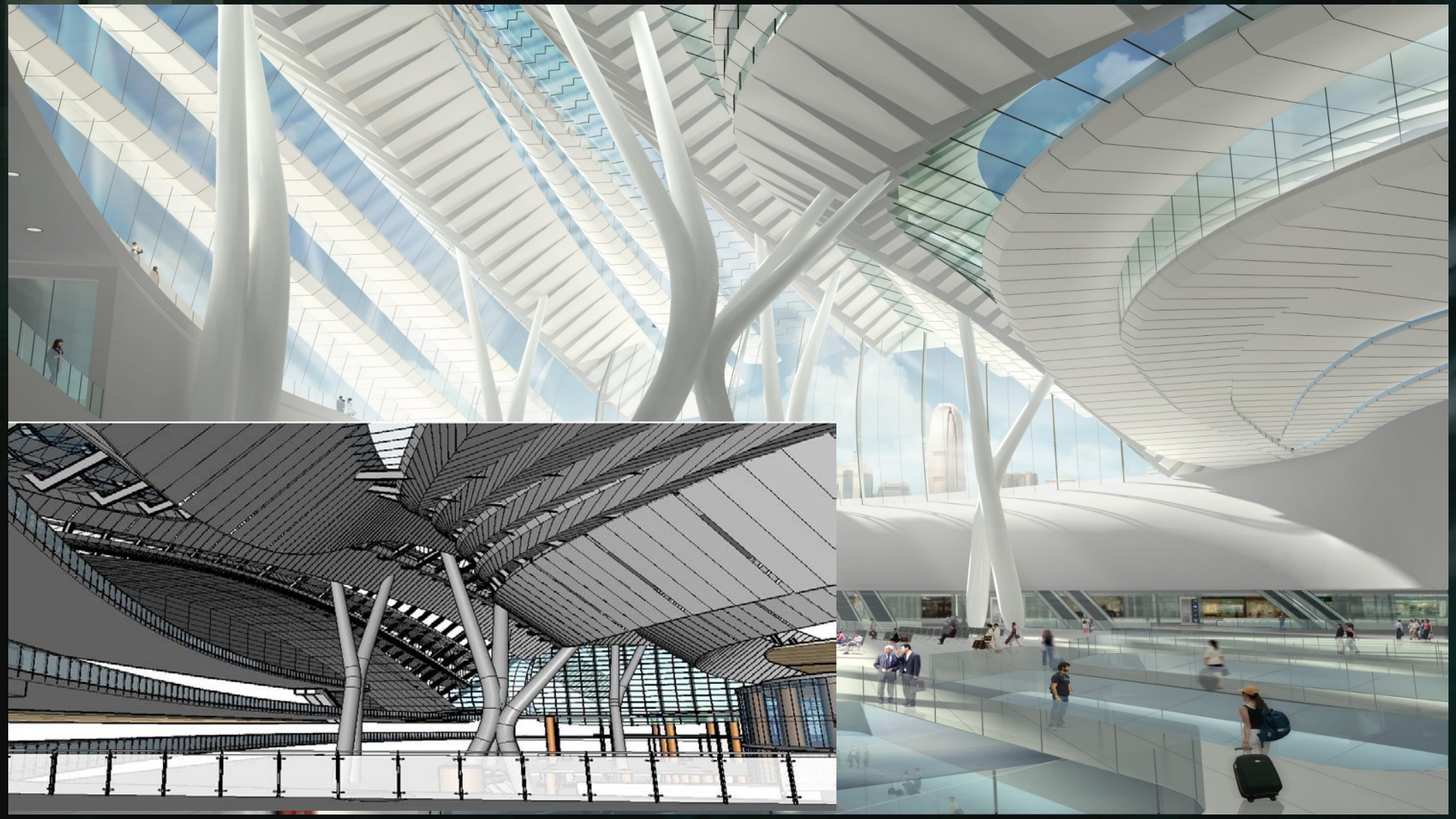
M + I = B (制造)



PHILIPS
SAMSUNG





设计 — RHINO

↓

格网分化 — GRASSHOPPER

↓ 汇出

数字库 — REVIT API

↓ 汇入

自动优化 — REVIT API

↓

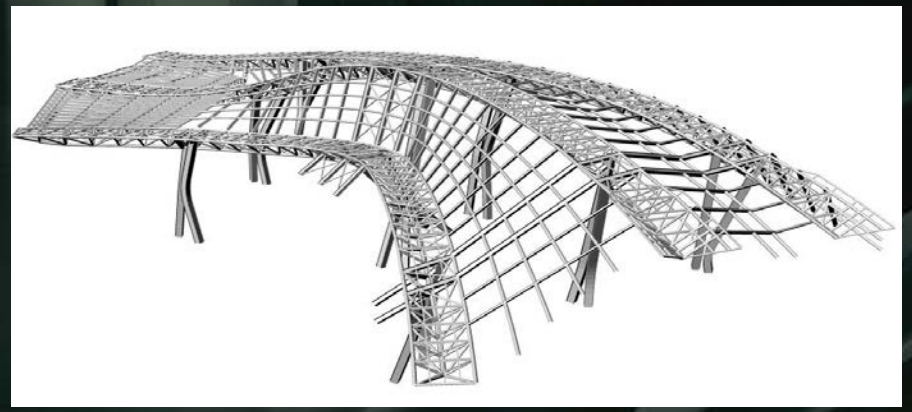
BIM生产 — REVIT

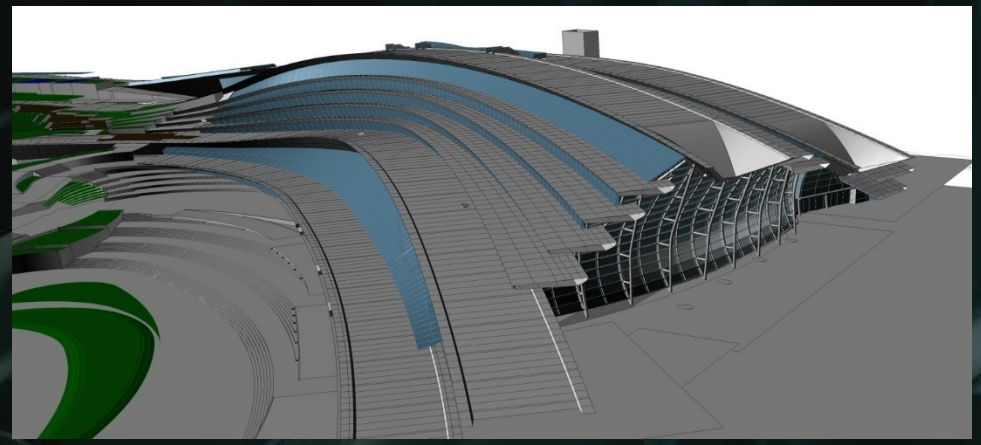
↓

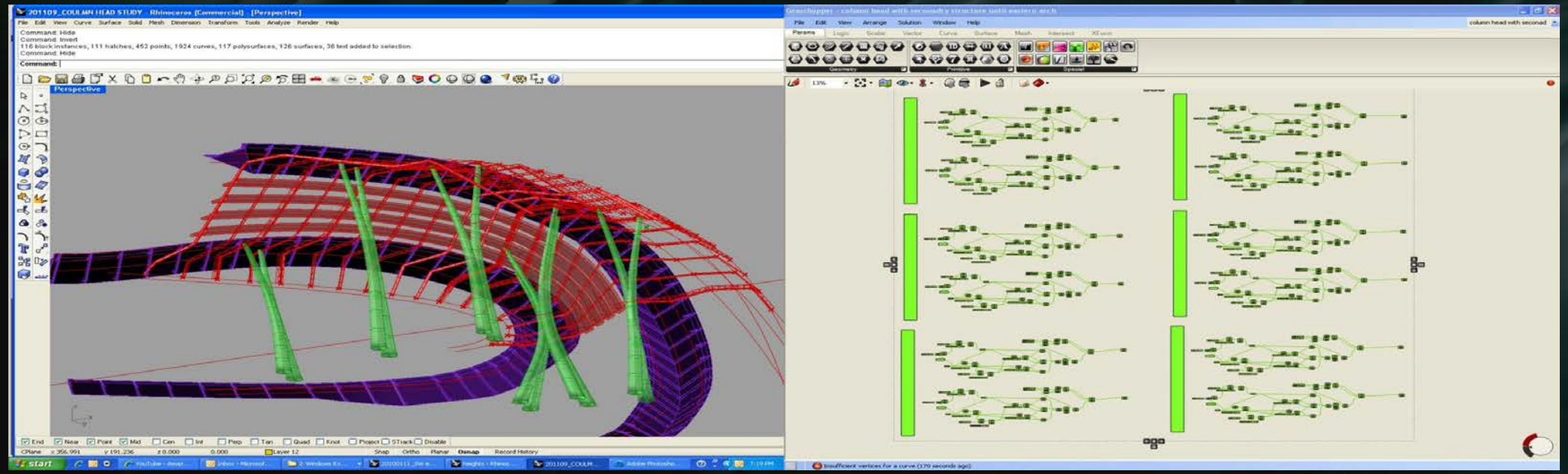
出图 — REVIT

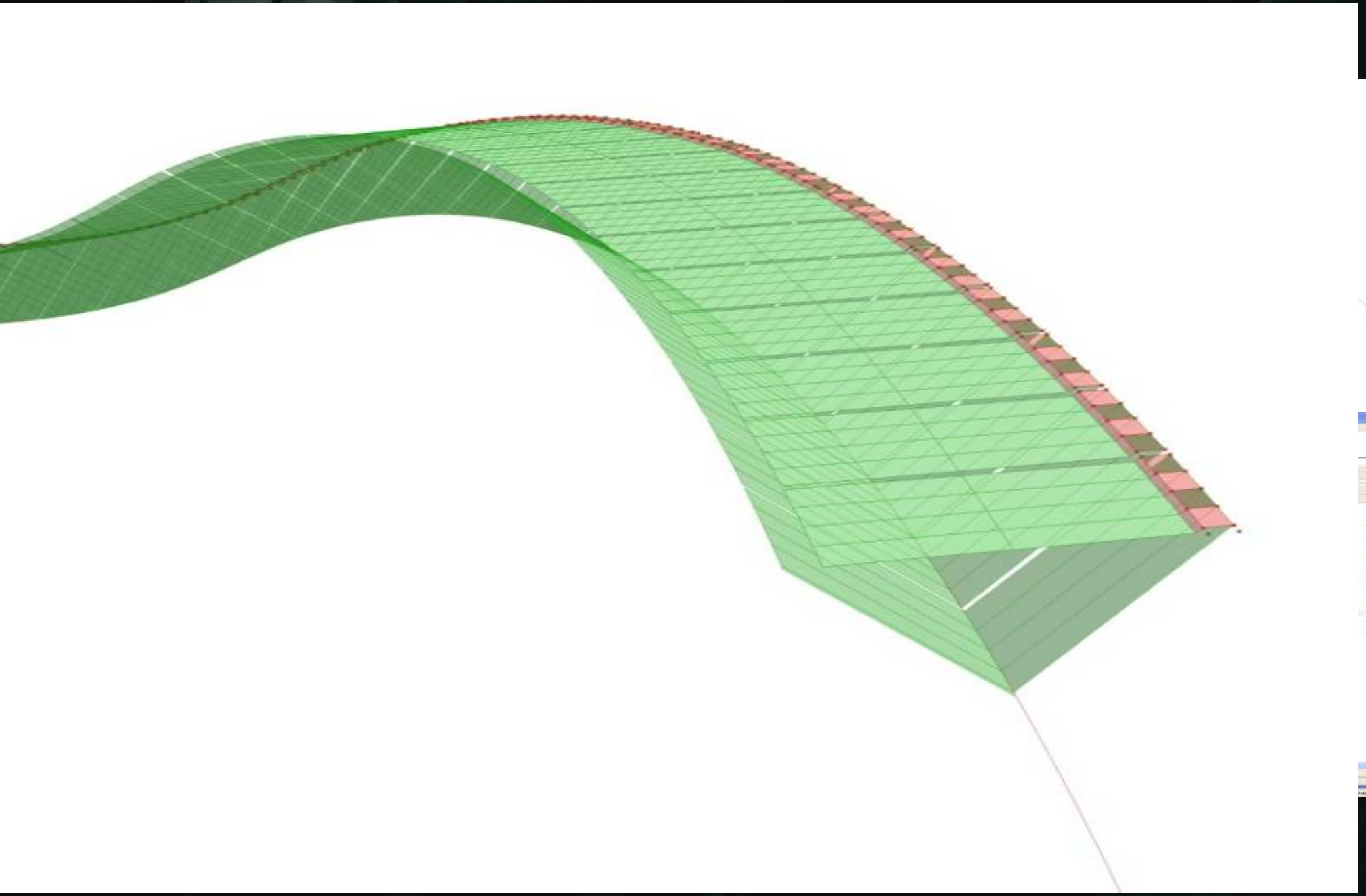
↓ 投标

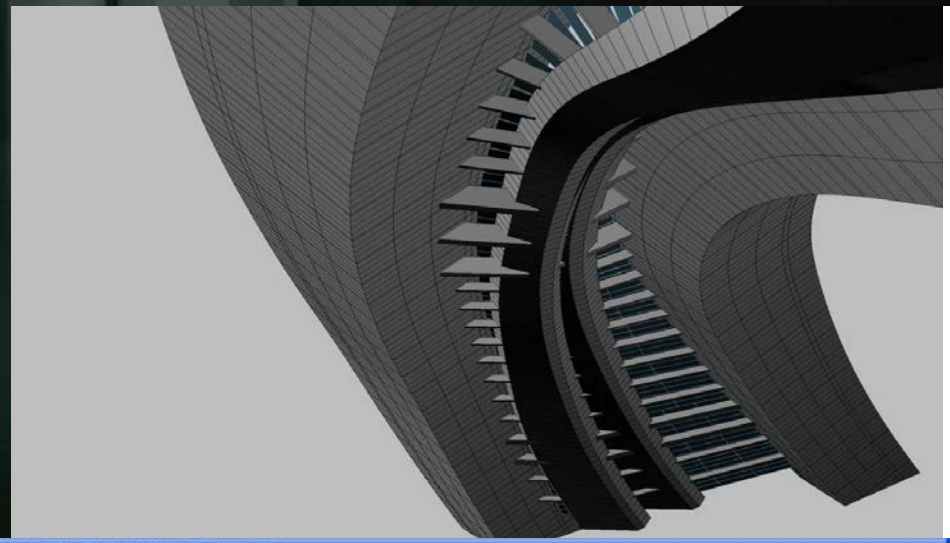
制造生产

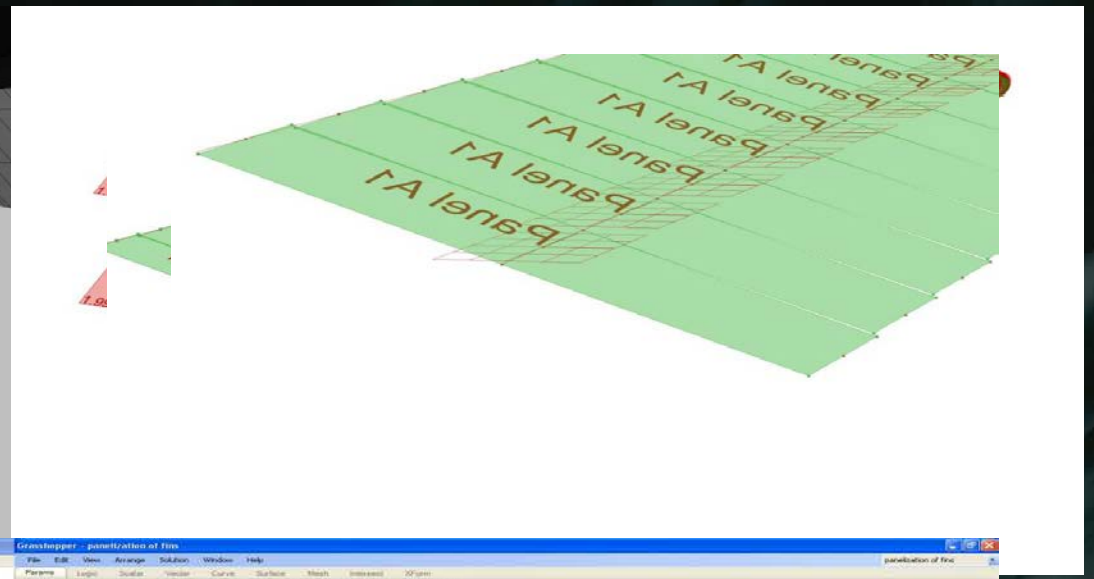


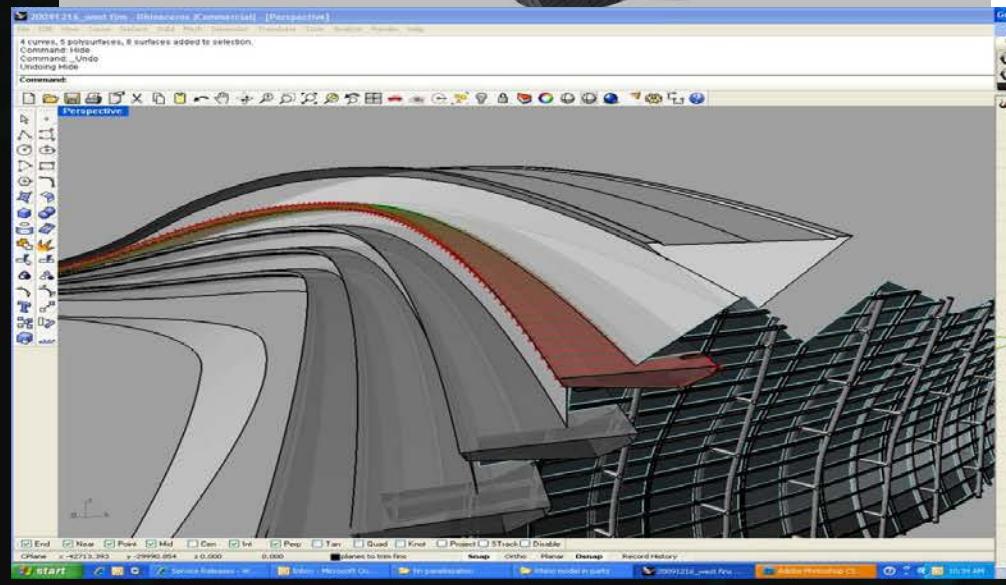


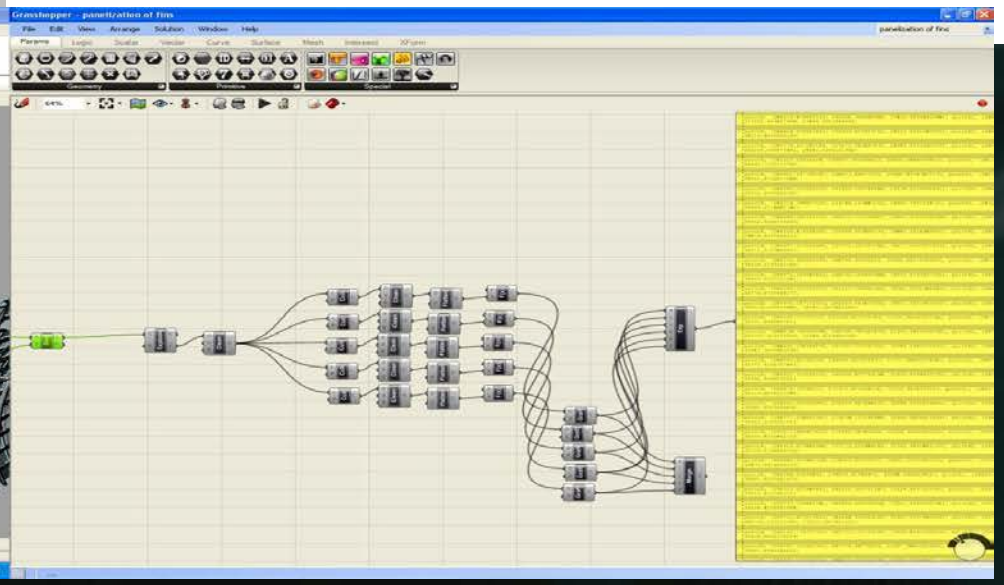

201109_COLUMN HEAD STUDY - Rhinoceros [Commercial] - [Perspective]
File Edit View Curve Surface Solid Mesh Dimension Transform Tools Analyze Render Help
Command: Hide
Command: Invert
116 block instances, 111 hatches, 452 points, 1924 curves, 117 polysurfaces, 126 surfaces, 36 text added to selection.
Command: Hide
Command:
Perspective
End Near Point Mid Cen Int Perp Tan Quad Knot Project STrack Disable
CPlane x 356.991 y 191.236 z 0.000 0.000 Layer 12 Snap Ortho Planar Osnap Record History
start
Grasshopper - column head with secondary structure until eastern arch
File Edit View Arrange Solution Window Help
column head with seconad
Params Logic Scalar Vector Curve Surface Mesh Intersect XForm
Geometry Primitive Special
13%
Insufficient vertices for a curve (170 seconds ago)

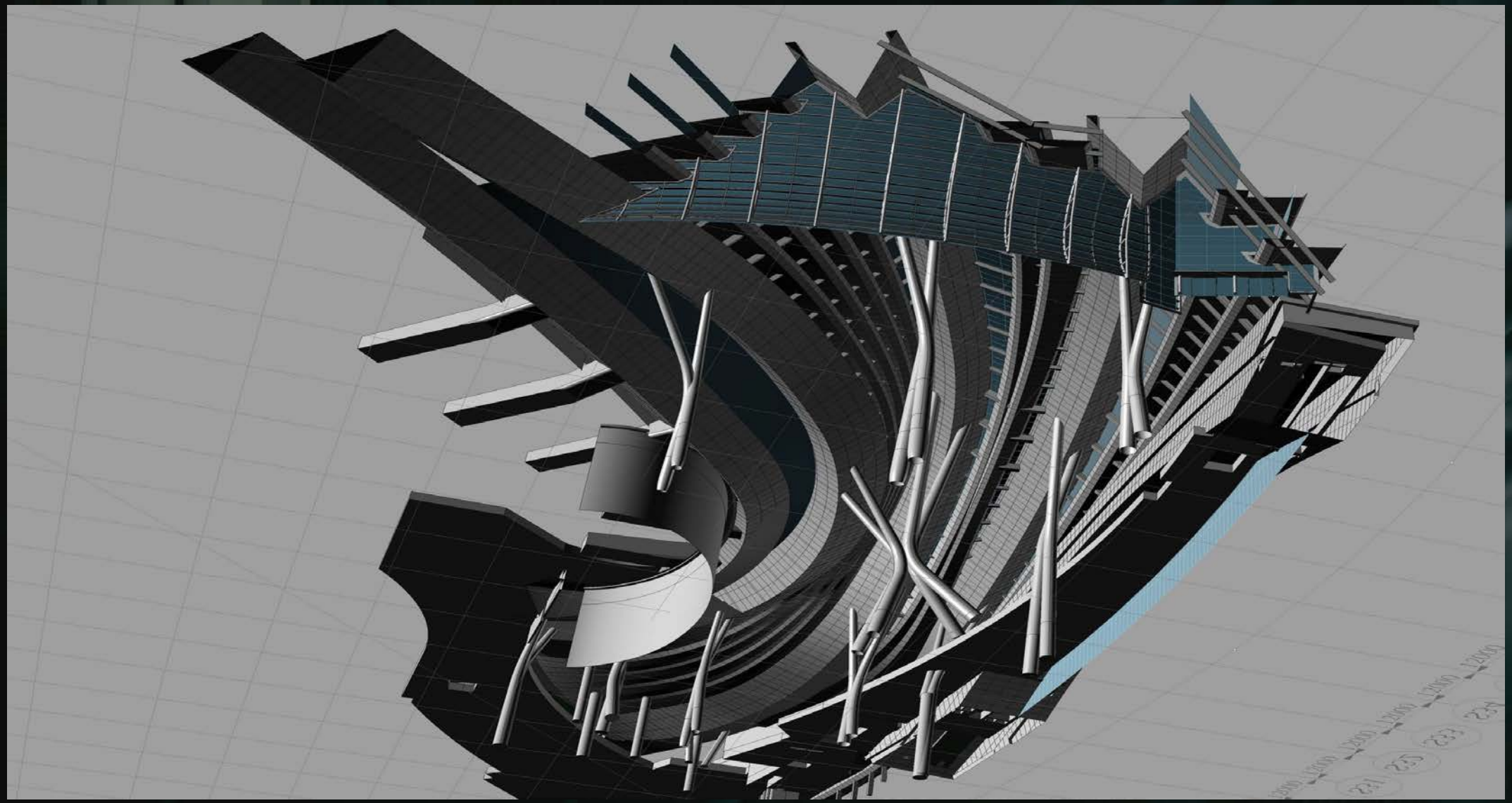


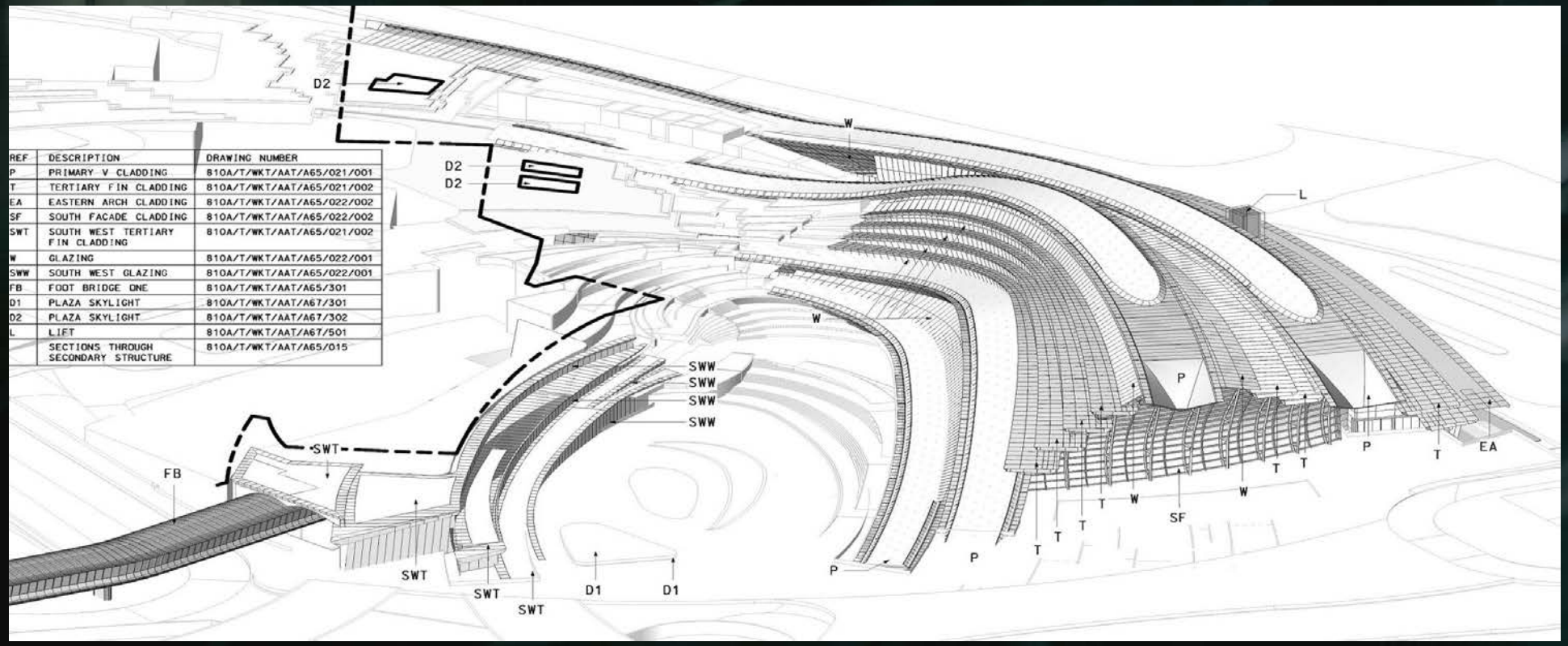



Panel A1
Panel A1
Panel A1
Panel A1
Panel A1
Panel A1

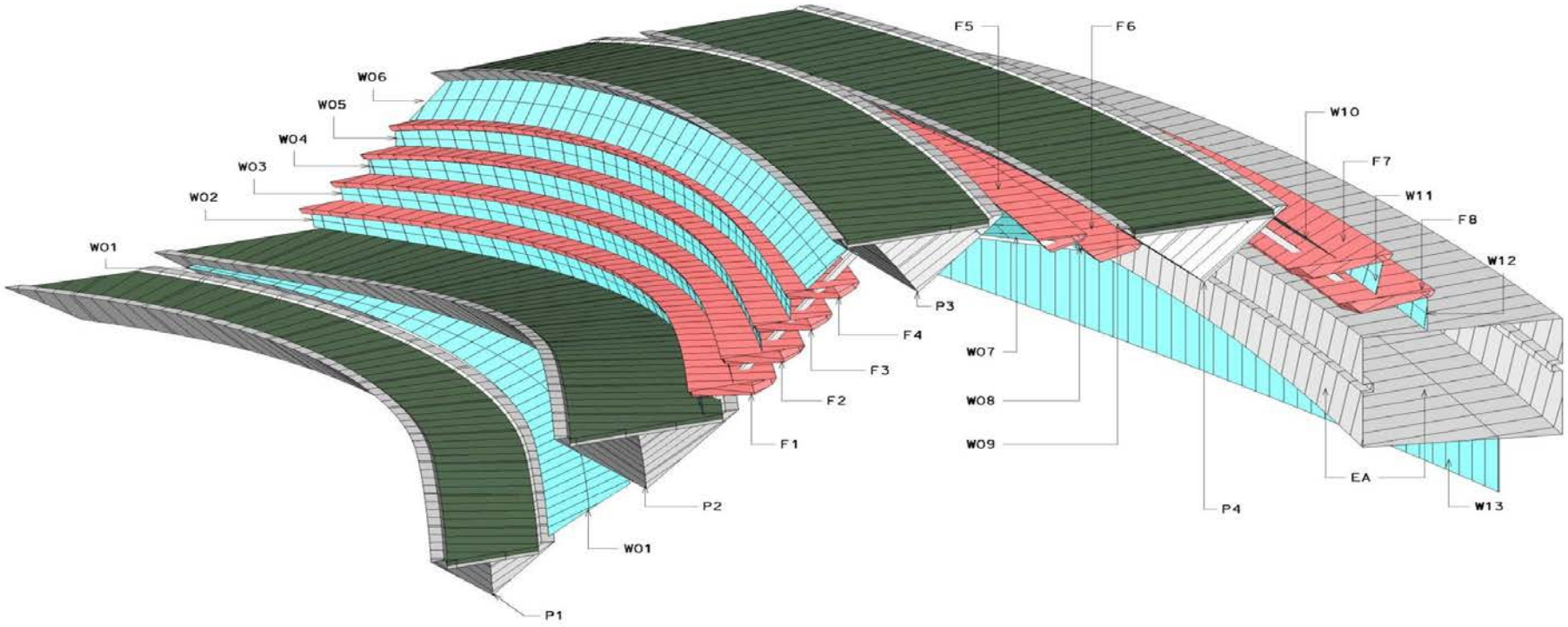

Perspective


Grasshopper - panelization of fins

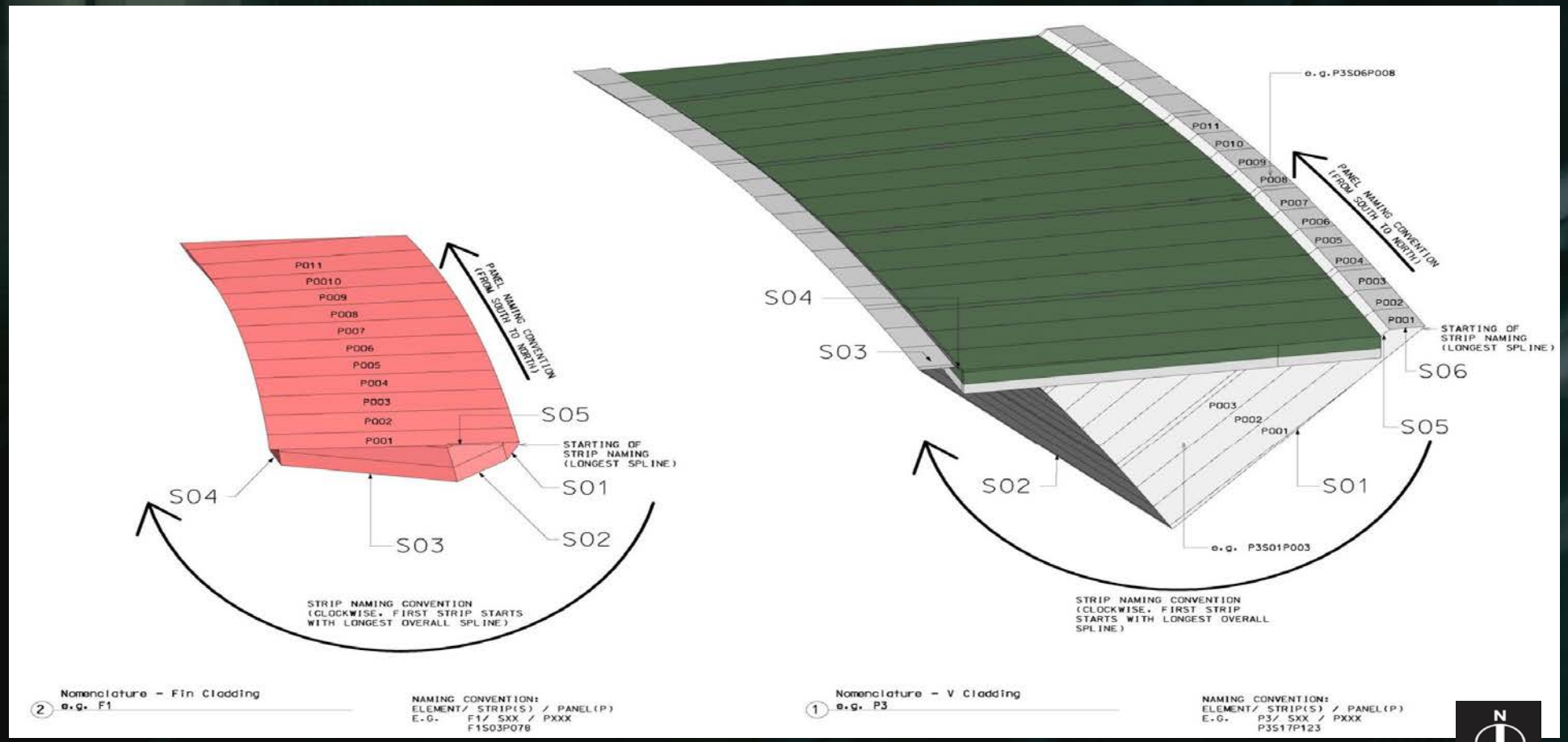


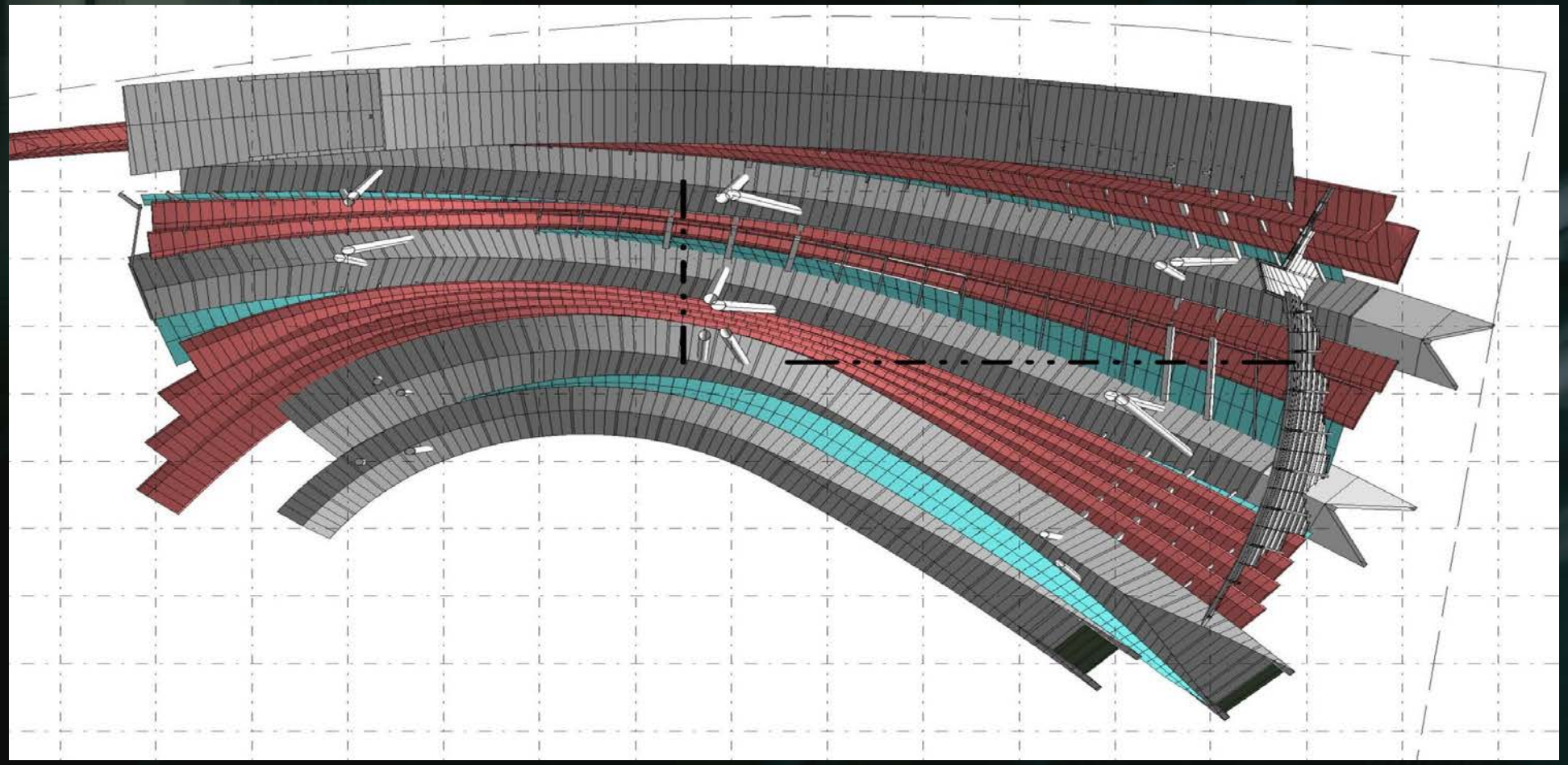


REF	DESCRIPTION	DRAWING NUMBER
P	PRIMARY V CLADDING	810A/T/WKT/AAT/A65/021/001
T	TERTIARY FIN CLADDING	810A/T/WKT/AAT/A65/021/002
EA	EASTERN ARCH CLADDING	810A/T/WKT/AAT/A65/022/002
SF	SOUTH FACADE CLADDING	810A/T/WKT/AAT/A65/022/002
SWT	SOUTH WEST TERTIARY FIN CLADDING	810A/T/WKT/AAT/A65/021/002
W	GLAZING	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
EA
P2
P4
W13
W01
P1

CONTEXT


P011
P0010
P009
P008
P007
P006
P005
P004
P003
P002
P001
PANEL NAMING CONVENTION (FROM SOUTH TO NORTH)
S05
STARTING OF STRIP NAMING (LONGEST SPLINE)
S01
S04
S03
S02
STRIP NAMING CONVENTION (CLOCKWISE. FIRST STRIP STARTS WITH LONGEST OVERALL SPLINE)
2 Nomenclature - Fin Cladding
e.g. F1
NAMING CONVENTION:
ELEMENT/ STRIP(S) / PANEL(P)
E.G. F1/ SXX / PXXX
F1S03P078
e.g.P3S06P008
P011
P010
P009
P008
P007
P006
P005
P004
P003
P002
P001
PANEL NAMING CONVENTION (FROM SOUTH TO NORTH)
S04
S03
STARTING OF STRIP NAMING (LONGEST SPLINE)
S06
P003
P002
P001
S05
S02
S01
e.g. P3S01P003
STRIP NAMING CONVENTION (CLOCKWISE. FIRST STRIP STARTS WITH LONGEST OVERALL SPLINE)
1 Nomenclature - V Cladding
e.g. P3
NAMING CONVENTION:
ELEMENT/ STRIP(S) / PANEL(P)
E.G. P3/ SXX / PXXX
P3S17P123
N



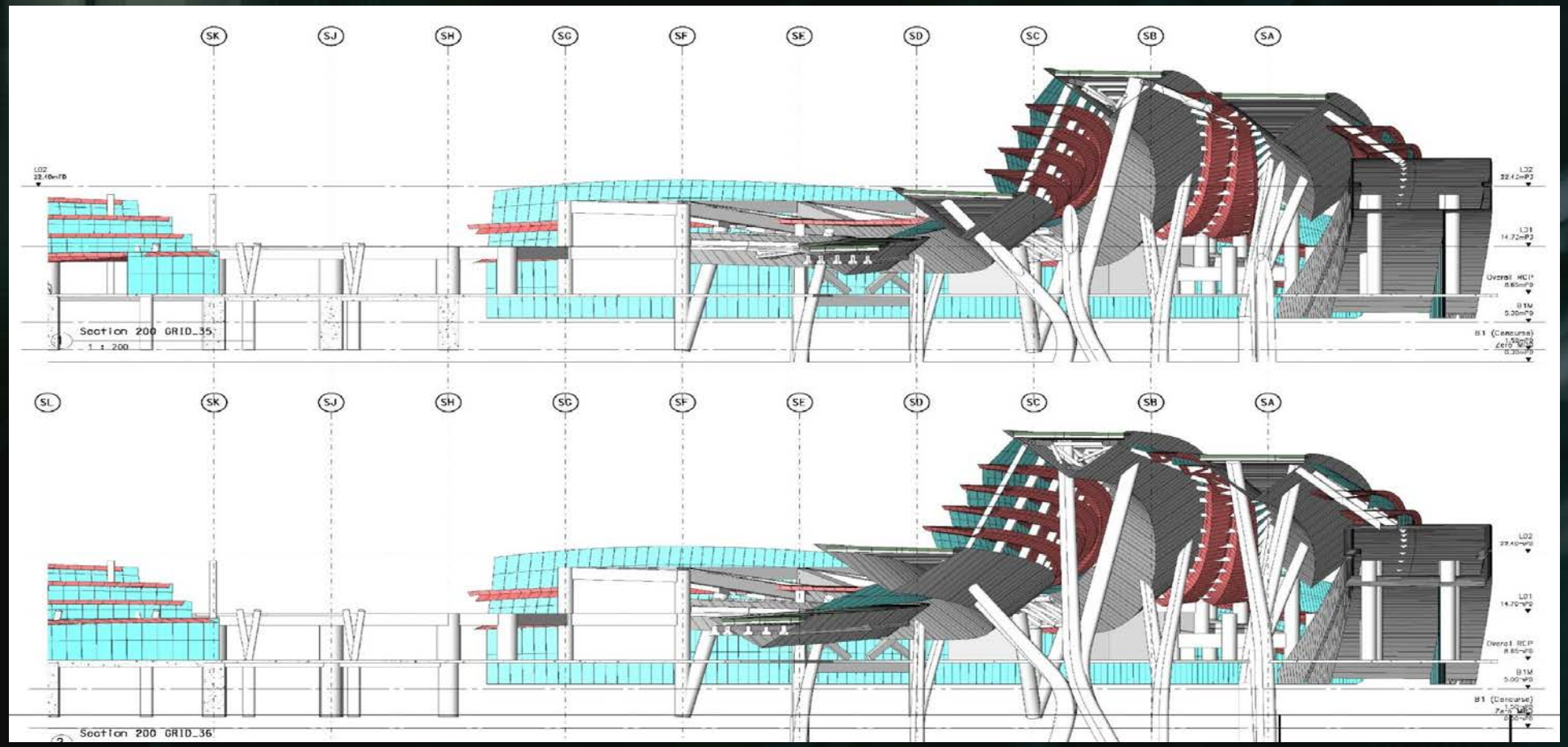
Express Rail Link - Consultancy Agreement No. C801 | Detailed Design for West Kowloon Terminus | Architectural Presentation | RENDERING | View onto Public Plaza

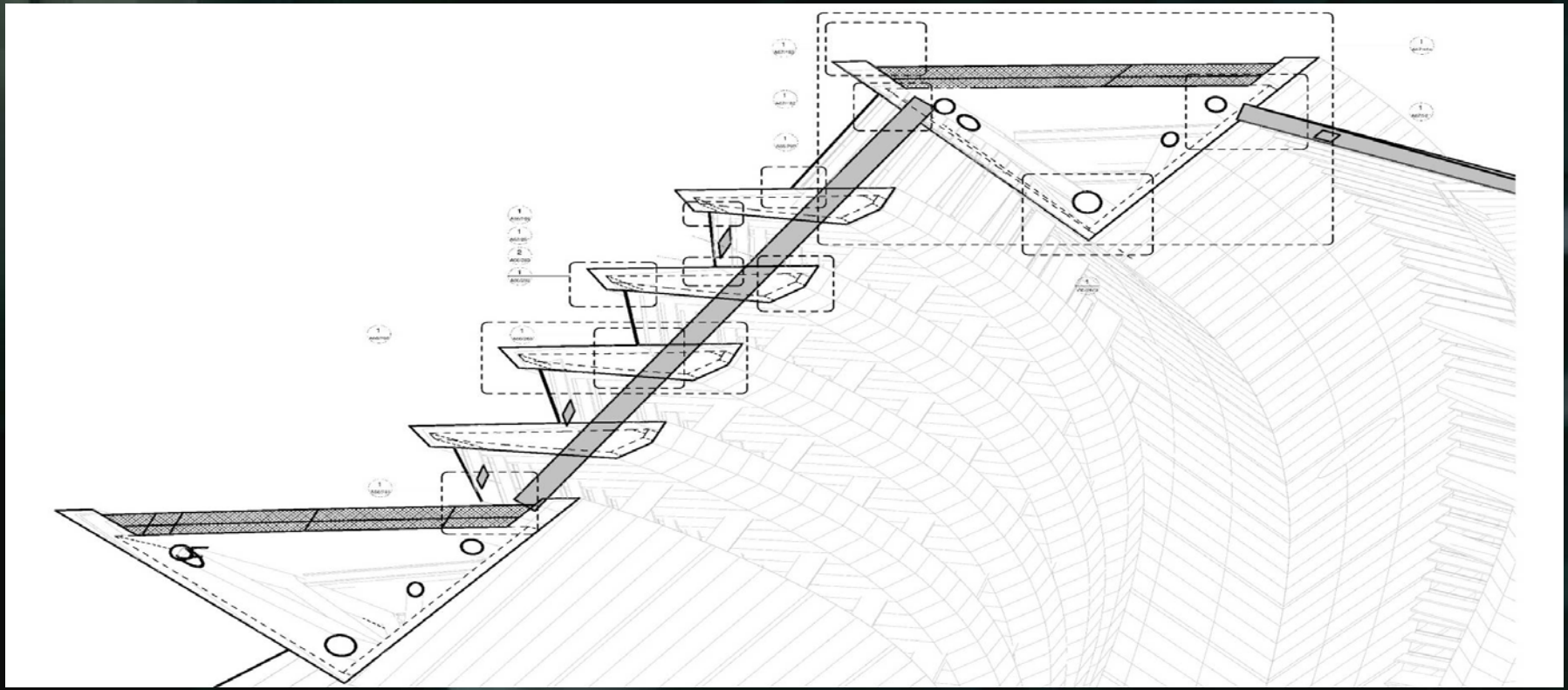
Microsoft Excel - 20100127_V3_S6.xls

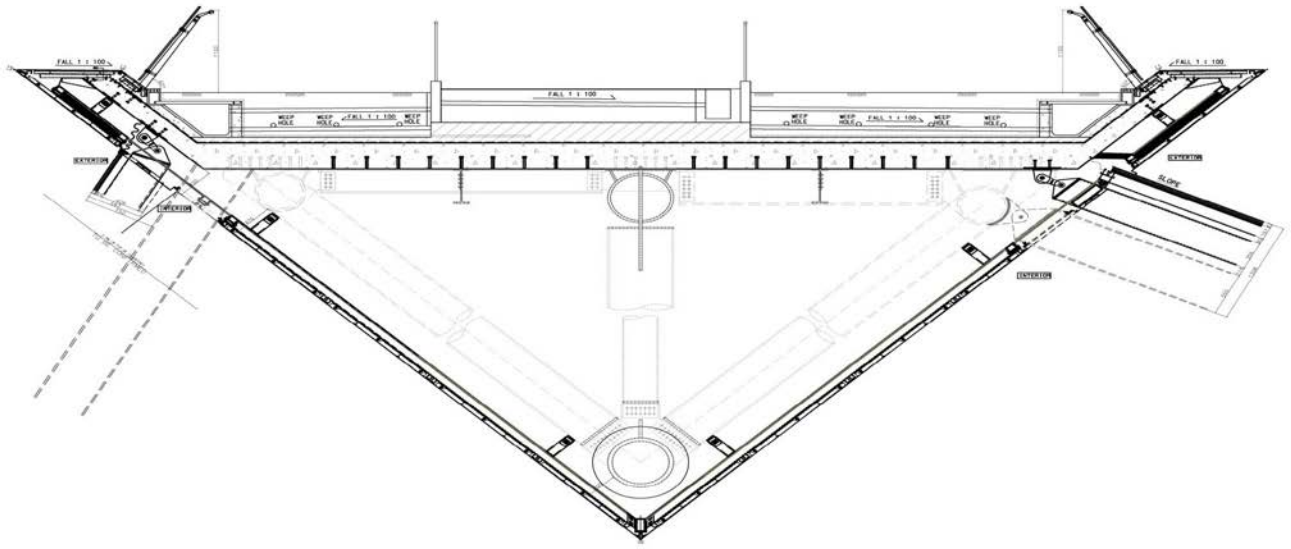
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1		P01x## lengt	P01y## lengt	P01z## lengt	P02x## lengt	P02y## lengt	P02z## lengt	P03x## lengt	P03y## lengt	P03z## lengt	P04x## lengt	P04y## lengt	P04z## lengt	Panel Type##ot
2	P3S06P001	149572.632	43124.1138	30997.4089	150034.096	44497.0923	31201.1007	151479.165	44220.6936	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

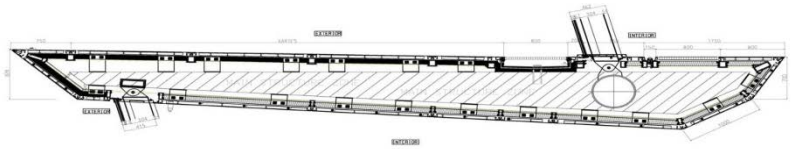
```
                    {
                        case 'x':
                            p[index].x = System.Convert.ToDouble(para.AsValueString());
                            break;
                        case 'y':
                            p[index].y = System.Convert.ToDouble(para.AsValueString());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

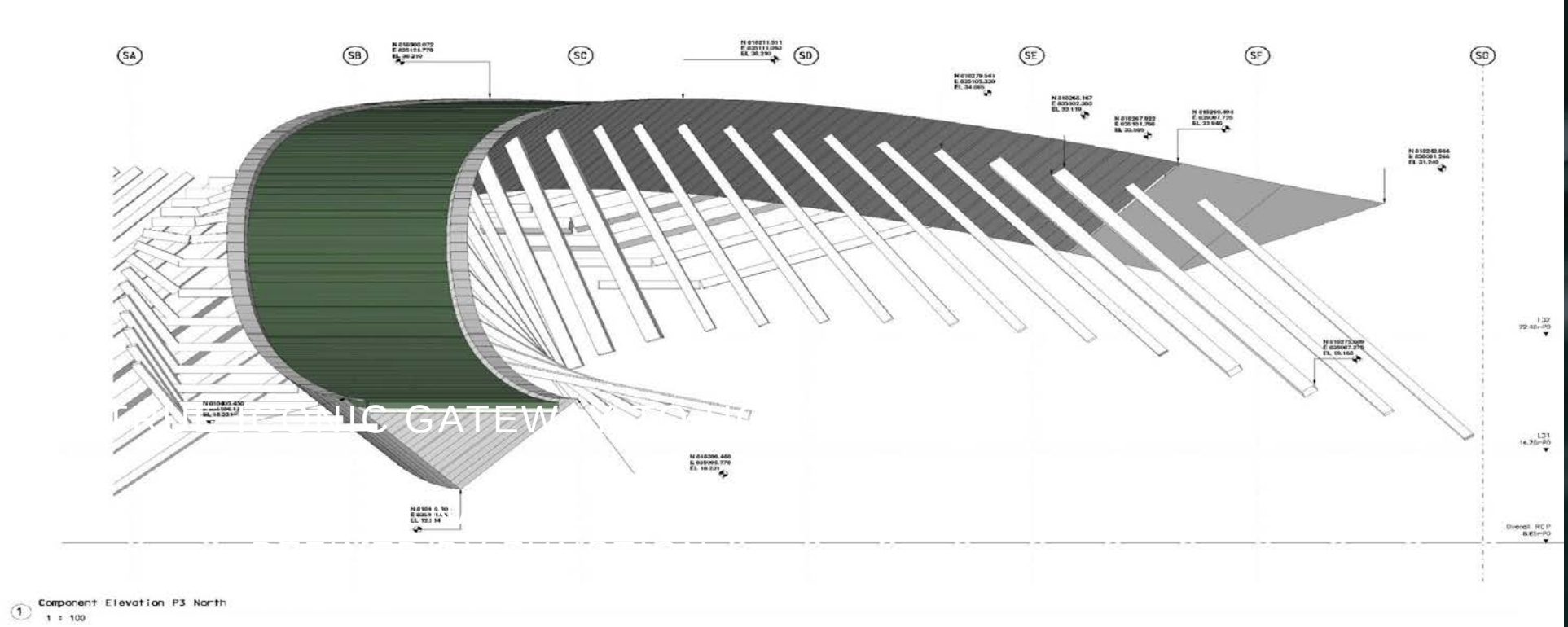
```
        public bool CanBeGroupedWith(CladdingPanel nextPanel, double tolerance)
        {
            if
            (
                Math.Abs(nextPanel.G_edge[0] - G_edge[0]) <= tolerance
                &&
                Math.Abs(nextPanel.G_edge[1] - G_edge[1]) <= tolerance
                &&
                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
Section 200 GRID_35
1 : 200
SL
SK
SJ
SH
SG
SF
SE
SD
SC
SB
SA
Section 200 GRID_36



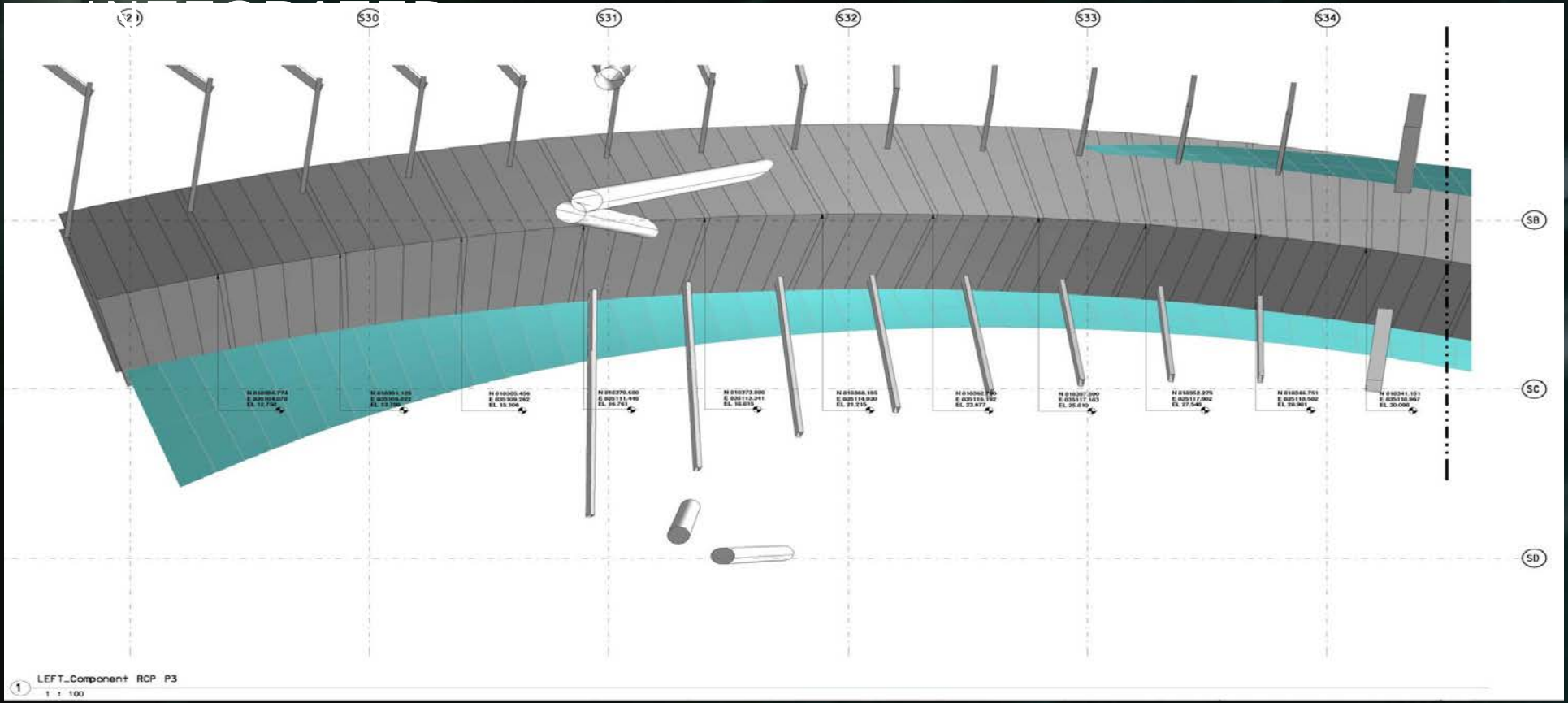

FALL 1 : 100
MEEP HOLE
EXTENTION
SLOPE


EXTERIOR
INTERIOR

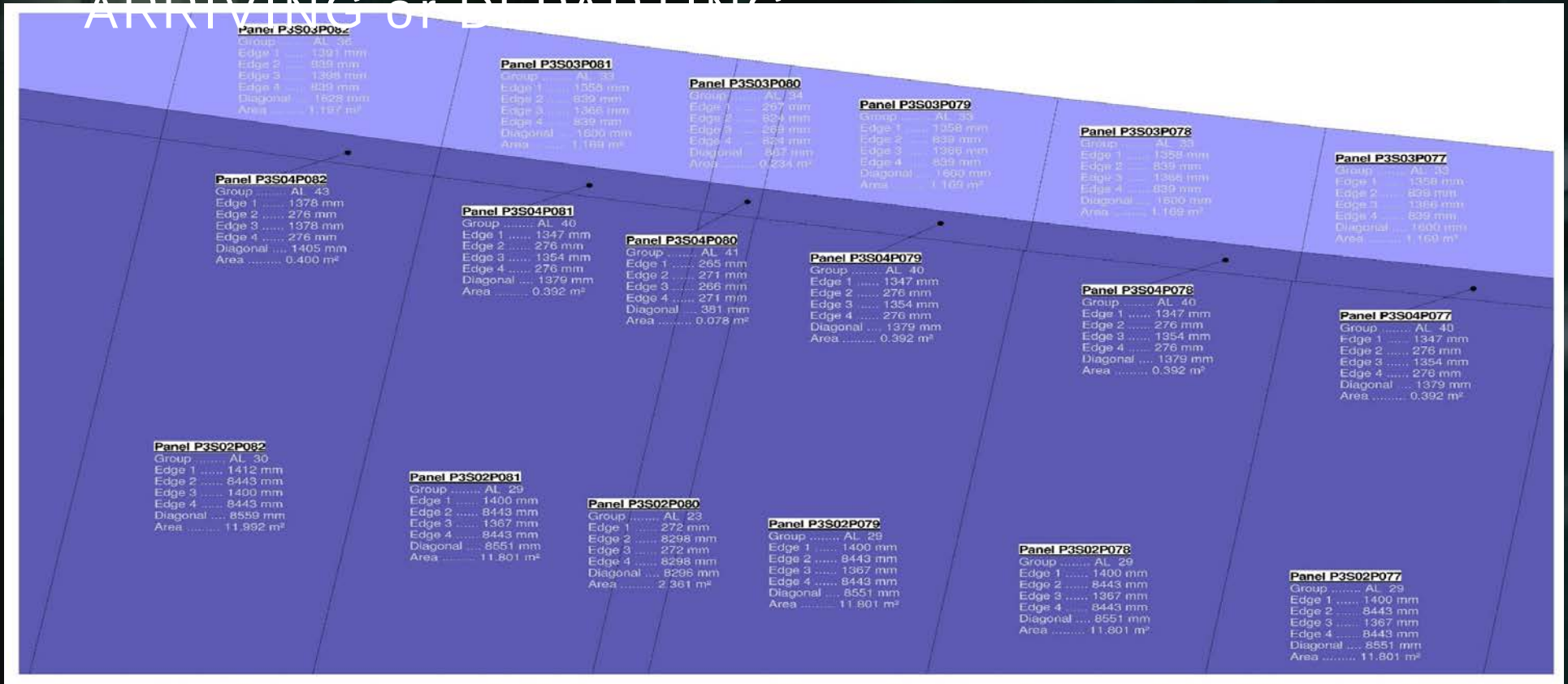


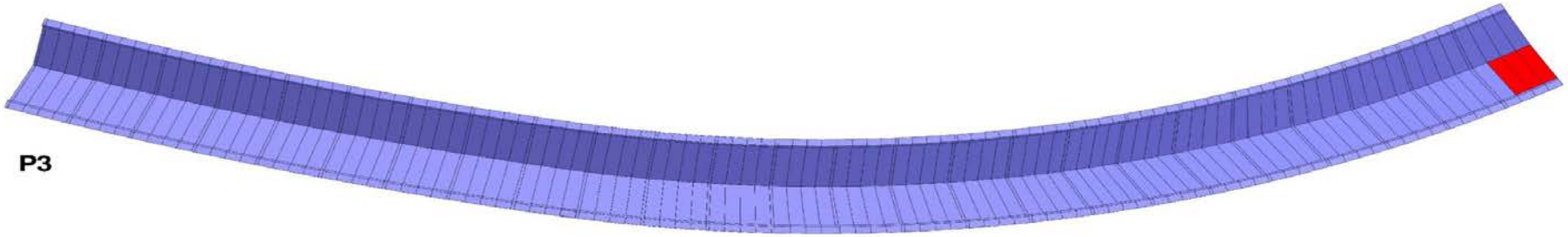
- EXCEEDING EXPECTATIONS

Express Rail Link - Consultancy Agreement No. C801 | Detailed Design for West Kowloon Terminus | Architectural Presentation | RENDERING | Evening View


S30
S31
S32
S33
S34
SB
SC
SD
LEFT_Component RCP P3
1 : 100

ARRIVING or DEPARTING

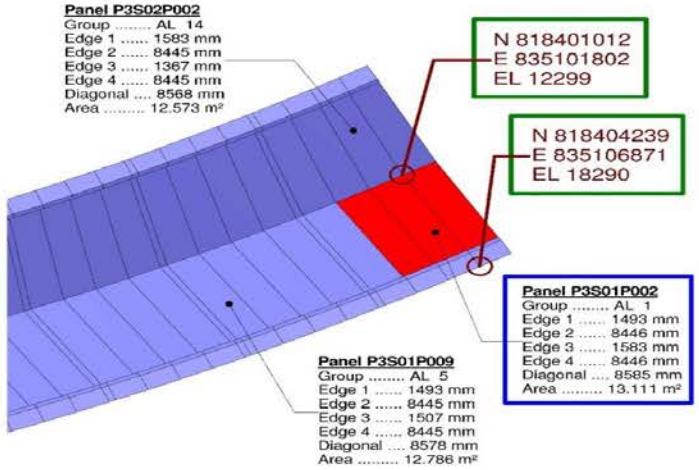




Schedule of panels

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	835101802	818401012	12299	835101802	818401012	12299	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	818402934	18391	835102568	818399625	12410	835104710	818401952	15347	1493	8446	1583	8446	8585	13.111 m²	AL 1
P3S01P003	835107598	818402934	18391	835102568	818399625	12410	835108310	818401617	18528	835103312	818398241	12565	835106166	818398255	15633	1493	8446	1583	8446	8585	13.111 m²	AL 1
AL 1: 3																					39.333 m²	
P3S01P004	835108310	818401617	18528	835103312	818398241	12565	835109007	818400300	18696	835104033	818396862	12745	835106166	818398255	15633	1493	8446	1559	8446	8583	13.016 m²	AL 2
AL 2: 1																					13.016 m²	
P3S01P005	835109007	818400300	18696	835104033	818396862	12745	835109144	818400036	18736	835104175	818396588	12786	835106560	818398446	15741	294	8313	305	8313	8318	2.594 m²	AL 3
P3S01P010	835111765	818394722	19674	835106783	818391211	13770	835111800	818394454	19728	835106806	818390043	13826	835109336	818392833	16750	294	8313	305	8313	8318	2.594 m²	AL 3
P3S01P015	835114258	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	22562	835111511	818379492	16822	835113994	818381444	19059	294	8313	305	8313	8318	2.594 m²	AL 3
P3S01P025	835118417	818377721	24432	835113315	818373975	18751	835118503	818377451	24534	835113398	818373701	18855	835115908	818375712	21659	294	8313	305	8313	8318	2.594 m²	AL 3
P3S01P030	835120094	818372092	26719	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	835107501	818397641	15867	1493	8446	1534	8446	8581	12.901 m²	AL 4
P3S01P018	835115454	818386100	21716	835110455	818382531	15899	835115973	818384746	22094	835110918	818381150	16365	835113167	818385633	19355	1493	8446	1534	8446	8581	12.901 m²	AL 4
P3S01P019	835115973	818384746	22094	835110918	818381153	16335	835116476	818383392	22499	835111414	818379769	16734	835113995	818382964	19408	1493	8446	1534	8446	8581	12.901 m²	AL 4
P3S01P021	835116575	818383121	22562	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	835117594	818380417	23465	835112447	818376730	17757	835114755	818379257	20378	1493	8446	1534	8446	8581	12.901 m²	AL 4
P3S01P023	835117594	818380417	23465	835112447	818376730	17757	835117960	818379068	23938	835112890	818375351	18258	835115211	818377891	20855	1493	8446	1534	8446	8581	12.901 m²	AL 4
P3S01P024	835117960	818379068	23938	835112890	818375351	18258	835118417	818377721	24432	835113315	818373975	18751	835115550	818376589	21353	1493	8446	1534	8446	8581	12.901 m²	AL 4
P3S01P026	835118503	818377451	24534	835113398	818373701	18855	835118961	818376108	25052	835113802	818372332	19436	835116159	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	835107973	818396303	16090	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P008	835110485	818397388	19170	835105522	818393885	13245	835111132	818396657	19414	835106181	818392551	13500	835108325	818394970	16332	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P009	835111132	818396657	19414	835106181	818392551	13500	835111765	818394722	19674	835106783	818391211	13770	835108960	818395655	16590	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P011	835111890	818394454	19728	835106806	818390043	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	818386990	14745	835110890	818389337	17519	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P014	835113688	818390425	20609	835108670	818386990	14745	835114256	818389075	20904	835109228	818385543	15084	835111440	818387906	17843	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P016	835114366	818388805	21001	835109337	818385271	15154	835114919	818387453	21346	835109878	818383908	15516	835112126	818386359	18254	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P017	835114919	818387453	21346	835109878	818383908	15516	835115454	818386100	21716	835110405	818382531	15899	835112864	818384908	18818	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P027	835118921	818376108	25052	835113802	818372332	19436	835119324	818374766	25590	835114189	818370671	20002	835116559	818373544	22520	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P028	835119324	818374766	25590	835114189	818370671	20002	835119711	818373429	26146	835114559	818369618	20586	835118946	818372196	23081	1493	8445	1507	8445	8578	12.786 m²	AL 5
P3S01P029	835119711	818373429	26146	835114559	818369618	20586	835120084	818372092	26719	835114909	818368280	21178	835117916	818370555	23558	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	1472	8445	8574	12.661 m²	AL 6
AL 6: 1																					12.661 m²	

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



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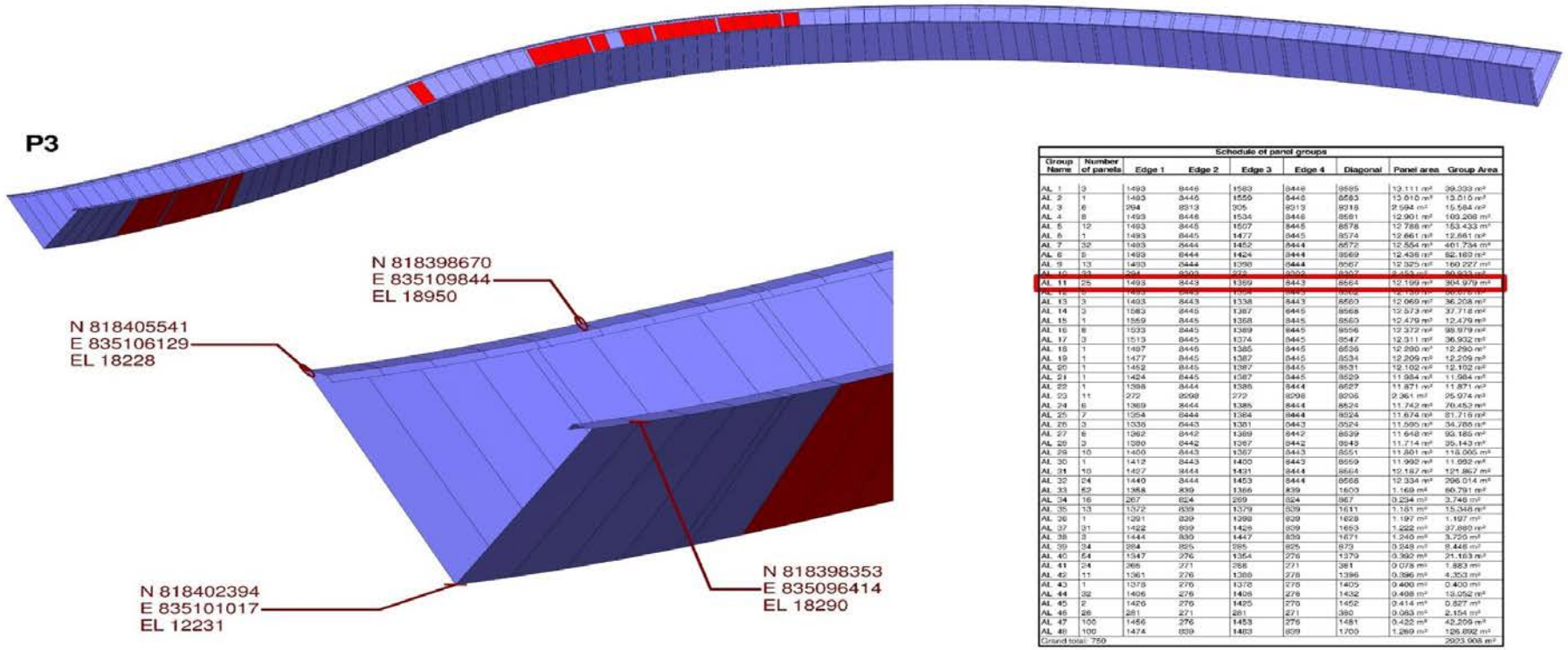
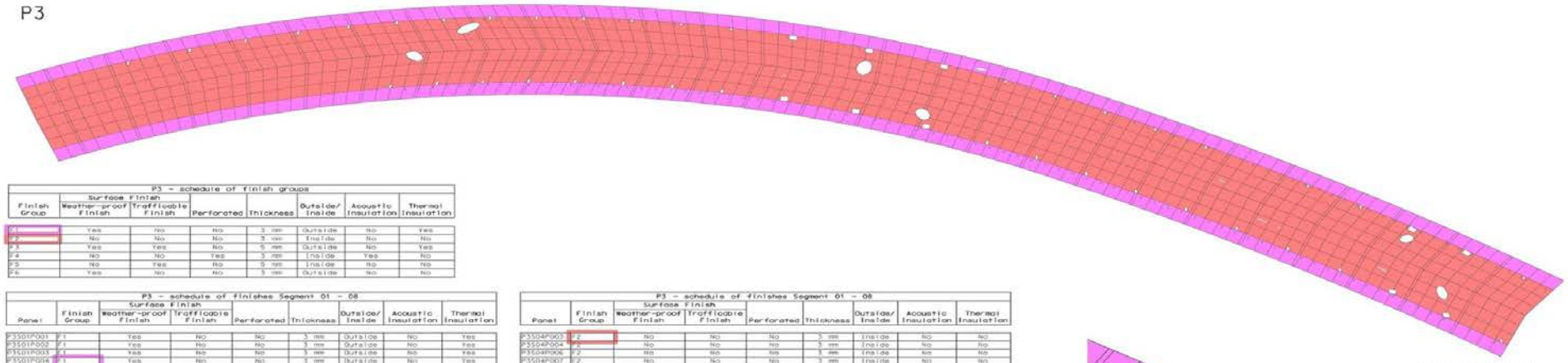


Schedule of panel groups

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	1556	8446	8583	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	12.788 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	53	294	8303	272	8303	8307	2.453 m²	129.933 m²
AL 11	25	1493	8443	1369	8443	8564	12.199 m²	304.979 m²
AL 12	7	1493	8443	1354	8443	8562	12.130 m²	84.911 m²
AL 13	3	1493	8443	1338	8443	8560	12.069 m²	36.208 m²
AL 14	3	1563	8445	1387	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	1389	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	8306	2.361 m²	25.974 m²
AL 24	6	1369	8444	1385	8444	8524	11.742 m²	70.453 m²
AL 25	7	1354	8444	1384	8444	8524	11.674 m²	81.718 m²
AL 26	3	1336	8443	1381	8443	8524	11.595 m²	34.786 m²
AL 27	8	1362	8442	1389	8442	8539	11.648 m²	93.185 m²
AL 28	3	1380	8442	1367	8442	8543	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	1291	839	1298	839	1628	1.197 m²	1.197 m²
AL 37	31	1422	839	1429	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	54	1347	276	1354	276	1379	0.392 m²	21.163 m²
AL 41	24	266	271	268	271	381	0.078 m²	1.883 m²
AL 42	11	1361	276	1389	278	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	1408	278	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	0.093 m²	2.154 m²
AL 47	105	1456	276	1453	276	1481	0.422 m²	42.259 m²
AL 48	100	1474	839	1483	839	1700	1.269 m²	126.892 m²
Grand total: 750								2923.908 m²

CONTEXT

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 11 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
P3S03P004	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 21 25								
P3S03P005	F2	No	No	No	3 mm	Inside	No	No
P3S03P005	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
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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
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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
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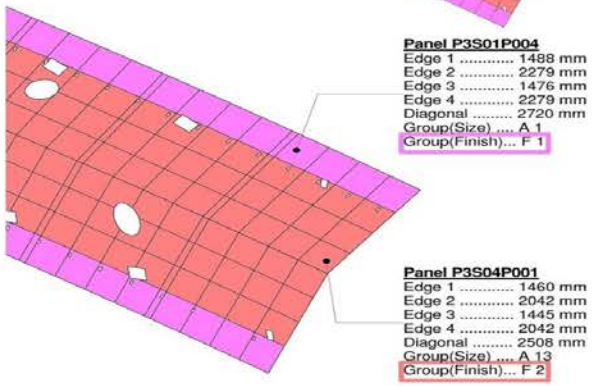
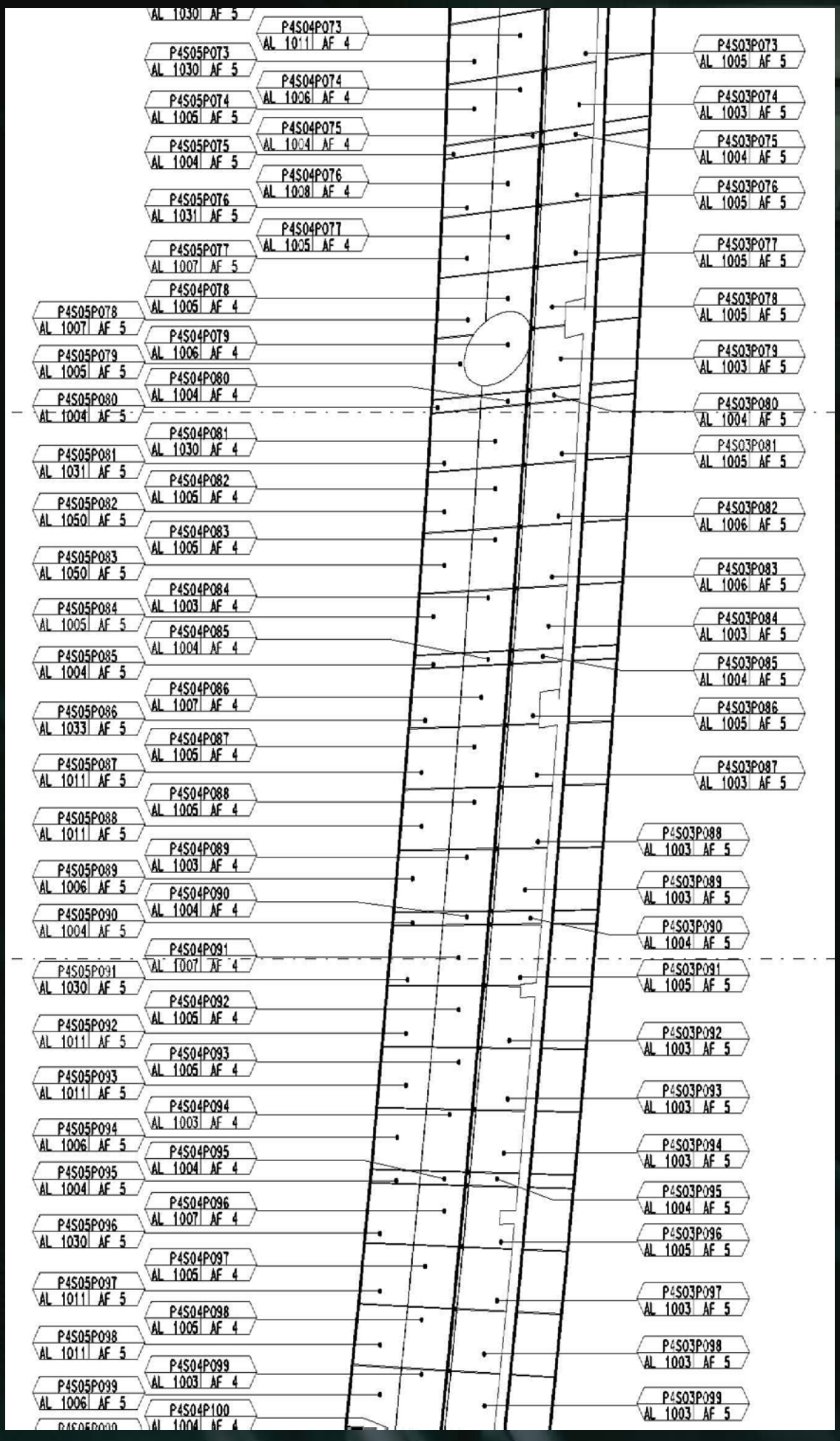
P3S07P005	F2	No	No	No	3 mm	Inside	No	No
P3S07P006	F2	No	No	No	3 mm	Inside	No	No
P3S07P007	F2	No	No	No	3 mm	Inside	No	No
P3S07P008	F2	No	No	No	3 mm	Inside	No	No
P3S07P009	F2	No	No	No	3 mm	Inside	No	No
F 61 29								

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

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AL 1004 AF 4
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AL 1004 AF 5
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AL 1030 AF 4
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AL 1050 AF 5
P4S04P084
AL 1003 AF 4
P4S05P084
AL 1005 AF 5
P4S04P085
AL 1004 AF 4
P4S05P085
AL 1004 AF 5
P4S04P086
AL 1007 AF 4
P4S05P086
AL 1033 AF 5
P4S04P087
AL 1005 AF 4
P4S05P087
AL 1011 AF 5
P4S04P088
AL 1005 AF 4
P4S05P088
AL 1011 AF 5
P4S04P089
AL 1003 AF 4
P4S05P089
AL 1006 AF 5
P4S04P090
AL 1004 AF 4
P4S05P090
AL 1004 AF 5
P4S04P091
AL 1007 AF 4
P4S05P091
AL 1030 AF 5
P4S04P092
AL 1005 AF 4
P4S05P092
AL 1011 AF 5
P4S04P093
AL 1005 AF 4
P4S05P093
AL 1011 AF 5
P4S04P094
AL 1003 AF 4
P4S05P094
AL 1006 AF 5
P4S04P095
AL 1004 AF 4
P4S05P095
AL 1004 AF 5
P4S04P096
AL 1007 AF 4
P4S05P096
AL 1030 AF 5
P4S04P097
AL 1005 AF 4
P4S05P097
AL 1011 AF 5
P4S04P098
AL 1005 AF 4
P4S05P098
AL 1011 AF 5
P4S04P099
AL 1003 AF 4
P4S05P099
AL 1006 AF 5
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AL 1004 AF 4
P4S03P073
AL 1005 AF 5
P4S03P074
AL 1003 AF 5
P4S03P075
AL 1004 AF 5
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AL 1005 AF 5
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AL 1005 AF 5
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AL 1003 AF 5
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AL 1004 AF 5
P4S03P081
AL 1005 AF 5
P4S03P082
AL 1006 AF 5
P4S03P083
AL 1006 AF 5
P4S03P084
AL 1003 AF 5
P4S03P085
AL 1004 AF 5
P4S03P086
AL 1005 AF 5
P4S03P087
AL 1003 AF 5
P4S03P088
AL 1003 AF 5
P4S03P089
AL 1003 AF 5
P4S03P090
AL 1004 AF 5
P4S03P091
AL 1005 AF 5
P4S03P092
AL 1003 AF 5
P4S03P093
AL 1003 AF 5
P4S03P094
AL 1003 AF 5
P4S03P095
AL 1004 AF 5
P4S03P096
AL 1005 AF 5
P4S03P097
AL 1003 AF 5
P4S03P098
AL 1003 AF 5
P4S03P099
AL 1003 AF 5

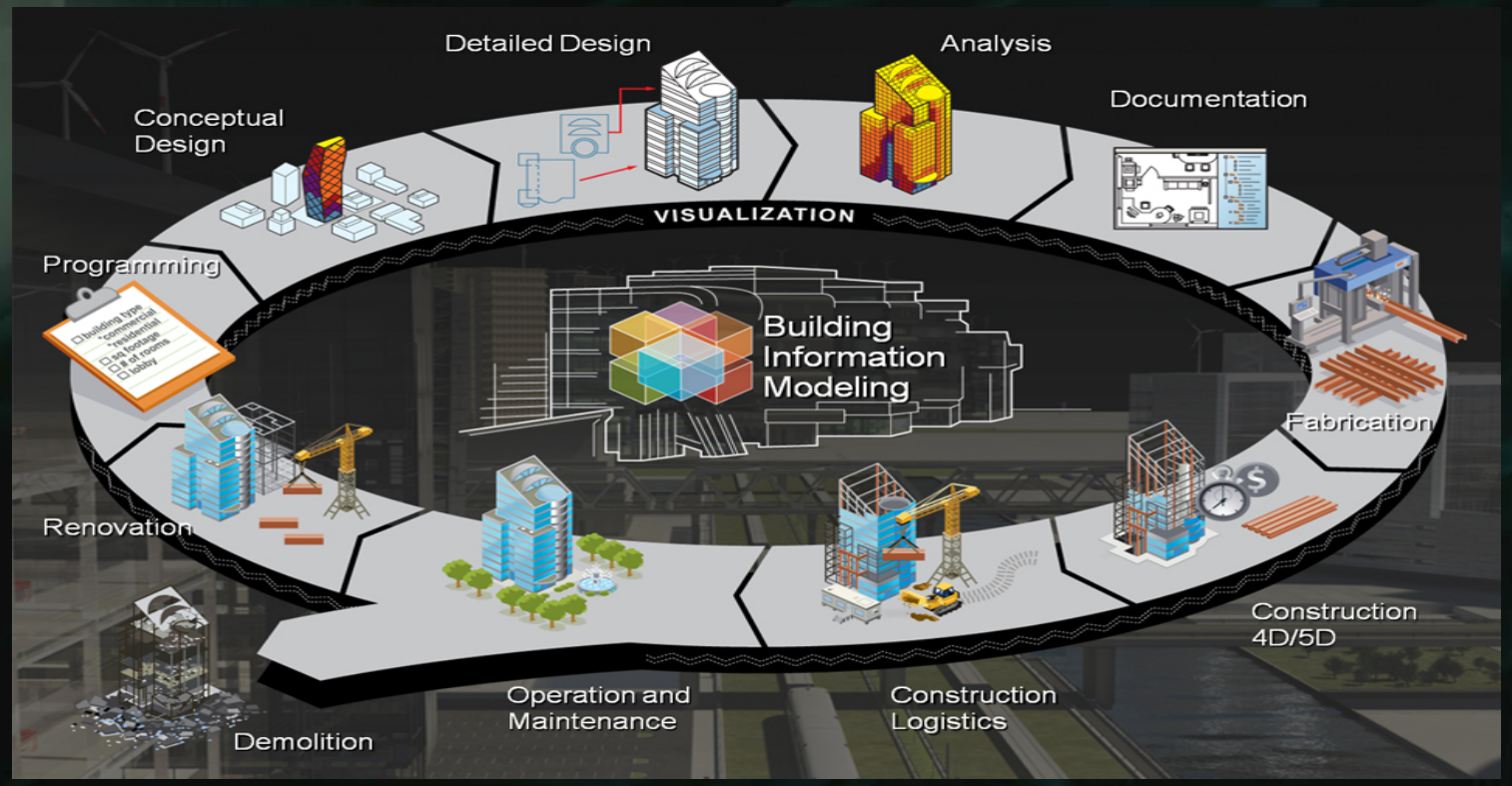
从建造到制造

http://adapa.dk/

案例三

真BIM (营运阶段)

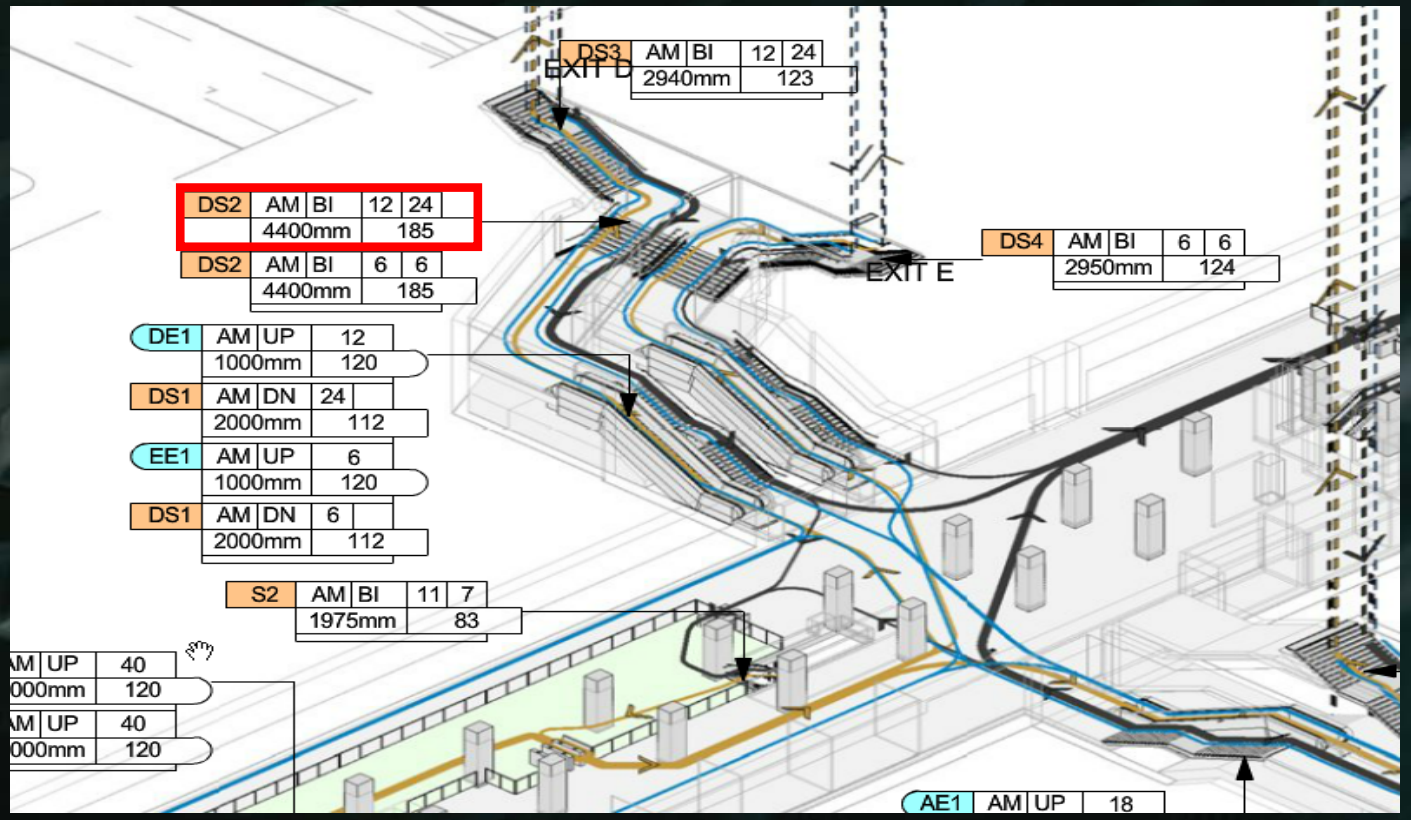
M + I = B (安全)


Detailed Design
Analysis
Documentation
Conceptual Design
VISUALIZATION
Programming
Building Information Modeling
Fabrication
Renovation
Construction 4D/5D
Operation and Maintenance
Construction Logistics
Demolition

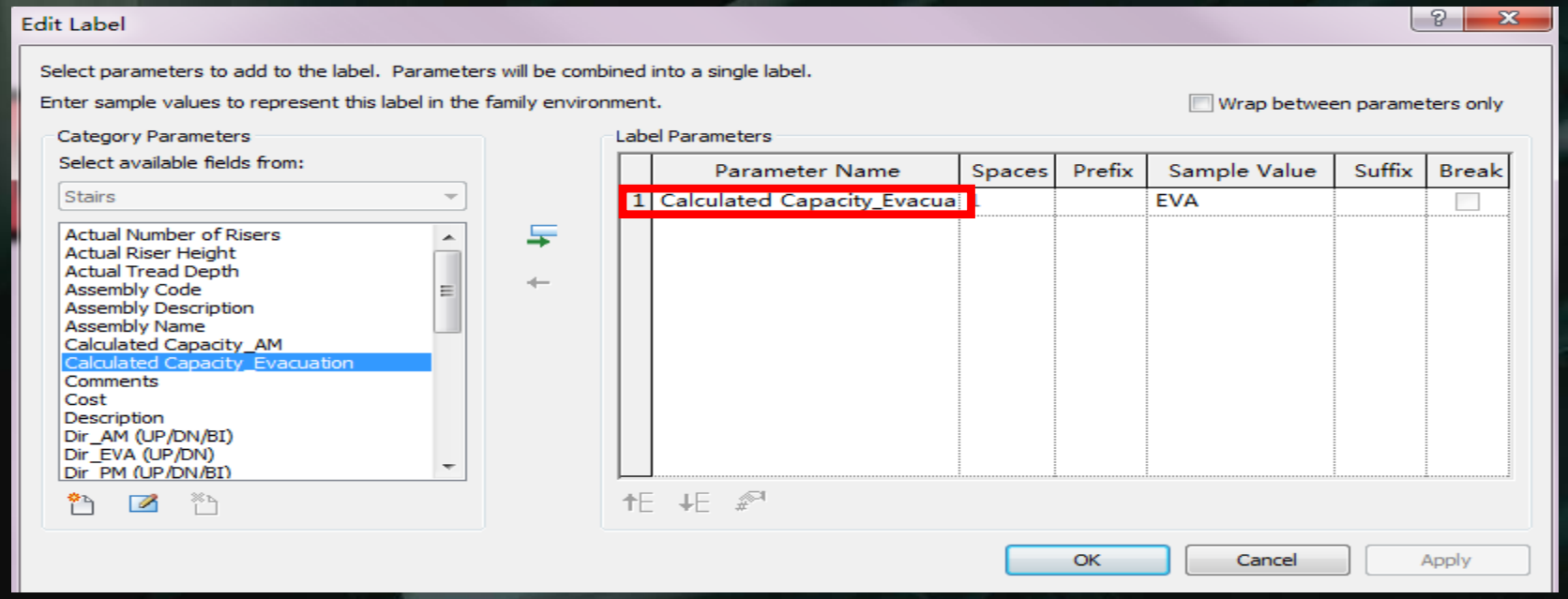
真BIM

STAIR SCHEDULE

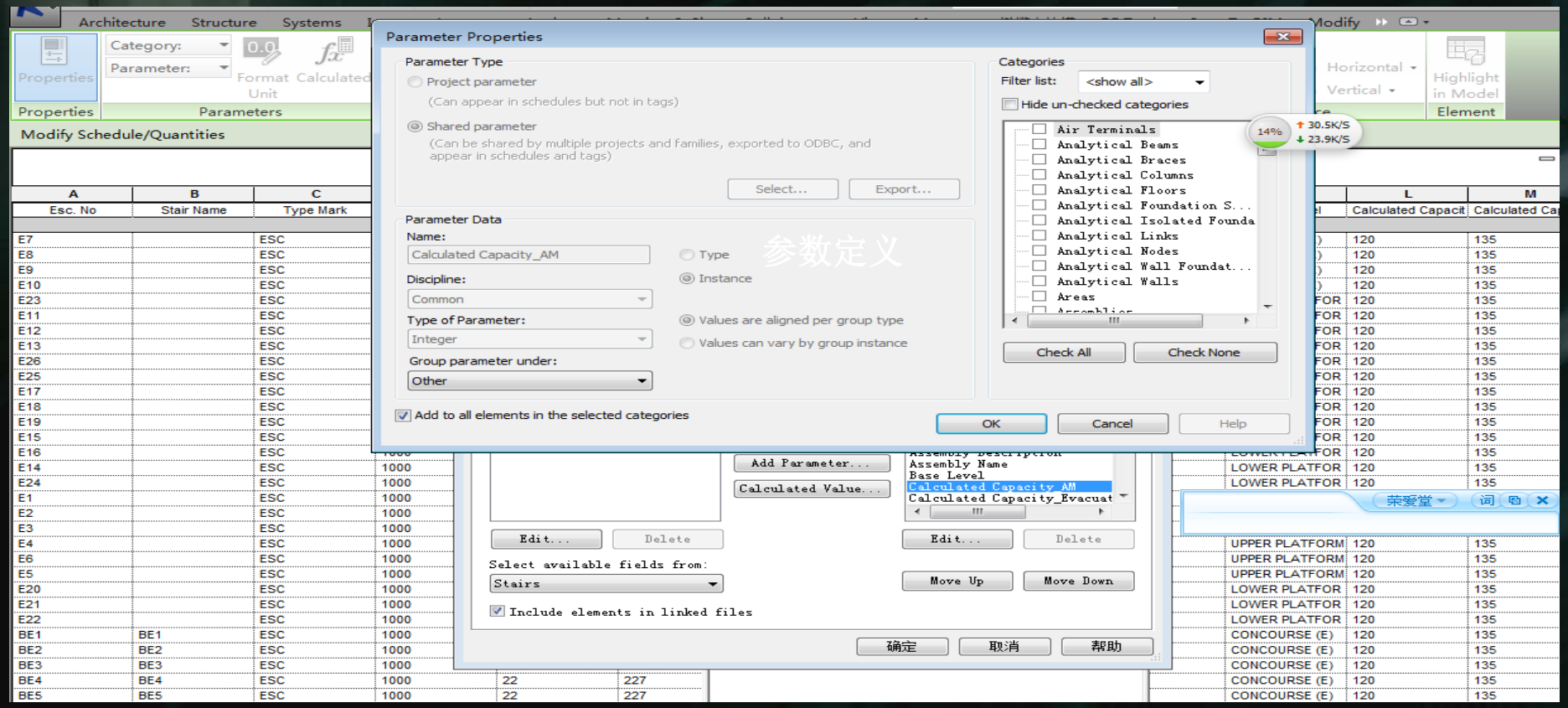
NAME	STAIR WIDTH (mm)	NORMAL AM PEAK				
		DIR. (UP/DN/BI)	CAL.CAP.			TOTAL CAPACITY
			UP	DN	BI	
AS1	2050	DN	103	115	86	115
AS2	4400	BI	220	246	185	185
AS2E	4400	UP	220	246	185	220
BS1	2000	UP	100	112	84	100
BS2	2000	UP	100	112	84	100
BS3	4450	BI	223	249	187	187
BS4	4370	BI	219	245	184	184
BS4E	2630	UP	132	147	110	219
BS5	4370	BI	219	245	184	184
BS5E	4370	DN	219	245	184	245
CS1	4400	BI	220	246	185	185
CS2	2010	DN	101	113	84	113
CS3	2370	BI	119	133	100	100
CS3E	2370	UP	119	133	100	119
CS4	2370	BI	119	133	100	100
CS4E	2370	UP	119	133	100	119
DS1	2000	DN	100	112	84	112
DS1	2000	DN	100	112	84	112
DS2	4400	BI	220	246	185	185
DS2	4400	BI	220	246	185	185
DS3	2940	BI	147	165	123	123



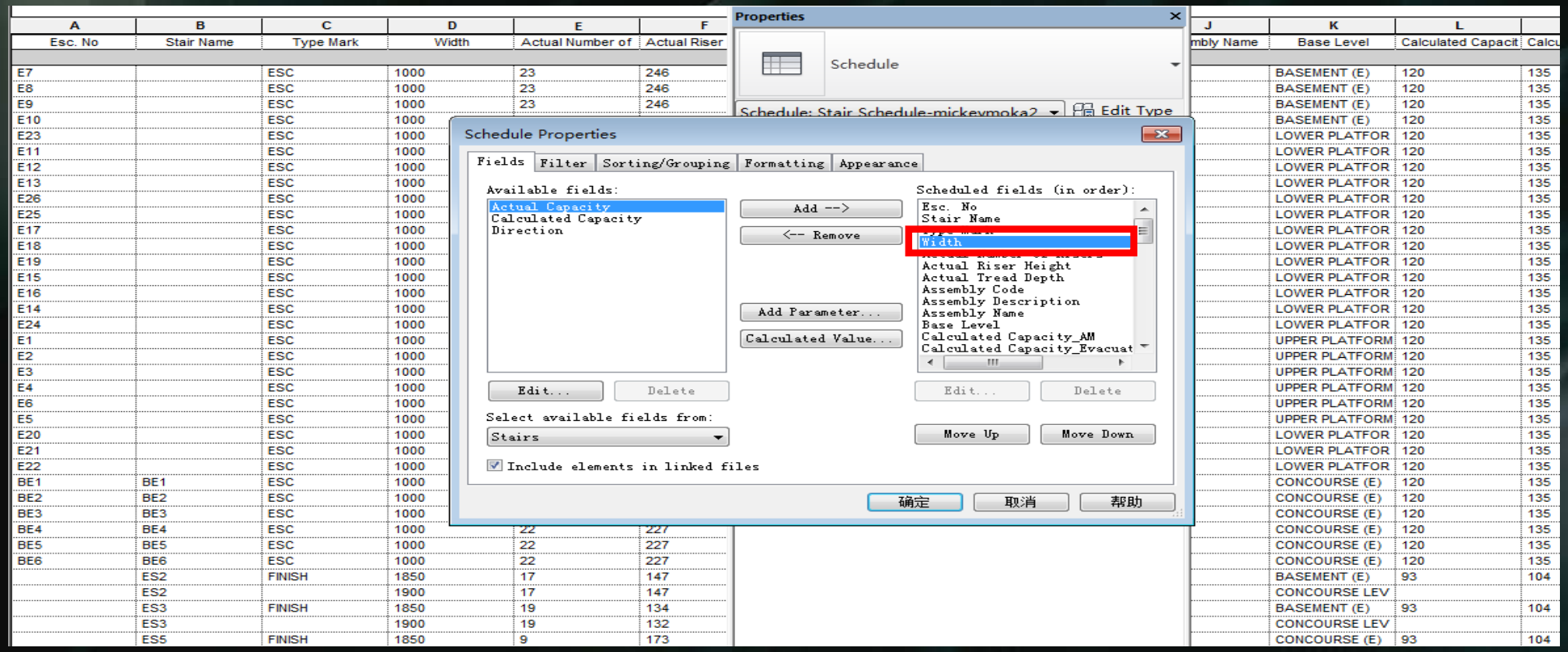
真BIM

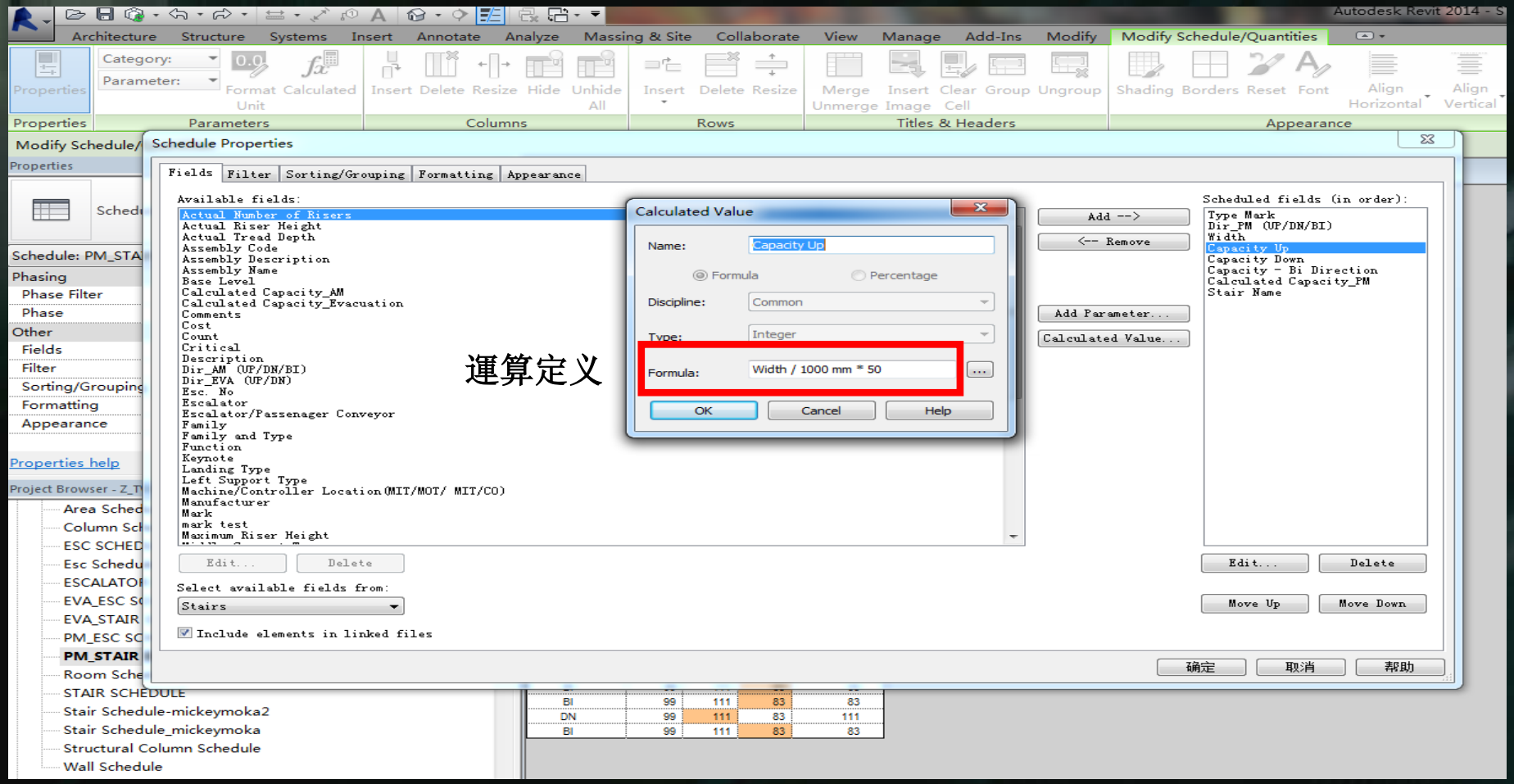

Edit Label
Select parameters to add to the label. Parameters will be combined into a single label.
Enter sample values to represent this label in the family environment.
Wrap between parameters only
Category Parameters
Select available fields from:
Stairs
Actual Number of Risers
Actual Riser Height
Actual Tread Depth
Assembly Code
Assembly Description
Assembly Name
Calculated Capacity_AM
Calculated Capacity_Evacuation
Comments
Cost
Description
Dir_AM (UP/DN/BI)
Dir_EVA (UP/DN)
Dir_PM (UP/DN/BI)
Label Parameters
Parameter Name
Spaces
Prefix
Sample Value
Suffix
Break
1
Calculated Capacity_Evacua
EVA
OK
Cancel
Apply

真BIM


Architecture
Structure
Systems
Modify
Properties
Category:
Parameter:
Format
Calculated
Unit
Properties
Parameters
Horizontal
Vertical
Highlight in Model
Element
Modify Schedule/Quantities
Parameter Properties
Parameter Type
Project parameter
(Can appear in schedules but not in tags)
Shared parameter
(Can be shared by multiple projects and families, exported to ODBC, and appear in schedules and tags)
Select...
Export...
Parameter Data
Name:
Calculated Capacity_AM
Type
Instance
参数定义
Discipline:
Common
Type of Parameter:
Integer
Values are aligned per group type
Values can vary by group instance
Group parameter under:
Other
Add to all elements in the selected categories
Categories
Filter list:
<show all>
Hide un-checked categories
Air Terminals
Analytical Beams
Analytical Braces
Analytical Columns
Analytical Floors
Analytical Foundation S...
Analytical Isolated Founda
Analytical Links
Analytical Nodes
Analytical Wall Foundat...
Analytical Walls
Areas
Check All
Check None
OK
Cancel
Help
14%
30.5K/S
23.9K/S
Add Parameter...
Calculated Value...
Assembly Name
Base Level
Calculated Capacity_AM
Calculated Capacity_Evacuat
Edit...
Delete
Move Up
Move Down
Select available fields from:
Stairs
Include elements in linked files
确定
取消
帮助
A
B
C
L
M
Esc. No
Stair Name
Type Mark
Calculated Capacit
Calculated Ca
E7
E8
E9
E10
E23
E11
E12
E13
E26
E25
E17
E18
E19
E15
E16
E14
E24
E1
E2
E3
E4
E6
E5
E20
E21
E22
BE1
BE2
BE3
BE4
BE5
ESC
1000
22
227
120
135
LOWER PLATFOR
UPPER PLATFORM
CONCOURSE (E)

真BIM

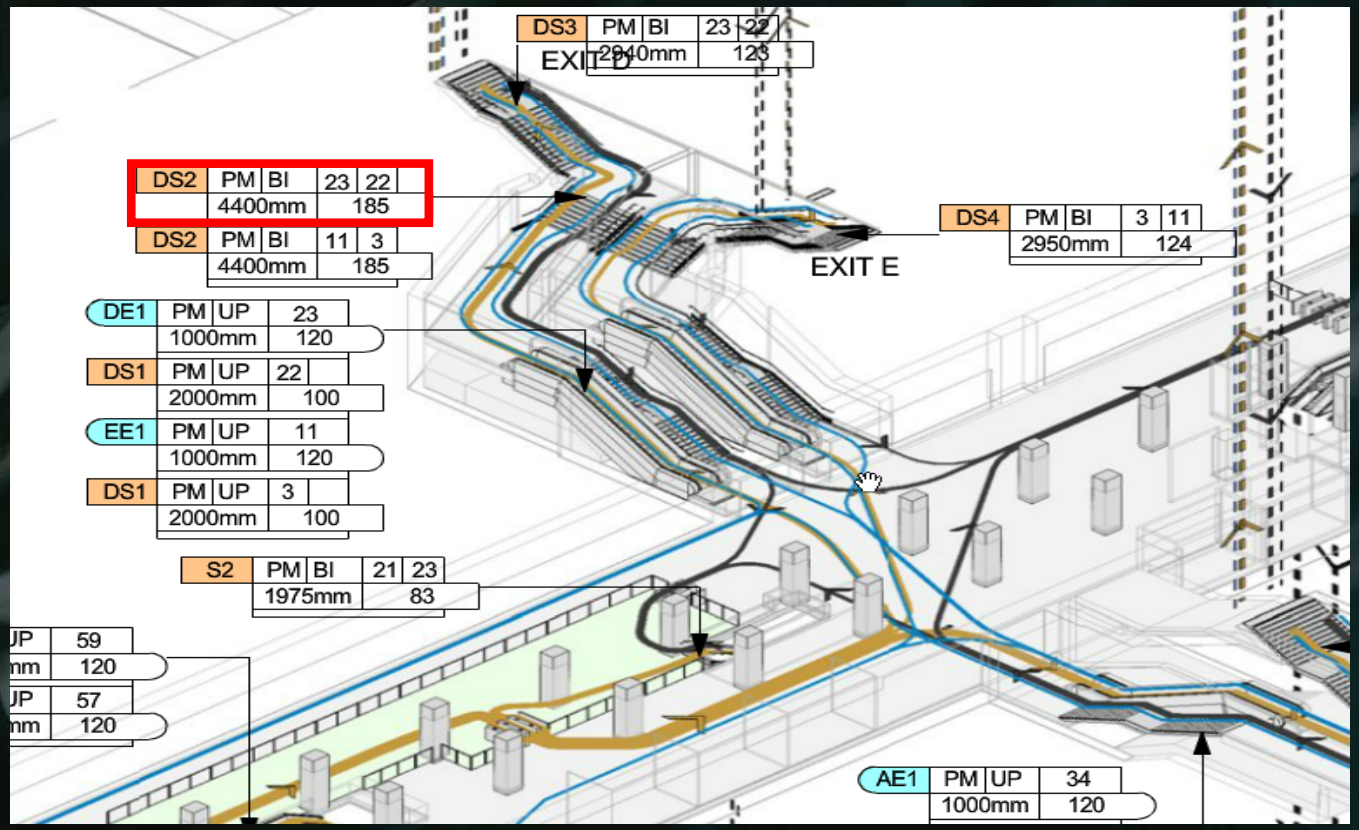

Properties
Schedule
Schedule: Stair Schedule-mickeymoka2
Edit Type
Schedule Properties
Fields
Filter
Sorting/Grouping
Formatting
Appearance
Available fields:
Actual Capacity
Calculated Capacity
Direction
Add -->
<-- Remove
Add Parameter...
Calculated Value...
Scheduled fields (in order):
Esc. No
Stair Name
Width
Actual Riser Height
Actual Tread Depth
Assembly Code
Assembly Description
Assembly Name
Base Level
Calculated Capacity_AM
Calculated Capacity_Evacuat
Edit...
Delete
Move Up
Move Down
Select available fields from:
Stairs
Include elements in linked files
确定
取消
帮助


Autodesk Revit 2014 - S
Architecture
Structure
Systems
Insert
Annotate
Analyze
Massing & Site
Collaborate
View
Manage
Add-Ins
Modify
Modify Schedule/Quantities
Properties
Category:
Parameter:
Format Unit
Calculated
Insert
Delete
Resize
Hide
Unhide All
Merge Unmerge
Insert Image
Clear Cell
Group
Ungroup
Shading
Borders
Reset
Font
Align Horizontal
Align Vertical
Parameters
Columns
Rows
Titles & Headers
Appearance
Schedule Properties
Fields
Filter
Sorting/Grouping
Formatting
Appearance
Available fields:
Actual Number of Risers
Actual Riser Height
Actual Tread Depth
Assembly Code
Assembly Description
Assembly Name
Base Level
Calculated Capacity_AM
Calculated Capacity_Evacuation
Comments
Cost
Count
Critical
Description
Dir_AM (UP/DN/BI)
Dir_EVA (UP/DN)
Esc. No
Escalator
Escalator/Passenager Conveyor
Family
Family and Type
Function
Keynote
Landing Type
Left Support Type
Machine/Controller Location(MIT/MOT/ MIT/CO)
Manufacturer
Mark
mark test
Maximum Riser Height
Edit...
Delete
Select available fields from:
Stairs
Include elements in linked files
Calculated Value
Name:
Capacity Up
Formula
Percentage
Discipline:
Common
Type:
Integer
Formula:
Width / 1000 mm * 50
OK
Cancel
Help
運算定义
Add -->
<-- Remove
Add Parameter...
Calculated Value...
Scheduled fields (in order):
Type Mark
Dir_PM (UP/DN/BI)
Width
Capacity Up
Capacity Down
Capacity - Bi Direction
Calculated Capacity_PM
Stair Name
Edit...
Delete
Move Up
Move Down
确定
取消
帮助
Properties
Schedule: PM_STA
Phasing
Phase Filter
Phase
Other
Fields
Filter
Sorting/Grouping
Formatting
Appearance
Properties help
Project Browser - Z_T
Area Sched
Column Sc
ESC SCHED
Esc Schedu
ESCALATOR
EVA_ESC S
EVA_STAIR
PM_ESC S
PM_STAIR
Room Sche
STAIR SCHEDULE
Stair Schedule-mickeymoka2
Stair Schedule_mickeymoka
Structural Column Schedule
Wall Schedule
BI 99 111 83 83
DN 99 111 83 111
BI 99 111 83 83

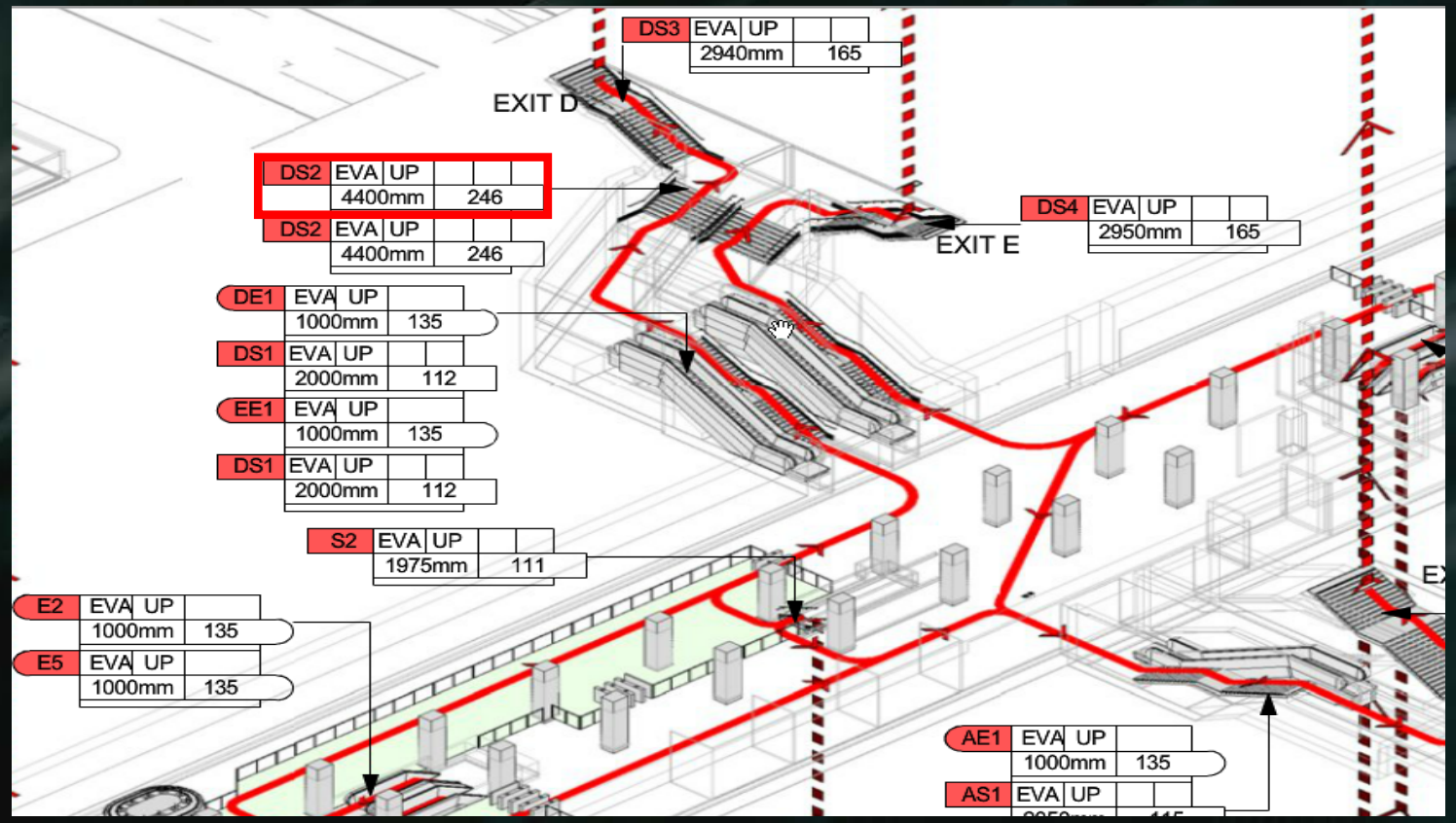
真BIM

(23 + 22) / 185
= 24.3%
= 安全

(安全指標超過80%可能會有危機)



真BIM

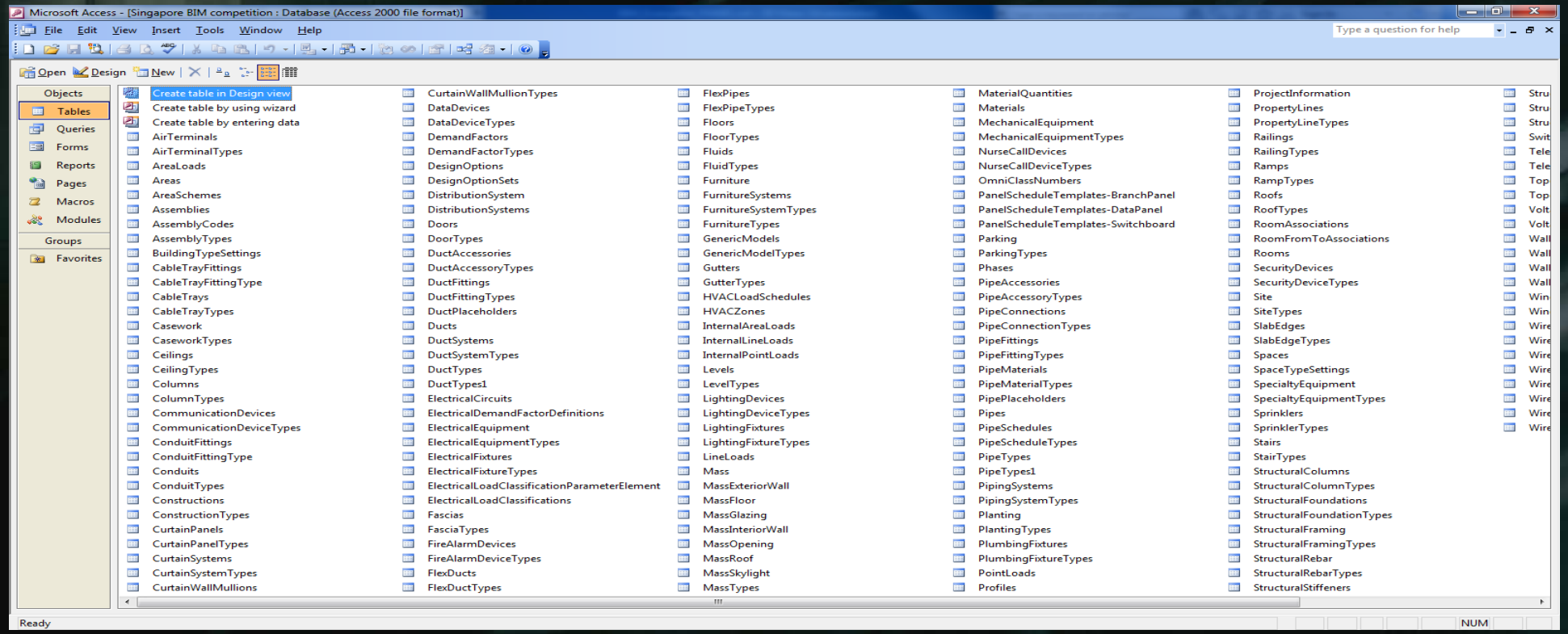

DS3 EVA UP
2940mm 165
EXIT D
DS2 EVA UP
4400mm 246
DS2 EVA UP
4400mm 246
DS4 EVA UP
2950mm 165
EXIT E
DE1 EVA UP
1000mm 135
DS1 EVA UP
2000mm 112
EE1 EVA UP
1000mm 135
DS1 EVA UP
2000mm 112
S2 EVA UP
1975mm 111
E2 EVA UP
1000mm 135
E5 EVA UP
1000mm 135
AE1 EVA UP
1000mm 135
AS1 EVA UP

案例四

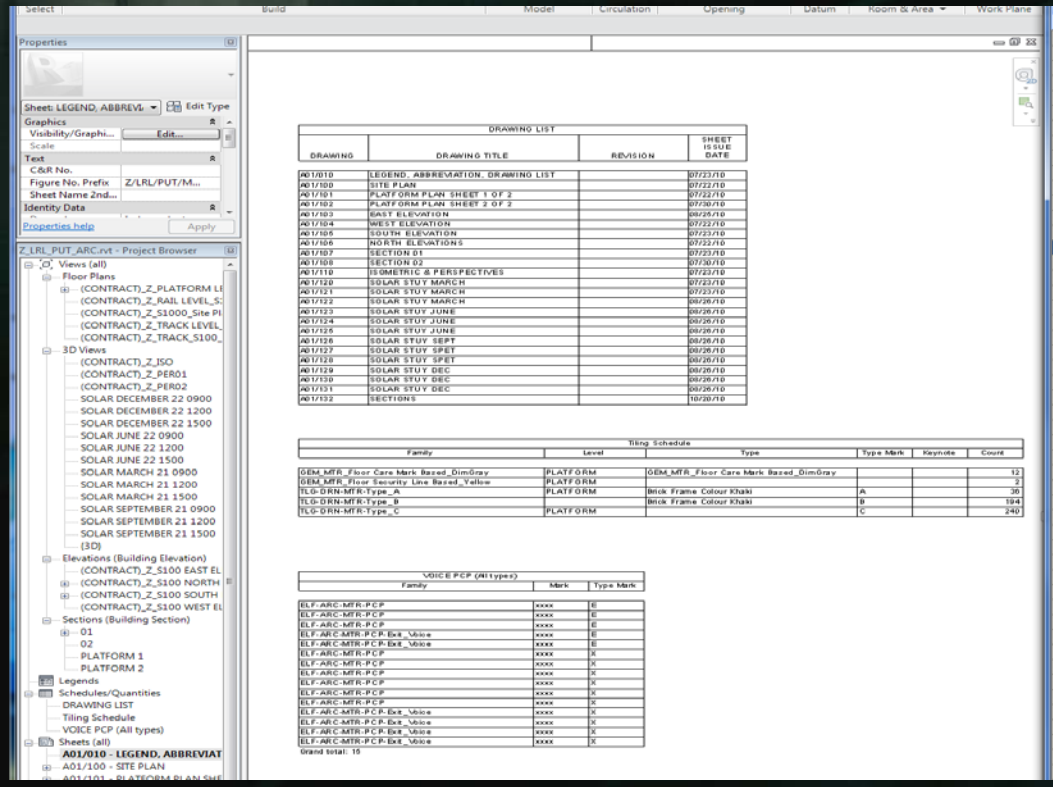
真BIM (营运阶段)

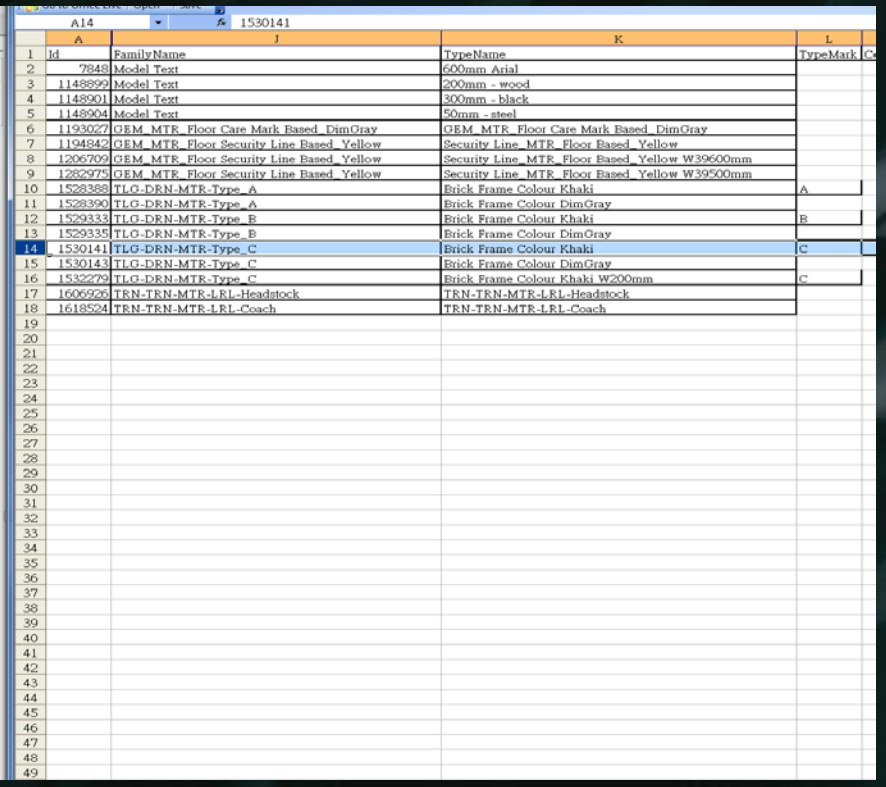
M + I = B (维修保护)

物业管理 - 维修保护


Microsoft Access - [Singapore BIM competition : Database (Access 2000 file format)]
File Edit View Insert Tools Window Help
Type a question for help
Open Design New
Objects
Tables
Queries
Forms
Reports
Pages
Macros
Modules
Groups
Favorites
Create table in Design view
Create table by using wizard
Create table by entering data
AirTerminals
AirTerminalTypes
AreaLoads
Areas
AreaSchemes
Assemblies
AssemblyCodes
AssemblyTypes
BuildingTypeSettings
CableTrayFittings
CableTrayFittingType
CableTrays
CableTrayTypes
Casework
CaseworkTypes
Ceilings
CeilingTypes
Columns
ColumnTypes
CommunicationDevices
CommunicationDeviceTypes
ConduitFittings
ConduitFittingType
Conduits
ConduitTypes
Constructions
ConstructionTypes
CurtainPanels
CurtainPanelTypes
CurtainSystems
CurtainSystemTypes
CurtainWallMullions
CurtainWallMullionTypes
DataDevices
DataDeviceTypes
DemandFactors
DemandFactorTypes
DesignOptions
DesignOptionSets
DistributionSystem
DistributionSystems
Doors
DoorTypes
DuctAccessories
DuctAccessoryTypes
DuctFittings
DuctFittingTypes
DuctPlaceholders
Ducts
DuctSystems
DuctSystemTypes
DuctTypes
DuctTypes1
ElectricalCircuits
ElectricalDemandFactorDefinitions
ElectricalEquipment
ElectricalEquipmentTypes
ElectricalFixtures
ElectricalFixtureTypes
ElectricalLoadClassificationParameterElement
ElectricalLoadClassifications
Fascias
FasciaTypes
FireAlarmDevices
FireAlarmDeviceTypes
FlexDucts
FlexDuctTypes
FlexPipes
FlexPipeTypes
Floors
FloorTypes
Fluids
FluidTypes
Furniture
FurnitureSystems
FurnitureSystemTypes
FurnitureTypes
GenericModels
GenericModelTypes
Gutters
GutterTypes
HVACLoadSchedules
HVACZones
InternalAreaLoads
InternalLineLoads
InternalPointLoads
Levels
LevelTypes
LightingDevices
LightingDeviceTypes
LightingFixtures
LightingFixtureTypes
LineLoads
Mass
MassExteriorWall
MassFloor
MassGlazing
MassInteriorWall
MassOpening
MassRoof
MassSkylight
MassTypes
MaterialQuantities
Materials
MechanicalEquipment
MechanicalEquipmentTypes
NurseCallDevices
NurseCallDeviceTypes
OmniClassNumbers
PanelScheduleTemplates-BranchPanel
PanelScheduleTemplates-DataPanel
PanelScheduleTemplates-Switchboard
Parking
ParkingTypes
Phases
PipeAccessories
PipeAccessoryTypes
PipeConnections
PipeConnectionTypes
PipeFittings
PipeFittingTypes
PipeMaterials
PipeMaterialTypes
PipePlaceholders
Pipes
PipeSchedules
PipeScheduleTypes
PipeTypes
PipeTypes1
PipingSystems
PipingSystemTypes
Planting
PlantingTypes
PlumbingFixtures
PlumbingFixtureTypes
PointLoads
Profiles
ProjectInformation
PropertyLines
PropertyLineTypes
Railings
RailingTypes
Ramps
RampTypes
Roofs
RoofTypes
RoomAssociations
RoomFromToAssociations
Rooms
SecurityDevices
SecurityDeviceTypes
Site
SiteTypes
SlabEdges
SlabEdgeTypes
Spaces
SpaceTypeSettings
SpecialtyEquipment
SpecialtyEquipmentTypes
Sprinklers
SprinklerTypes
Stairs
StairTypes
StructuralColumns
StructuralColumnTypes
StructuralFoundations
StructuralFoundationTypes
StructuralFraming
StructuralFramingTypes
StructuralRebar
StructuralRebarTypes
StructuralStiffeners
Ready
NUM

物業管理

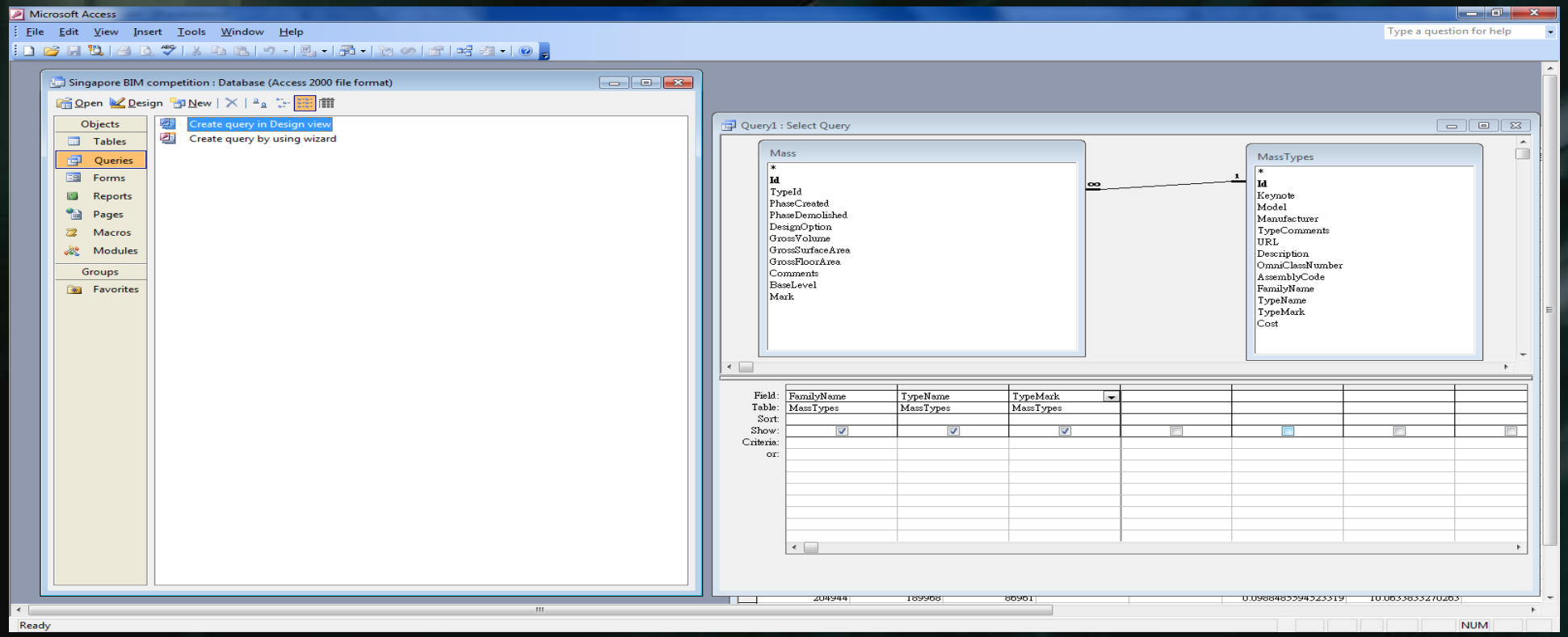




A14 | 1530141

	A	J	K	L
1	Id	FamilyName	TypeName	TypeMark
2	7848	Model Text	600mm Arial	
3	1148899	Model Text	200mm - wood	
4	1148901	Model Text	300mm - black	
5	1148904	Model Text	50mm - steel	
6	1193027	GEM_MTR_Floor Care Mark Based_DimGray	GEM_MTR_Floor Care Mark Based_DimGray	
7	1194842	GEM_MTR_Floor Security Line Based_Yellow	Security Line_MTR_Floor Based_Yellow	
8	1206709	GEM_MTR_Floor Security Line Based_Yellow	Security Line_MTR_Floor Based_Yellow W39600mm	
9	1282975	GEM_MTR_Floor Security Line Based_Yellow	Security Line_MTR_Floor Based_Yellow W39500mm	
10	1528388	TLG-DRN-MTR-Type_A	Brick Frame Colour Khaki	A
11	1528390	TLG-DRN-MTR-Type_A	Brick Frame Colour DimGray	
12	1529333	TLG-DRN-MTR-Type_B	Brick Frame Colour Khaki	B
13	1529335	TLG-DRN-MTR-Type_B	Brick Frame Colour DimGray	
14	1530141	TLG-DRN-MTR-Type_C	Brick Frame Colour Khaki	C
15	1530143	TLG-DRN-MTR-Type_C	Brick Frame Colour DimGray	
16	1532279	TLG-DRN-MTR-Type_C	Brick Frame Colour Khaki W200mm	C
17	1606926	TRN-TRN-MTR-LRL-Headstock	TRN-TRN-MTR-LRL-Headstock	
18	1618524	TRN-TRN-MTR-LRL-Coach	TRN-TRN-MTR-LRL-Coach	

物业管理 - 维修保护

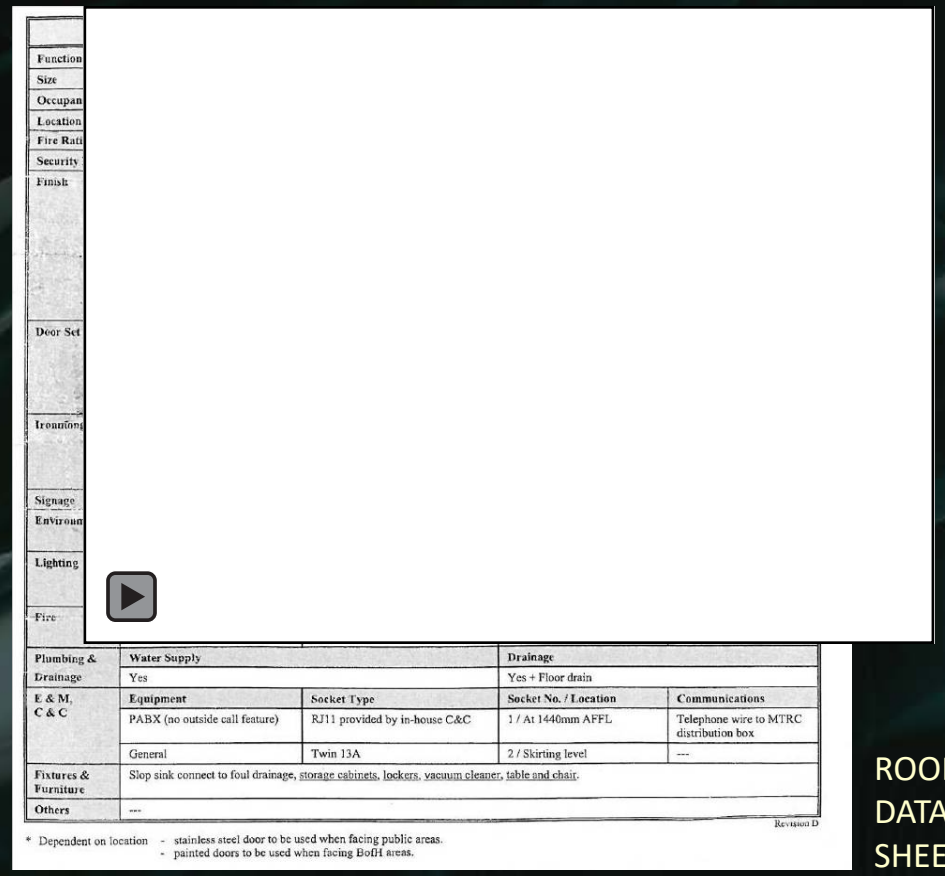

Microsoft Access
File Edit View Insert Tools Window Help
Type a question for help
Singapore BIM competition : Database (Access 2000 file format)
Open Design New
Objects
Tables
Queries
Forms
Reports
Pages
Macros
Modules
Groups
Favorites
Create query in Design view
Create query by using wizard
Query1 : Select Query
Mass
*
Id
TypeId
PhaseCreated
PhaseDemolished
DesignOption
GrossVolume
GrossSurfaceArea
GrossFloorArea
Comments
BaseLevel
Mark
MassTypes
*
Id
Keynote
Model
Manufacturer
TypeComments
URL
Description
OmniClassNumber
AssemblyCode
FamilyName
TypeName
TypeMark
Cost
Field: FamilyName TypeName TypeMark
Table: MassTypes MassTypes MassTypes
Sort:
Show:
Criteria:
or:
Ready
NUM

物业管理 - 维修保护

Query1 : Select Query

FamilyName	TypeName
SAT Tower Mullion	SAT Tower Mullion
SAT Tower Surface Ref	SAT Tower Surface Ref
Tower Panel	S01-P001
Tower Panel	S01-P002
Tower Panel	S01-P003
Tower Panel	S01-P004
Tower Panel	S01-P005
Tower Panel	S01-P006
Tower Panel	S01-P007
Tower Panel	S01-P008
Tower Panel	S01-P009
Tower Panel	S01-P010
Tower Panel	S01-P011
Tower Panel	S01-P012
Tower Panel	S01-P013
Tower Panel	S01-P014
Tower Panel	S01-P015
Tower Panel	S01-P016
Tower Panel	S01-P017
Tower Panel	S01-P018
Tower Panel	S01-P019
Tower Panel	S01-P020
Tower Panel	S01-P021
Tower Panel	S01-P022
Tower Panel	S01-P023
Tower Panel	S01-P024
Tower Panel	S01-P025
Tower Panel	S01-P026
Tower Panel	S01-P027
Tower Panel	S01-P028
Tower Panel	S01-P029
Tower Panel	S01-P030
Tower Panel	S01-P031
Tower Panel	S01-P032
Tower Panel	S01-P033
Tower Panel	S01-P034
Tower Panel	S01-P035
Tower Panel	S01-P036
Tower Panel	S01-P037
Tower Panel	S01-P038
Tower Panel	S01-P039
Tower Panel	S01-P040

Record: 1 of 2503



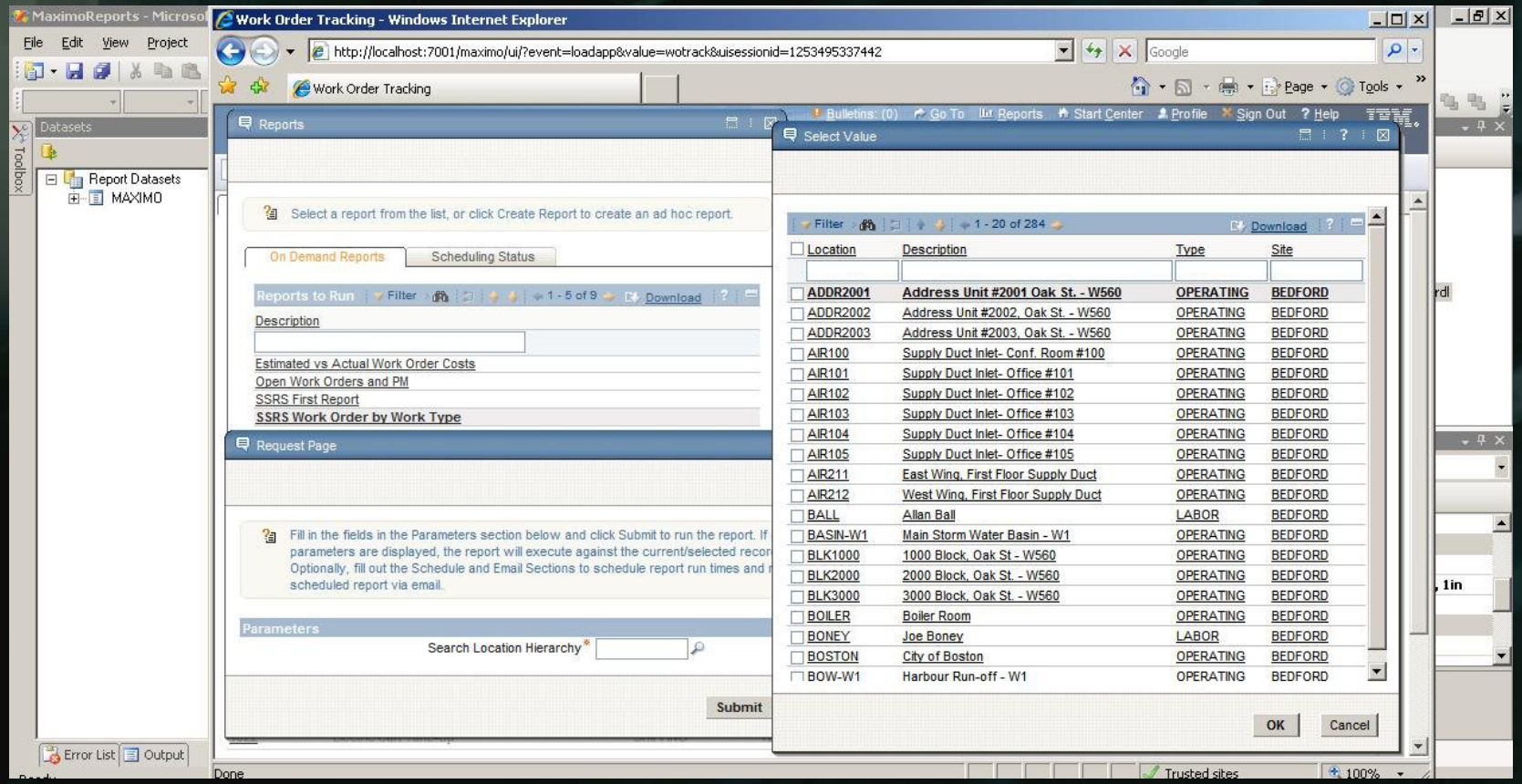
Function				
Size				
Occupan				
Location				
Fire Rati				
Security				
Finish				
Door Set				
Ironmong				
Signage				
Environm				
Lighting				
Fire				
Plumbing & Drainage	Water Supply		Drainage	
	Yes		Yes + Floor drain	
E & M, C & C	Equipment	Socket Type	Socket No. / Location	Communications
	PABX (no outside call feature)	RJ11 provided by in-house C&C	1 / At 1440mm AFFL	Telephone wire to MTRC distribution box
	General	Twin 13A	2 / Skirting level	---
Fixtures & Furniture	Slop sink connect to foul drainage, storage cabinets, lockers, vacuum cleaner, table and chair.			
Others	---			

Revision D

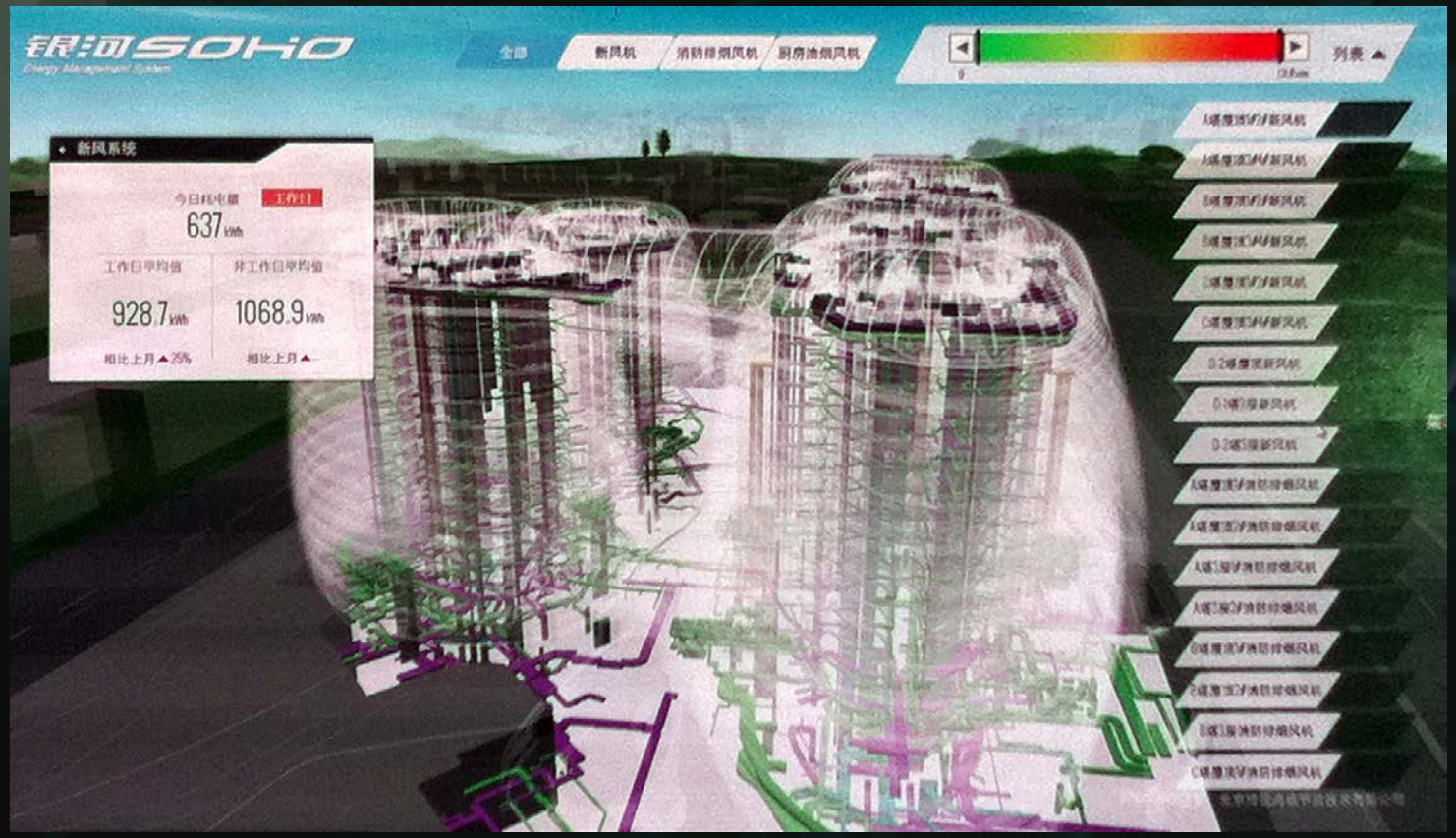
* Dependent on location - stainless steel door to be used when facing public areas.
- painted doors to be used when facing BofH areas.

ROOM DATA SHEET

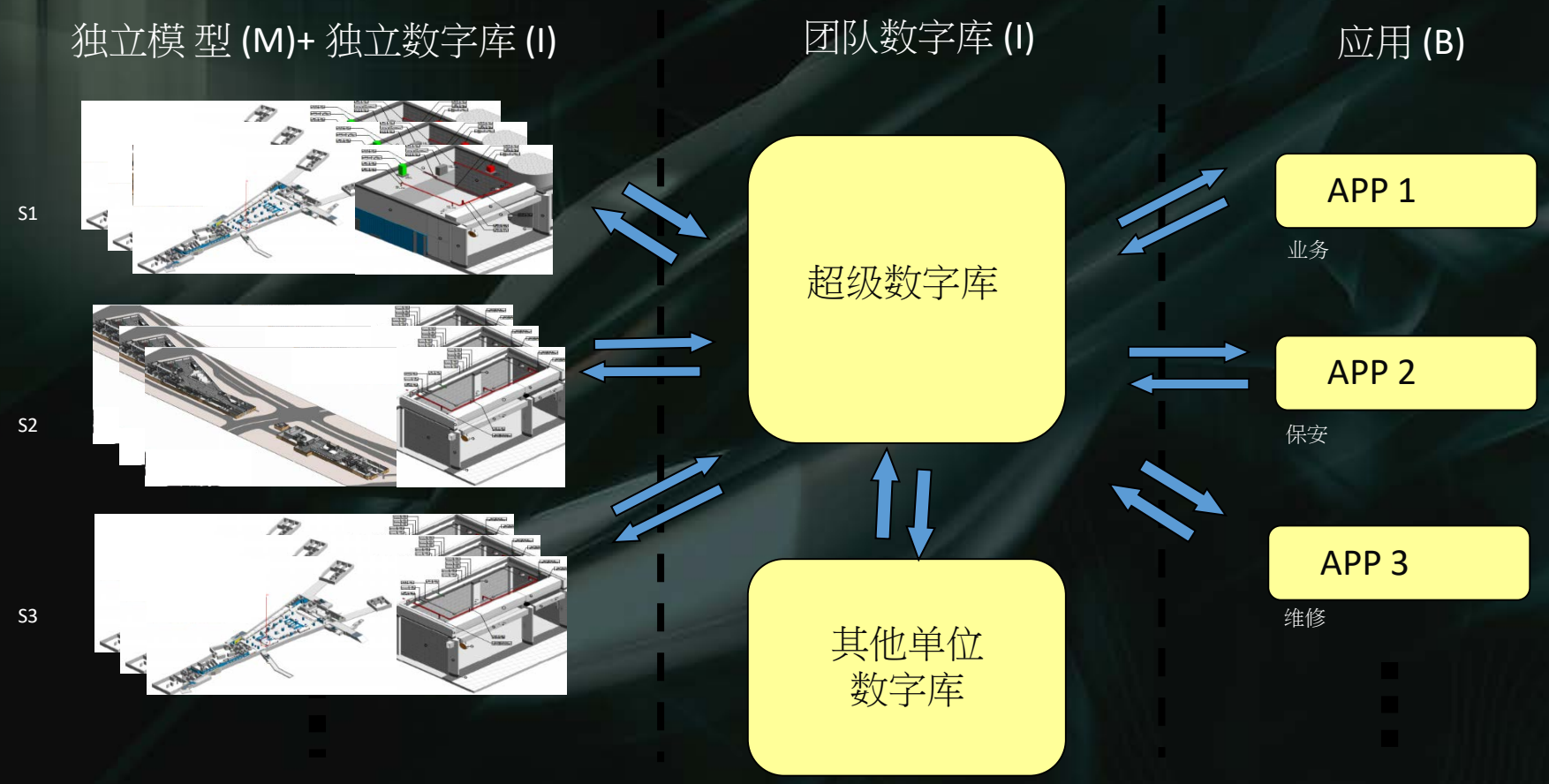
物业管理 - 维修保护


MaximoReports - Microsoft
File Edit View Project
Datasets
Report Datasets
MAXIMO
Toolbox
Error List
Output
Work Order Tracking - Windows Internet Explorer
http://localhost:7001/maximo/ui/?event=loadapp&value=wotrack&uisessionid=1253495337442
Work Order Tracking
Page
Tools
Bulletins: (0)
Go To
Reports
Start Center
Profile
Sign Out
Help
Reports
Select a report from the list, or click Create Report to create an ad hoc report.
On Demand Reports
Scheduling Status
Reports to Run
Filter
1 - 5 of 9
Download
Description
Estimated vs Actual Work Order Costs
Open Work Orders and PM
SSRS First Report
SSRS Work Order by Work Type
Request Page
Fill in the fields in the Parameters section below and click Submit to run the report. If
parameters are displayed, the report will execute against the current/selected recor
Optionally, fill out the Schedule and Email Sections to schedule report run times and
scheduled report via email.
Parameters
Search Location Hierarchy*
Submit
Select Value
Filter
1 - 20 of 284
Download
Location
Description
Type
Site
ADDR2001 Address Unit #2001 Oak St. - W560 OPERATING BEDFORD
ADDR2002 Address Unit #2002, Oak St. - W560 OPERATING BEDFORD
ADDR2003 Address Unit #2003, Oak St. - W560 OPERATING BEDFORD
AIR100 Supply Duct Inlet- Conf. Room #100 OPERATING BEDFORD
AIR101 Supply Duct Inlet- Office #101 OPERATING BEDFORD
AIR102 Supply Duct Inlet- Office #102 OPERATING BEDFORD
AIR103 Supply Duct Inlet- Office #103 OPERATING BEDFORD
AIR104 Supply Duct Inlet- Office #104 OPERATING BEDFORD
AIR105 Supply Duct Inlet- Office #105 OPERATING BEDFORD
AIR211 East Wing, First Floor Supply Duct OPERATING BEDFORD
AIR212 West Wing, First Floor Supply Duct OPERATING BEDFORD
BALL Allan Ball LABOR BEDFORD
BASIN-W1 Main Storm Water Basin - W1 OPERATING BEDFORD
BLK1000 1000 Block, Oak St - W560 OPERATING BEDFORD
BLK2000 2000 Block, Oak St. - W560 OPERATING BEDFORD
BLK3000 3000 Block, Oak St. - W560 OPERATING BEDFORD
BOILER Boiler Room OPERATING BEDFORD
BONEY Joe Boney LABOR BEDFORD
BOSTON City of Boston OPERATING BEDFORD
BOW-W1 Harbour Run-off - W1 OPERATING BEDFORD
OK
Cancel
Done
Trusted sites
100%

物业管理 - 维修保护


银河SOHO
Energy Management System
全部
新风机
消防排烟风机
厨房油烟风机
列表
新风系统
今日耗电量
工作日
637 kWh
工作日平均值
非工作日平均值
928.7 kWh
1068.9 kWh
相比上月 ▲25%
相比上月 ▲-

BIM 在物业管理中概念



- 三维模 M - 非BIM也
- CG (Computer Graphic) - 非BIM也
- 有其型 M 而没其神 - 非BIM也
- 有型 M, 有量 I, 能碰; 乃半BIM 矣
- 有型 M , 有神 I, 有务 B; 乃真BIM 也

REVIT

- 專業性
- 2D ←→ 3D ←→ 資料雙向性
- M = I， 資料一致性
- M + I 的設計性
- 出圖 !!! - 圖， 表
- 參數化設計
- 資料互換性，延伸性 (EXCHANGE)
- 第二代 BIM