真BIM， 假BIM，半BIM

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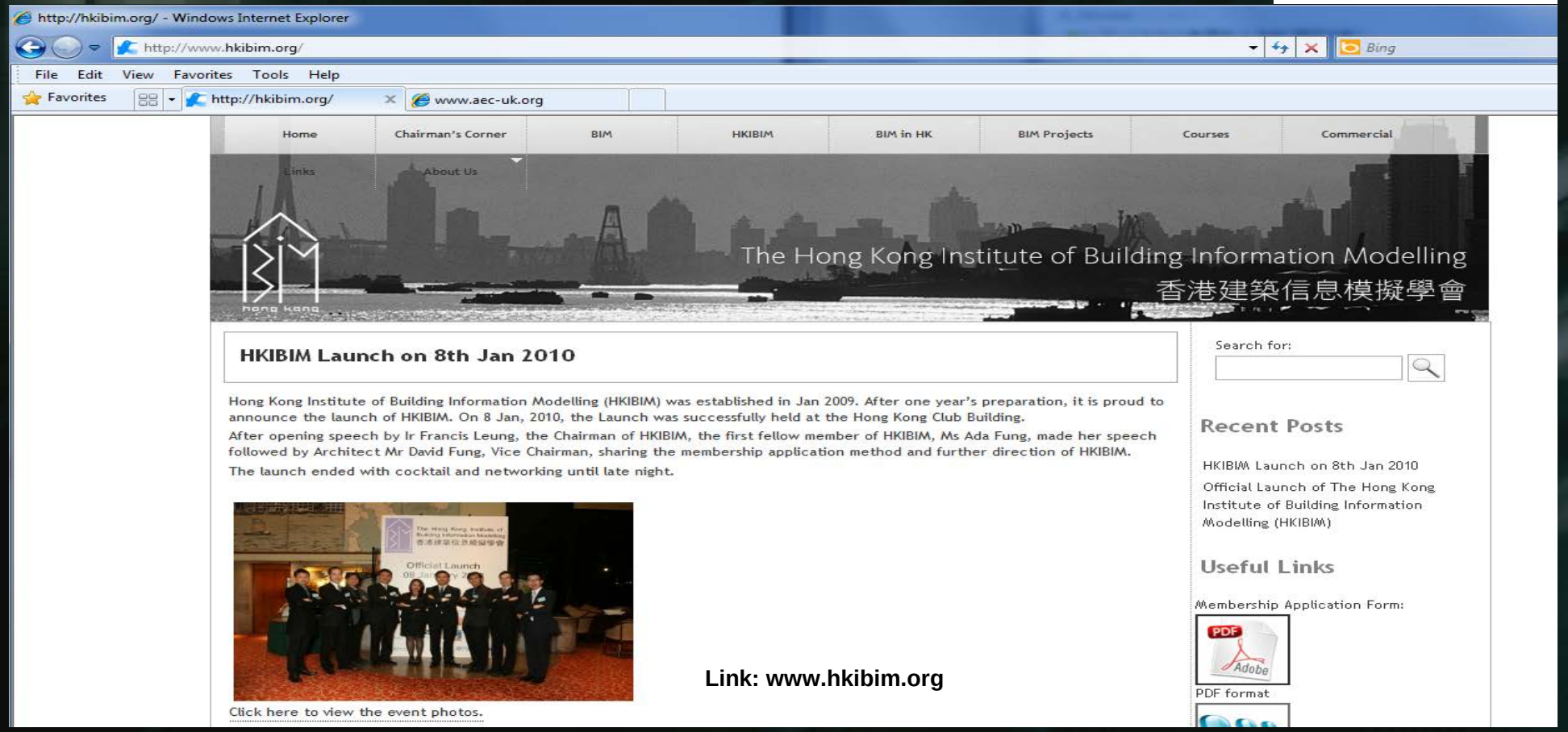
HKIBIM www.hkibim.org

The Hong Kong Institute of Building Information Modelling
香港建築信息模擬學會



Link: www.hkibim.org

HKIBIM 的目标

- **促进和推动業界對 BIM 教育，理解，欣赏和兴趣，對建筑信息作出管理;**
- 建立和推进建设行业信息化管理的实践标准。
- 建立与有关高等教育机构，政府决策局/部门，法定机构和其他组织的联系;
- 研究，推动和促进更好的信息化建设管理手段，在整个建筑生命周期改善沟通，协调，管理，生产力，交付时间，成本和质量;
- 提供建筑信息管理专业的职业指导;

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

B = Building 建築

I = Information 資訊

M = Modelling 模型/ 模擬

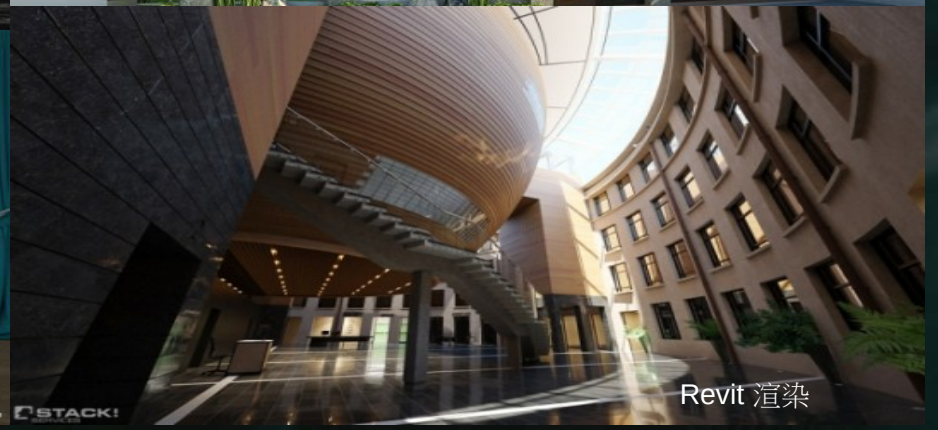
真耶, 假耶? 不在乎平台，在於BIM 的應用程度和方法。

假BIM

M + ?

三维模 - 非BIM也

假BIM



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

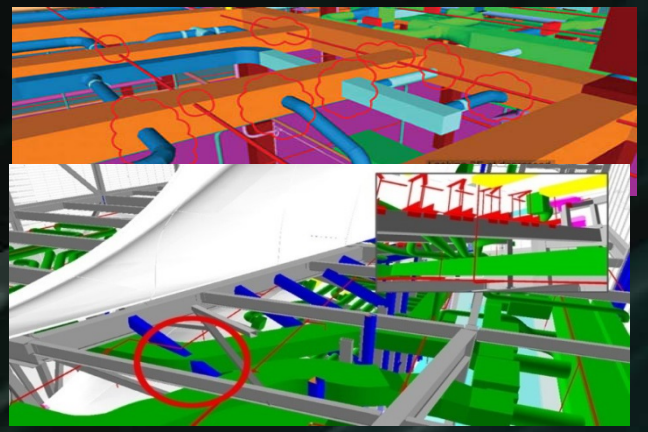
互動展示

半BIM

I <> M

- 有型, 有量, 能碰; 乃半BIM 矣

半BIM



REVIT/
NAVIS WORKS

設計

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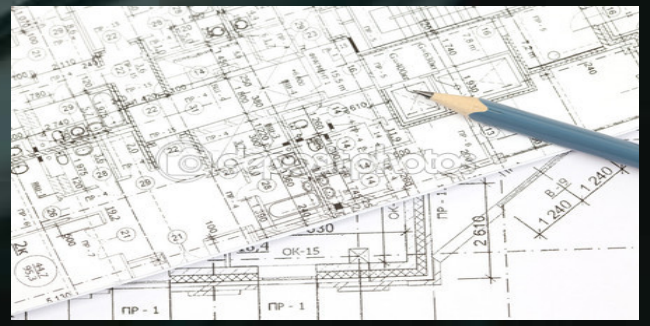
問題

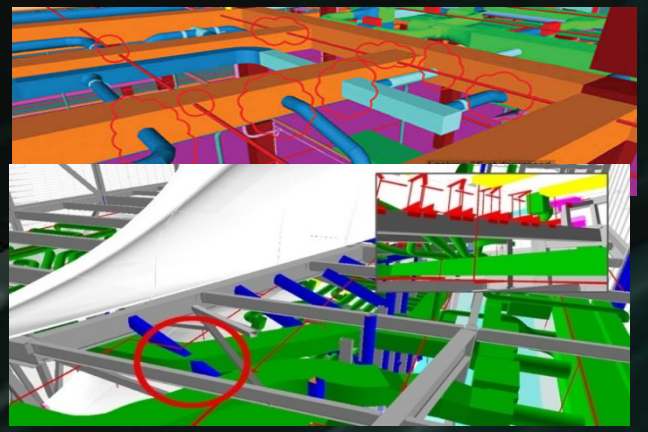
CAD



半BIM

設計

REVIT/
NAVIS WORKS



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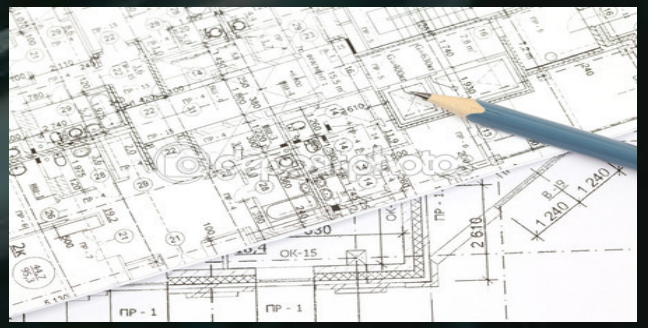

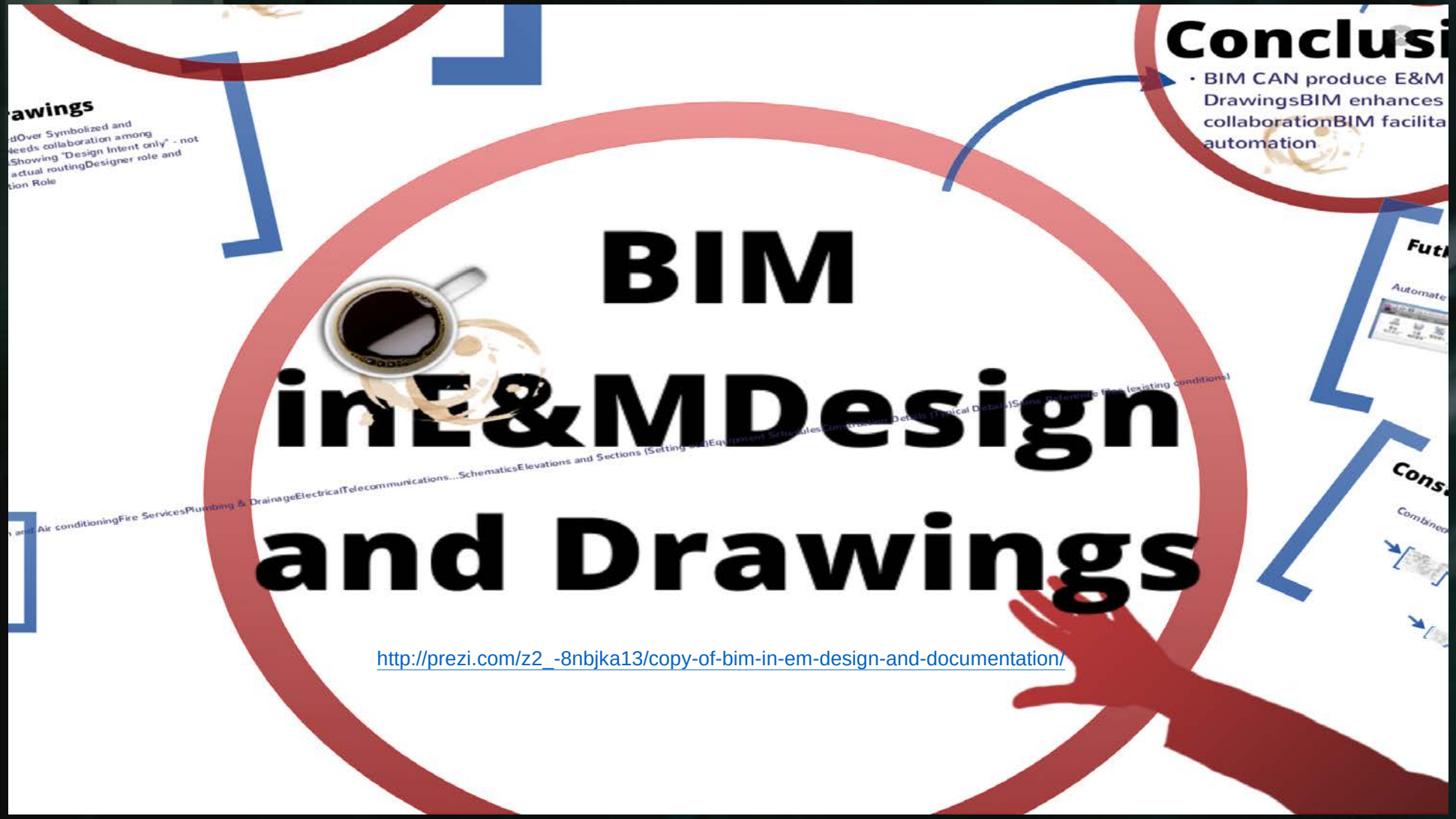
Conclusi
• BIM CAN produce E&M
DrawingsBIM enhances
collaborationBIM facilita
automation
BIM
inE&MDesign
and Drawings
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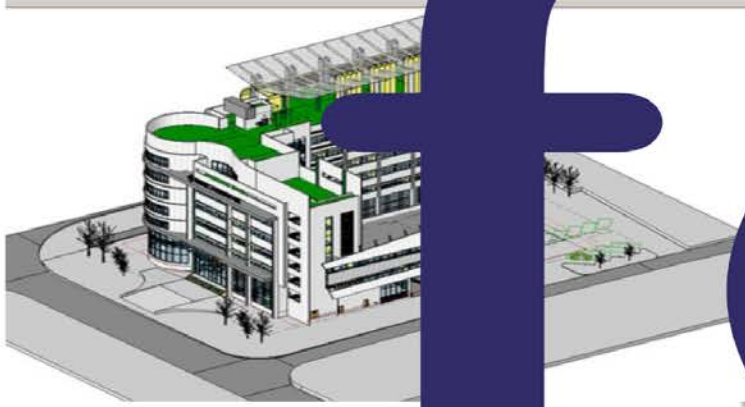
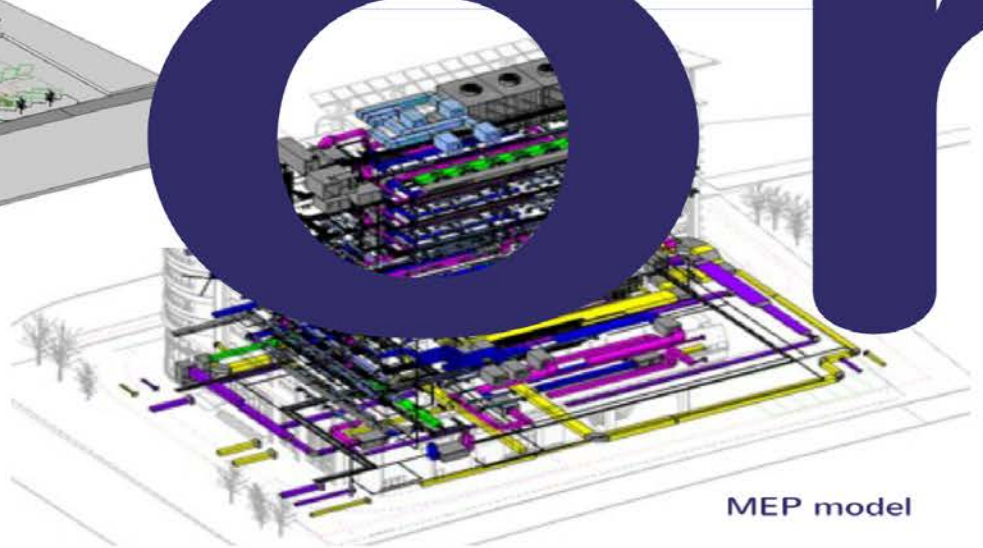
BIM is....?

3D Modelling?Use for Clash Analysis?

[ ]

Architectural + Structural M





MEP model

CONTRACT [redacted]

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TENDER DRAWINGS

TENDER ISSUE

[redacted]

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CONFIDENTIAL

CK004.B LIST

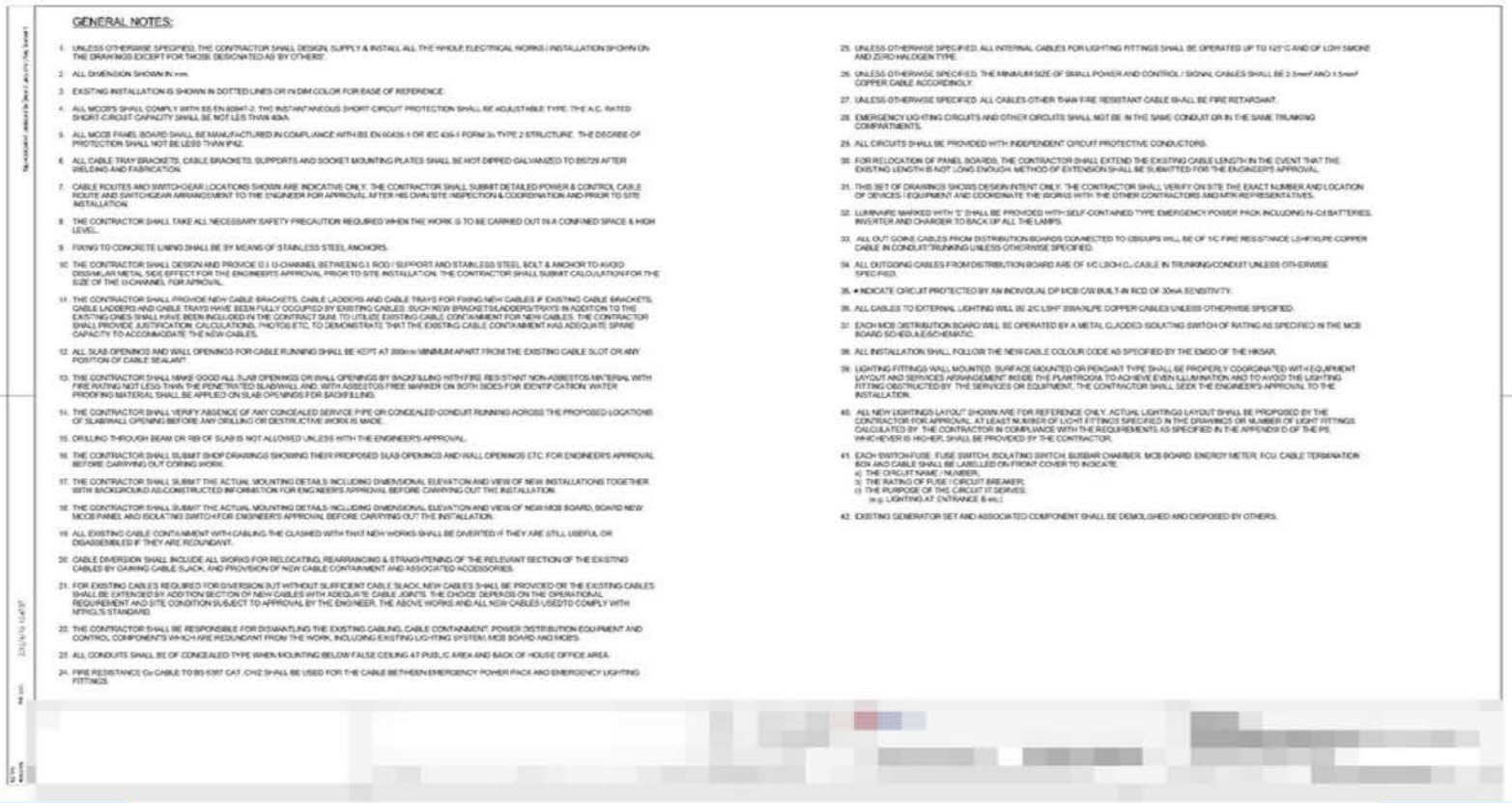
Drawing Number		Drawing Title			Revision No.	Remark
CK004.B/T/QVB/MTR/	000/000	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB			A	
CK004.B/T/QVB/MTR/	A00/001	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	DRAWING LIST		A	
CK004.B/T/QVB/MTR/	A00/002	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	CO-ORDINATED LAYOUT PLAN		A	
CK004.B/T/QVB/MTR/	A10/001	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	GENERAL NOTE		A	
CK004.B/T/QVB/MTR/	A10/002	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	PROPOSED AND DETAILS OF FLOOR COATING SYSTEM	SIGN PLATES AND ROOM PLATES DETAILS	A	
CK004.B/T/QVB/MTR/	A10/200	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	STANDARD BLOCKWORK DETAILS (SHEET 1 OF 6)		A	
CK004.B/T/QVB/MTR/	A10/201	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	STANDARD BLOCKWORK DETAILS (SHEET 2 OF 6)		A	
CK004.B/T/QVB/MTR/	A10/202	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	STANDARD BLOCKWORK DETAILS (SHEET 3 OF 6)		A	
CK004.B/T/QVB/MTR/	A10/203	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	STANDARD BLOCKWORK DETAILS (SHEET 4 OF 6)		A	
CK004.B/T/QVB/MTR/	A10/204	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	STANDARD BLOCKWORK DETAILS (SHEET 5 OF 6)		A	
CK004.B/T/QVB/MTR/	A10/205	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	STANDARD BLOCKWORK DETAILS (SHEET 6 OF 6)		A	
CK004.B/T/QVB/MTR/	A12/001	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	SITE LOCATION PLAN AND ACCESS ROUTE - QVB VENTILATION BUILDING		A	FOR REFERENCE ONLY
CK004.B/T/QVB/MTR/	A12/002	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	CO-ORDINATED SECTIONS		A	
CK004.B/T/QVB/MTR/	A12/003	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	CO-ORDINATED SECTIONS		A	
CK004.B/T/QVB/MTR/	A12/004	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	CO-ORDINATED SECTIONS		A	
CK004.B/T/QVB/MTR/	A13/100	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	CUTAWAY SECTIONS		A	FOR REFERENCE ONLY
CK004.B/T/QVB/MTR/	A13/101	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	CUTAWAY SECTIONS		A	FOR REFERENCE ONLY
CK004.B/T/QVB/MTR/	A41/301	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	FINISHES SCHEDULE & LOUVRE SCHEDULE		A	
CK004.B/T/QVB/MTR/	A53/001	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	DETAILS OF EXTERNAL ALUMINIUM LOUVRES			
CK004.B/T/QVB/MTR/	E00/001	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	LEGEND AND ABBREVIATION		A	
CK004.B/T/QVB/MTR/	E00/002	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	ELECTRICAL SERVICES - NOTES		A	
CK004.B/T/QVB/MTR/	E01/001	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	GROUND FLOOR LEVEL (+5.1)	EXISTING LIGHTING AND SMALL POWER LAYOUT	A	
CK004.B/T/QVB/MTR/	E01/002	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	GROUND FLOOR LEVEL (+5.1)	NEW LIGHTING AND SMALL POWER LAYOUT	A	
CK004.B/T/QVB/MTR/	E07/001	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	MODIFICATION OF EXISTING LV SWITCHBOARD		A	
CK004.B/T/QVB/MTR/	E07/002	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	SCHEMATIC DIAGRAM OF EXISTING LV SWITCHBOARD		A	
CK004.B/T/QVB/MTR/	E09/001	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	GROUND FLOOR LEVEL (+5.1)	NEW POWER CABLE ROUTE	A	
CK004.B/T/QVB/MTR/	E09/002	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	BASEMENT LEVEL 1 (-1.3)	NEW POWER CABLE ROUTE	A	
CK004.B/T/QVB/MTR/	E12/001	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	SCHEMATIC DIAGRAM OF NEW MCB BOARD 'DB-F'		A	
CK004.B/T/QVB/MTR/	F00/001	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	SCHEMATIC AND NOTES FOR FM200 GAS EXTINGUISHING SYSTEM		A	
CK004.B/T/QVB/MTR/	F09/001	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	QVB - GROUND FLOOR LEVEL	PROPOSED FS LAYOUT AT NEW 33kV SWITCHROOM	A	
CK004.B/T/QVB/MTR/	M00/001	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	GENERAL NOTES, LEGEND AND ABBREVIATIONS		A	
CK004.B/T/QVB/MTR/	M07/001	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	ECS CONTROL SCHEMATIC DIAGRAM & CONTROL PRINCIPLES		A	
CK004.B/T/QVB/MTR/	M08/001	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	EXISTING CABLE CONTAINMENT LAYOUT AT	BASEMENT 1 (LEVEL -1.2)	A	FOR REFERENCE ONLY
CK004.B/T/QVB/MTR/	M08/002	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	EXISTING CABLE CONTAINMENT LAYOUT AT G/F		A	FOR REFERENCE ONLY
CK004.B/T/QVB/MTR/	M08/001	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	GROUND FLOOR LEVEL	NEW ECS LAYOUT	A	
CK004.B/T/QVB/MTR/	M08/002	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	GROUND FLOOR LEVEL	SECTION VIEW A - A, B - B & EQUIPMENT SCHEDULE	A	
CK004.B/T/QVB/MTR/	M08/003	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	LOCATION OF ECS CONTROL ROOM AT BASEMENT 1 (LEVEL -1.2)		A	
CK004.B/T/QVB/MTR/	M11/001	CONVERSION OF EXISTING GENERATOR ROOM TO 33kV SWITCH ROOM AT QVB	TYPICAL ECS INSTALLATION DETAILS		A	
CD4c203/	301/12/601	LIGHTING & POWER SERVICE PRINCIPLE SCHEME	GROUND FLOOR LEVEL +5.1		D	FOR REFERENCE ONLY
C25/19.09-10E/T/QVB/MTR/	E07/001	MODIFICATION OF EMERGENCY POWER SUPPLY SYSTEM	AT NVB, SVB, QVB & KTT QVB	EXISTING & NEW POWER SUPPLY AND PROTECTION SCHEME	A	FOR REFERENCE ONLY

Grand total: 40

Symbols & Abbreviations

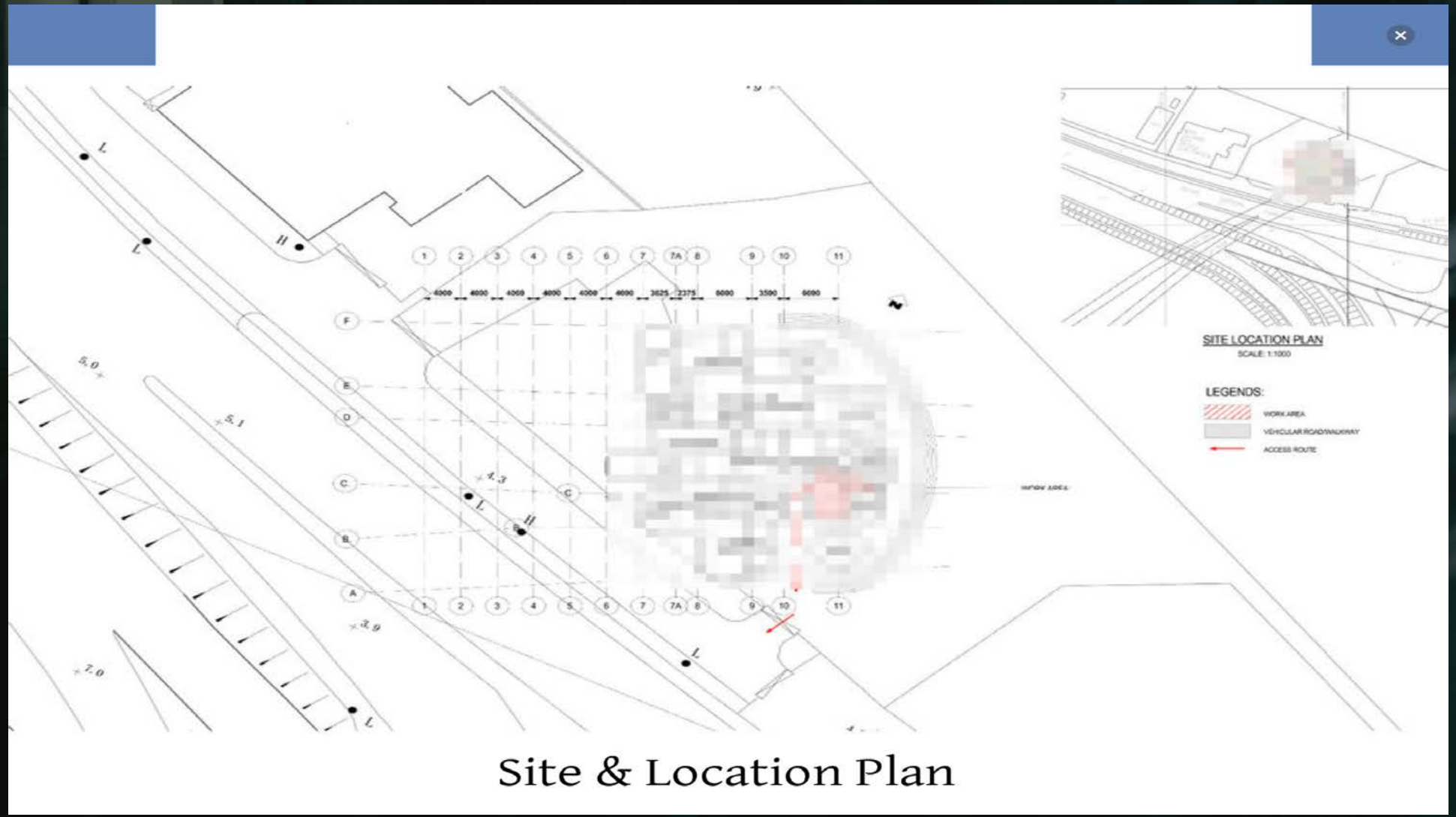
LMCP	LOCAL MOTOR CONTROL PANEL
	13A SWITCHED FSU C/W INDICATOR AND MATT-CHROME FINISH FRONT PLATE
	13A SWITCHED POWER SOCKET OUTLET C/W MATT-CHROME FINISH FRONT PLATE
	10A LIGHTING SWITCH, MATT-CHROME FINISH FRONT PLATE
	EXISTING BULKHEAD LIGHTING
— — C — —	EXISTING CABLE ROUTE
—— C ——	NEW CABLE ROUTE
	EXISTING EQUIPMENT
	EXISTING EMERGENCY STOP BUTTON

General Notes

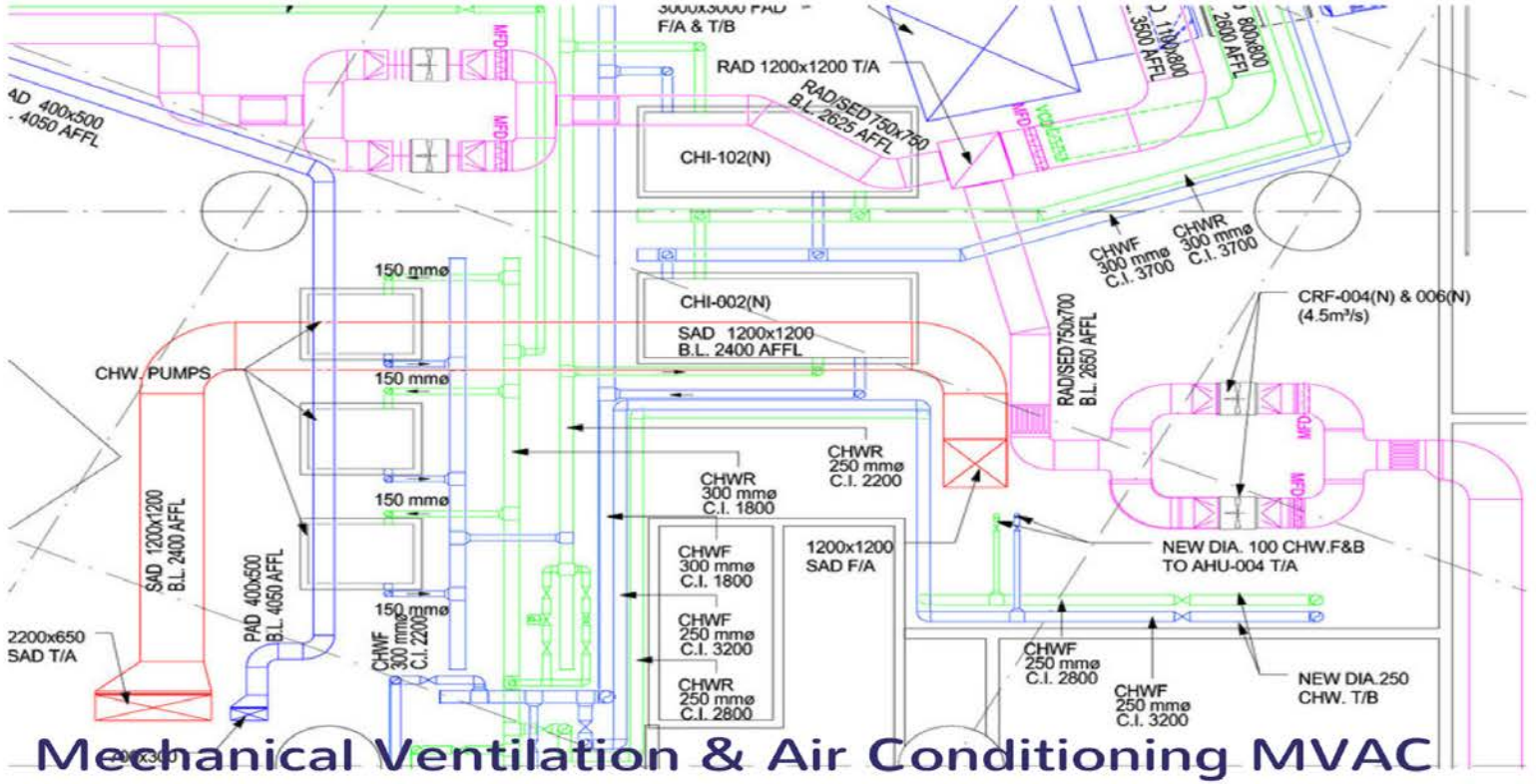


GENERAL NOTES:

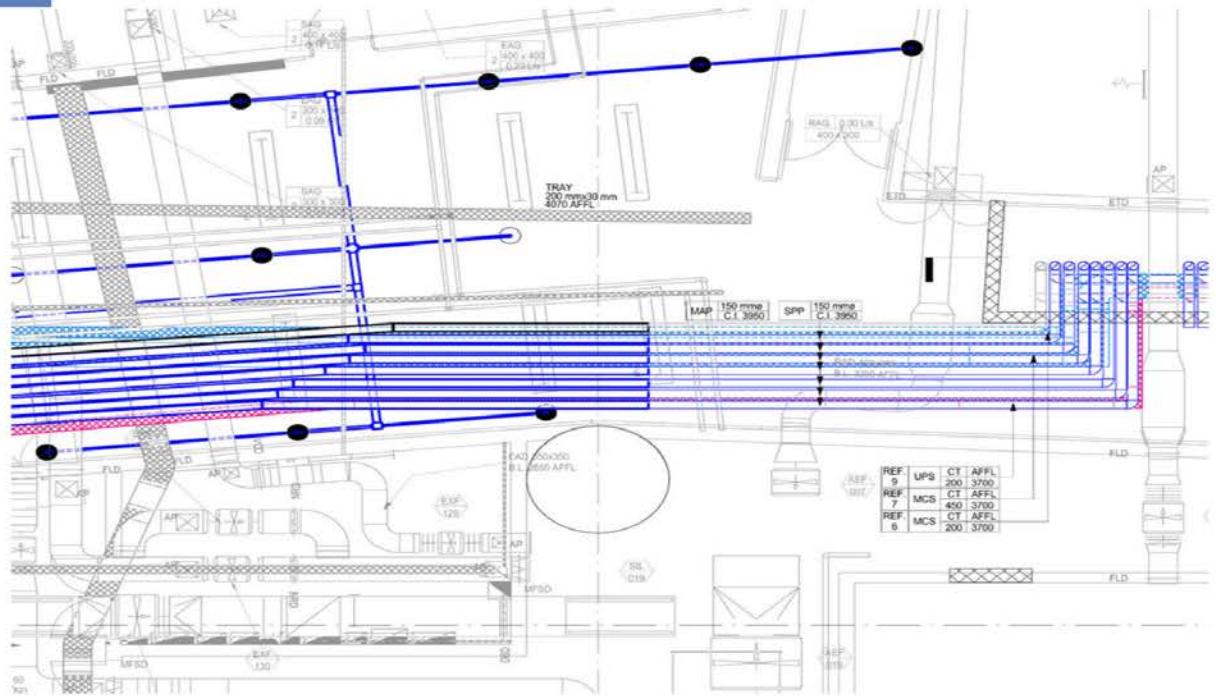
1. UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR SHALL DESIGN, SUPPLY & INSTALL ALL THE WHOLE ELECTRICAL WORKS / INSTALLATION SHOWN ON THE DRAWINGS EXCEPT FOR THOSE DESIGNATED AS BY OTHERS'.
2. ALL DIMENSION SHOWN IN mm.
3. EXISTING INSTALLATION IS SHOWN IN DOTTED LINES OR IN DIM COLOR FOR EASE OF REFERENCE.
4. ALL MCCB'S SHALL COMPLY WITH BS EN 60947-2. THE INSTANTANEOUS SHORT-CIRCUIT PROTECTION SHALL BE ADJUSTABLE TYPE. THE A.C. RATED SHORT-CIRCUIT CAPACITY SHALL BE NOT LES THAN 40kA.
5. ALL MCCB PANEL BOARD SHALL BE MANUFACTURED IN COMPLIANCE WITH BS EN 60439-1 OR IEC 439-1 FORM 3b TYPE 2 STRUCTURE. THE DEGREE OF PROTECTION SHALL NOT BE LESS THAN IP42.
6. ALL CABLE TRAY BRACKETS, CABLE BRACKETS, SUPPORTS AND SOCKET MOUNTING PLATES SHALL BE HOT DIPPED GALVANIZED TO BS729 AFTER WELDING AND FABRICATION.
7. CABLE ROUTES AND SWITCHGEAR LOCATIONS SHOWN ARE INDICATIVE ONLY. THE CONTRACTOR SHALL SUBMIT DETAILED POWER & CONTROL CABLE ROUTE AND SWITCHGEAR ARRANGEMENT TO THE ENGINEER FOR APPROVAL AFTER HIS OWN SITE INSPECTION & COORDINATION AND PRIOR TO SITE INSTALLATION.
8. THE CONTRACTOR SHALL TAKE ALL NECESSARY SAFETY PRECAUTION REQUIRED WHEN THE WORK IS TO BE CARRIED OUT IN A CONFINED SPACE & HIGH LEVEL.
9. FIXING TO CONCRETE LINING SHALL BE BY MEANS OF STAINLESS STEEL ANCHORS.
10. THE CONTRACTOR SHALL DESIGN AND PROVIDE G.I U-CHANNEL BETWEEN G.I ROD / SUPPORT AND STAINLESS STEEL BOLT & ANCHOR TO AVOID DISSIMILAR METAL SIDE EFFECT FOR THE ENGINEER'S APPROVAL PRIOR TO SITE INSTALLATION. THE CONTRACTOR SHALL SUBMIT CALCULATION FOR THE SIZE OF THE U-CHANNEL FOR APPROVAL.
11. THE CONTRACTOR SHALL PROVIDE NEW CABLE BRACKETS, CABLE LADDERS AND CABLE TRAYS FOR FIXING NEW CABLES IF EXISTING CABLE BRACKETS, CABLE LADDERS AND CABLE TRAYS HAVE BEEN FULLY OCCUPIED BY EXISTING CABLES. SUCH NEW BRACKETS/LADDERS/TRAYS IN ADDITION TO THE EXISTING ONES SHALL HAVE BEEN INCLUDED IN THE CONTRACT SUM. TO UTILIZE EXISTING CABLE CONTAINMENT FOR NEW CABLES, THE CONTRACTOR SHALL PROVIDE JUSTIFICATION, CALCULATIONS, PHOTOS ETC. TO DEMONSTRATE THAT THE EXISTING CABLE CONTAINMENT HAS ADEQUATE SPARE CAPACITY TO ACCOMMODATE THE NEW CABLES.
12. ALL SLAB OPENINGS AND WALL OPENINGS FOR CABLE RUNNING SHALL BE KEPT AT 300mm MINIMUM APART FROM THE EXISTING CABLE SLOT OR ANY POSITION OF CABLE SEALANT.
13. THE CONTRACTOR SHALL MAKE GOOD ALL SLAB OPENINGS OR WALL OPENINGS BY BACKFILLING WITH FIRE RESISTANT NON-ASBESTOS MATERIAL WITH FIRE RATING NOT LESS THAN THE PENETRATED SLAB/WALL AND, WITH ASSESS'S FREE MARKER ON BOTH SIDES FOR IDENTIFICATION. WATER PROOFING MATERIAL SHALL BE APPLIED ON SLAB OPENINGS FOR BACKFILLING.
14. THE CONTRACTOR SHALL VERIFY ABSENCE OF ANY CONCEALED SERVICE PIPE OR CONCEALED CONDUIT RUNNING ACROSS THE PROPOSED LOCATIONS OF SLAB/WALL OPENING BEFORE ANY DRILLING OR DESTRUCTIVE WORK IS MADE.
15. DRILLING THROUGH BEAM OR RIB OF SLAB IS NOT ALLOWED UNLESS WITH THE ENGINEER'S APPROVAL.
16. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SHOWING THEIR PROPOSED SLAB OPENINGS AND WALL OPENINGS ETC. FOR ENGINEER'S APPROVAL BEFORE CARRYING OUT CORING WORK.
17. THE CONTRACTOR SHALL SUBMIT THE ACTUAL MOUNTING DETAILS INCLUDING DIMENSIONAL ELEVATION AND VIEW OF NEW INSTALLATIONS TOGETHER WITH BACKGROUND AS-CONSTRUCTED INFORMATION FOR ENGINEER'S APPROVAL BEFORE CARRYING OUT THE INSTALLATION.
18. THE CONTRACTOR SHALL SUBMIT THE ACTUAL MOUNTING DETAILS INCLUDING DIMENSIONAL ELEVATION AND VIEW OF NEW MCB BOARD, BOARD NEW MCCB PANEL AND ISOLATING SWITCH FOR ENGINEER'S APPROVAL BEFORE CARRYING OUT THE INSTALLATION.
19. ALL EXISTING CABLE CONTAINMENT WITH CABLING THE CLASHED WITH THAT NEW WORKS SHALL BE DIVERTED IF THEY ARE STILL USEFUL OR DISASSEMBLED IF THEY ARE REDUNDANT.
20. CABLE DIVERSION SHALL INCLUDE ALL WORKS FOR RELOCATING, REARRANGING & STRAIGHTENING OF THE RELEVANT SECTION OF THE EXISTING CABLES BY GAINING CABLE SLACK, AND PROVISION OF NEW CABLE CONTAINMENT AND ASSOCIATED ACCESSORIES.
21. FOR EXISTING CABLES REQUIRED FOR DIVERSION BUT WITHOUT SUFFICIENT CABLE SLACK, NEW CABLES SHALL BE PROVIDED OR THE EXISTING CABLES SHALL BE EXTENDED BY ADDITION SECTION OF NEW CABLES WITH ADEQUATE CABLE JOINTS. THE CHOICE DEPENDS ON THE OPERATIONAL REQUIREMENT AND SITE CONDITION SUBJECT TO APPROVAL BY THE ENGINEER. THE ABOVE WORKS AND ALL NEW CABLES USED TO COMPLY WITH MTRCL'S STANDARD.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISMANTLING THE EXISTING CABLING, CABLE CONTAINMENT, POWER DISTRIBUTION EQUIPMENT AND CONTROL COMPONENTS WHICH ARE REDUNDANT FROM THE WORK, INCLUDING EXISTING LIGHTING SYSTEM, MCB BOARD AND MCB'S.
23. ALL CONDUITS SHALL BE OF CONCEALED TYPE WHEN MOUNTING BELOW FALSE CEILING AT PUBLIC AREA AND BACK OF HOUSE OFFICE AREA.
24. FIRE RESISTANCE Cu CABLE TO BS 6387 CAT. CWZ SHALL BE USED FOR THE CABLE BETWEEN EMERGENCY POWER PACK AND EMERGENCY LIGHTING FITTINGS.
25. UNLESS OTHERWISE SPECIFIED, ALL INTERNAL CABLES FOR LIGHTING FITTINGS SHALL BE OPERATED UP TO 125°C AND OF LOW SMOKE AND ZERO HALOGEN TYPE.
26. UNLESS OTHERWISE SPECIFIED, THE MINIMUM SIZE OF SMALL POWER AND CONTROL / SIGNAL CABLES SHALL BE 2.5mm² AND 1.5mm² COPPER CABLE ACCORDINGLY.
27. UNLESS OTHERWISE SPECIFIED, ALL CABLES OTHER THAN FIRE RESISTANT CABLE (B) ALL BE FIRE RETARDANT.
28. EMERGENCY LIGHTING CIRCUITS AND OTHER CIRCUITS SHALL NOT BE IN THE SAME CONDUIT OR IN THE SAME TRUNKING COMPARTMENTS.
29. ALL CIRCUITS SHALL BE PROVIDED WITH INDEPENDENT CIRCUIT PROTECTIVE CONDUCTORS.
30. FOR RELOCATION OF PANEL BOARDS, THE CONTRACTOR SHALL EXTEND THE EXISTING CABLE LENGTH IN THE EVENT THAT THE EXISTING LENGTH IS NOT LONG ENOUGH. METHOD OF EXTENSION SHALL BE SUBMITTED FOR THE ENGINEER'S APPROVAL.
31. THIS SET OF DRAWINGS SHOWS DESIGN INTENT ONLY. THE CONTRACTOR SHALL VERIFY ON SITE THE EXACT NUMBER AND LOCATION OF DEVICES / EQUIPMENT AND COORDINATE THE WORKS WITH THE OTHER CONTRACTORS AND MTR REPRESENTATIVES.
32. LUMINAIRE MARKED WITH 'E' SHALL BE PROVIDED WITH SELF-CONTAINED TYPE EMERGENCY POWER PACK INCLUDING NI-Cd BATTERIES, INVERTER AND CHARGER TO BACK UP ALL THE LAMPS.
33. ALL OUT GOING CABLES FROM DISTRIBUTION BOARDS CONNECTED TO CBS/UPS WILL BE OF 1/C FIRE RESISTANCE LSHF/XLPE COPPER CABLE IN CONDUIT/TRUNKING UNLESS OTHERWISE SPECIFIED.
34. ALL OUTGOING CABLES FROM DISTRIBUTION BOARD ARE OF 1/C LSOH C.U. CABLE IN TRUNKING/CONDUIT UNLESS OTHERWISE SPECIFIED.
35. # INDICATE CIRCUIT PROTECTED BY AN INDIVIDUAL DP MCB C/W BUILT-IN RCD OF 30mA SENSITIVITY.
36. ALL CABLES TO EXTERNAL LIGHTING WILL BE 2C LSHF SWA/XLPE COPPER CABLES UNLESS OTHERWISE SPECIFIED.
37. EACH MCB DISTRIBUTION BOARD WILL BE OPERATED BY A METAL CLADDED ISOLATING SWITCH OF RATING AS SPECIFIED IN THE MCB BOARD SCHED.&ESCHEMATIC.
38. ALL INSTALLATION SHALL FOLLOW THE NEW CABLE COLOUR CODE AS SPECIFIED BY THE EMSD OF THE HKSAR.
39. LIGHTING FITTINGS WALL MOUNTED, SURFACE MOUNTED OR PENDANT TYPE SHALL BE PROPERLY COORDINATED WITH EQUIPMENT LAYOUT AND SERVICES ARRANGEMENT INSIDE THE PLANTROOM TO ACHIEVE EVEN ILLUMINATION AND TO AVOID THE LIGHTING FITTING OBSTRUCTED BY THE SERVICES OR EQUIPMENT. THE CONTRACTOR SHALL SEEK THE ENGINEER'S APPROVAL TO THE INSTALLATION.
40. ALL NEW LIGHTINGS LAYOUT SHOWN ARE FOR REFERENCE ONLY. ACTUAL LIGHTINGS LAYOUT SHALL BE PROPOSED BY THE CONTRACTOR FOR APPROVAL AT LEAST NUMBER OF LIGHT FITTINGS SPECIFIED IN THE DRAWINGS OR NUMBER OF LIGHT FITTINGS CALCULATED BY THE CONTRACTOR IN COMPLIANCE WITH THE REQUIREMENTS AS SPECIFIED IN THE APPENDIX D OF THE IPS, WHICHEVER IS HIGHER, SHALL BE PROVIDED BY THE CONTRACTOR.
41. EACH SWITCH FUSE, FUSE SWITCH, ISOLATING SWITCH, BUSBAR CHAMBER, MCB BOARD, ENERGY METER, FCU, CABLE TERMINATION BOX AND CABLE SHALL BE LABELLED ON FRONT COVER TO INDICATE:
    a) THE CIRCUIT NAME / NUMBER;
    b) THE RATING OF FUSE / CIRCUIT BREAKER;
    c) THE PURPOSE OF THE CIRCUIT IT SERVES.
    (e.g. LIGHTING AT ENTRANCE & etc.)
42. EXISTING GENERATOR SET AND ASSOCIATED COMPONENT SHALL BE DEMOLISHED AND DISPOSED BY OTHERS.



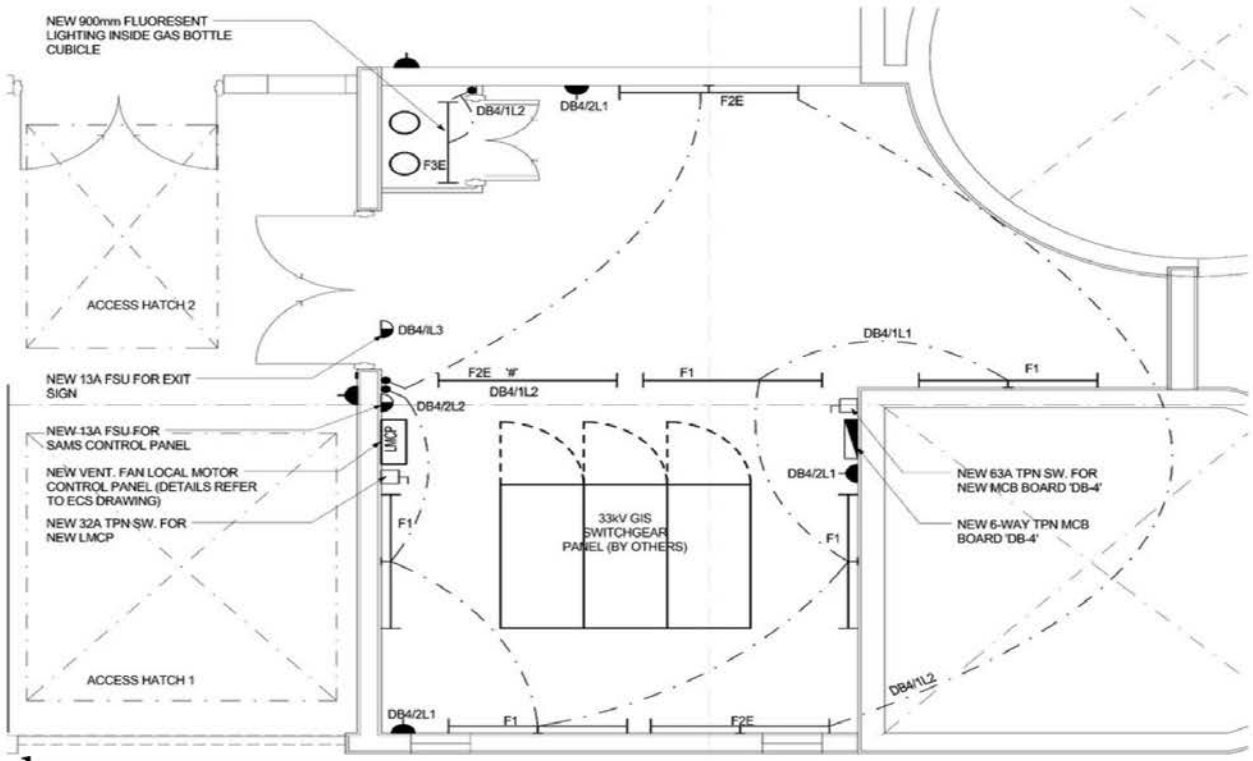
Site & Location Plan



Mechanical Ventilation & Air Conditioning MVAC

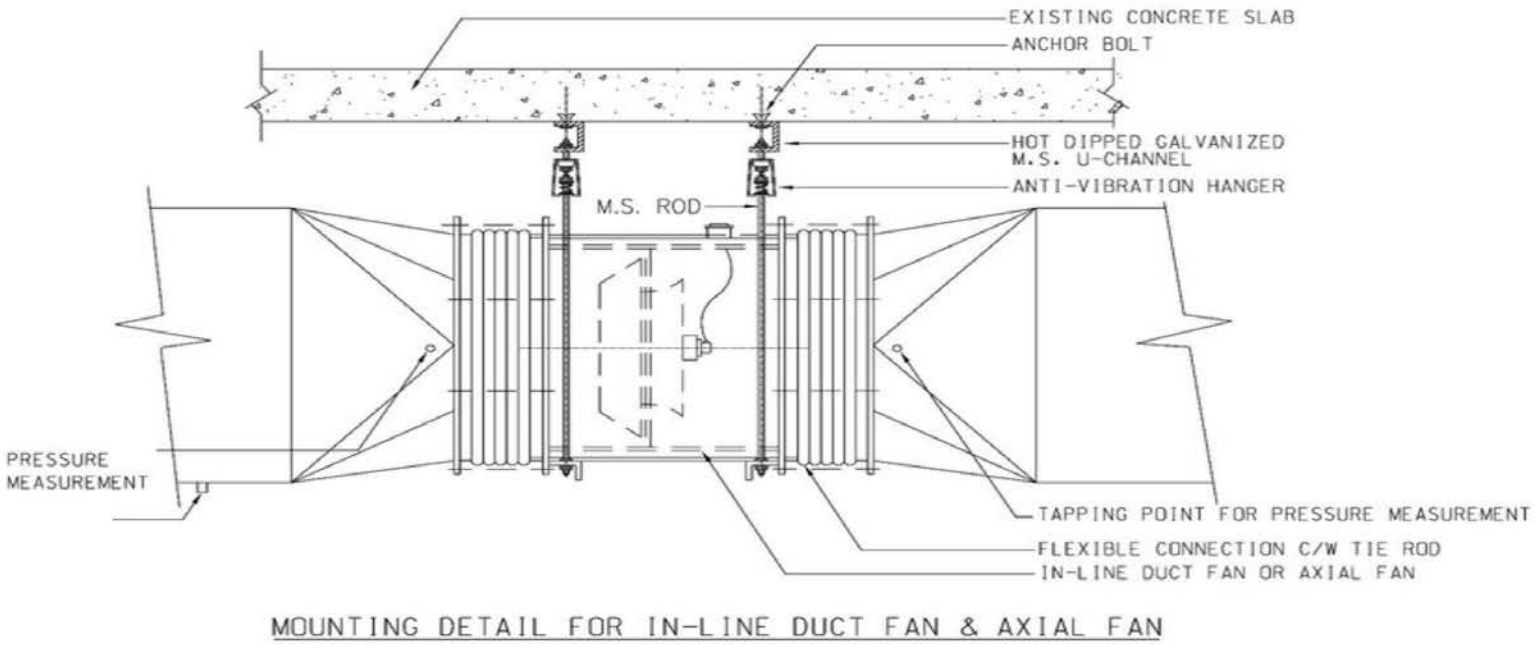


Fire Services, Plumbing & Drainage


NEW 900mm FLUORESENT LIGHTING INSIDE GAS BOTTLE CUBICLE
DB4/1L2
DB4/2L1
F2E
F3E
ACCESS HATCH 2
DB4/IL3
DB4/1L1
NEW 13A FSU FOR EXIT SIGN
F2E
F1
DB4/1L2
DB4/2L2
NEW 13A FSU FOR SAMS CONTROL PANEL
LMCP
NEW VENT. FAN LOCAL MOTOR CONTROL PANEL (DETAILS REFER TO ECS DRAWING)
NEW 32A TPN SW. FOR NEW LMCP
33kV GIS SWITCHGEAR PANEL (BY OTHERS)
DB4/2L1
NEW 63A TPN SW. FOR NEW MCB BOARD 'DB-4'
NEW 6-WAY TPN MCB BOARD 'DB-4'
ACCESS HATCH 1
DB4/1L2
DB4/2L1
F1
F2E

Electrical

Cable Containment



MOUNTING DETAIL FOR IN-LINE DUCT FAN & AXIAL FAN

Typical Details

[redacted]_DIA.65 SPRINKLER PIPE SCHEDULE

Family and Type	Size	Type Mark	Estimate Length (m)
Pipe Types: SPP	65 mmø	SPP	127.167

[redacted]_DIA.80 SPRINKLER PIPE SCHEDULE

Family and Type	Size	Type Mark	Estimate Length (m)
Pipe Types: SPP	80 mmø	SPP	127.367

[redacted]_DIA.100 SPRINKLER PIPE SCHEDULE

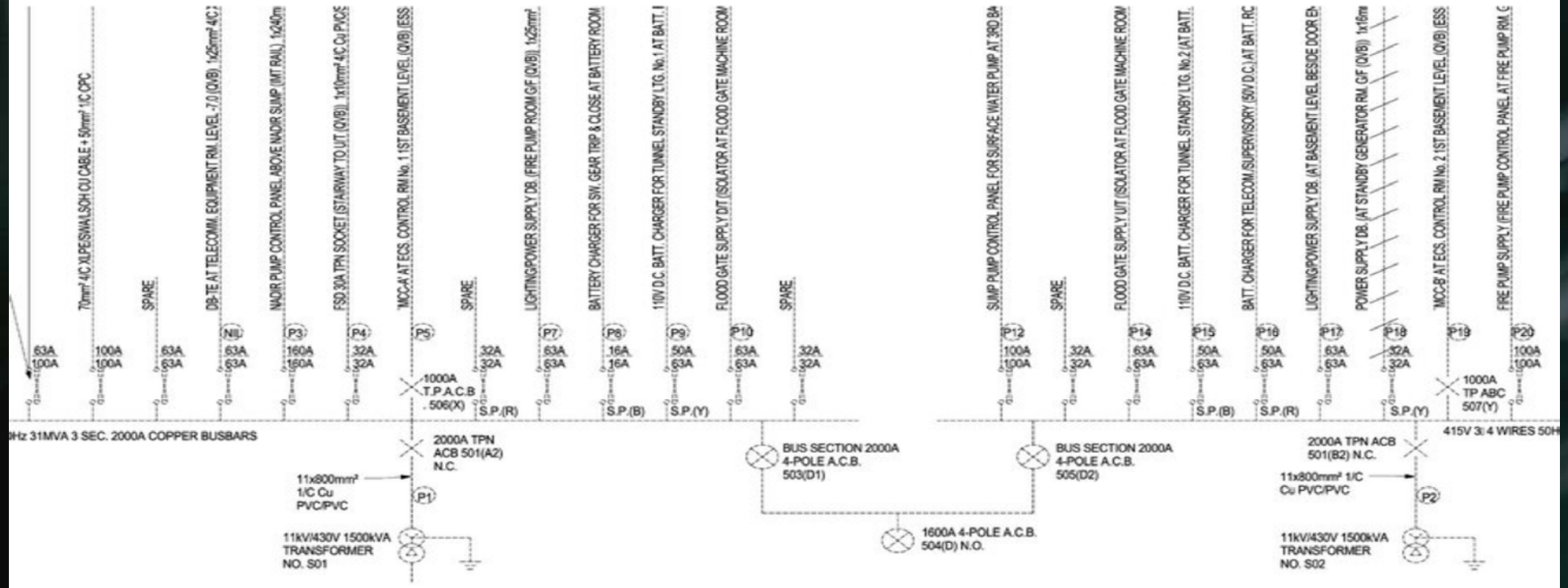
Family and Type	Size	Type Mark	Estimate Length (m)
Pipe Types: SPP	100 mmø	SPP	248.702

[redacted]_DIA.150 SPRINKLER PIPE SCHEDULE

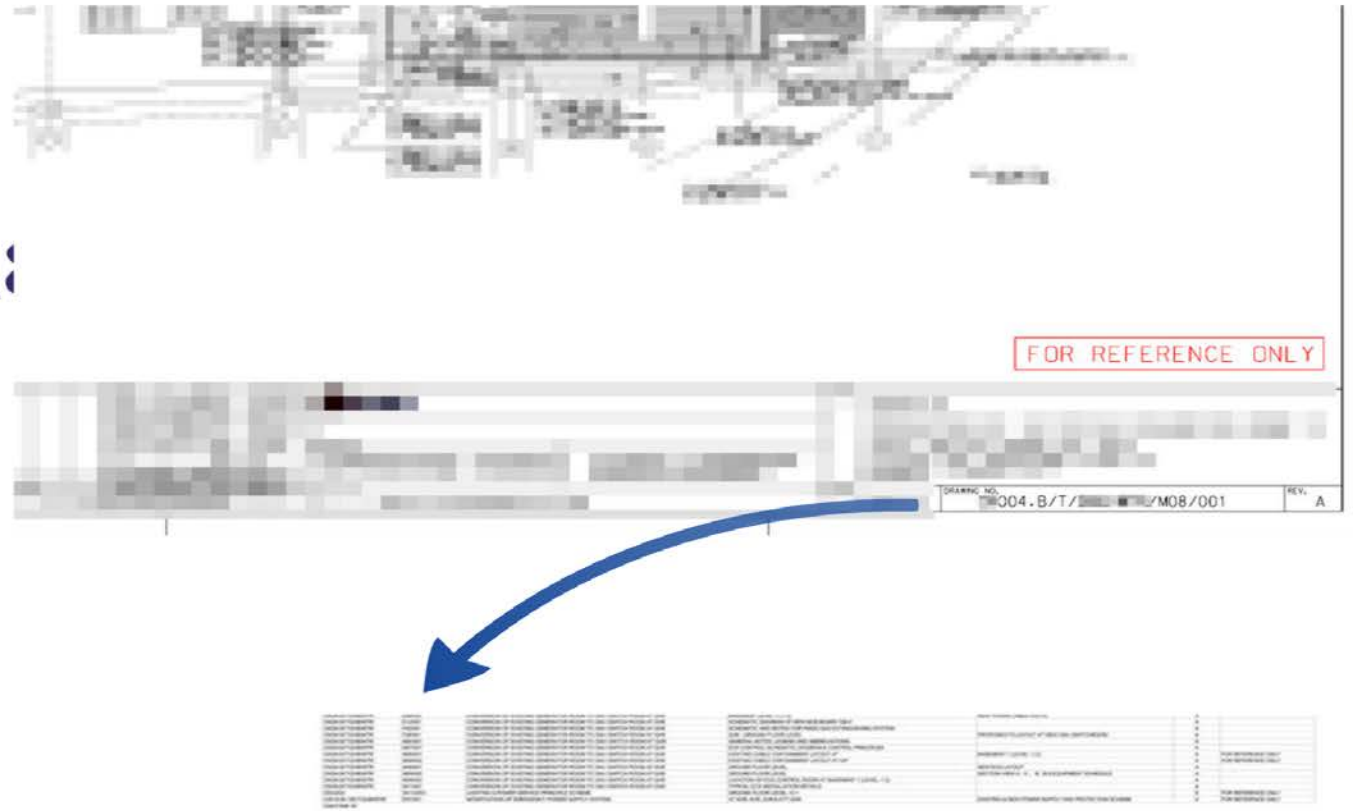
Family and Type	Size	Type Mark	Estimate Length (m)
Pipe Types: SPP	150 mmø	SPP	1746.315

Equipment Schedule

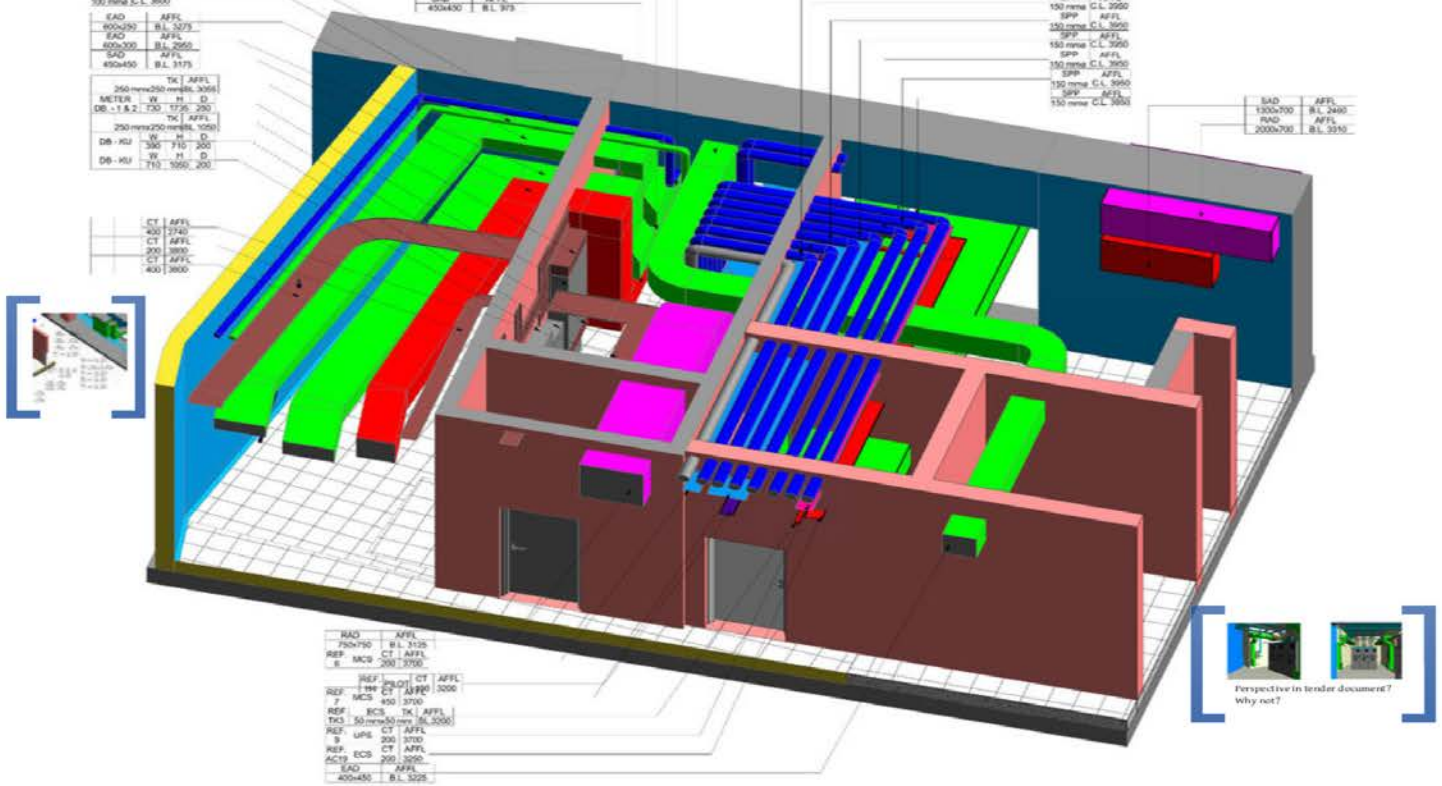
Schematic


70mm² 4/C XLPE/SWA/LSOH CU CABLE + 50mm² 1/C CPC
SPARE
DB-TE AT TELECOMM. EQUIPMENT RM. LEVEL -7.0 (Q/B) 1x25mm² 4/C
NADIR PUMP CONTROL PANEL ABOVE NADIR SUMP (IMT RAIL) 1x240m
FSD 30A TPN SOCKET (STAIRWAY TO U/T (Q/B)) 1x10mm² 4/C Cu PVC/S
'MCC-A' AT ECS. CONTROL RM No. 1 1ST BASEMENT LEVEL (Q/B) ESS
SPARE
LIGHTING/POWER SUPPLY DB. (FIRE PUMP ROOM G/F (Q/B)) 1x25mm²
BATTERY CHARGER FOR SW. GEAR TRIP & CLOSE AT BATTERY ROOM
110V D.C. BATT. CHARGER FOR TUNNEL STANDBY LTG. No. 1 AT BATT.
FLOOD GATE SUPPLY D/T (ISOLATOR AT FLOOD GATE MACHINE ROOM
SPARE
SUMP PUMP CONTROL PANEL FOR SURFACE WATER PUMP AT 3RD BA
SPARE
FLOOD GATE SUPPLY U/T (ISOLATOR AT FLOOD GATE MACHINE ROOM
110V D.C. BATT. CHARGER FOR TUNNEL STANDBY LTG. No.2 (AT BATT.
BATT. CHARGER FOR TELECOM./SUPERVISORY (50V D.C.) AT BATT. RC
LIGHTING/POWER SUPPLY DB. (AT BASEMENT LEVEL BESIDE DOOR EN
POWER SUPPLY DB. (AT STANDBY GENERATOR RM. G/F (Q/B)) 1x16m
'MCC-B' AT ECS. CONTROL RM No. 2 1ST BASEMENT LEVEL (Q/B) ESS
FIRE PUMP SUPPLY (FIRE PUMP CONTROL PANEL AT FIRE PUMP RM. G
63A 100A
100A 100A
63A 63A
NIL 63A 63A
P3 160A 160A
P4 32A 32A
P5
32A 32A
P7 63A 63A
P8 16A 16A
P9 50A 63A
P10 63A 63A
32A 32A
P12 100A 100A
32A 32A
P14 63A 63A
P15 50A 63A
P16 50A 63A
P17 63A 63A
P18 32A 32A
P19
P20 100A 100A
1000A T.P.A.C.B. 506(X)
1000A TP ABC 507(Y)
S.P.(R)
S.P.(B)
S.P.(Y)
S.P.(B)
S.P.(R)
S.P.(Y)
0Hz 31MVA 3 SEC. 2000A COPPER BUSBARS
415V 3Φ 4 WIRES 50H
2000A TPN ACB 501(A2) N.C.
11x800mm² 1/C Cu PVC/PVC
P1
11kV/430V 1500kVA TRANSFORMER NO. S01
BUS SECTION 2000A 4-POLE A.C.B. 503(D1)
BUS SECTION 2000A 4-POLE A.C.B. 505(D2)
1600A 4-POLE A.C.B. 504(D) N.O.
2000A TPN ACB 501(B2) N.C.
11x800mm² 1/C Cu PVC/PVC
P2
11kV/430V 1500kVA TRANSFORMER NO. S02

Reference Drawings



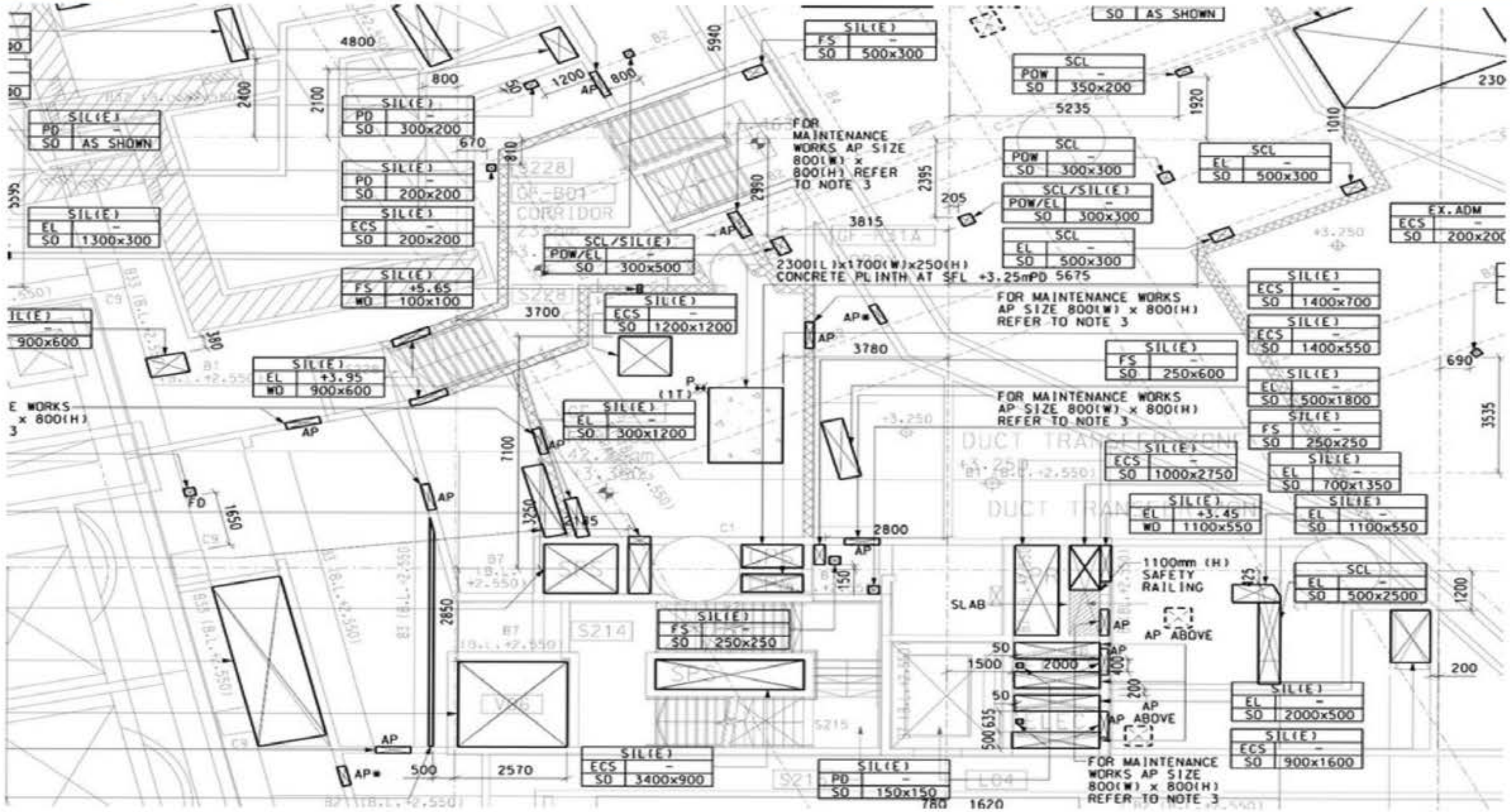
3D Documentation



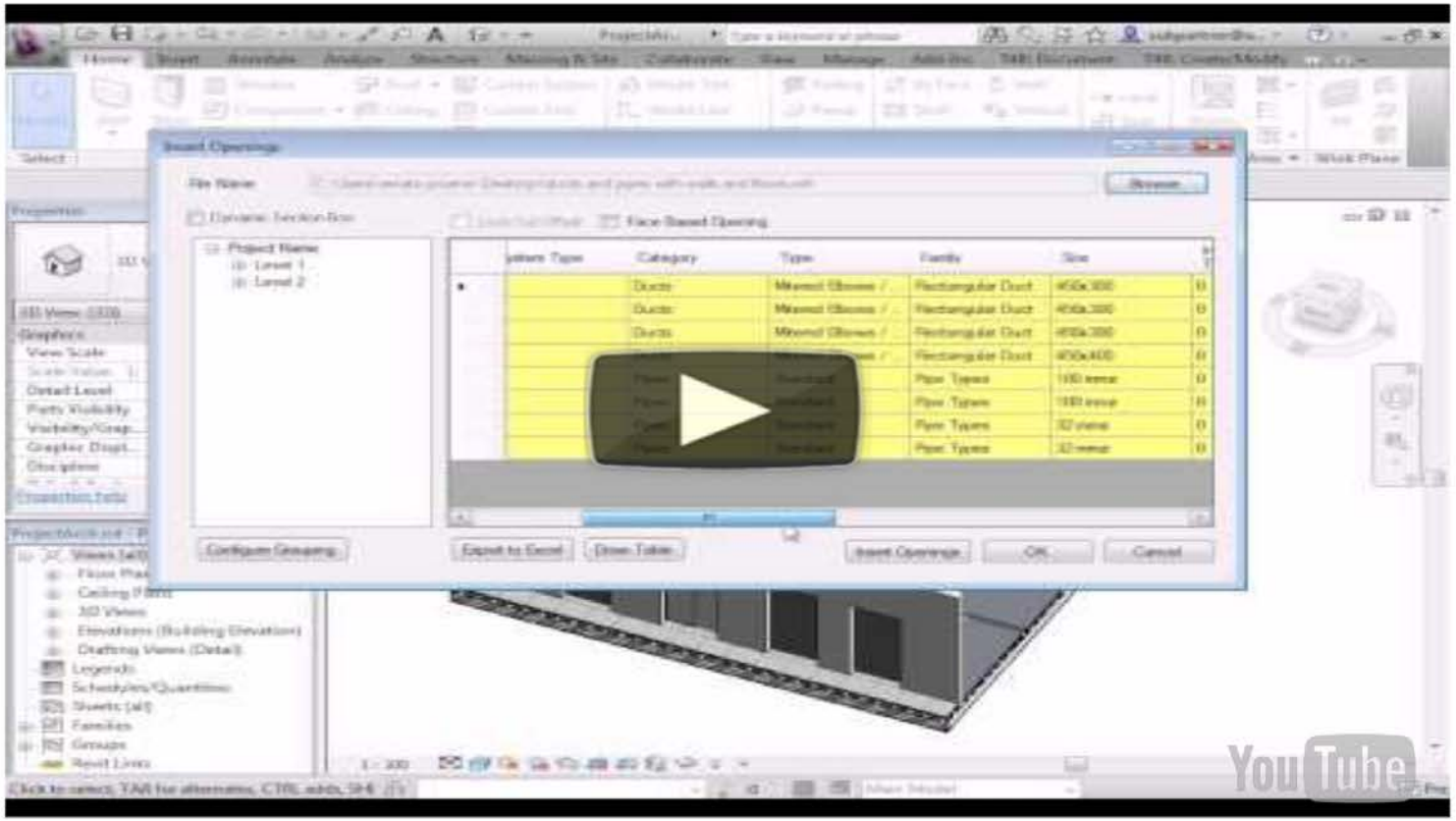
Perspective in tender document?
Why not?

Construction drawings

Combined Services Drawings CSDCo-ordination of di

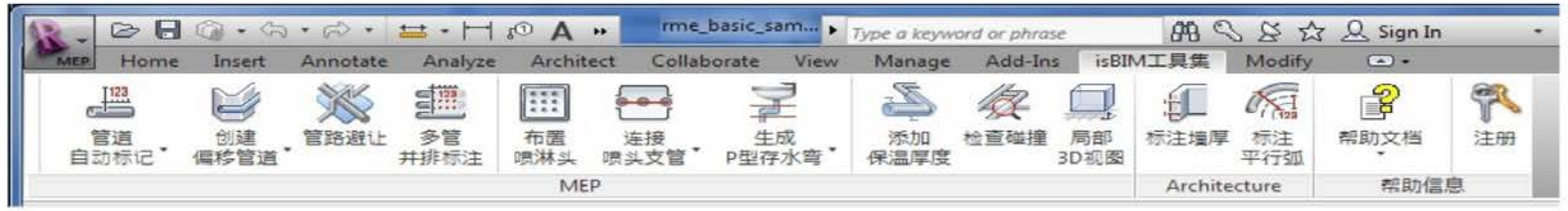


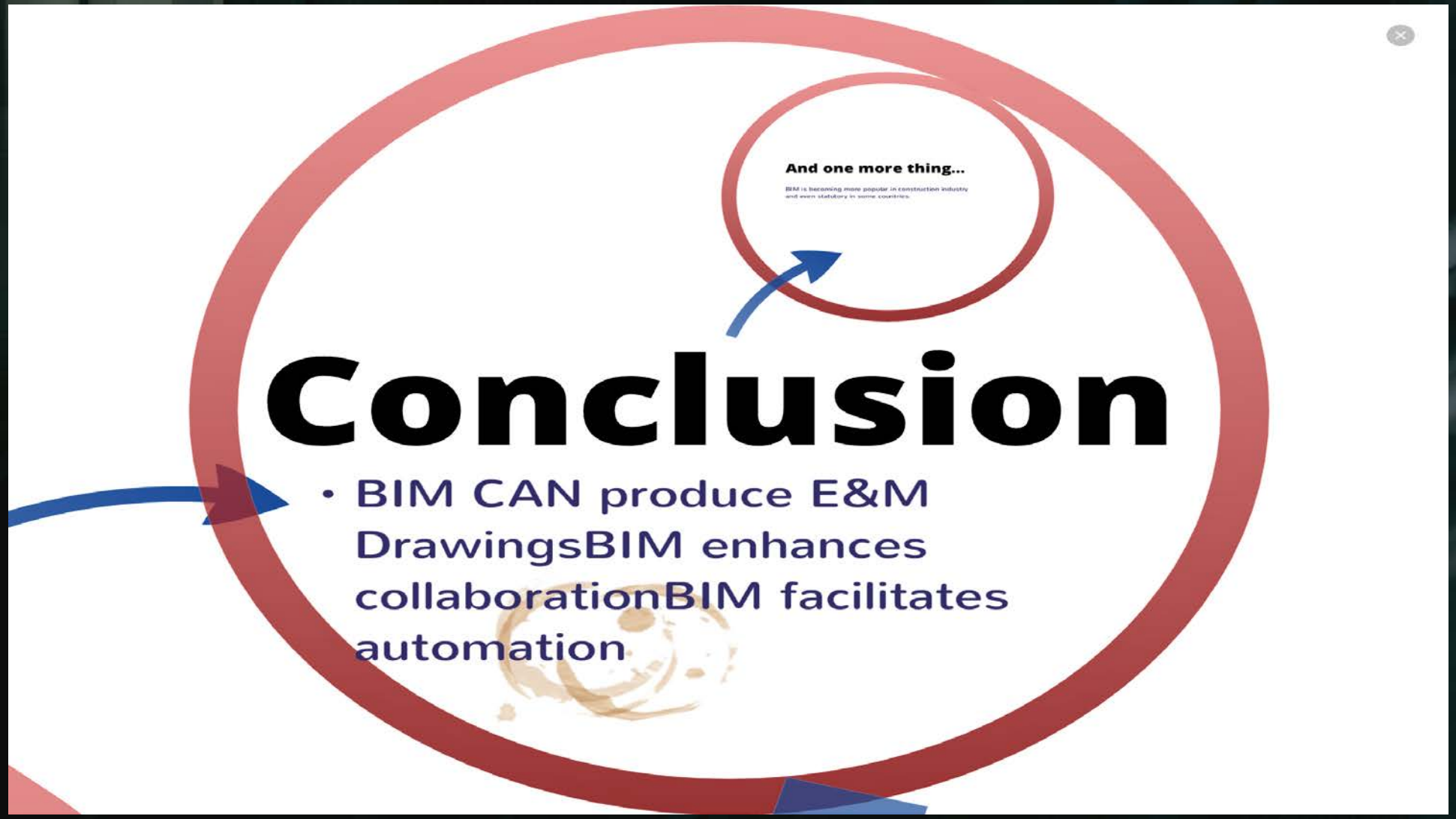
FOR MAINTENANCE WORKS AP SIZE 800(W) x 800(H) REFER TO NOTE 3
2300(L)x1700(W)x250(H) CONCRETE PLINTH AT SFL +3.25mPD
FOR MAINTENANCE WORKS AP SIZE 800(W) x 800(H) REFER TO NOTE 3
FOR MAINTENANCE WORKS AP SIZE 800(W) x 800(H) REFER TO NOTE 3
1100mm (H) SAFETY RAILING
AP ABOVE
FOR MAINTENANCE WORKS AP SIZE 800(W) x 800(H) REFER TO NOTE 3
GF-B01 CORRIDOR
DUCT TRANSFER ZONE
SLAB
SIL(E)
SCL
SCL/SIL(E)
EX.ADM


Insert Openings
Face Based Opening
Project Name
Level 1
Level 2
Category
Type
Family
Size
Ducts
Pipes
Pipe Types
Configure Grouping
Export to Excel
Draw Tables
Insert Openings
OK
Cancel
YouTube

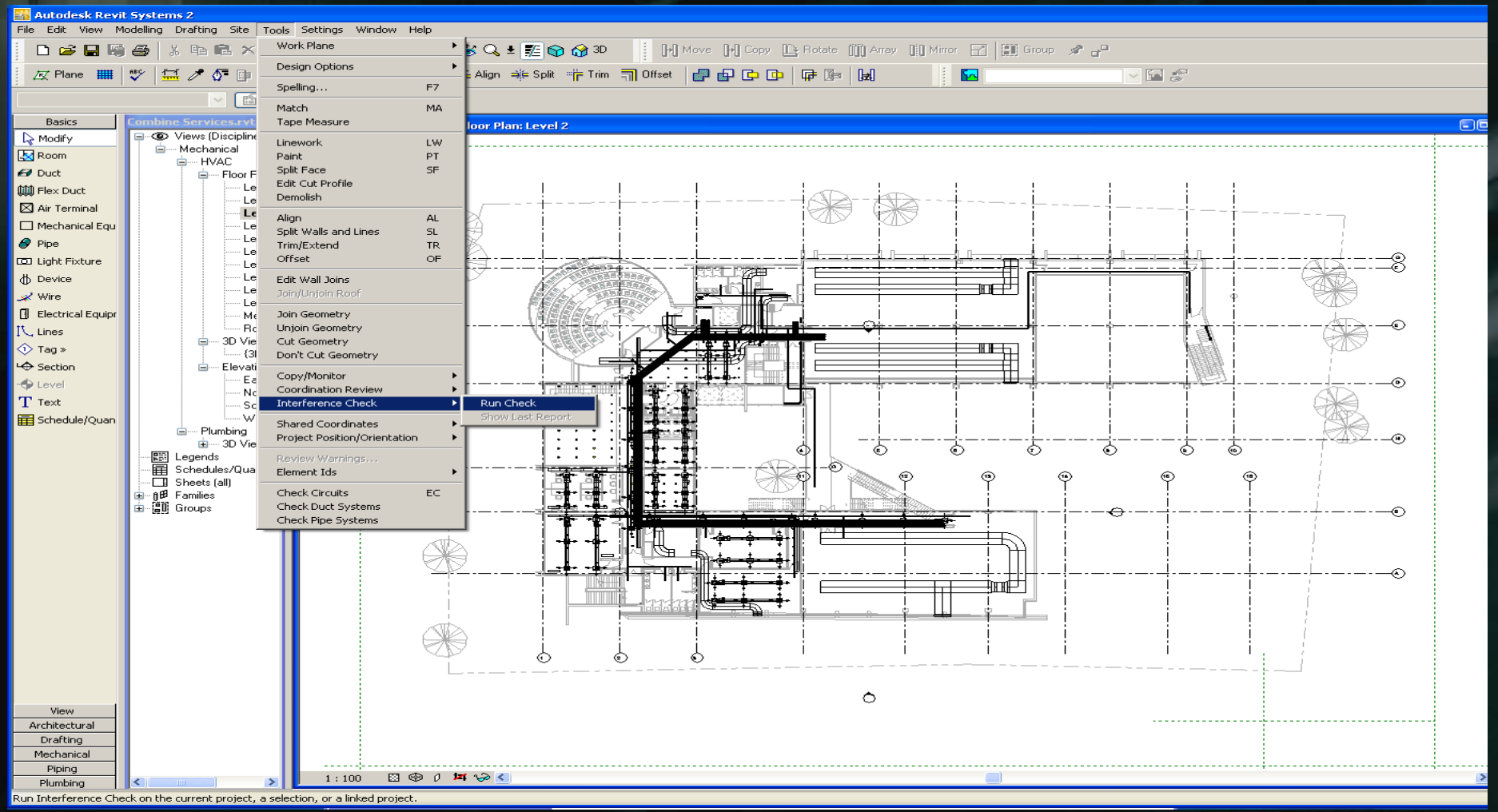
Futher Development ....

Automated Design

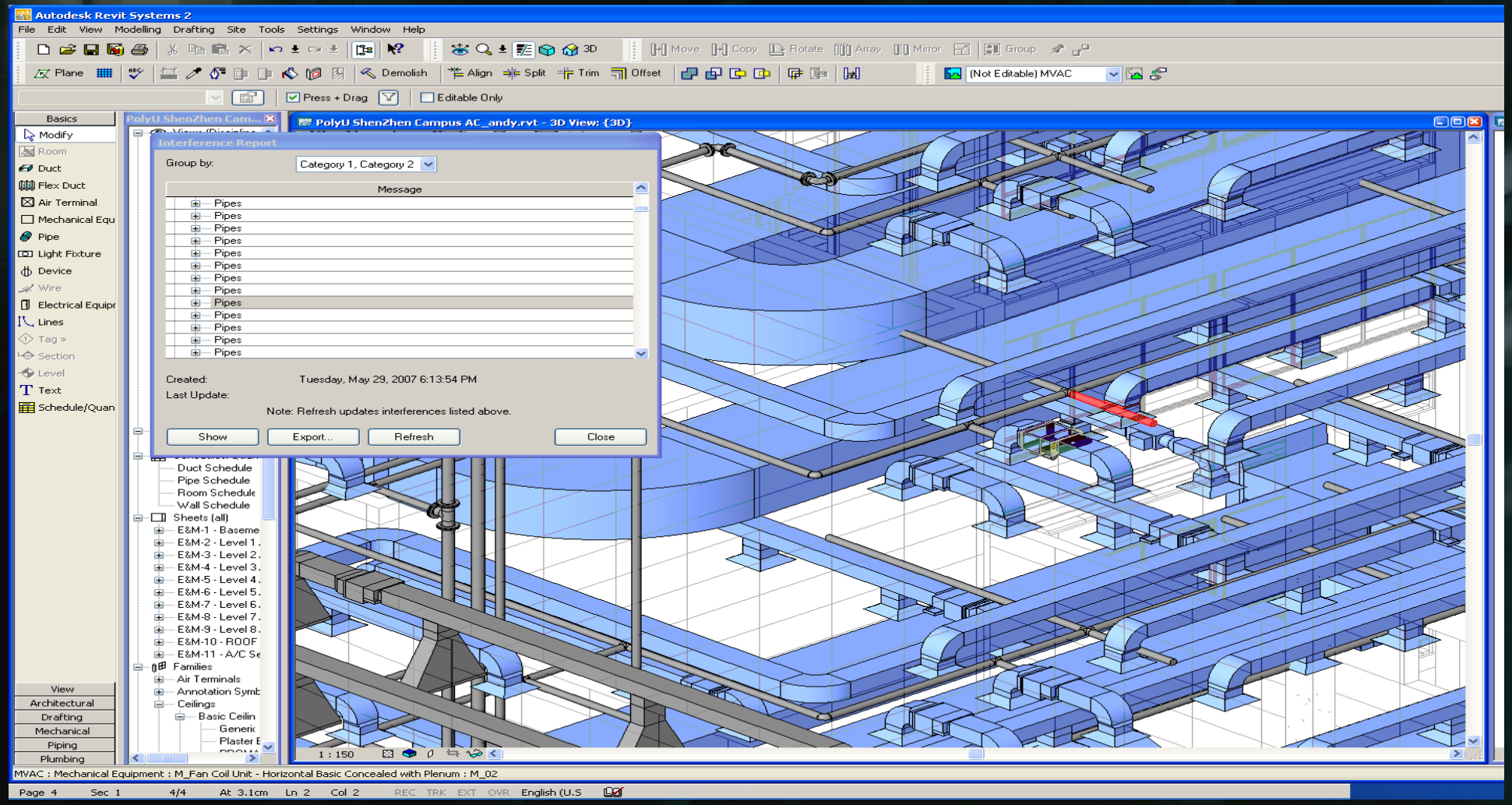



And one more thing...
BIM is becoming more popular in construction industry and even statutory in some countries.
Conclusion
• BIM CAN produce E&M DrawingsBIM enhances collaborationBIM facilitates automation

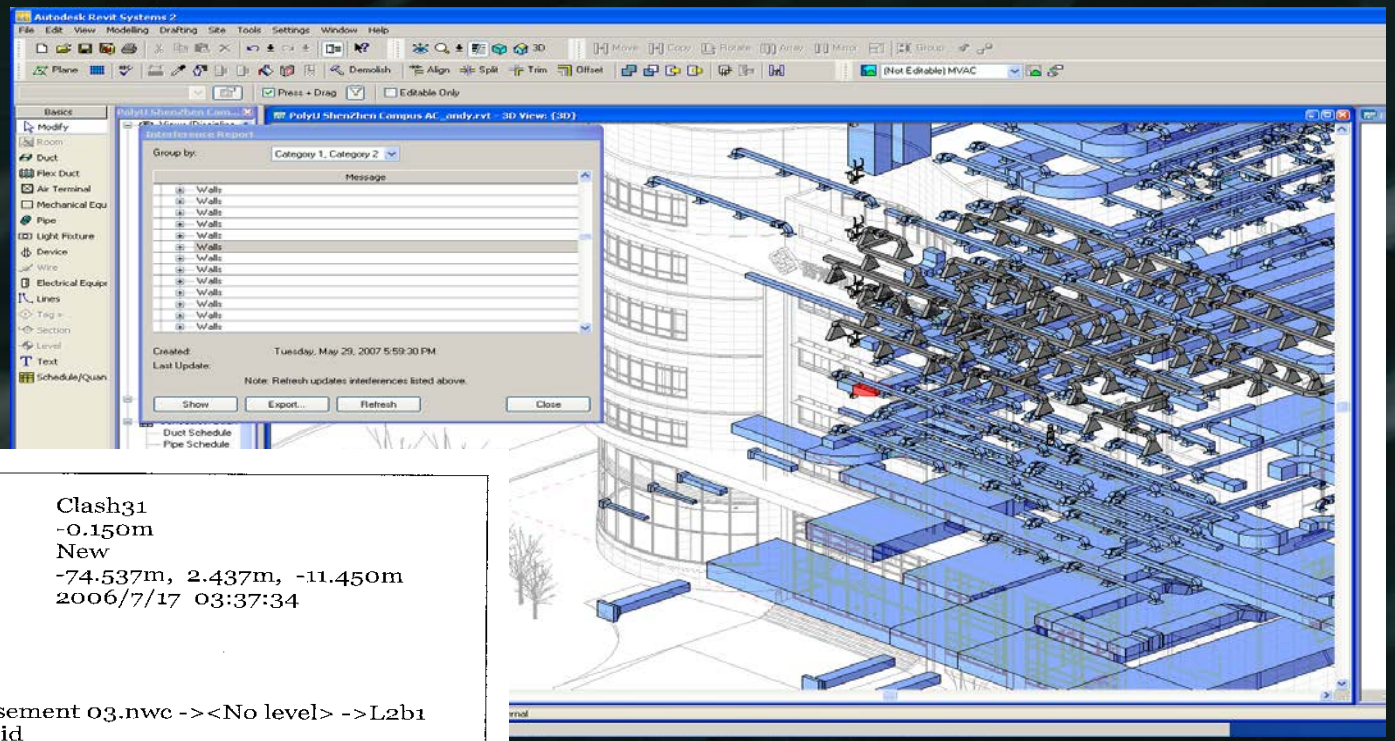
CLASH ANALYSIS

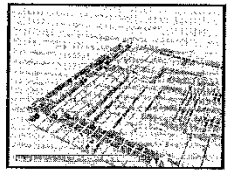


CLASH ANALYSIS



CLASH ANALYSIS REPORT





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

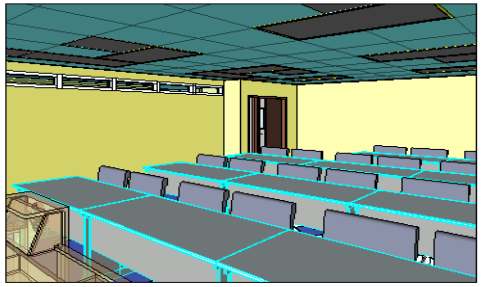
Item 1

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

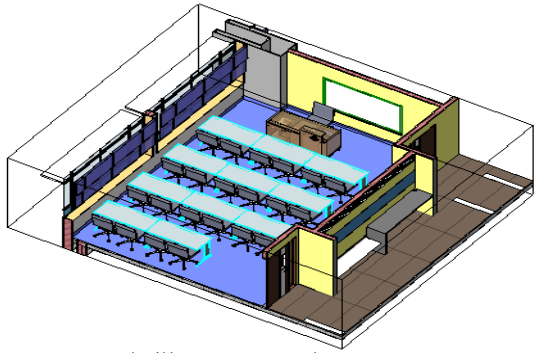
Item 2

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

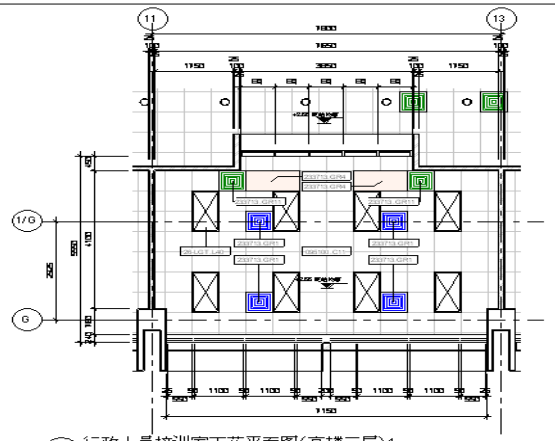
PRODUCTION OF CONSTRUCTION DRAWINGS



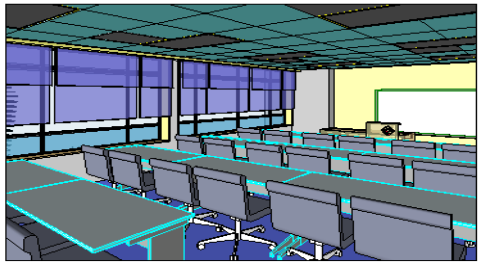
6 行政人员培训室立体示意图2



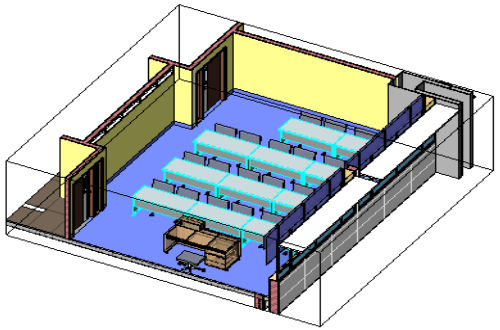
4 行政人员培训室立体剖面示意图2



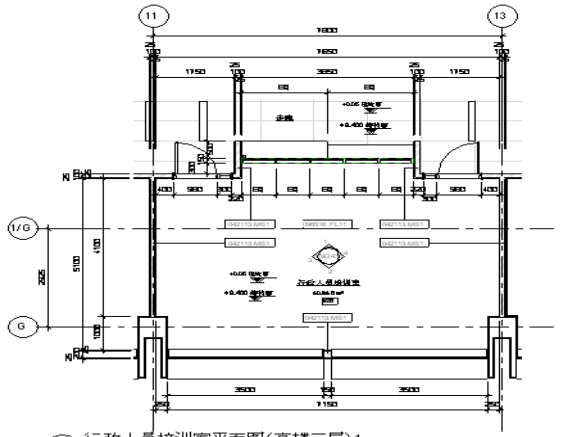
2 行政人员培训室天花平面图(高楼三层)1
1 : 50



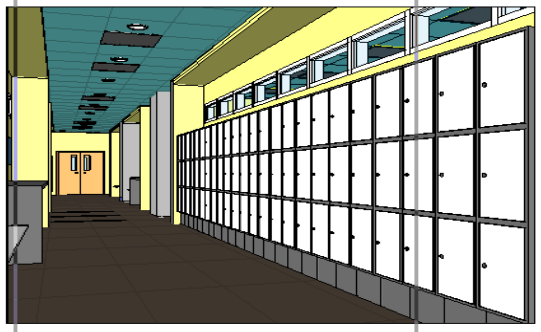
5 行政人员培训室立体示意图1



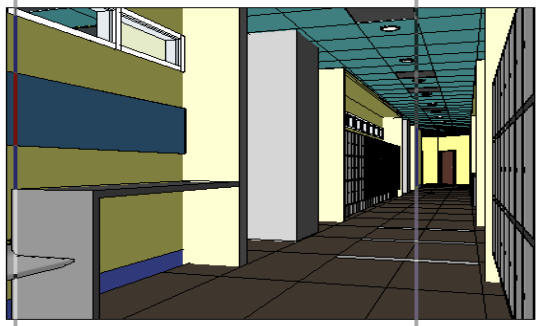
3 行政人员培训室立体剖面示意图1



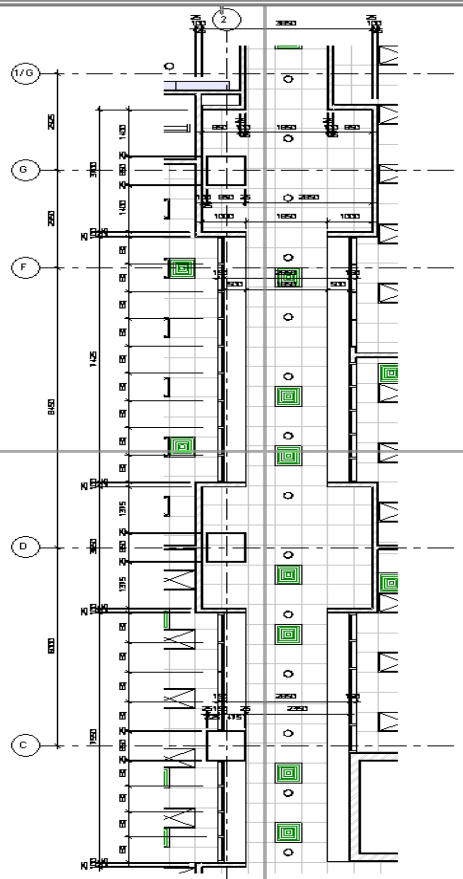
1 行政人员培训室平面图(高楼三层)1
1 : 50



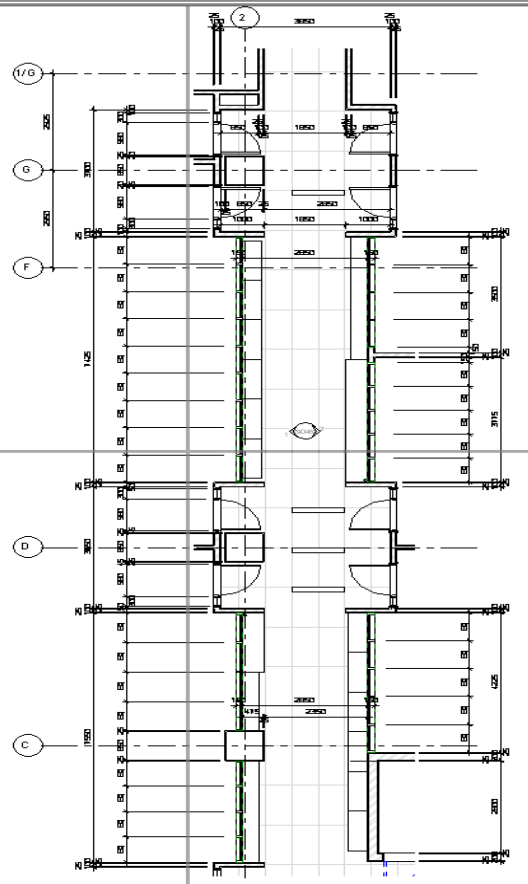
4 走廊立体示意图(低楼三至四层)2



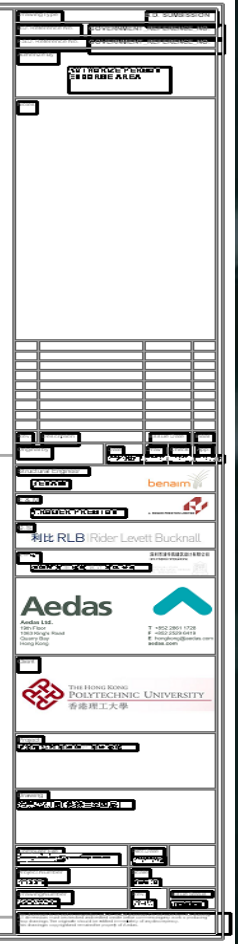
3 走廊立体示意图(低楼三至四层)1

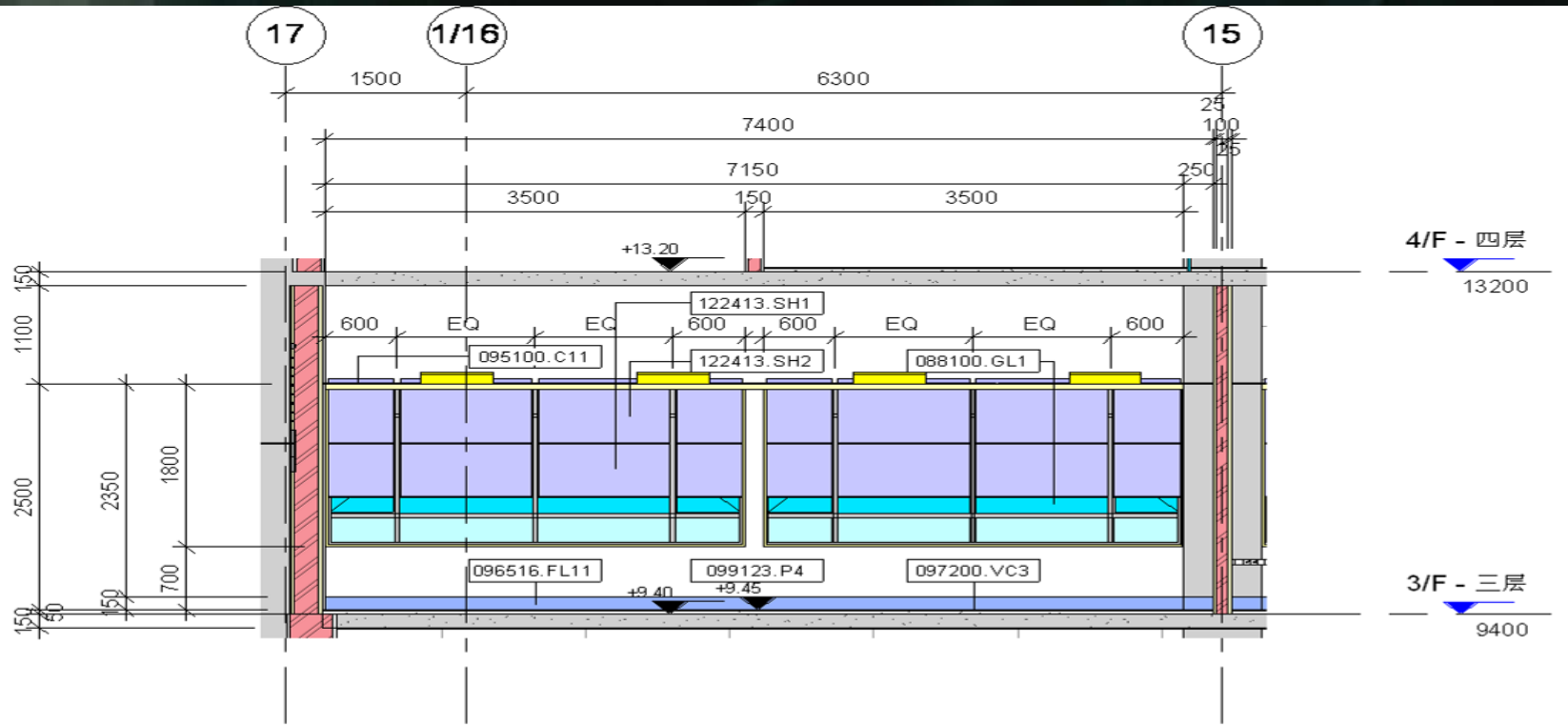


2 走廊天花平面图(低楼三至四层)
1 : 50



1 走廊平面图(低楼三至四层)
1 : 50





2 行政人员培训室立面图(高楼三层)6

1 : 50

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

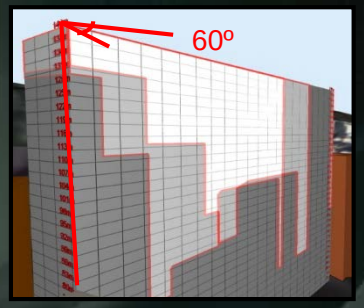
案例一

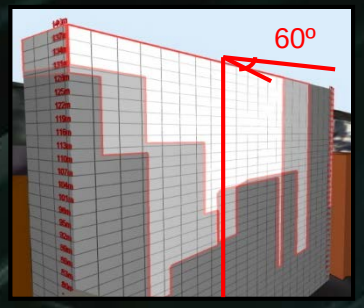
真BIM (设计阶段)

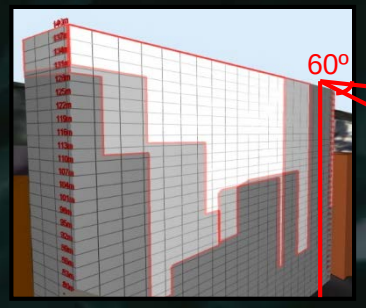
M + I = B (发展成本)

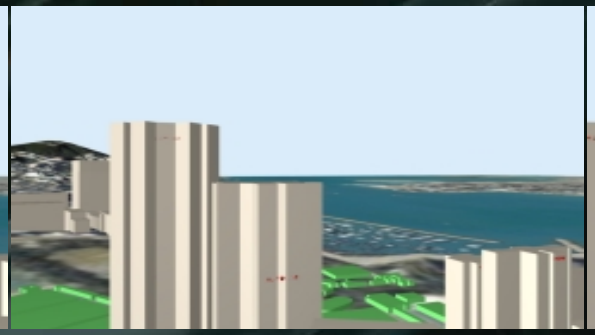
140m

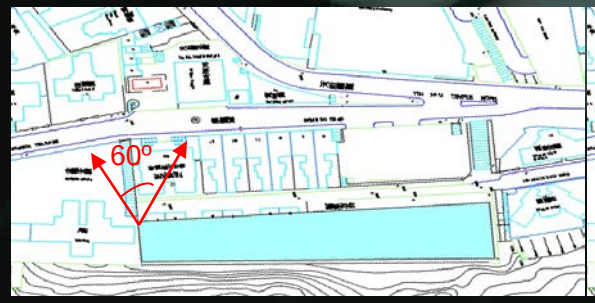
140m
135m
130m
125m
120m
115m
110m
105m
100m
95m
90m
85m
80m

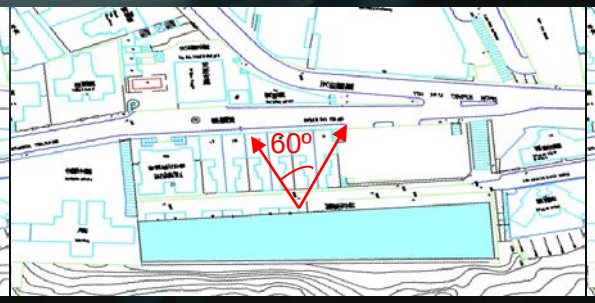






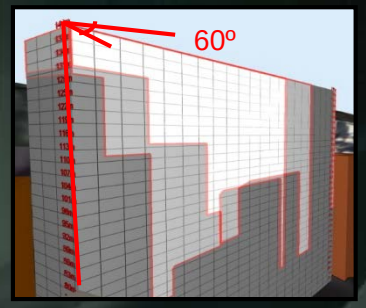


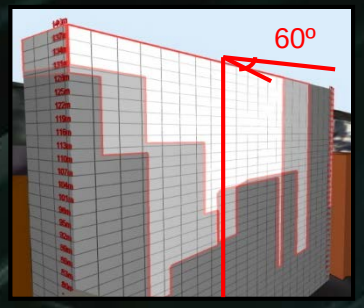


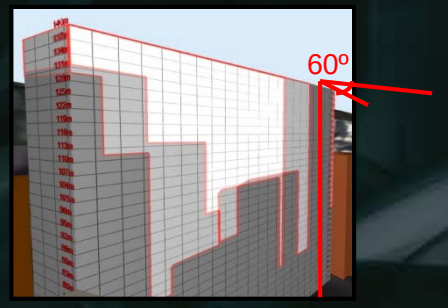


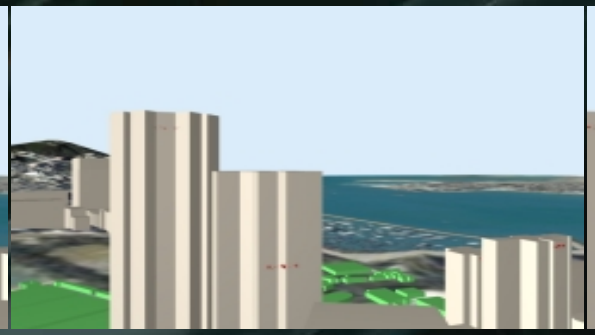
135m

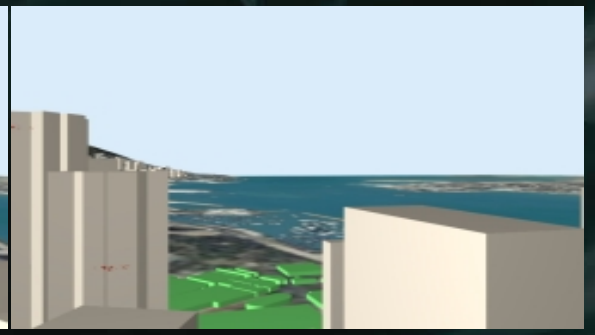
140m
135m
130m
125m
120m
115m
110m
105m
100m
95m
90m
85m
80m

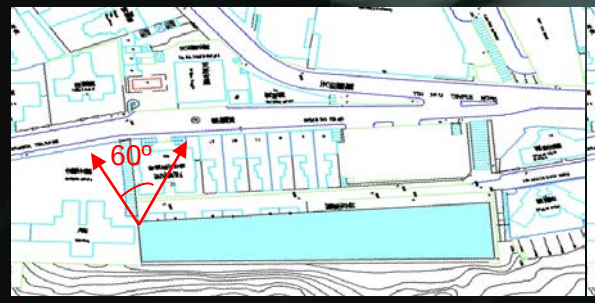


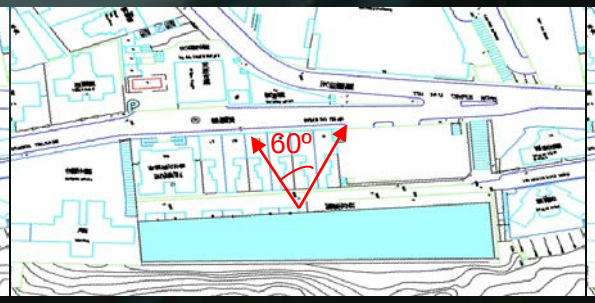








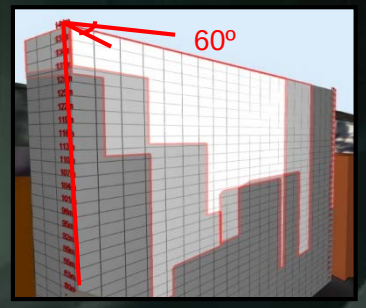


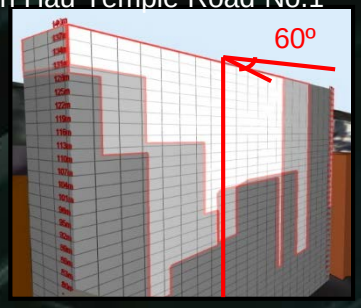


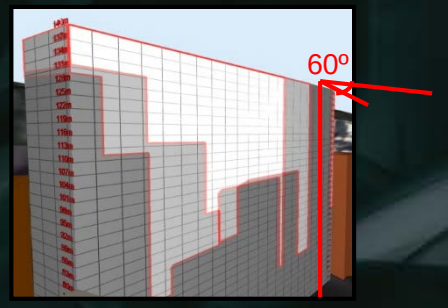
130m

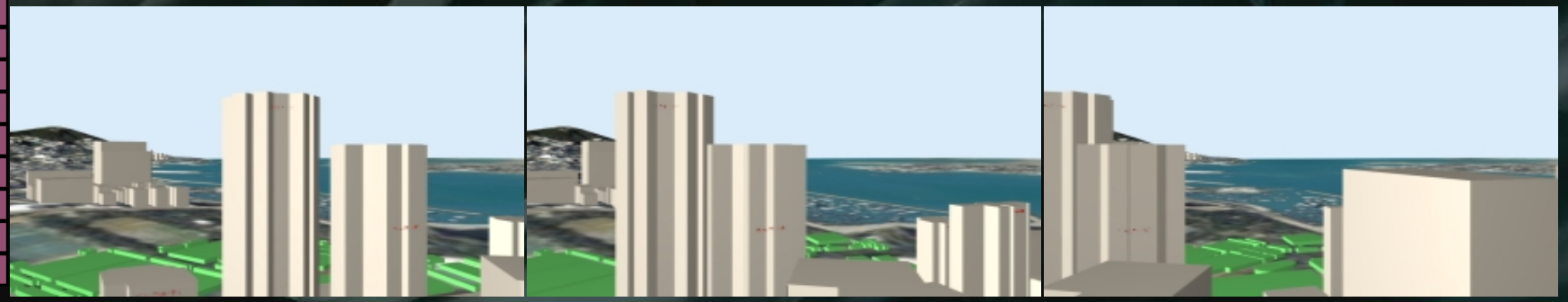
Tin Hau Temple Road No.1

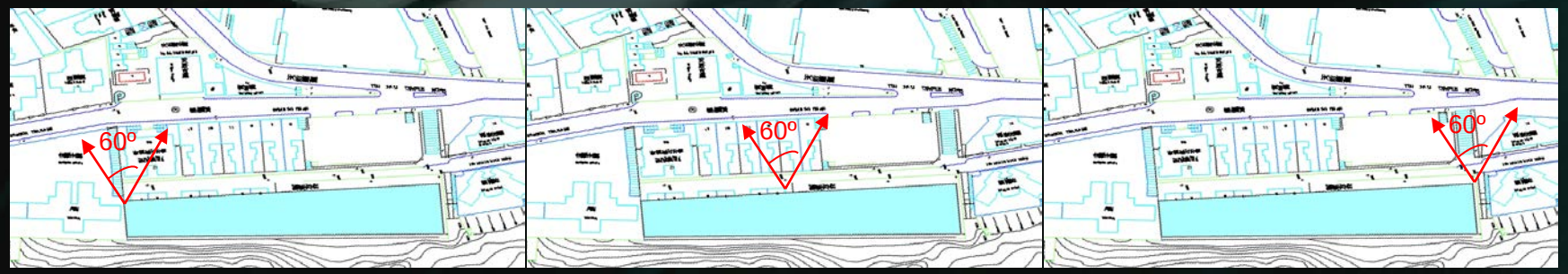
140m
135m
130m
125m
120m
115m
110m
105m
100m
95m
90m
85m
80m











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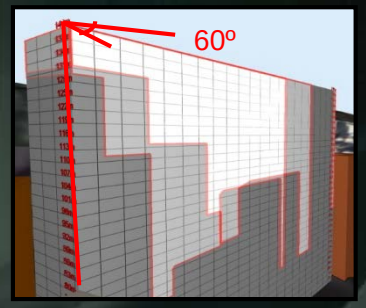

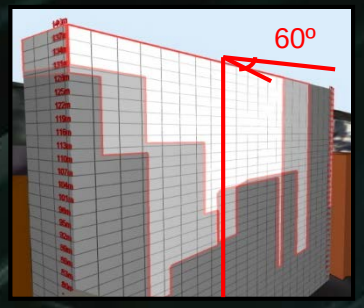

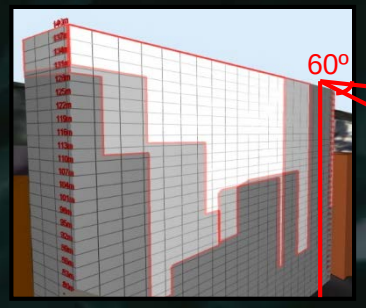

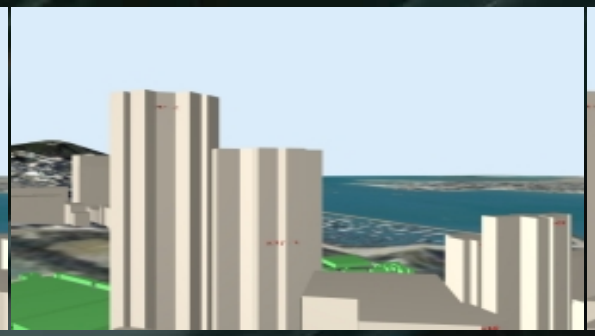

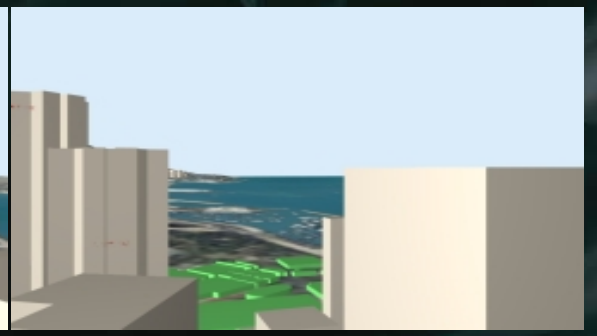

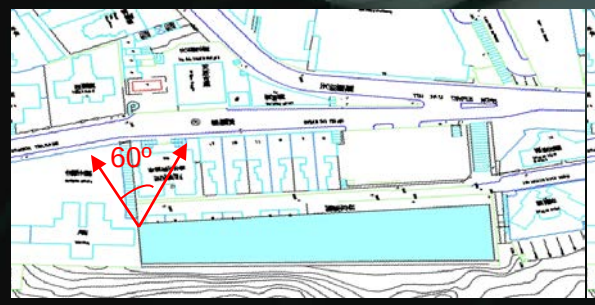

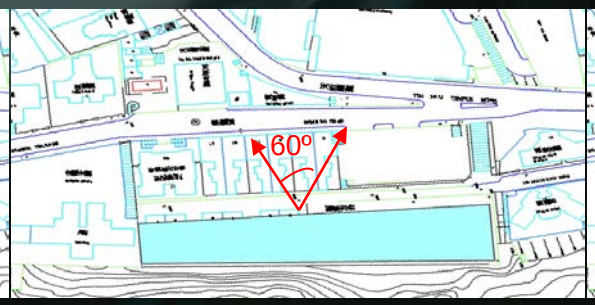

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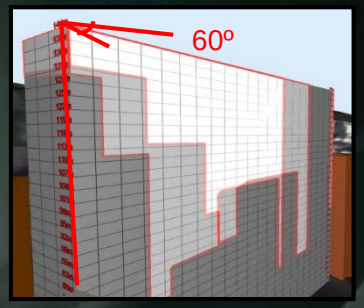

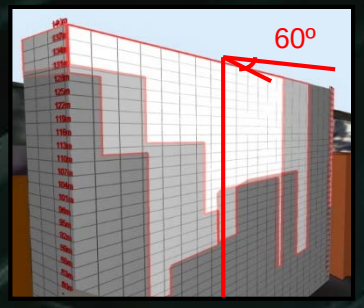

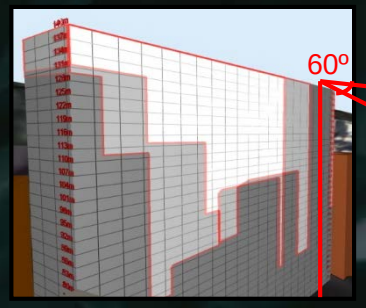

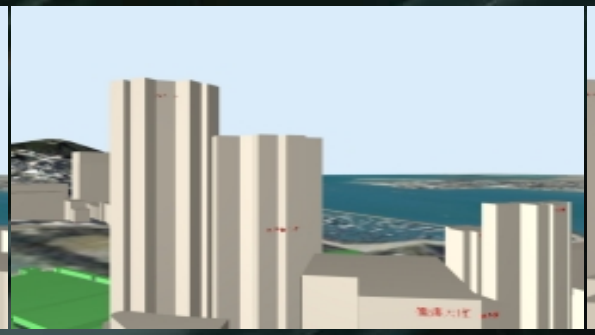

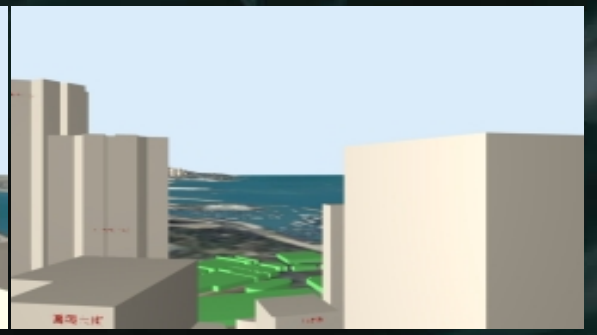

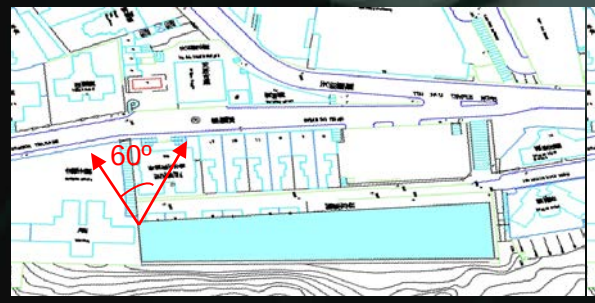

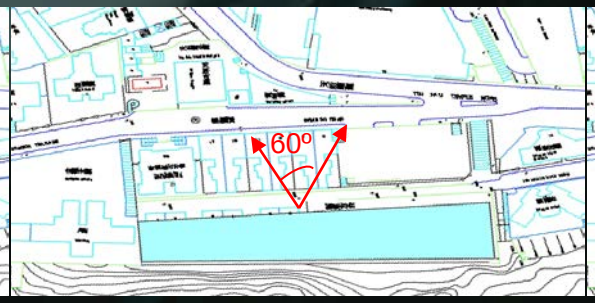

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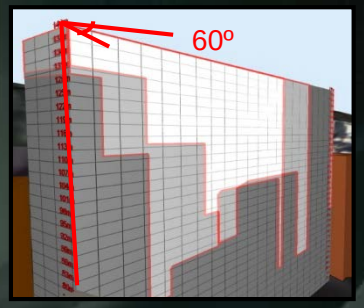

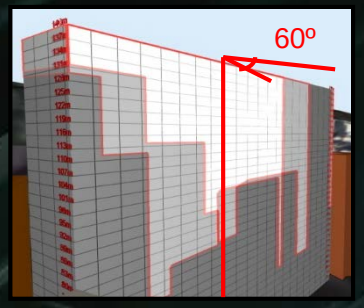

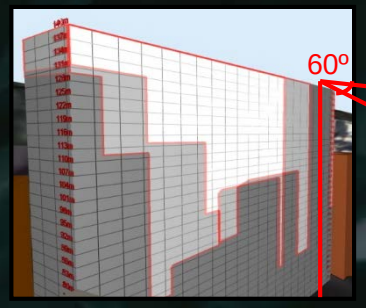

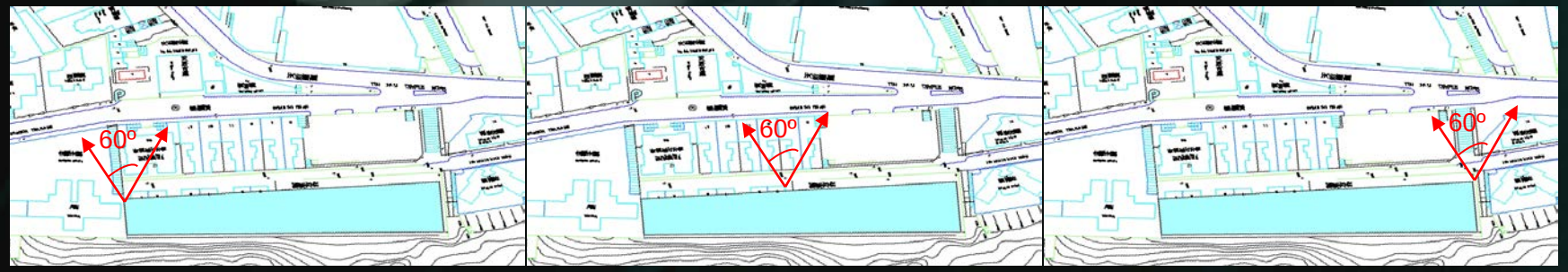

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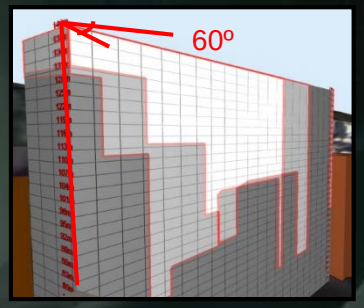
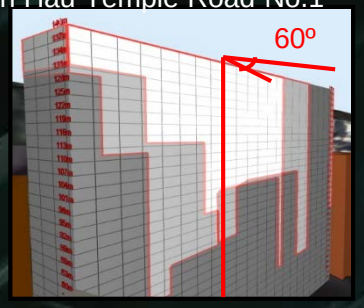
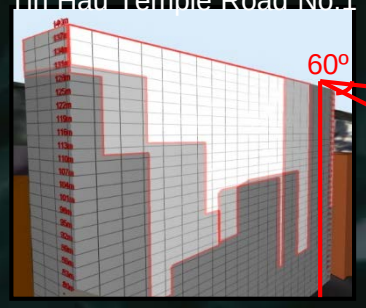
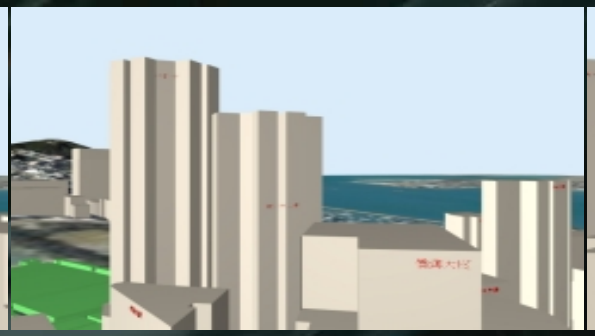


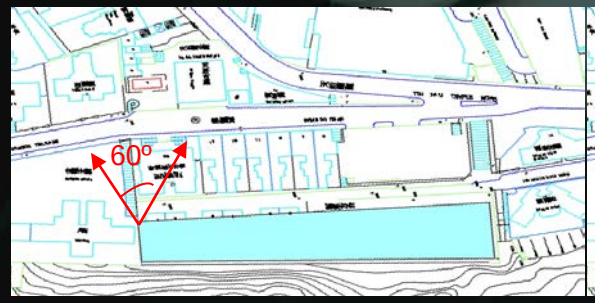
Tin Hau Temple Road No.1

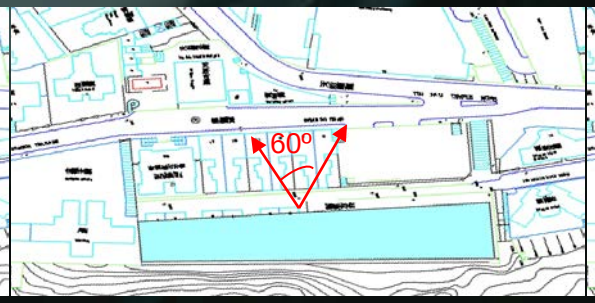


Tin Hau Temple Road No.1









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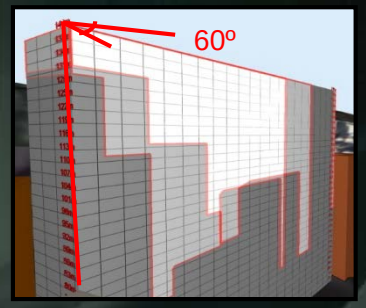

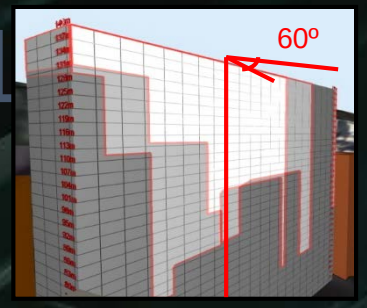

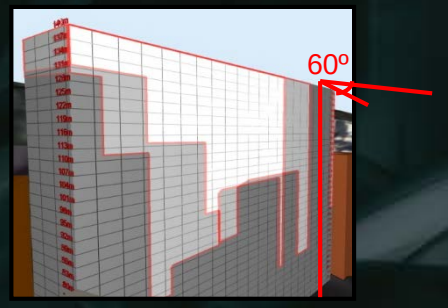

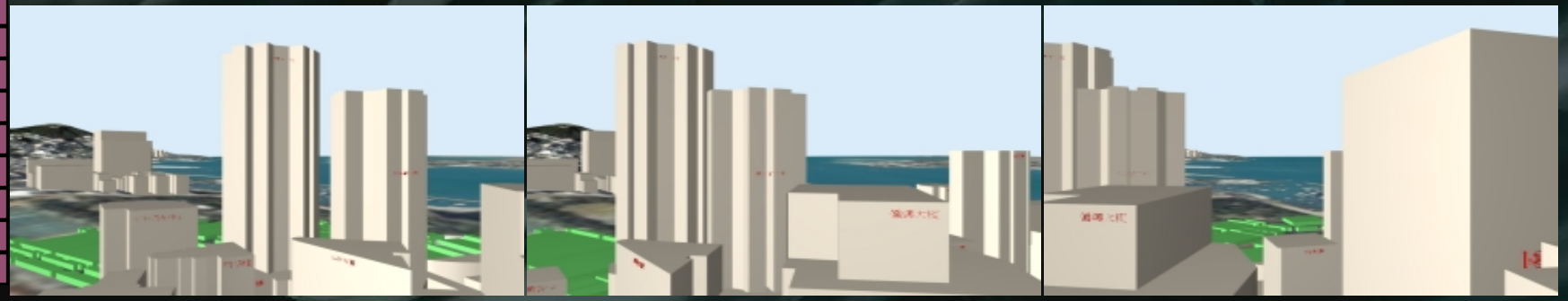

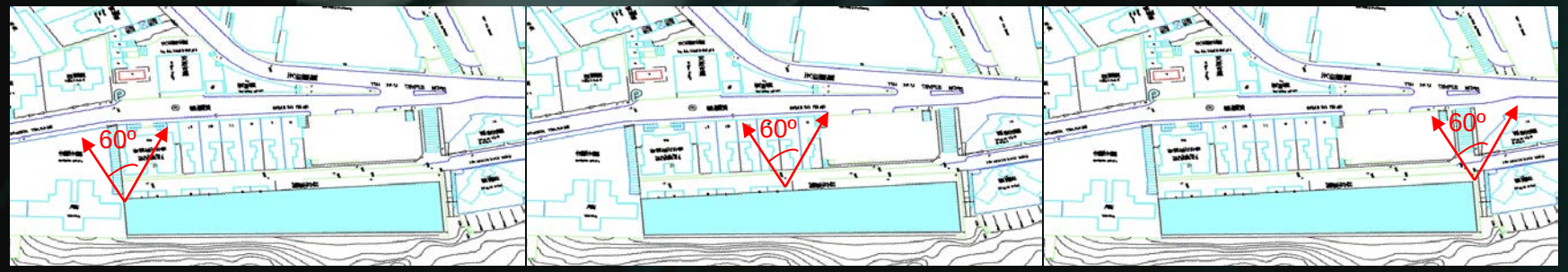

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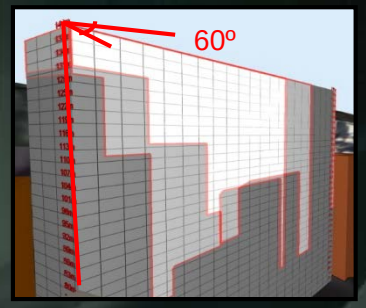

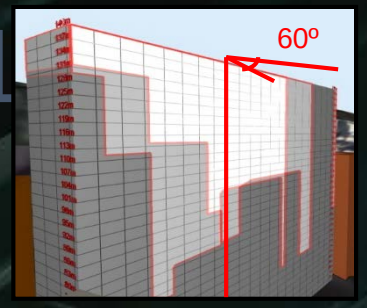

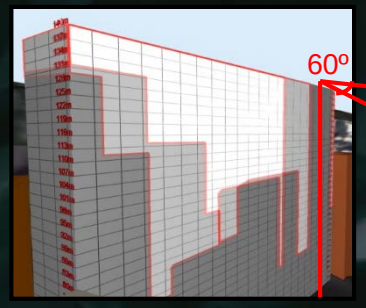

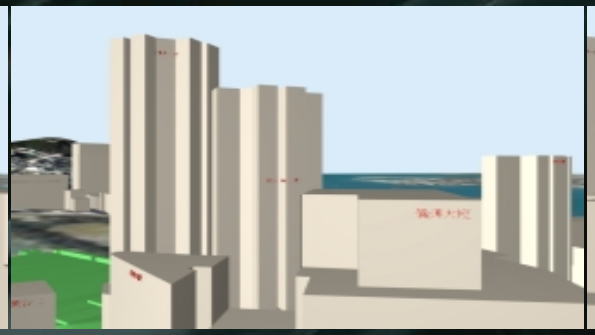

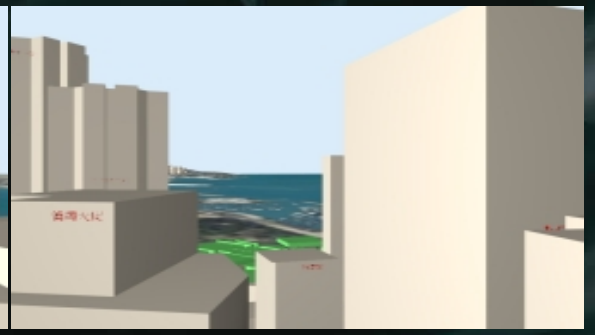

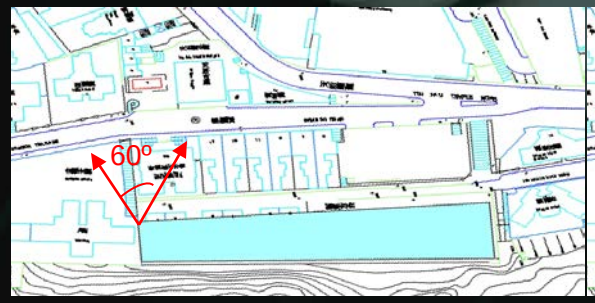

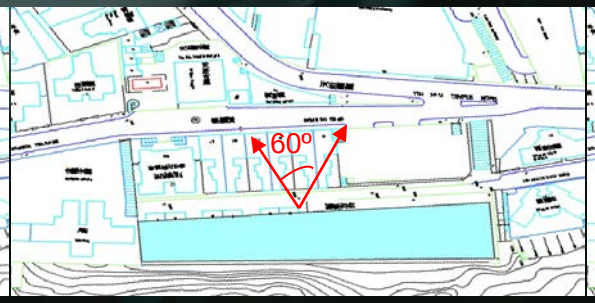

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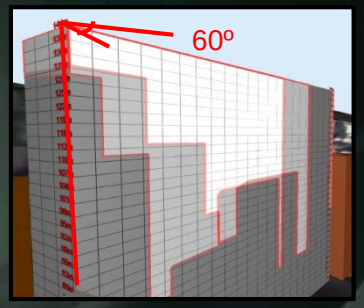

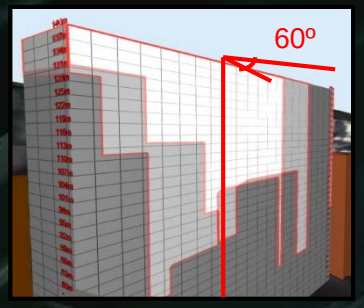

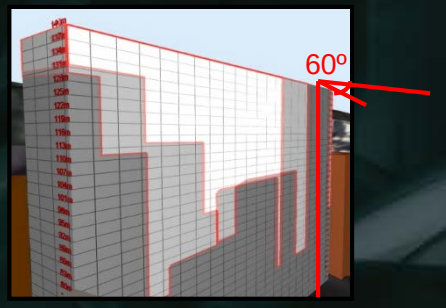

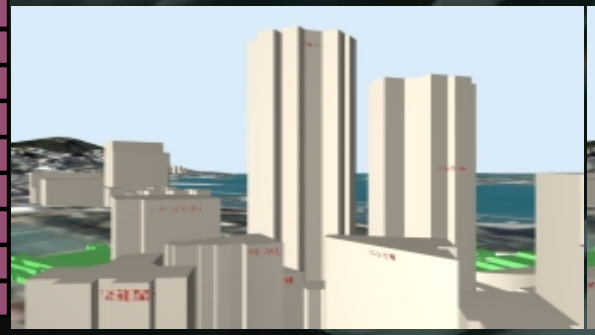

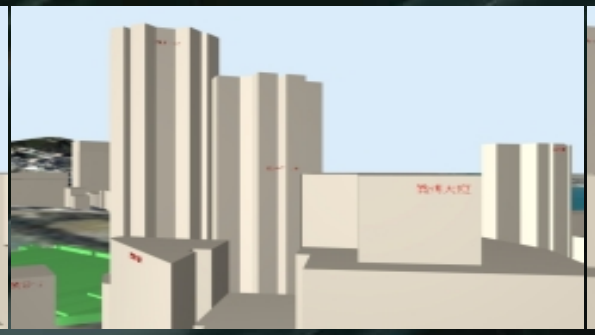

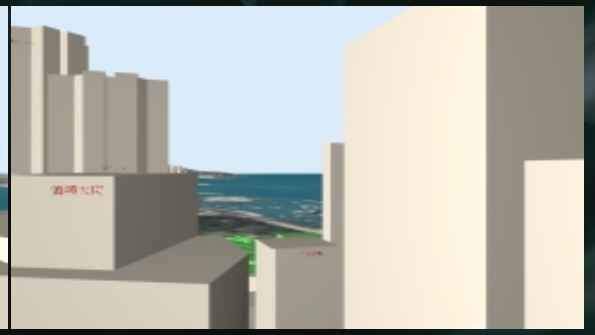

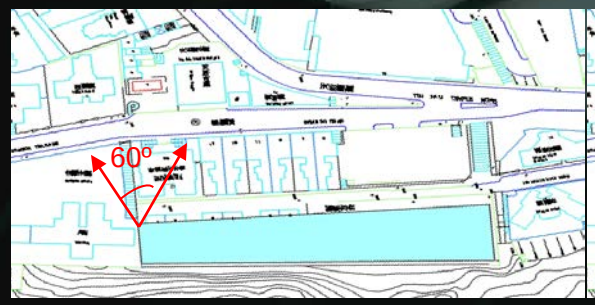

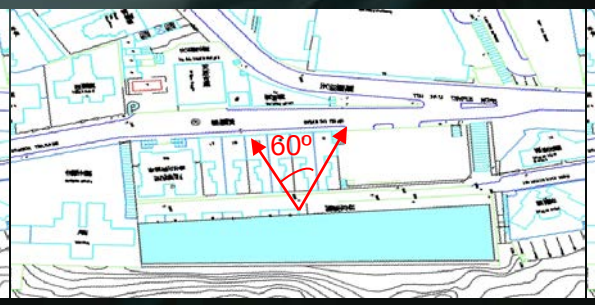

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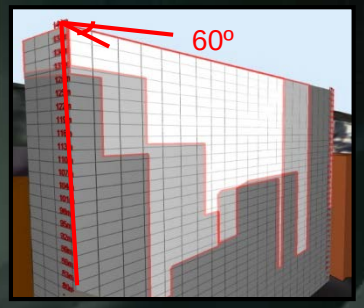

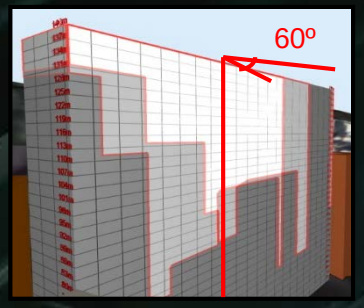

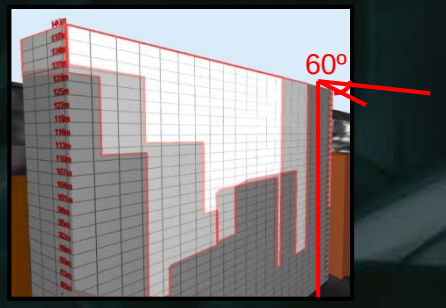

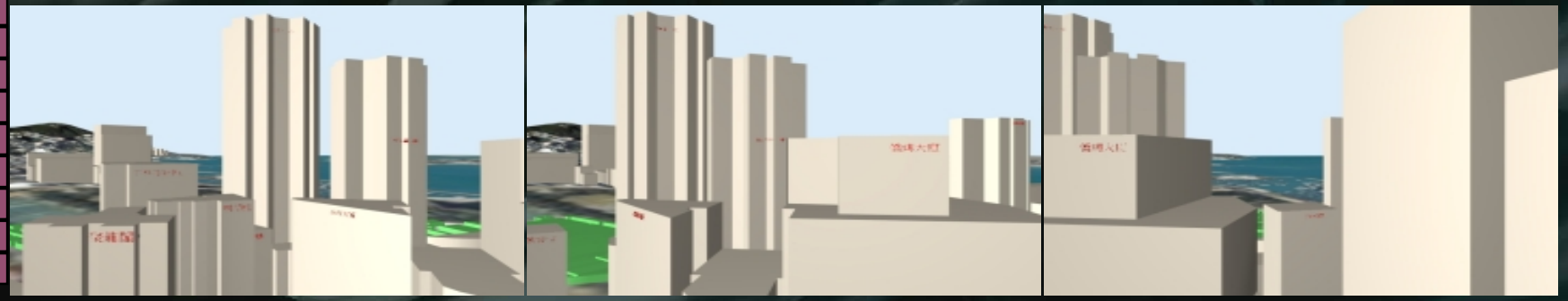

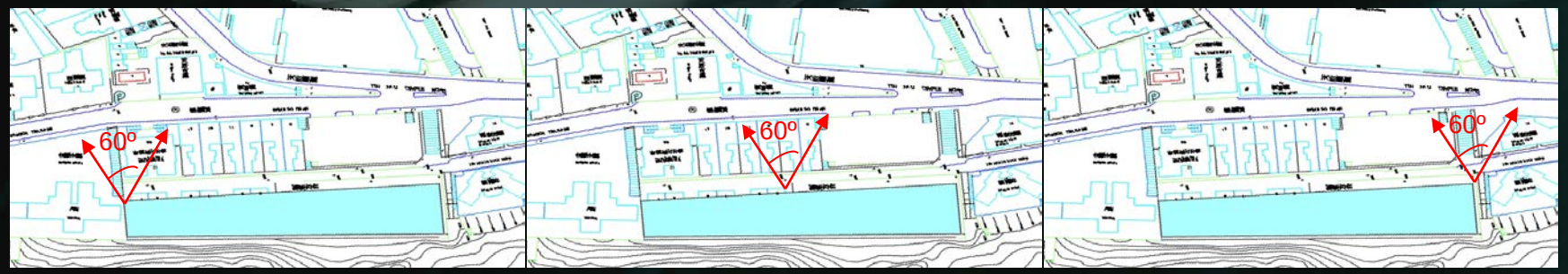

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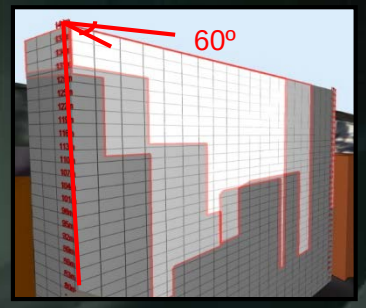
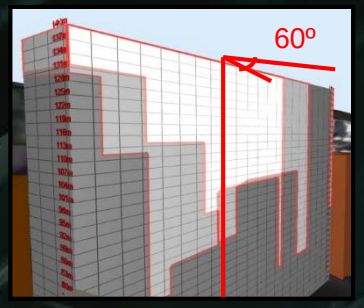
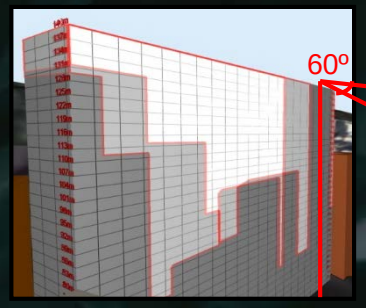
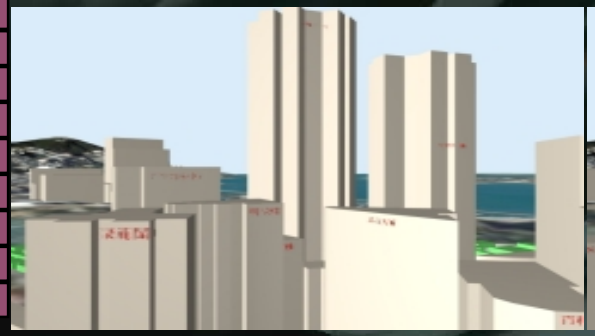
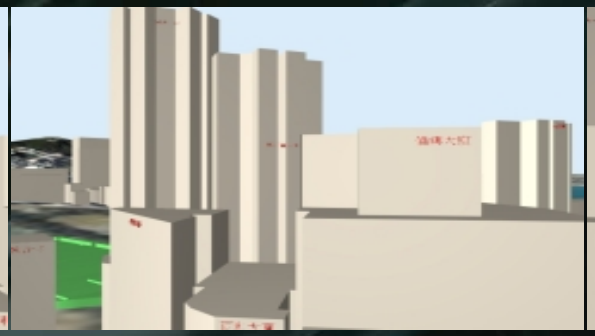
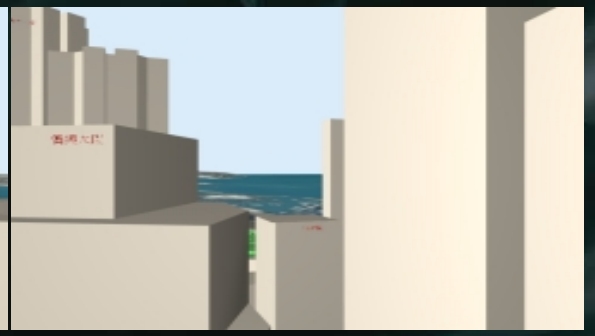


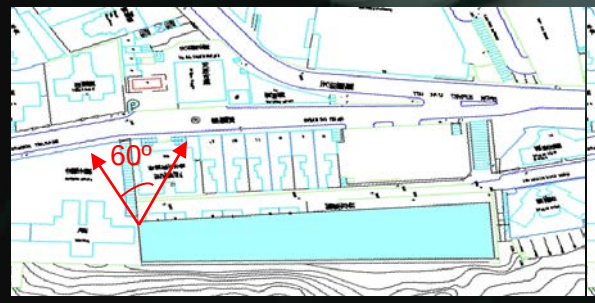


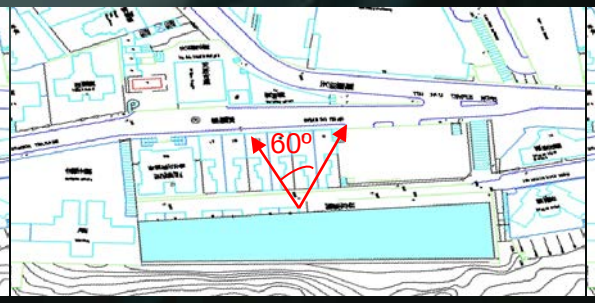






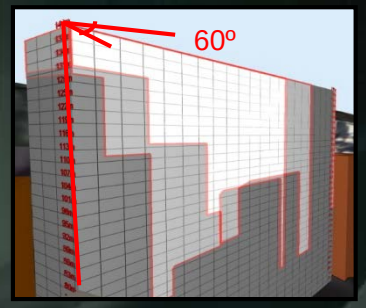


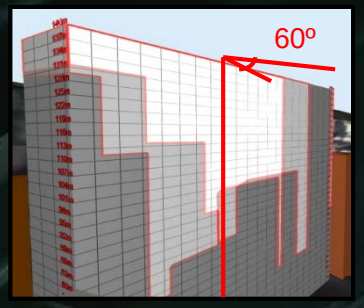


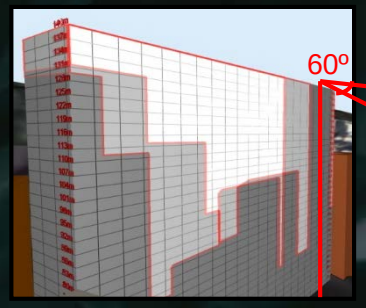


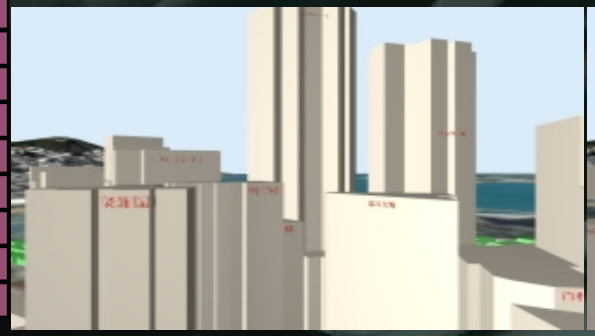
80m

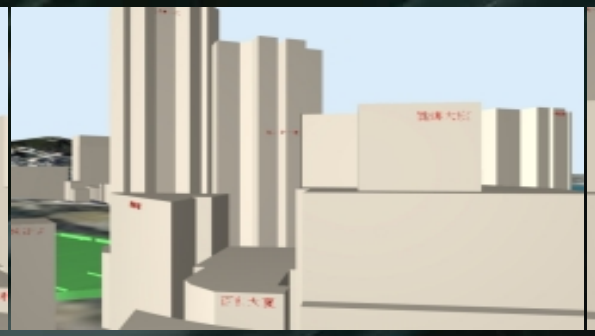
140m
135m
130m
125m
120m
115m
110m
105m
100m
95m
90m
85m
80m

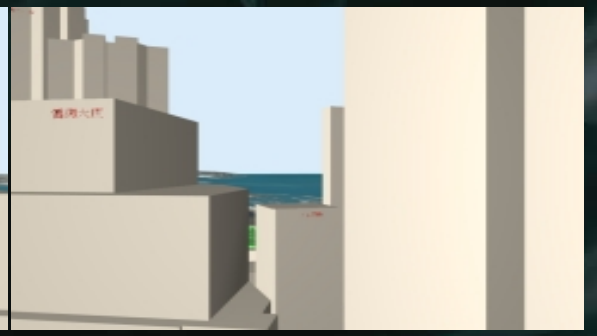


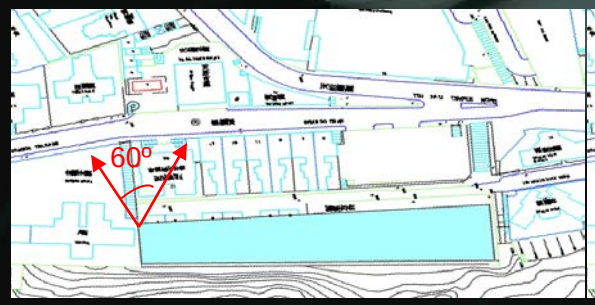


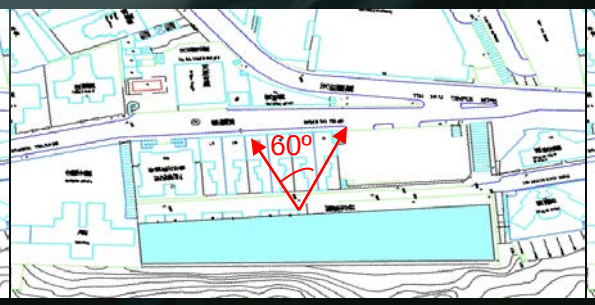




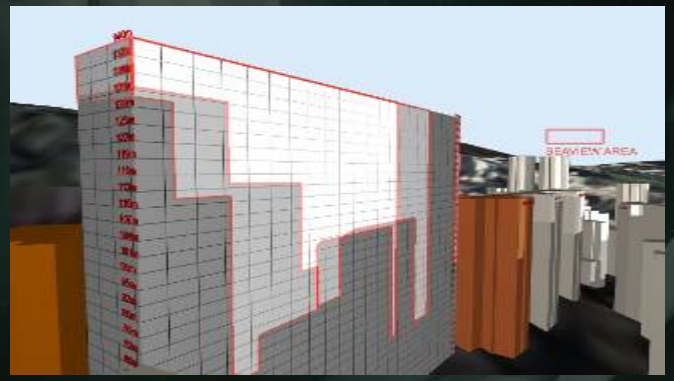


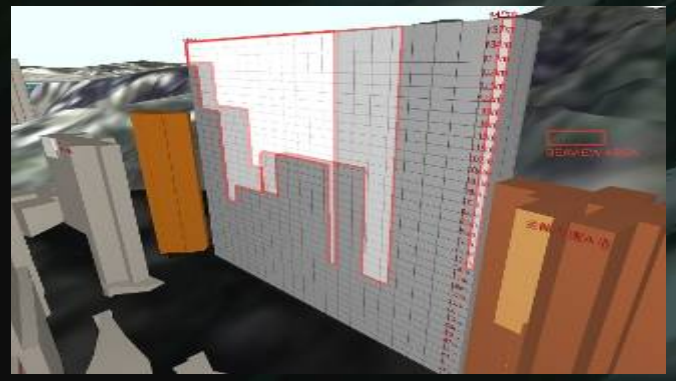


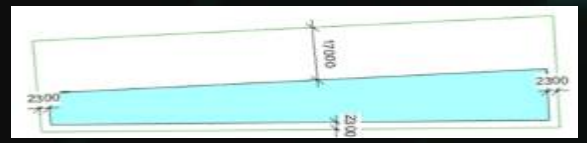




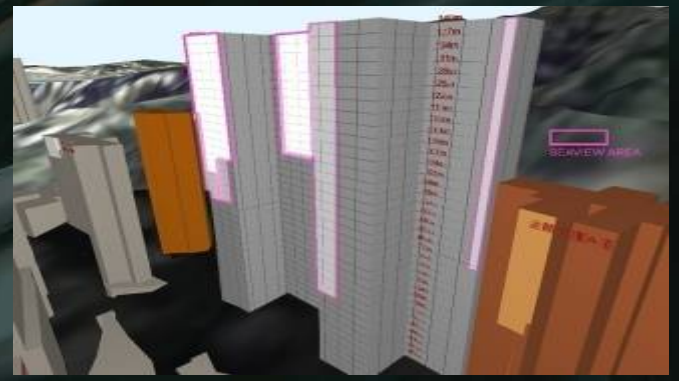
方案 A

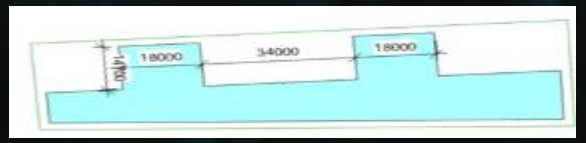






方案 B

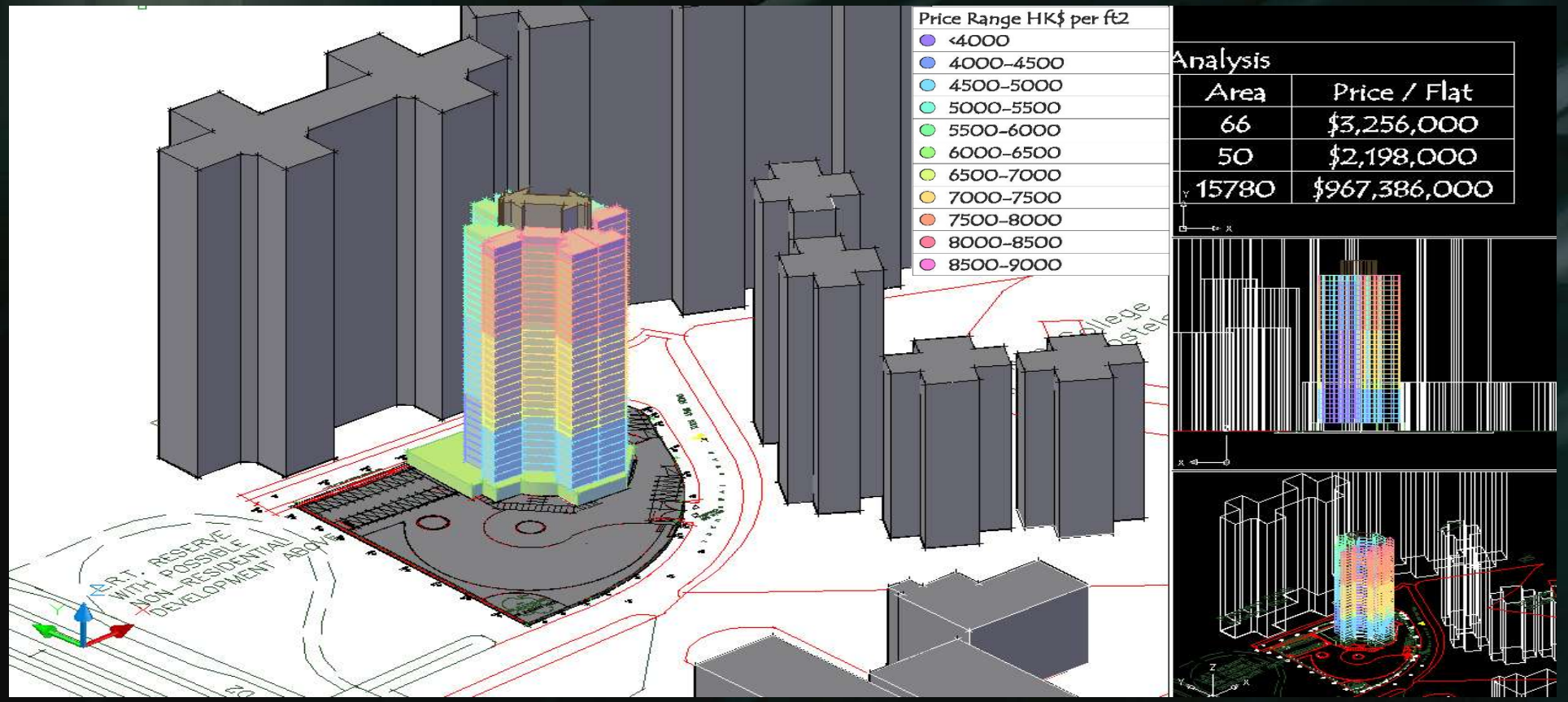


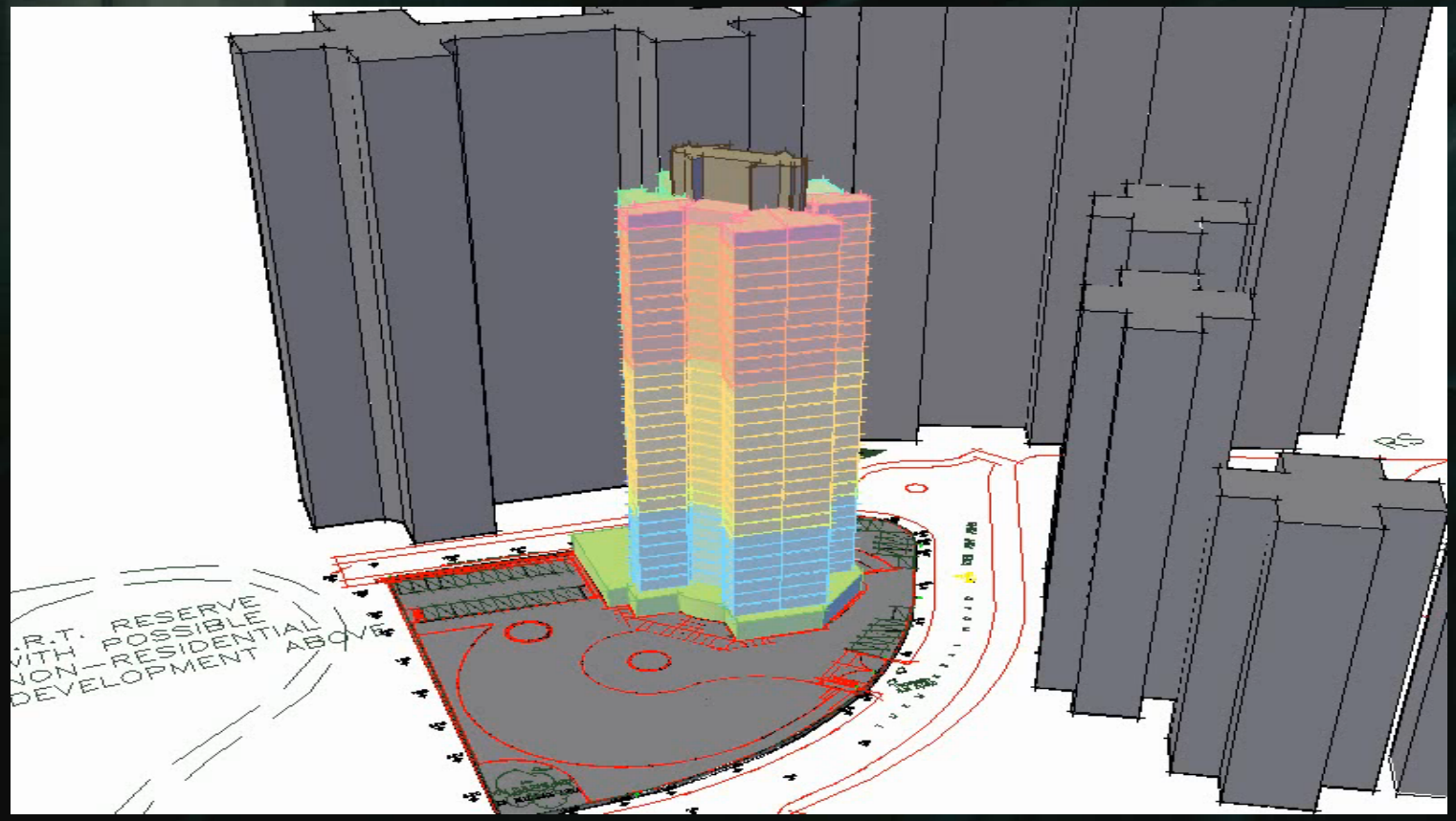


方案 A 海景

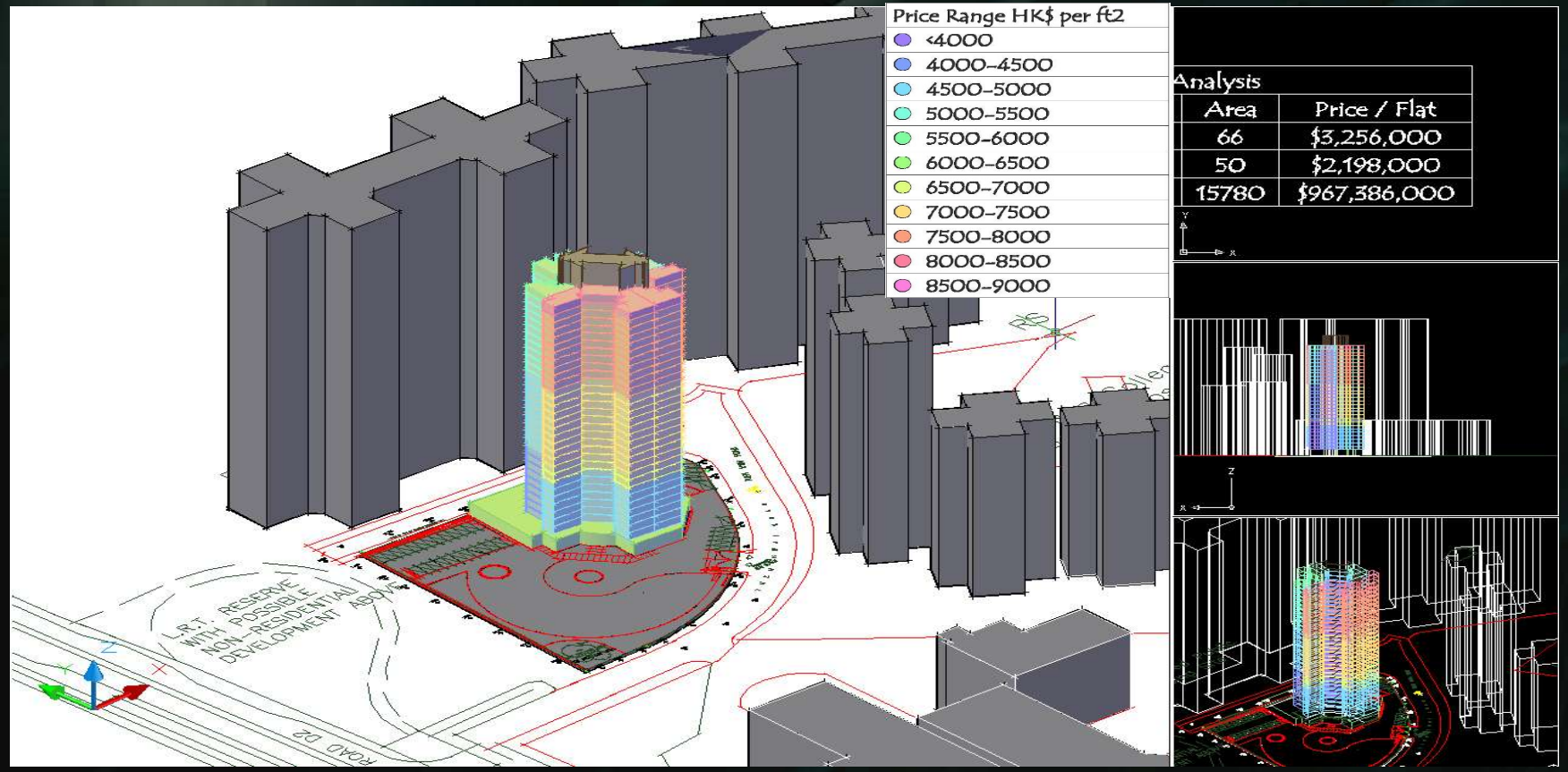
方案 B 海景

可研通設計平台
網上整合佈置,收益,景觀,成本,等等數據

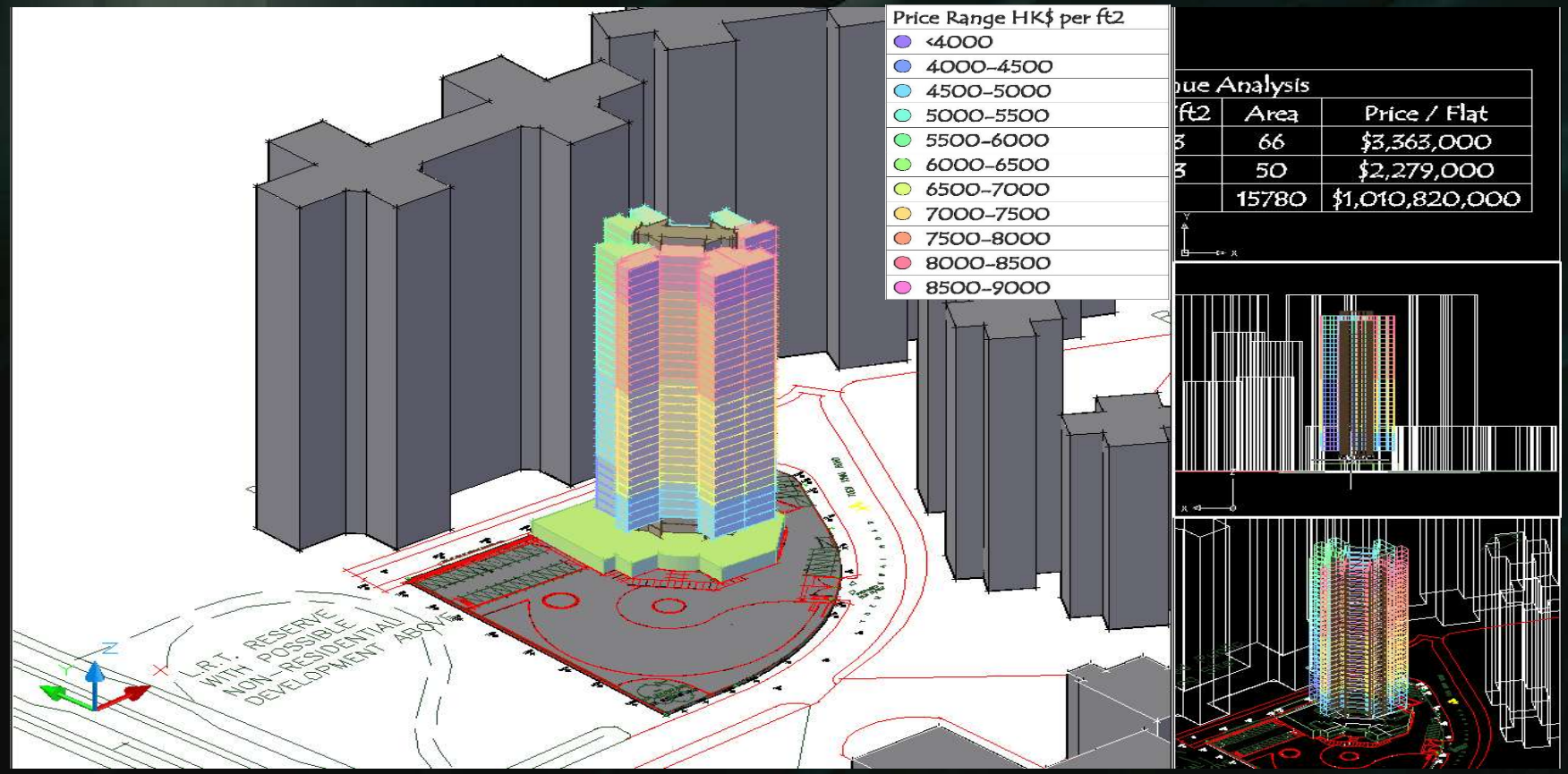



Price Range HK$ per ft2
<4000
4000–4500
4500–5000
5000–5500
5500–6000
6000–6500
6500–7000
7000–7500
7500–8000
8000–8500
8500–9000
R.T. RESERVE
WITH POSSIBLE
NON-RESIDENTIAL
DEVELOPMENT ABOVE

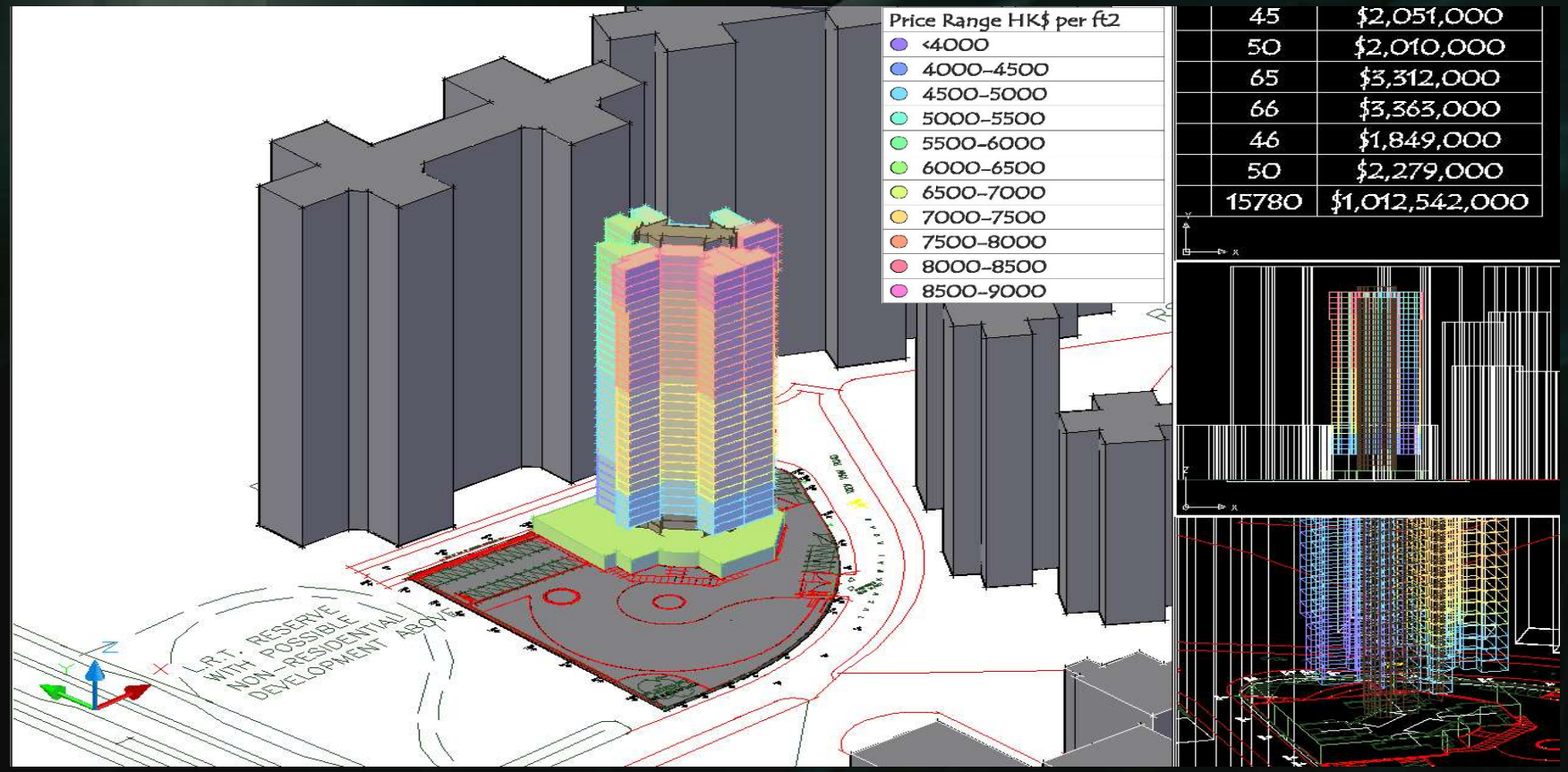
可研通設計平台
網上整合佈置,收益,景觀,成本,等等數據



可研通設計平台
網上整合佈置,收益,景觀,成本,等等數據



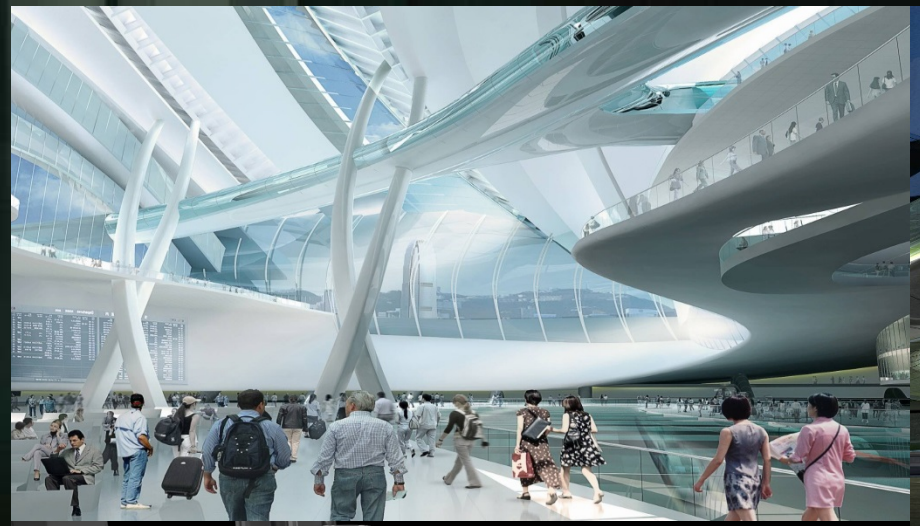
可研通設計平台
網上整合佈置,收益,景觀,成本,等等數據

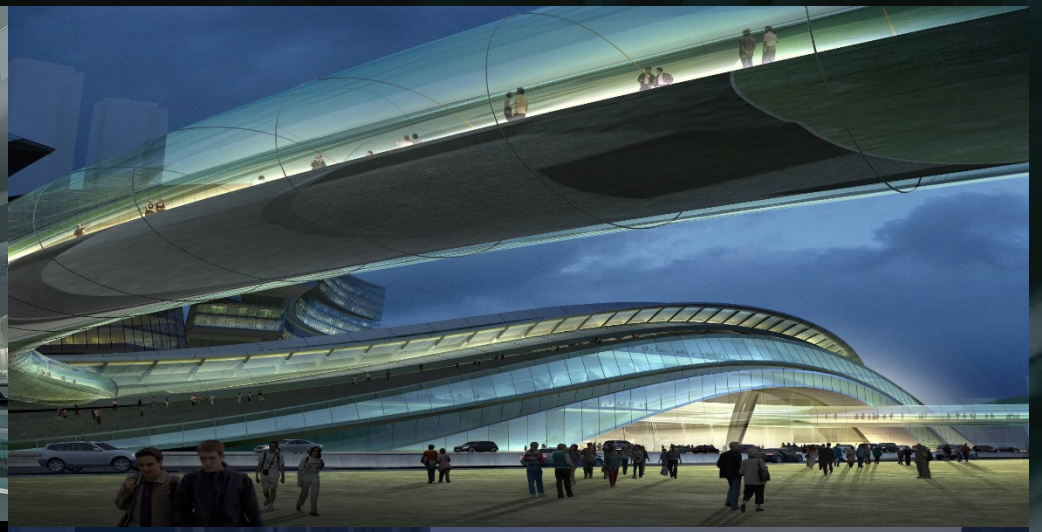


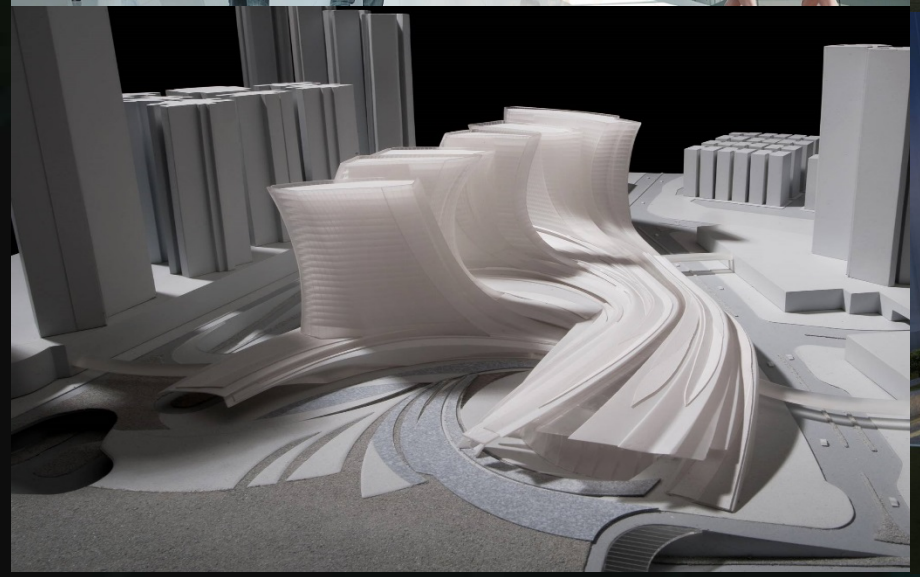
案例二

真BIM (施工阶段)

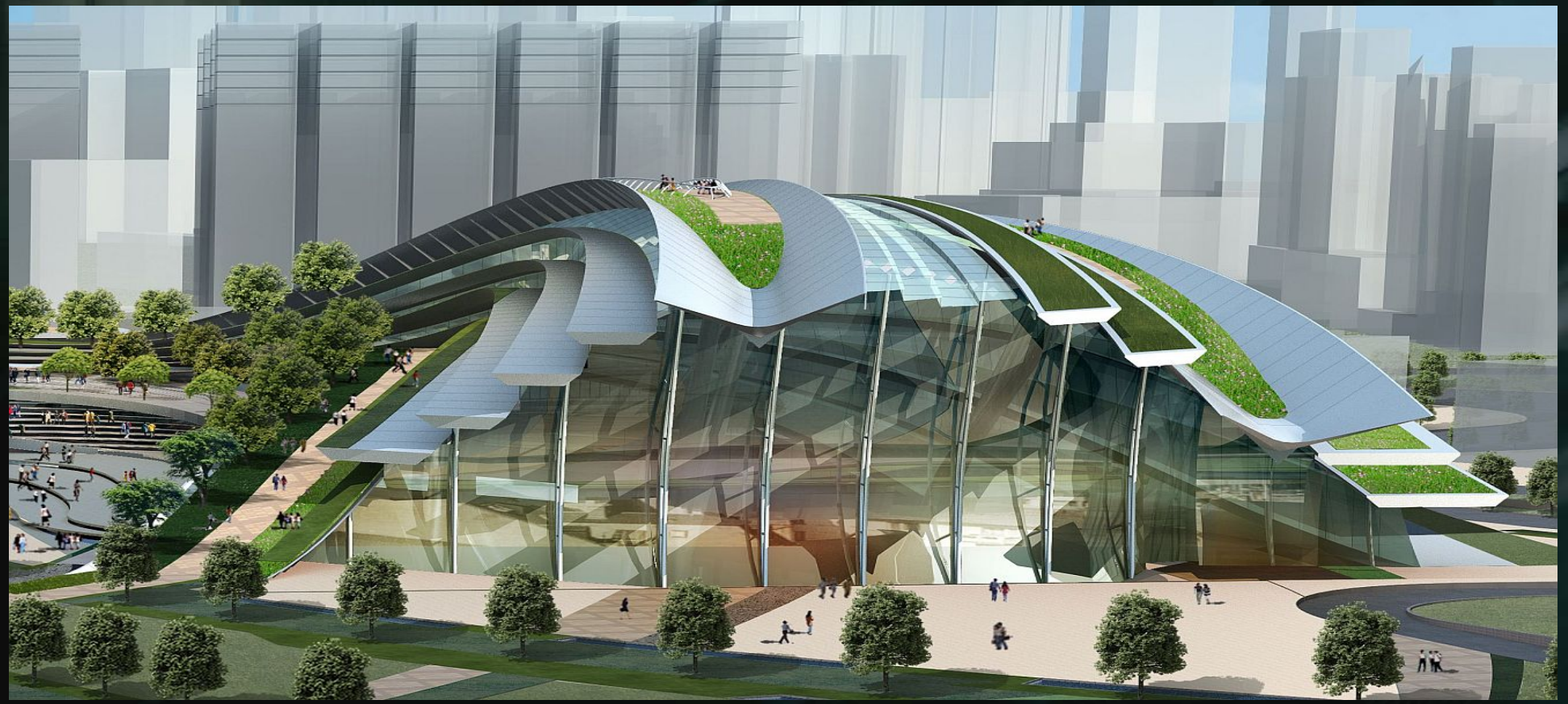
M + I = B (制造)

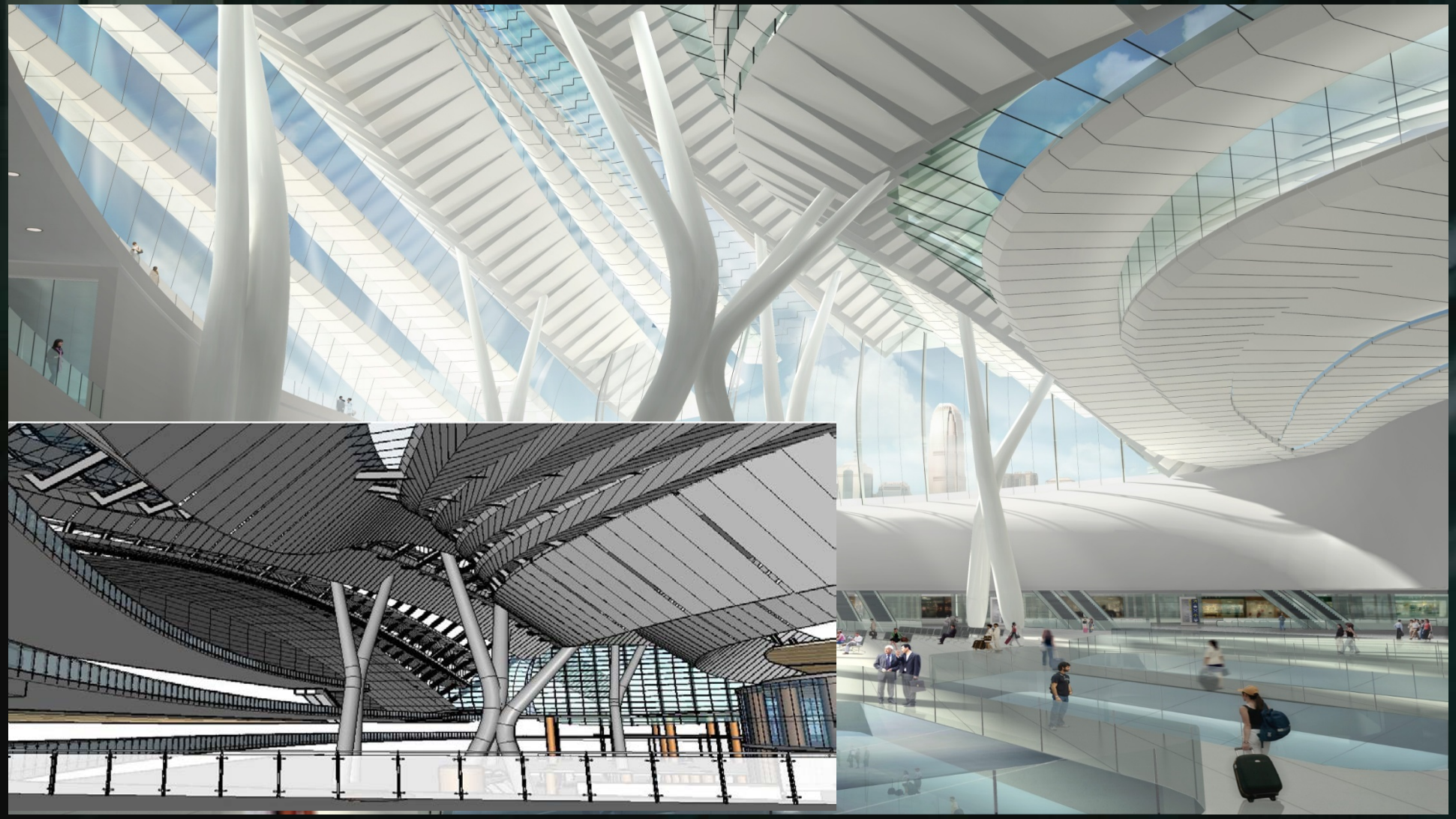







PHILIPS
SAMSUNG





设计 — RHINO

格网分化 — GRASSHOPPER

汇出

数字库 — REVIT API

汇入

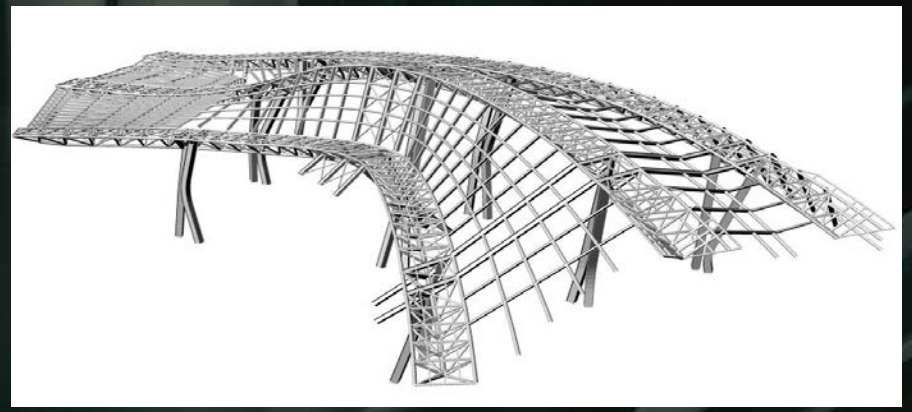
自动优化 — REVIT API

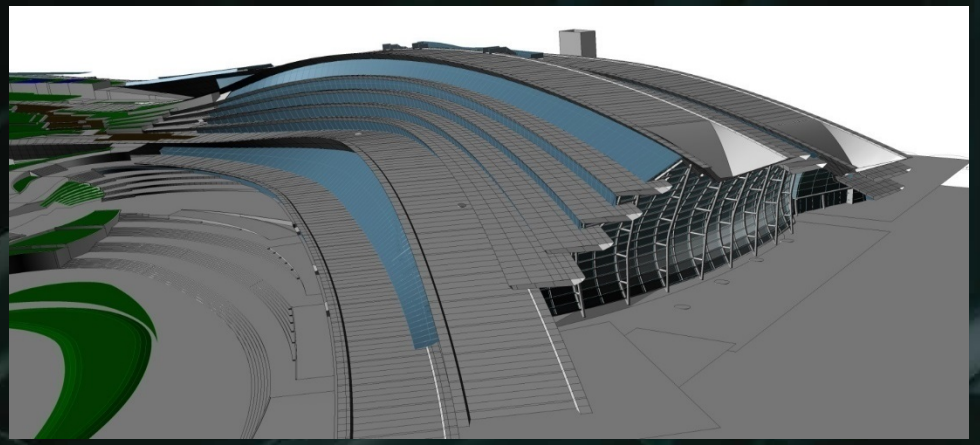
BIM生产 — REVIT

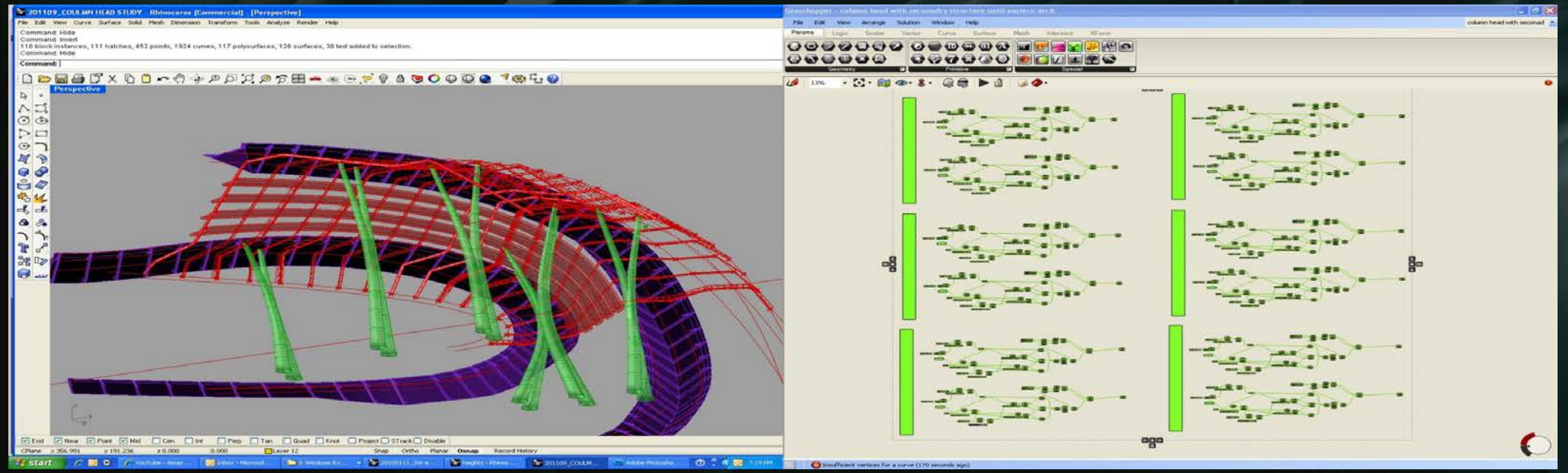
出图 — REVIT

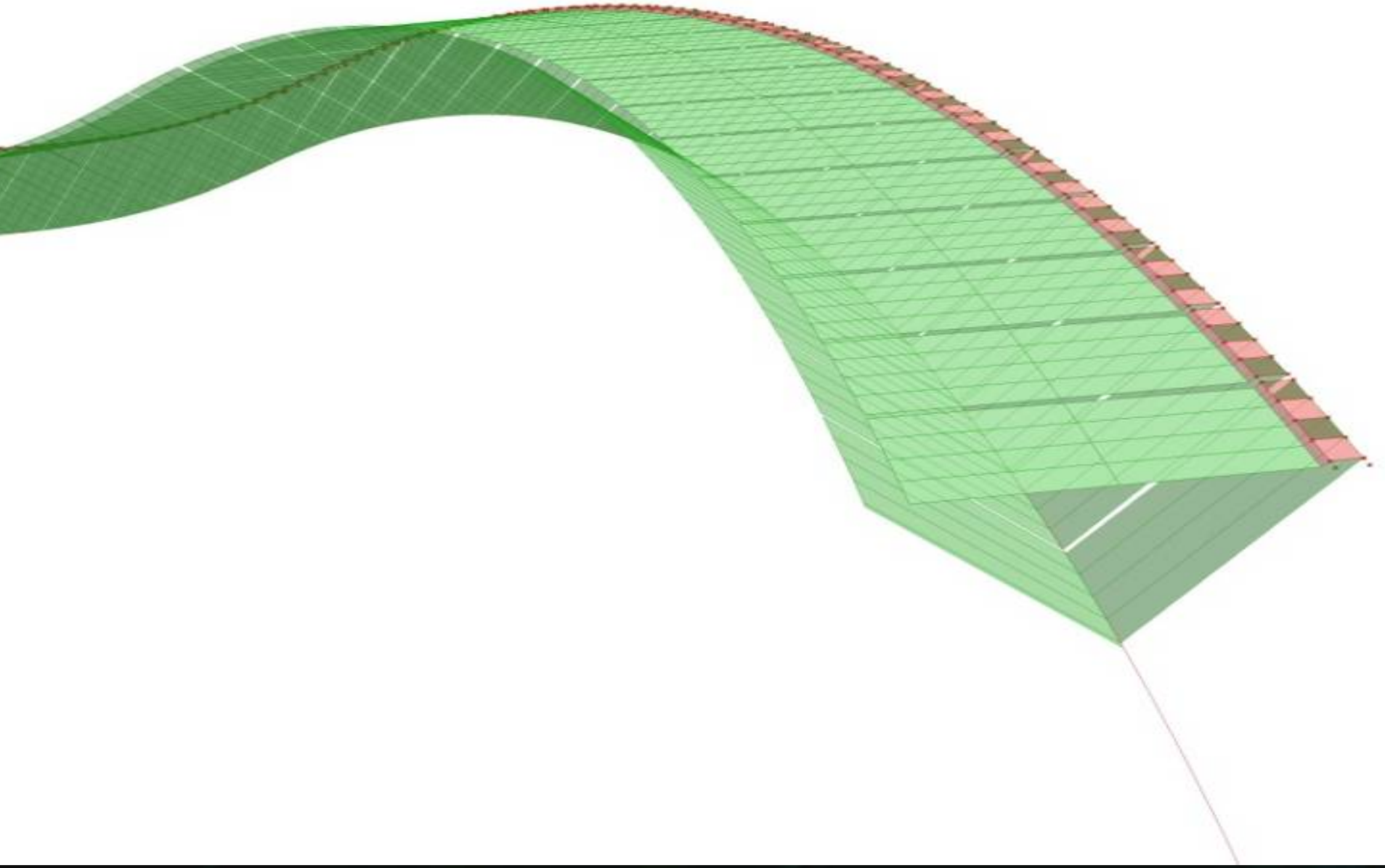
投标

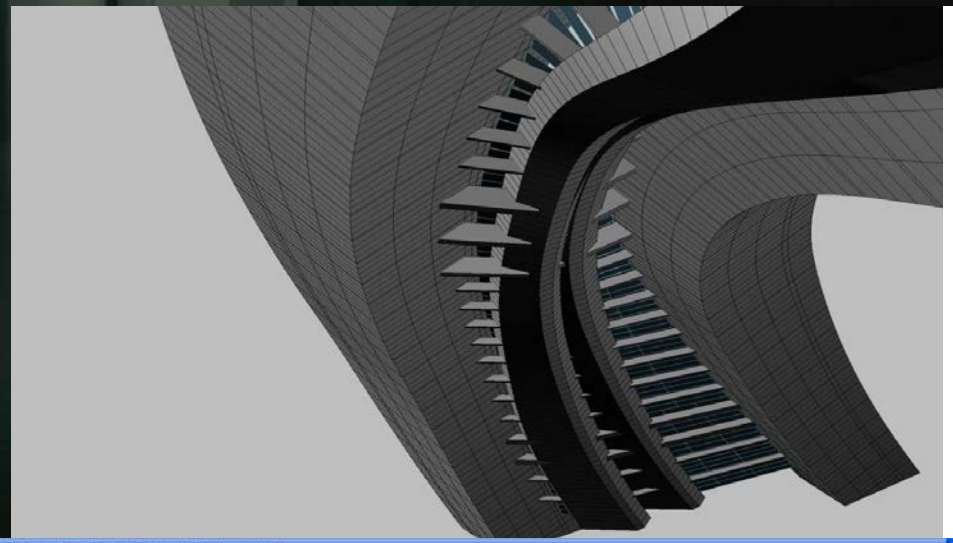
制造生产

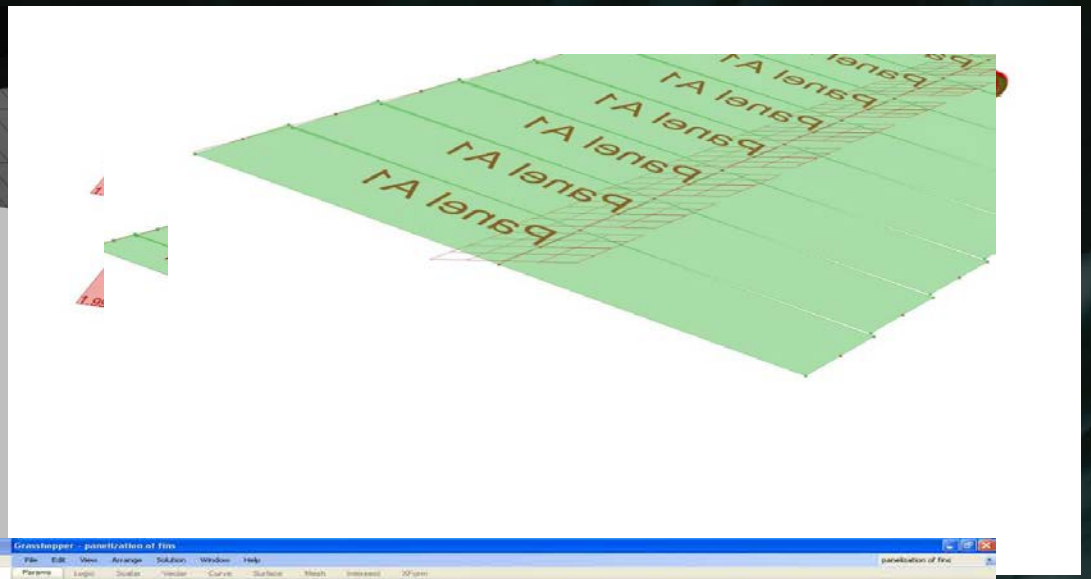


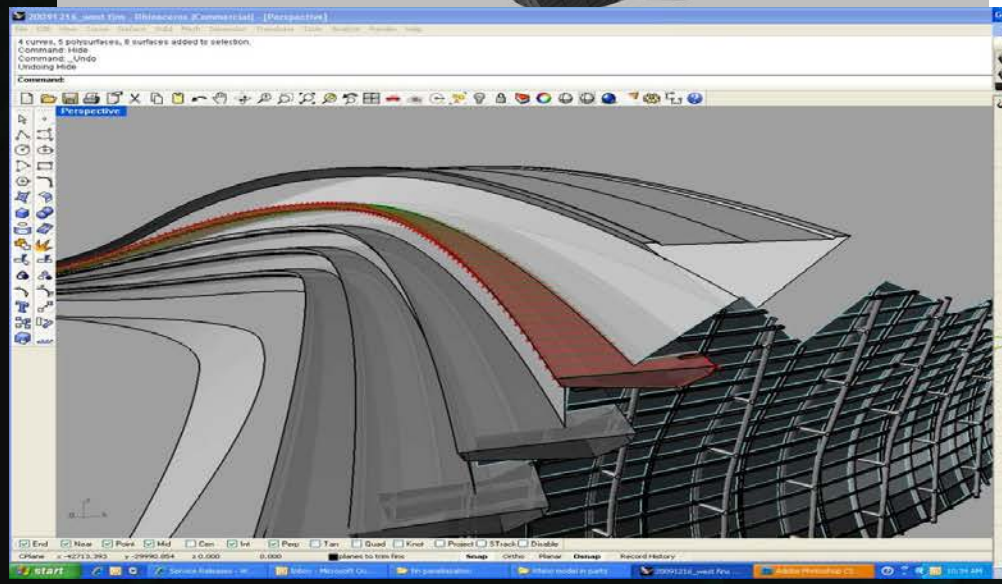


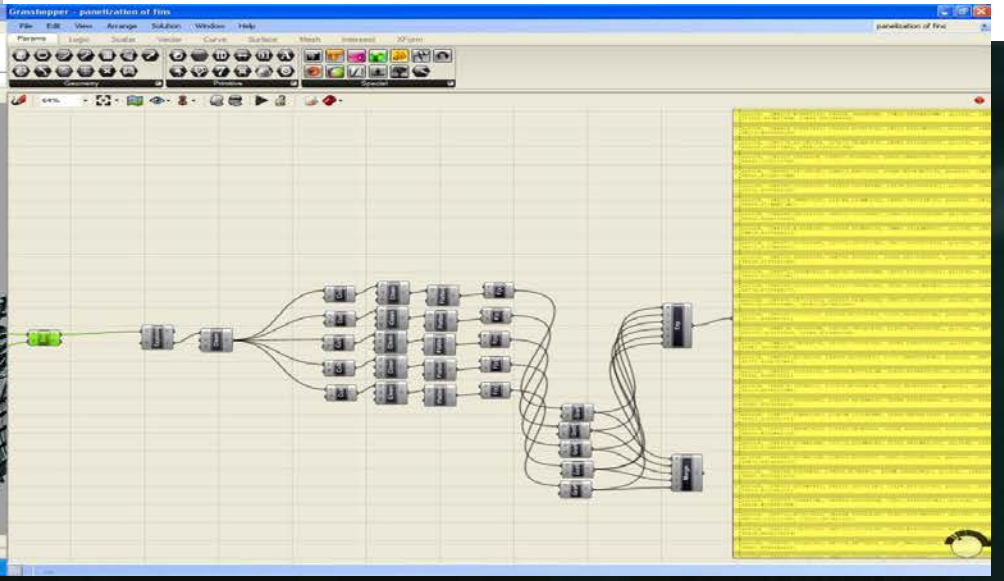

201109_COLUMN HEAD STUDY - Rhinoceros (Commercial) - [Perspective]
Perspective
Grasshopper - column head with secondary structure until eastern arch

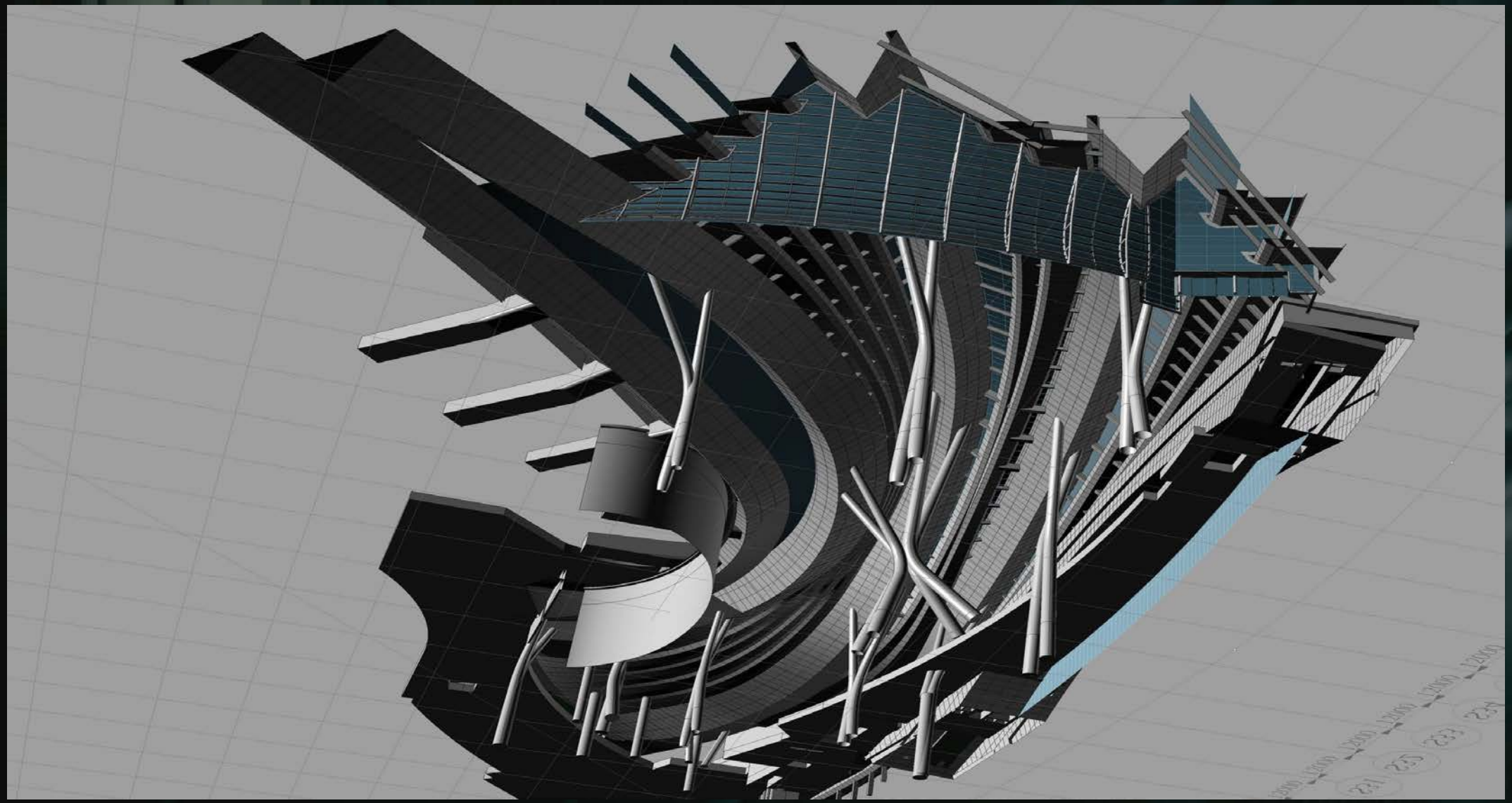


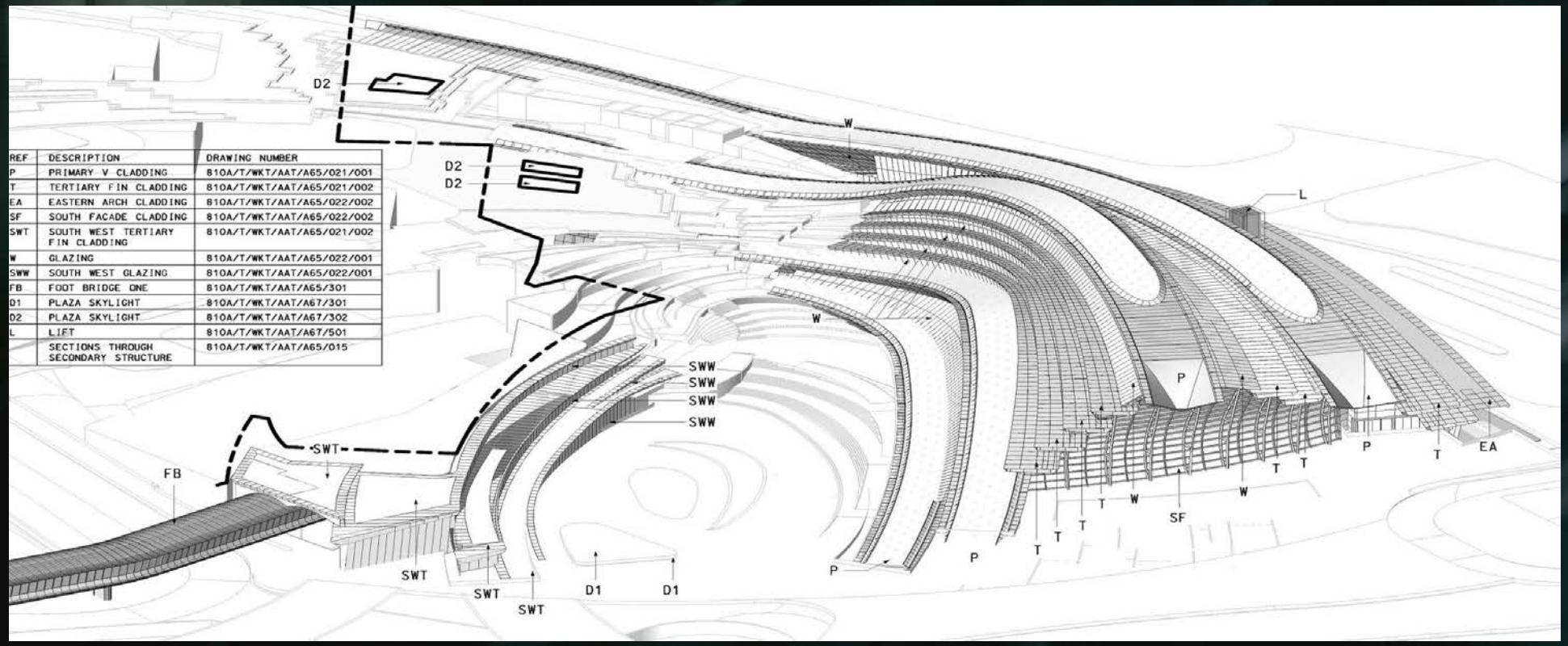



Panel A1
Panel A1
Panel A1
Panel A1
Panel A1

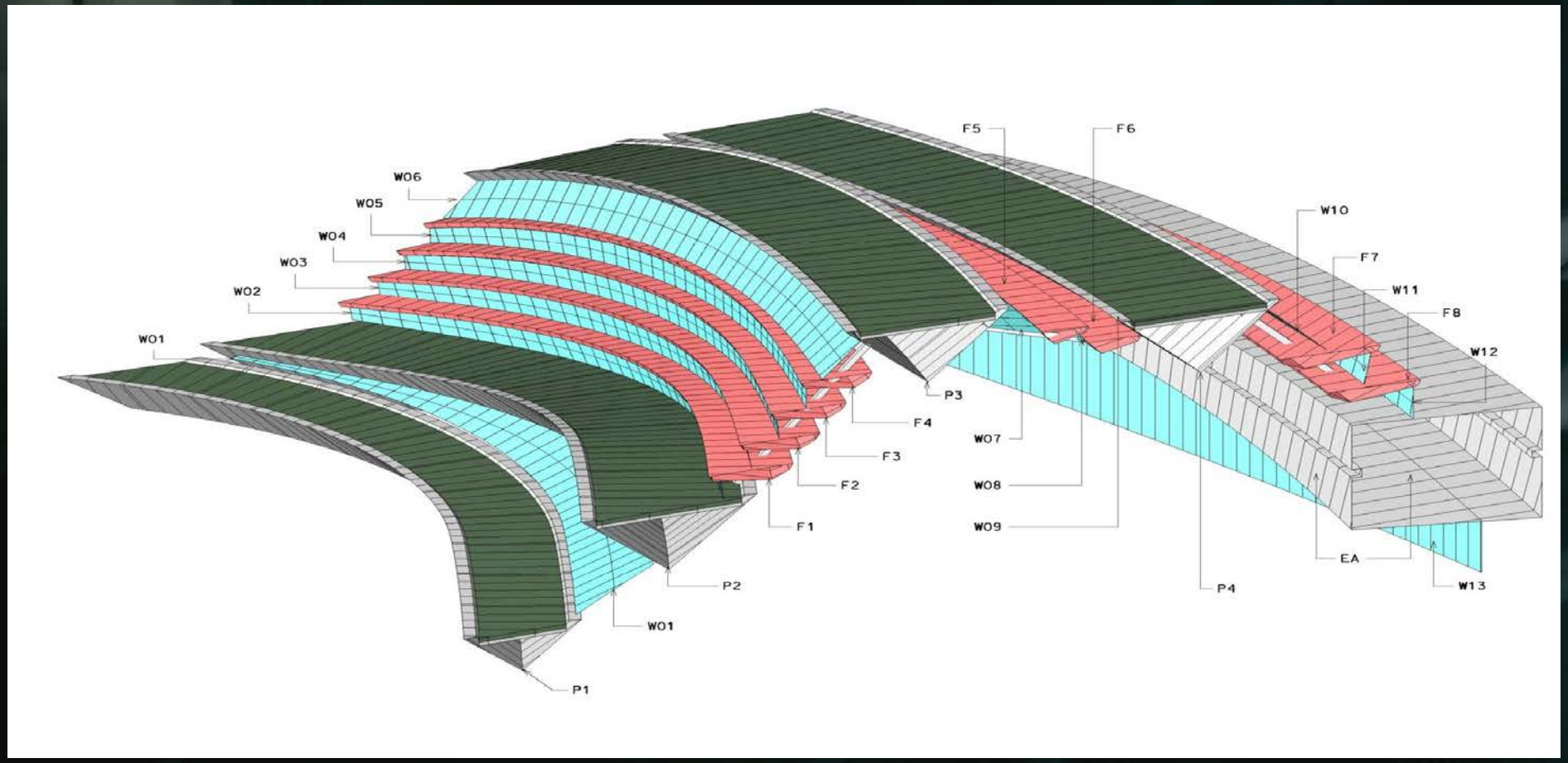

4 curves, 5 polysurfaces, 8 surfaces added to selection.
Command: Hide
Command: _Undo
Undoing Hide
Command:
Perspective


Grasshopper - panelization of fins
File Edit View Arrange Solution Window Help
Params
Geometry
Primitive
Special

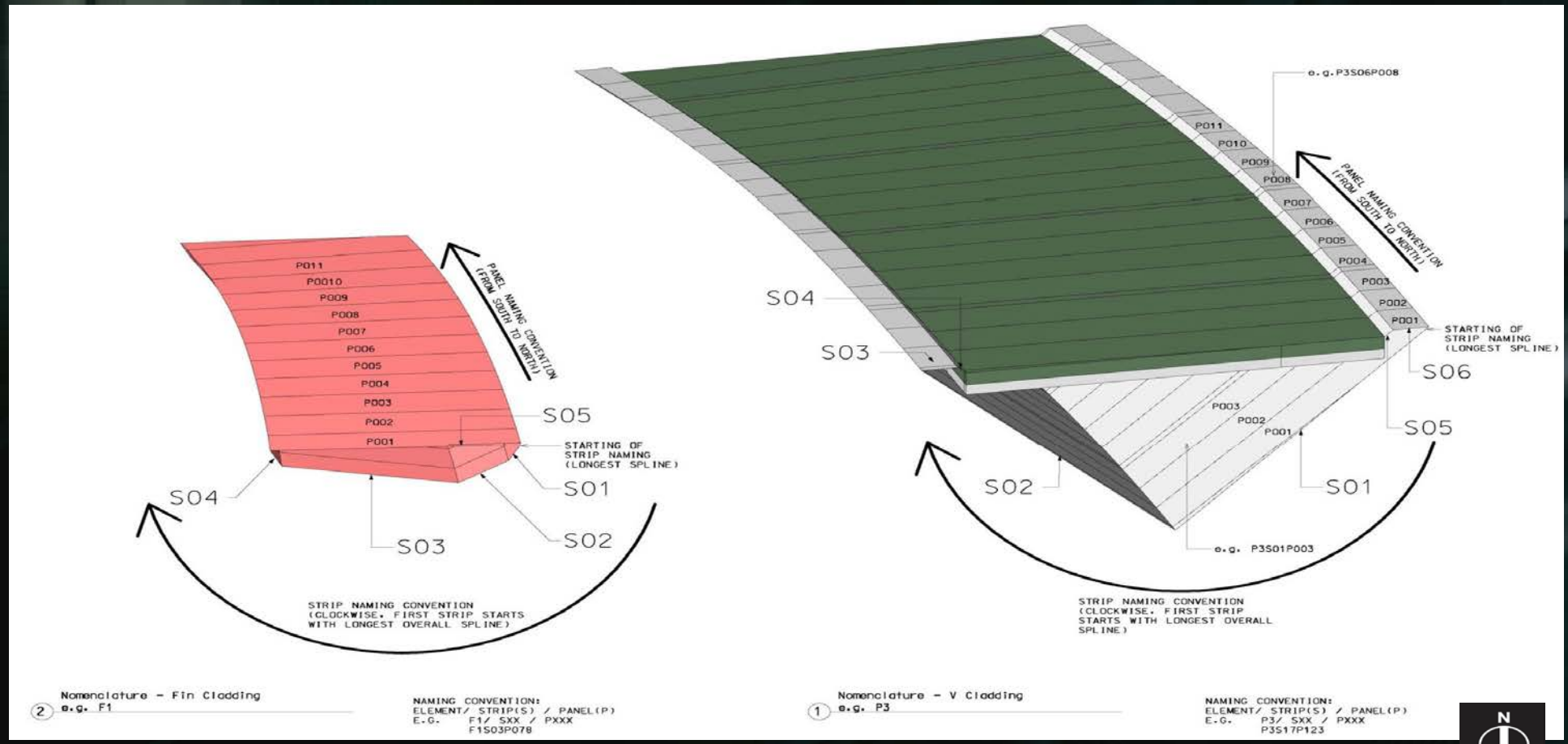


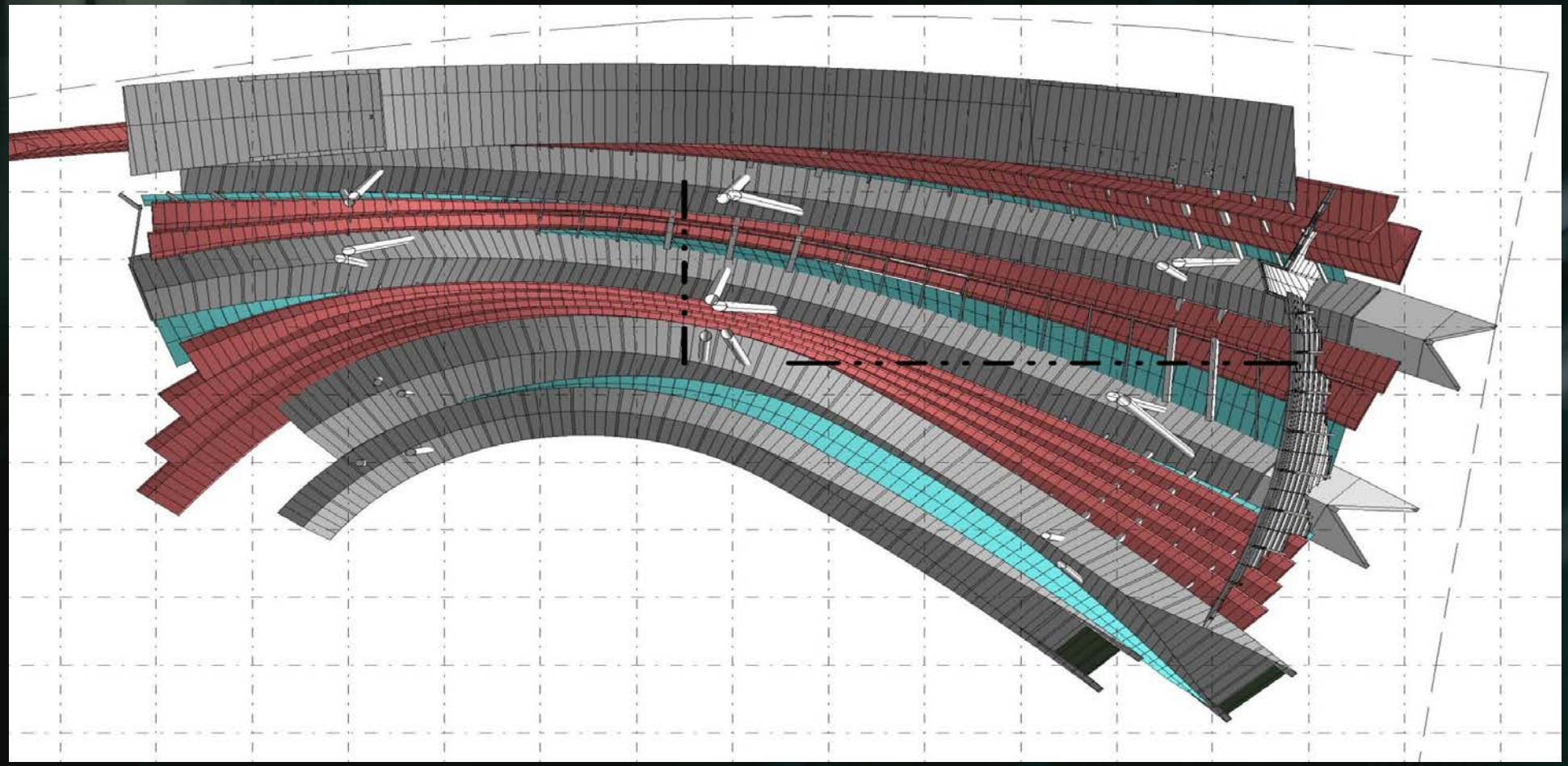


REF	DESCRIPTION	DRAWING NUMBER
P	PRIMARY V CLADDING	810A/T/WKT/AAT/A65/021/001
T	TERTIARY FIN CLADDING	810A/T/WKT/AAT/A65/021/002
EA	EASTERN ARCH CLADDING	810A/T/WKT/AAT/A65/022/002
SF	SOUTH FACADE CLADDING	810A/T/WKT/AAT/A65/022/002
SWT	SOUTH WEST TERTIARY FIN CLADDING	810A/T/WKT/AAT/A65/021/002
W	GLAZING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

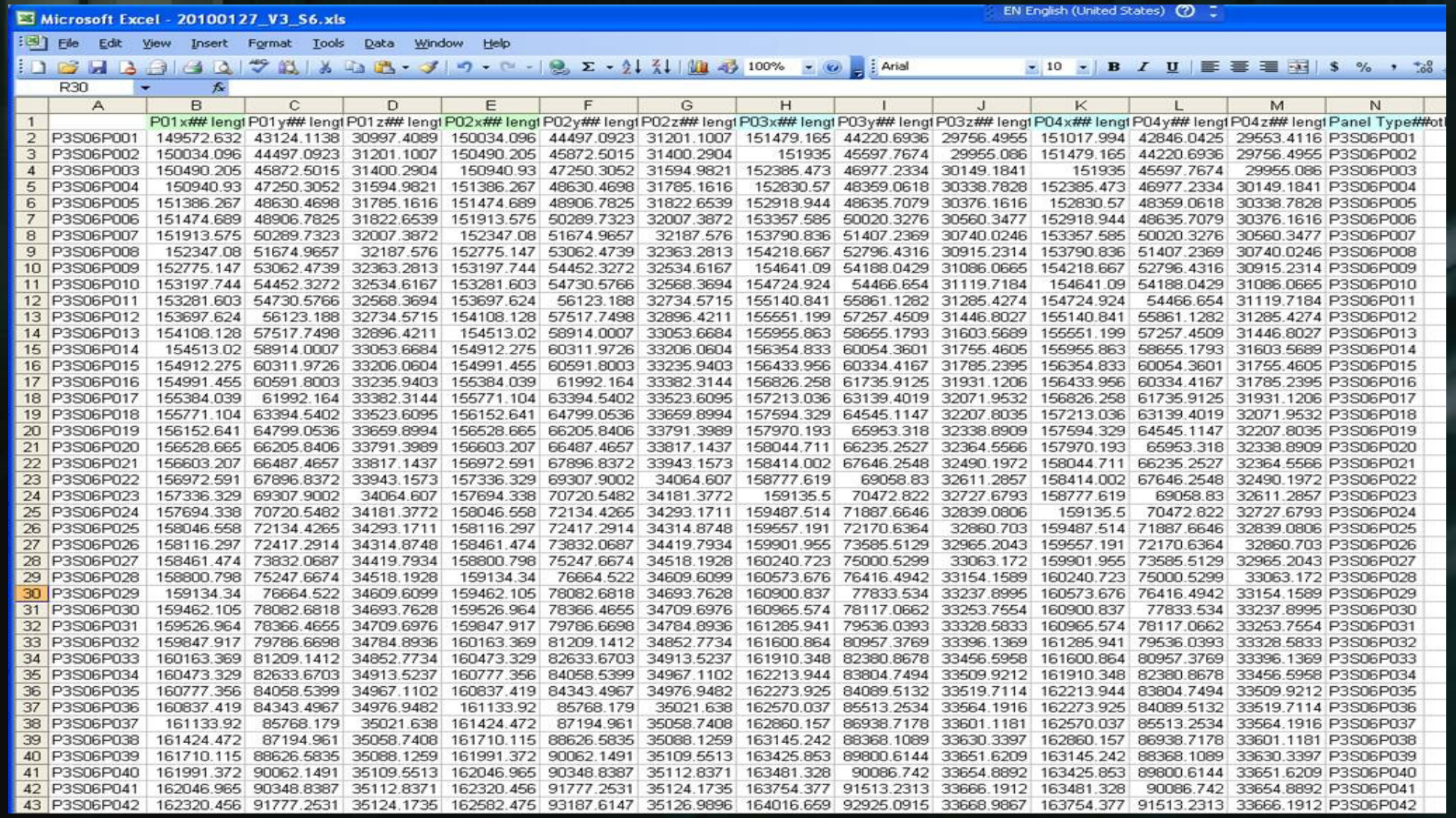

F5
F6
W06
W05
W04
W03
W02
W01
W10
F7
W11
F8
W12
P3
F4
F3
F2
F1
W07
W08
W09
P2
W01
P1
P4
EA
W13

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
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

EN English (United States)

File Edit View Insert Format Tools Data Window Help

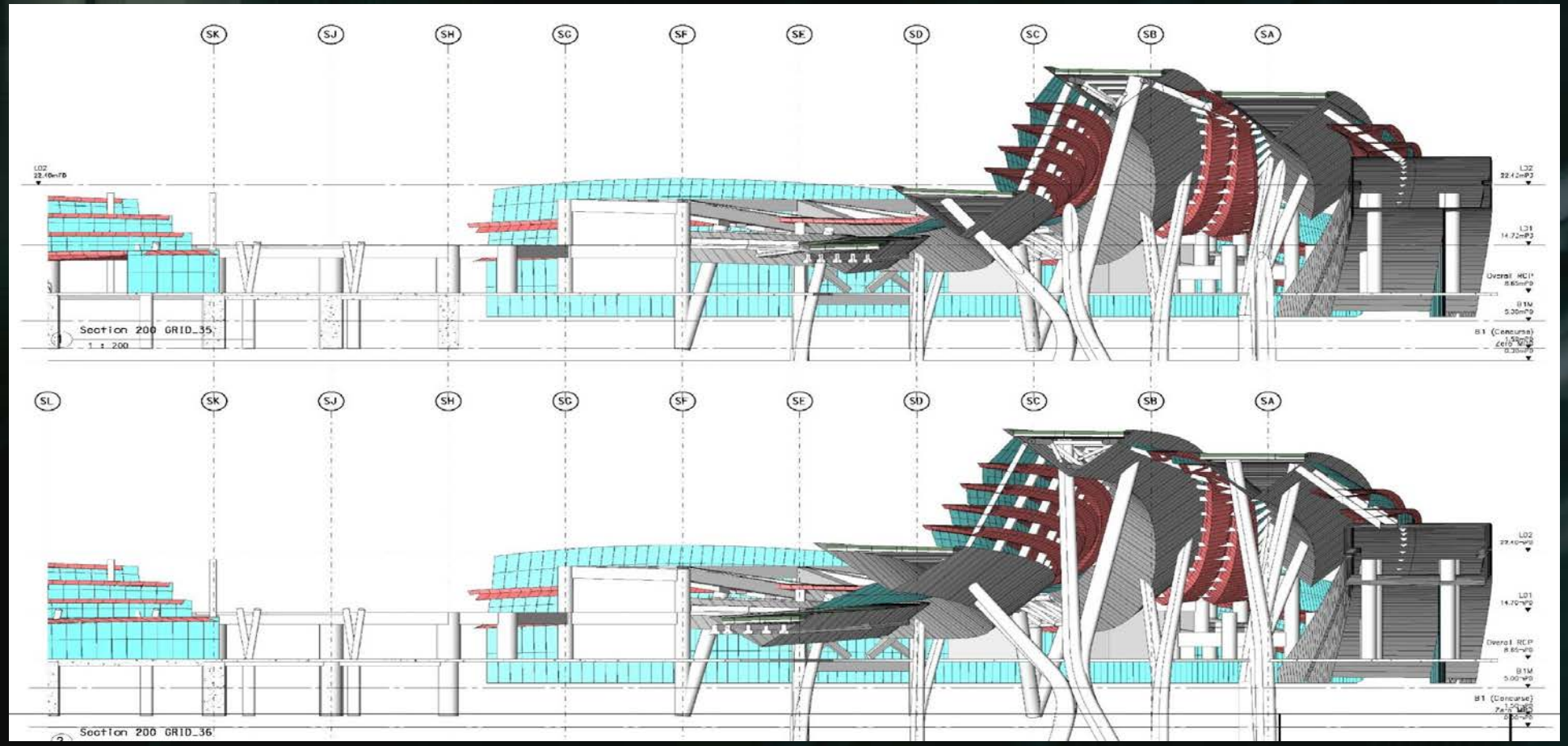
100% Arial 10

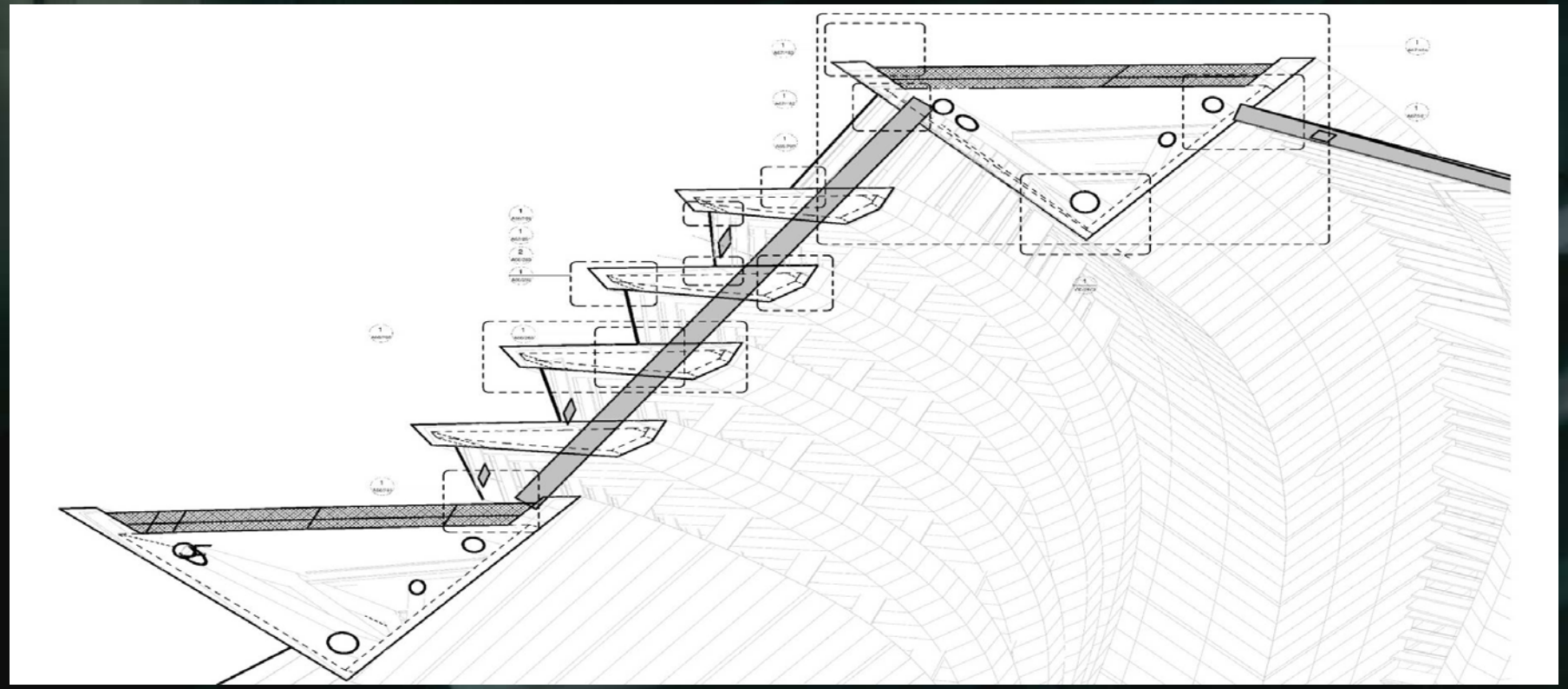
R30

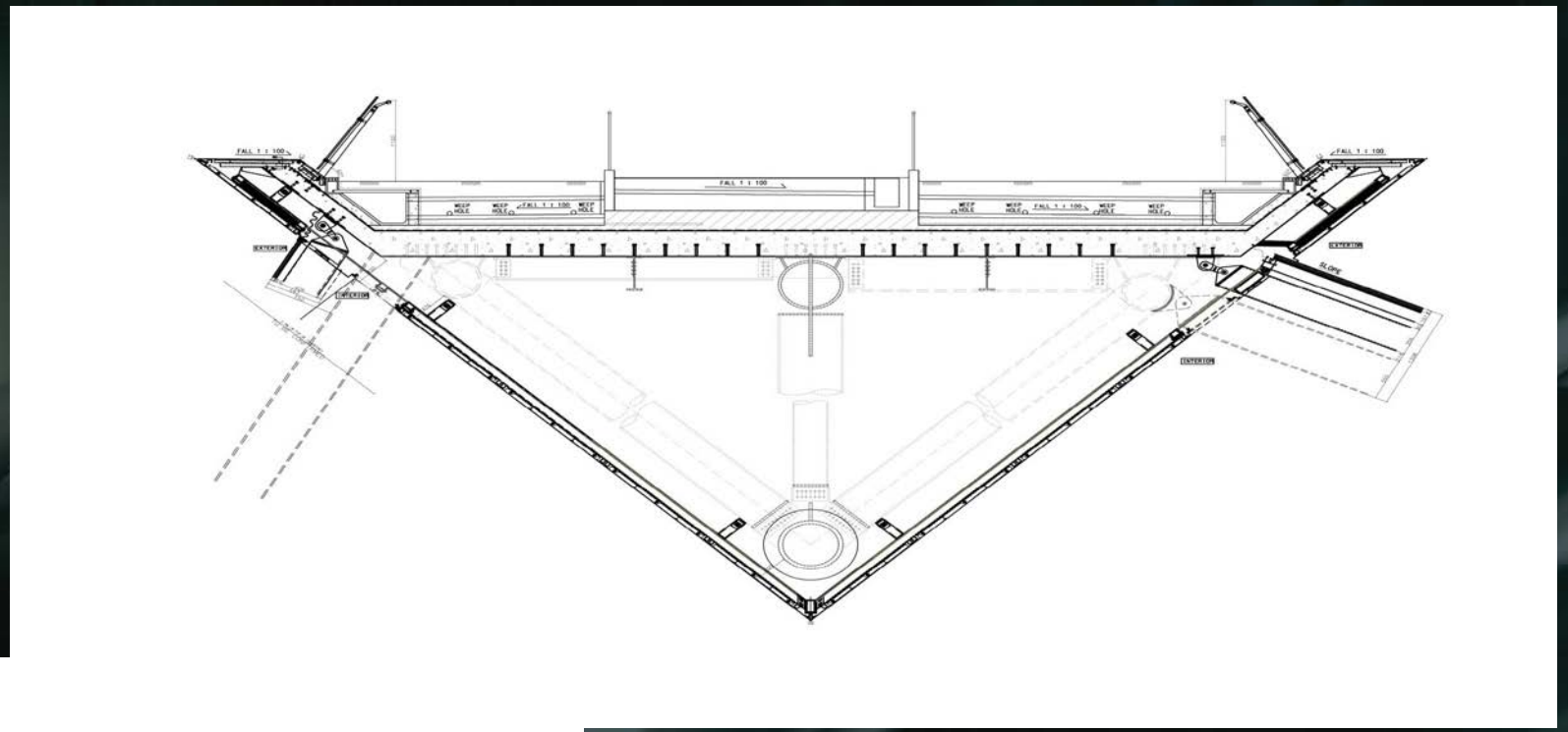
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1		P01x## lengt	P01y## lengt	P01z## lengt	P02x## lengt	P02y## lengt	P02z## lengt	P03x## lengt	P03y## lengt	P03z## lengt	P04x## lengt	P04y## lengt	P04z## lengt	Panel Type##	ot
2	P3S06P001	149572.632	43124.1138	30997.4089	150034.096	44497.0923	31201.1007	151479.165	44220.6936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

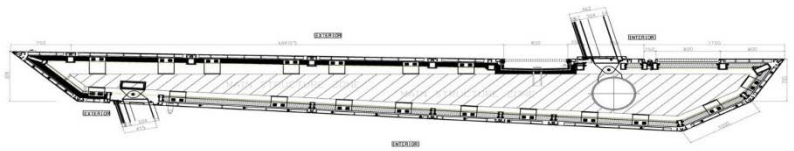
```
                    {
                        case 'x':
                            p[index].x = System.Convert.ToDouble(para.AsValueString());
                            break;
                        case 'y':
                            p[index].y = System.Convert.ToDouble(para.AsValueString());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

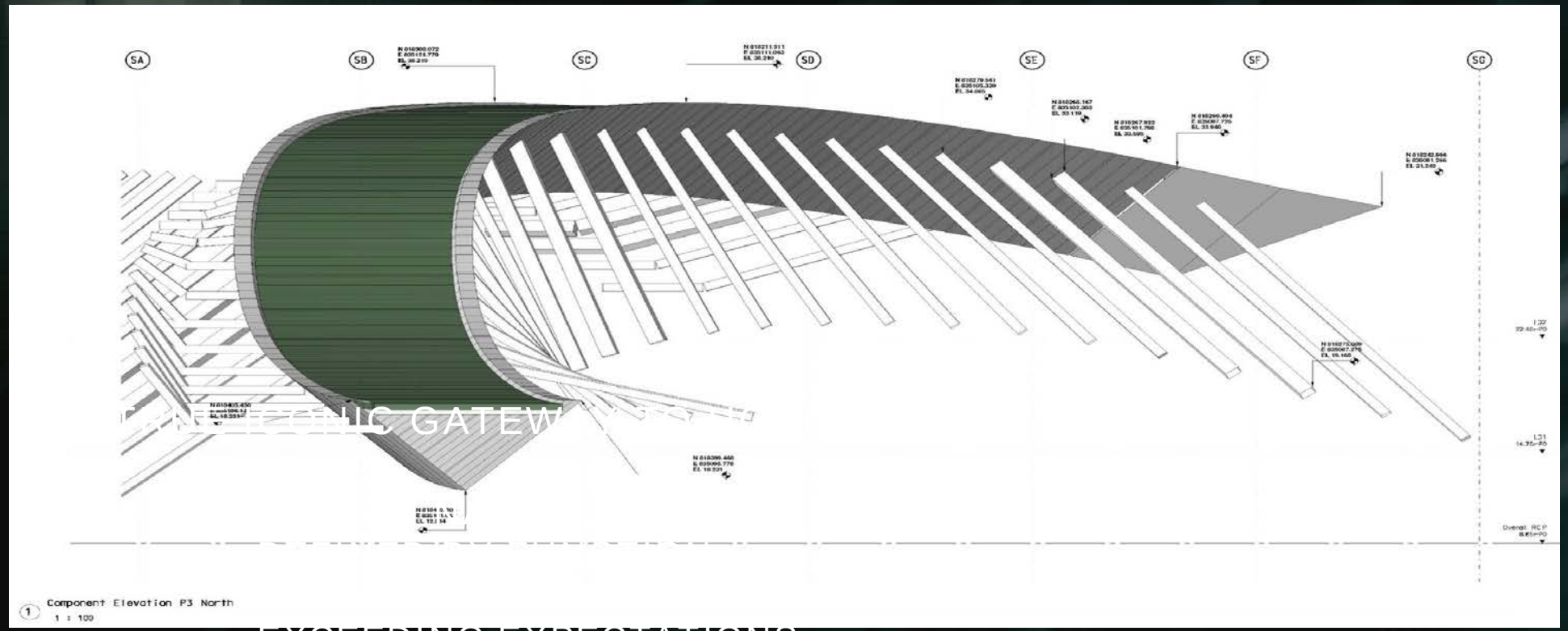
```
        public bool CanBeGroupedWith(CladdingPanel nextPanel, double tolerance)
        {
            if
            (
                Math.Abs(nextPanel.G_edge[0] - G_edge[0]) <= tolerance
                &&
                Math.Abs(nextPanel.G_edge[1] - G_edge[1]) <= tolerance
                &&
                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

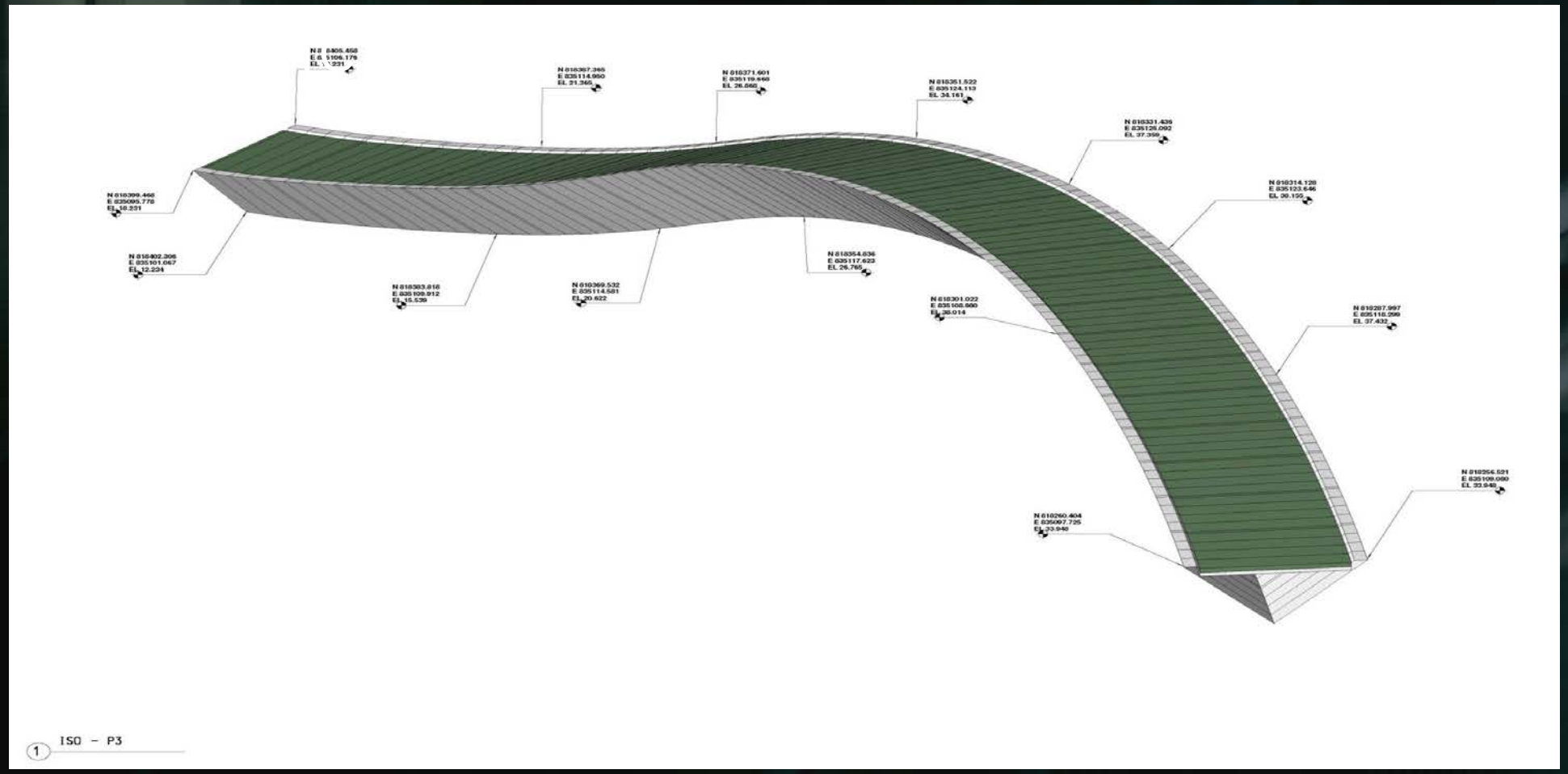



FALL 1 : 100
WEEP HOLE
EXTERIOR
ENTERTION
SLOPE

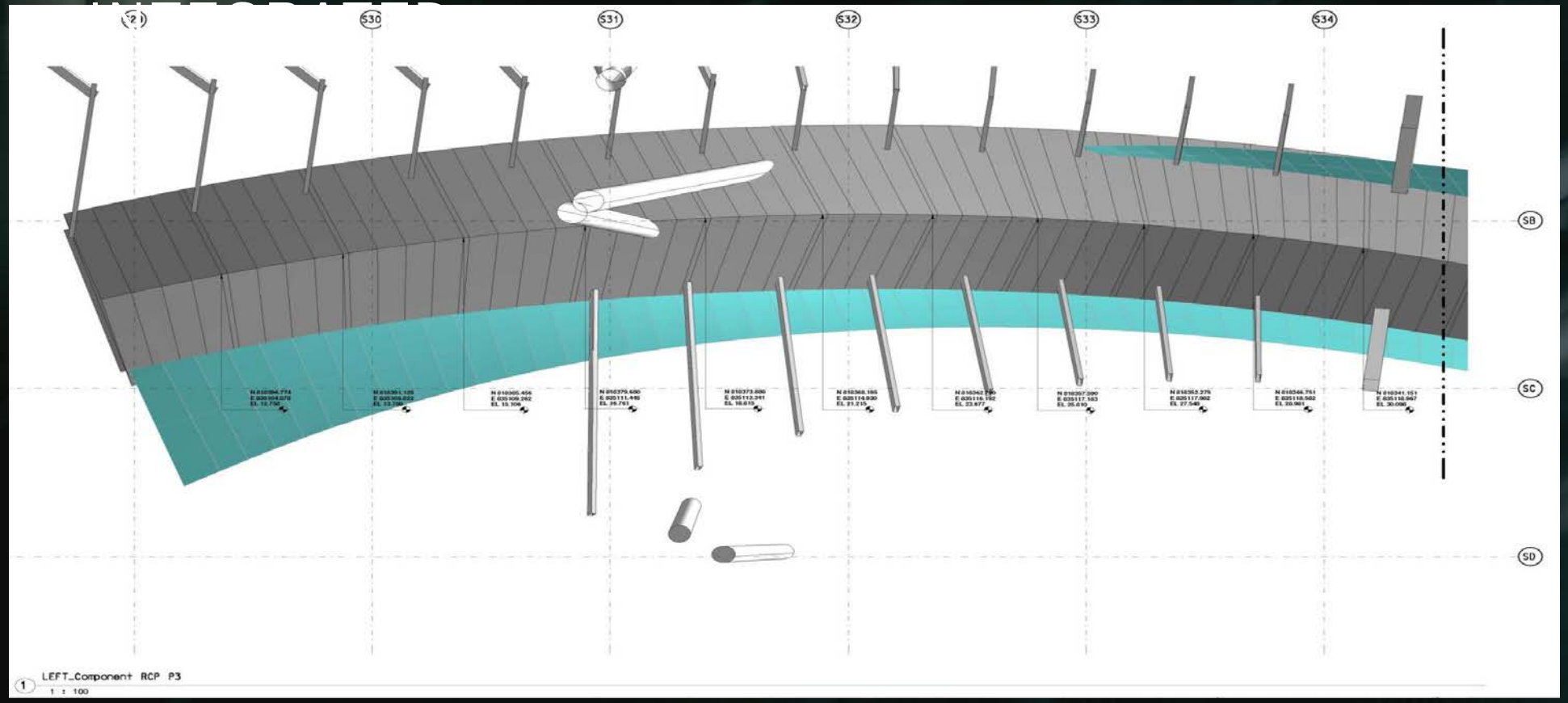

EXTERIOR
INTERIOR



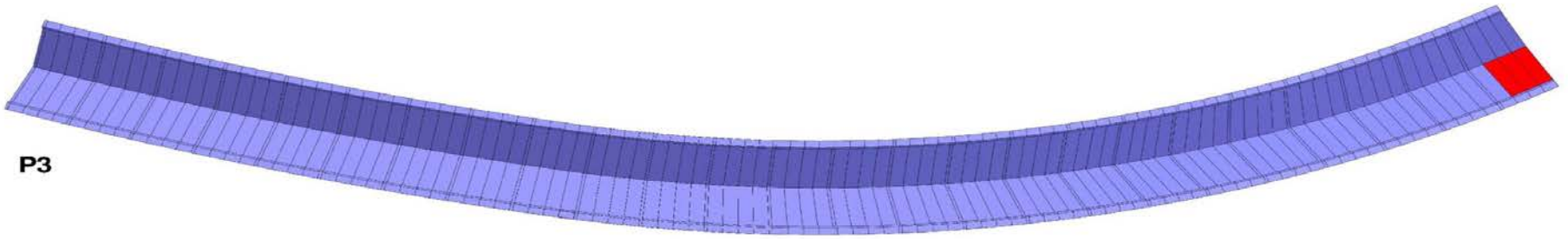
- EXCEEDING EXPECTATIONS



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

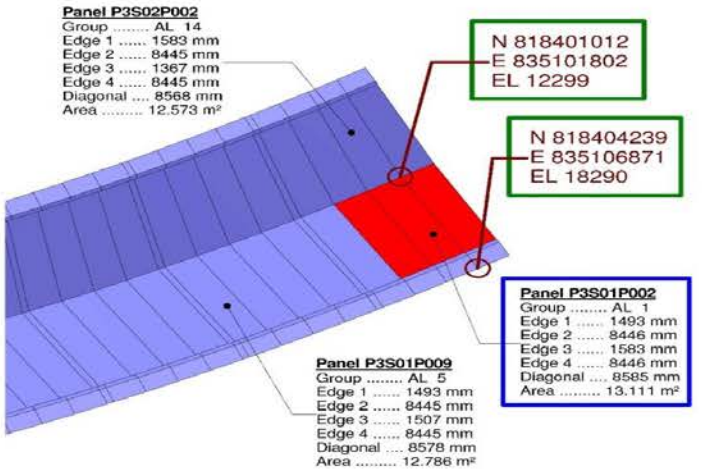
ARRIVING or DEPARTING

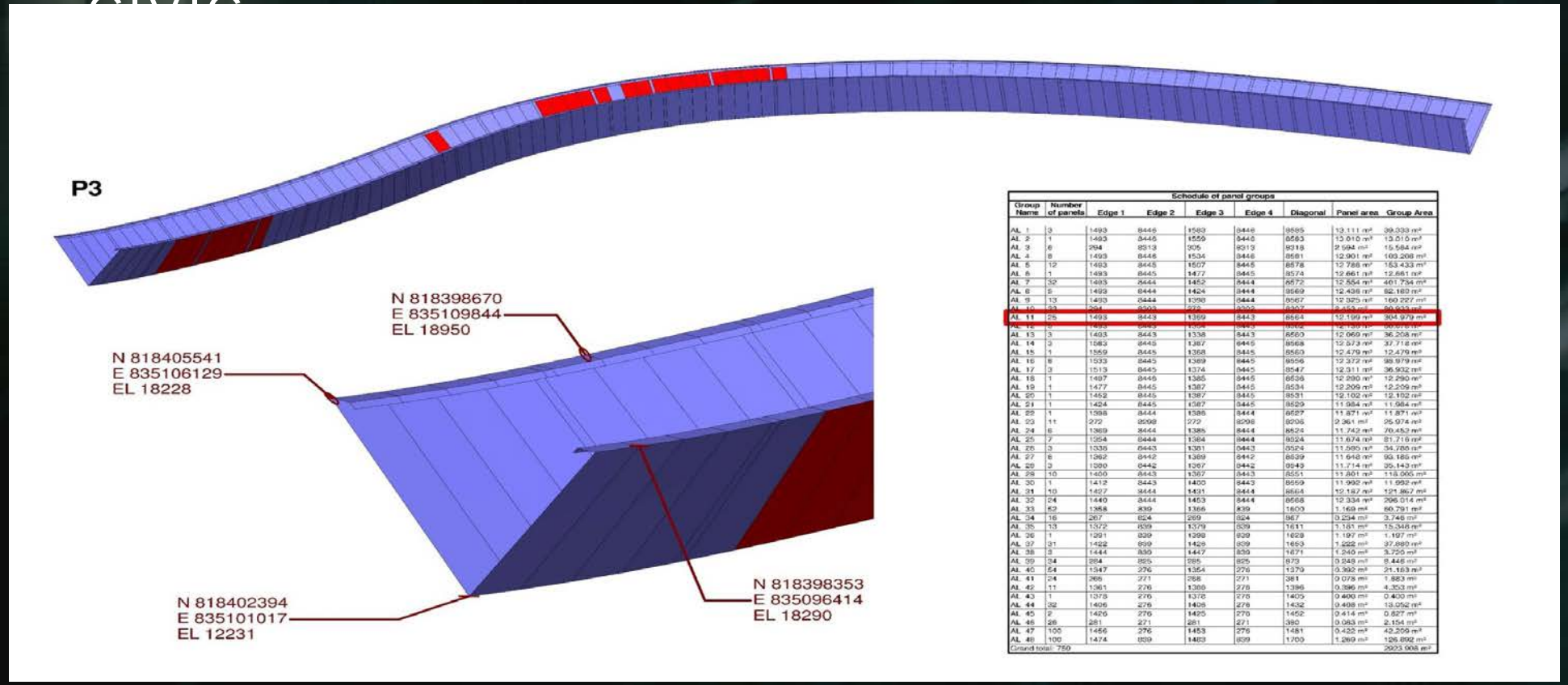


Schedule of panels

Panel	Point 1 P01 x	P01 y	P01 z	Point 2 P02 x	P02 y	P02 z	Point 3 P03 x	P03 y	P03 z	Point 4 P04 x	P04 y	P04 z	Center of weight C x	C y	C z	Edges Edge 1	Edge 2	Edge 3	Edge 4	Diagonal	Area	Group
P3S01P001	835106129	818405651	18228	835101017	818402386	12231	835106871	818404239	18290	835101802	818401012	12299	835103955	818403297	15262	1493	8446	1583	8446	8585	13.111 m²	AL. 1
P3S01P009	835106871	818404239	18290	835101802	818401012	12299	835107566	818402934	18391	835102568	818399625	12410	835104710	818401952	15341	1493	8446	1583	8445	8585	13.111 m²	AL. 1
P3S01P002	835107566	818402934	18391	835102568	818399625	12410	835108310	818401617	18528	835103312	818398241	12560	835105447	818400664	15472	1493	8446	1583	8445	8585	13.111 m²	AL. 1
AL. 1: 3																					39.333 m²	
P3S01P004	835108310	818401617	18528	835103312	818398241	12560	835109007	818403300	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	818403300	18696	835104033	818396862	12745	835109144	818405536	18756	835104175	818396588	12786	835106560	818398446	15741	294	8313	305	8313	8318	2.594 m²	AL. 3
P3S01P010	835111765	818394732	19674	835106783	818391241	13770	835111806	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	835109837	818385271	15154	835111797	818387174	18043	294	8313	305	8313	8318	2.594 m²	AL. 3
P3S01P020	835116475	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	18781	835116503	818377451	24534	835113398	818373701	18895	835115908	818375512	21059	294	8313	305	8313	8318	2.594 m²	AL. 3
P3S01P030	835120094	818372092	26719	835114909	818368282	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	818405536	18736	835104175	818396588	12786	835109822	818398714	18942	835104863	818395227	13005	835107601	818397641	15867	1493	8446	1534	8446	8581	12.901 m²	AL. 4
P3S01P018	835115454	818386100	21716	835110455	818382531	15899	835115973	818384746	21994	835110918	818381150	16065	835113187	818385633	19050	1493	8446	1534	8446	8581	12.901 m²	AL. 4
P3S01P019	835115973	818384746	21994	835110918	818381150	16065	835116476	818383092	22069	835111414	818379769	16734	835113995	818382964	19408	1493	8446	1534	8446	8581	12.901 m²	AL. 4
P3S01P021	835116575	818383121	22562	835111511	818379492	16822	835117069	818381769	23013	835111987	818378111	17278	835114283	818380623	19924	1493	8446	1534	8446	8581	12.901 m²	AL. 4
P3S01P022	835117059	818381769	23013	835111987	818378111	17278	835117534	818380417	23465	835112447	818376730	17757	835114755	818379057	20378	1493	8446	1534	8446	8581	12.901 m²	AL. 4
P3S01P023	835117528	818380417	23465	835112447	818376730	17757	835117966	818379068	23936	835112890	818375351	18258	835115211	818377891	20855	1493	8446	1534	8445	8581	12.901 m²	AL. 4
P3S01P024	835117980	818379068	23936	835112890	818375351	18258	835118417	818377721	24432	835113315	818373975	18781	835115950	818376529	21353	1493	8446	1534	8446	8581	12.901 m²	AL. 4
P3S01P026	835118503	818377451	24534	835113398	818373701	18888	835118991	818376108	25052	835113802	818372232	19436	835116158	818374998	21978	1493	8446	1534	8446	8581	12.901 m²	AL. 4
AL. 4: 6																					103.208 m²	
P3S01P007	835109822	818398714	18942	835104863	818395227	13005	835110465	818397388	19179	835105522	818393885	13245	835107973	818396303	16090	1493	8445	1507	8445	8578	12.786 m²	AL. 5
P3S01P008	835110485	818397366	19179	835105522	818393885	13245	835111132	818396657	19414	835106161	818392551	13500	835106325	818394970	16332	1493	8445	1507	8445	8578	12.786 m²	AL. 5
P3S01P009	835111132	818396657	19414	835106161	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	835113686	818390425	20609	835108670	818386090	14745	835110990	818389337	17519	1493	8445	1507	8445	8578	12.786 m²	AL. 5
P3S01P014	835113686	818390425	20609	835108670	818386090	14745	835114256	818389075	20934	835109228	818385543	15084	835111480	818387806	17843	1493	8445	1507	8445	8578	12.786 m²	AL. 5
P3S01P016	835114366	818388805	21001	835109537	818385271	15154	835114919	818387453	21346	835109878	818383908	15518	835112126	818386359	18254	1493	8445	1507	8445	8578	12.786 m²	AL. 5
P3S01P017	835114919	818387453	21346	835109878	818383908	15518	835115464	818388100	21710	835110405	818382531	15899	835112864	818384968	18618	1493	8445	1507	8445	8578	12.786 m²	AL. 5
P3S01P027	835118921	818376106	25552	835113803	818372333	19436	835119324	818374766	25890	835114189	818370671	20002	835116559	818373544	22520	1493	8445	1507	8445	8578	12.786 m²	AL. 5
P3S01P028	835119324	818374766	25890	835114189	818370671	20002	835119711	818373429	26145	835114559	818369619	20535	835116946	818372196	23081	1493	8445	1507	8445	8578	12.786 m²	AL. 5
P3S01P029	835119711	818373429	26145	835114559	818369619	20535	835120084	818372092	26716	835114956	818368288	21178	835117316	818376855	23656	1493	8445	1507	8445	8578	12.786 m²	AL. 5
AL. 5: 12																					159.493 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.

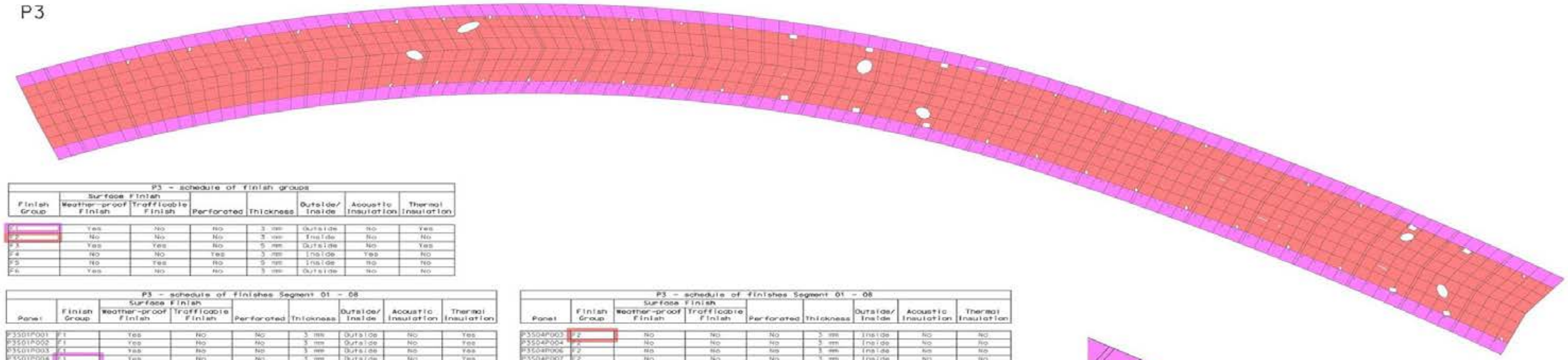




Schedule of panel groups

Group Name	Number of panels	Edge 1	Edge 2	Edge 3	Edge 4	Diagonal	Panel area	Group Area
AL 1	3	1493	8446	1589	8446	8585	13.111 m²	39.333 m²
AL 2	1	1493	8446	1559	8446	8583	13.515 m²	13.515 m²
AL 3	6	294	8513	305	9313	9318	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	33	294	8393	272	8393	8397	2.453 m²	80.933 m²
AL 11	25	1493	8443	1369	8443	8564	12.199 m²	304.979 m²
AL 12	2	1493	8443	1354	8443	8563	12.130 m²	24.261 m²
AL 13	3	1493	8443	1338	8443	8563	12.069 m²	36.208 m²
AL 14	3	1583	8445	1387	8445	8568	12.573 m²	37.718 m²
AL 15	1	1559	8445	1368	8445	8563	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	8206	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	1338	8443	1381	8443	8524	11.589 m²	34.766 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	62	1358	839	1366	839	1609	1.169 m²	80.791 m²
AL 34	16	267	824	269	824	967	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	973	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	1388	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	0.053 m²	2.154 m²
AL 47	105	1466	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

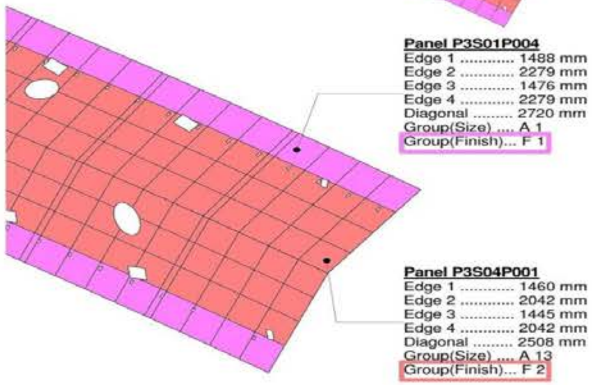
CONTEXT



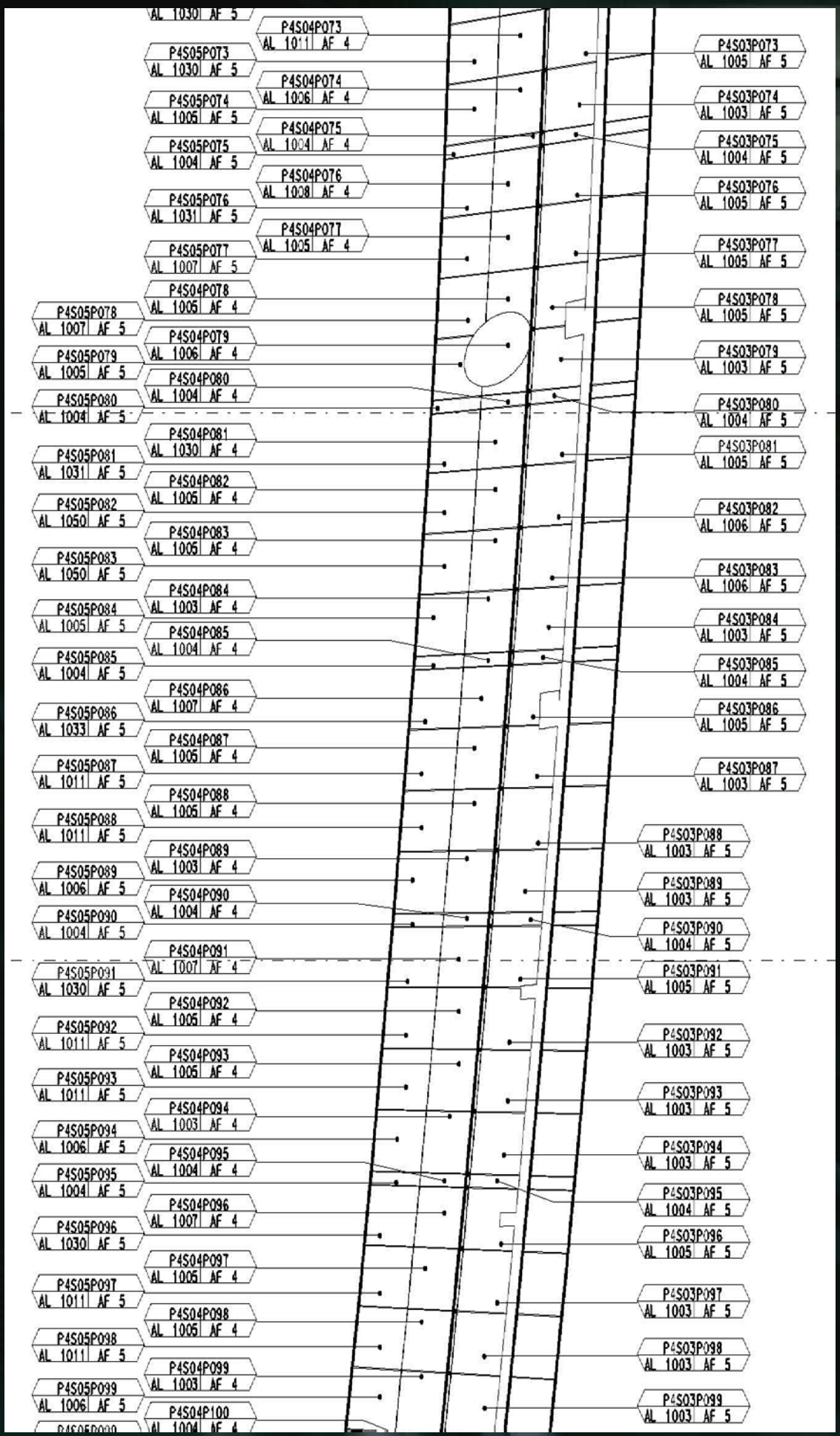
P3 - schedule of finish groups							
Finish Group	Surface Finish: Weather-proof Finish	Surface Finish: Trafficable Finish	Perforated	Thickness	Outside/ Inside	Acoustic Insulation	Thermal Insulation
F1	Yes	No	No	3 mm	Outside	No	Yes
F2	No	No	No	3 mm	Inside	No	No
F3	Yes	Yes	No	5 mm	Outside	No	Yes
F4	No	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 21: 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.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P4S04P073
AL 1011 AF 4
P4S05P073
AL 1030 AF 5
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AL 1006 AF 4
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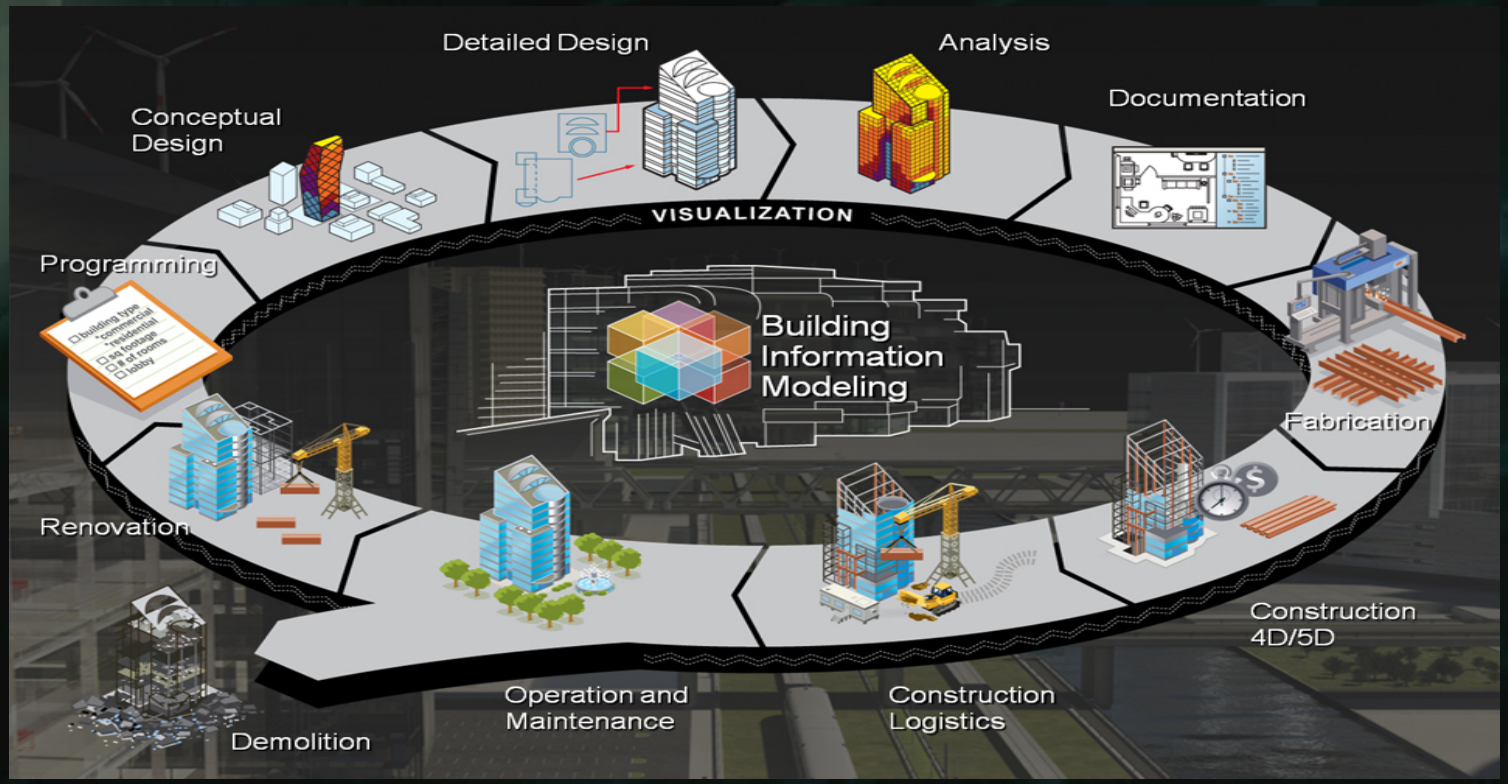
从建造到制造

http://adapa.dk/

案例三

真BIM (营运阶段)

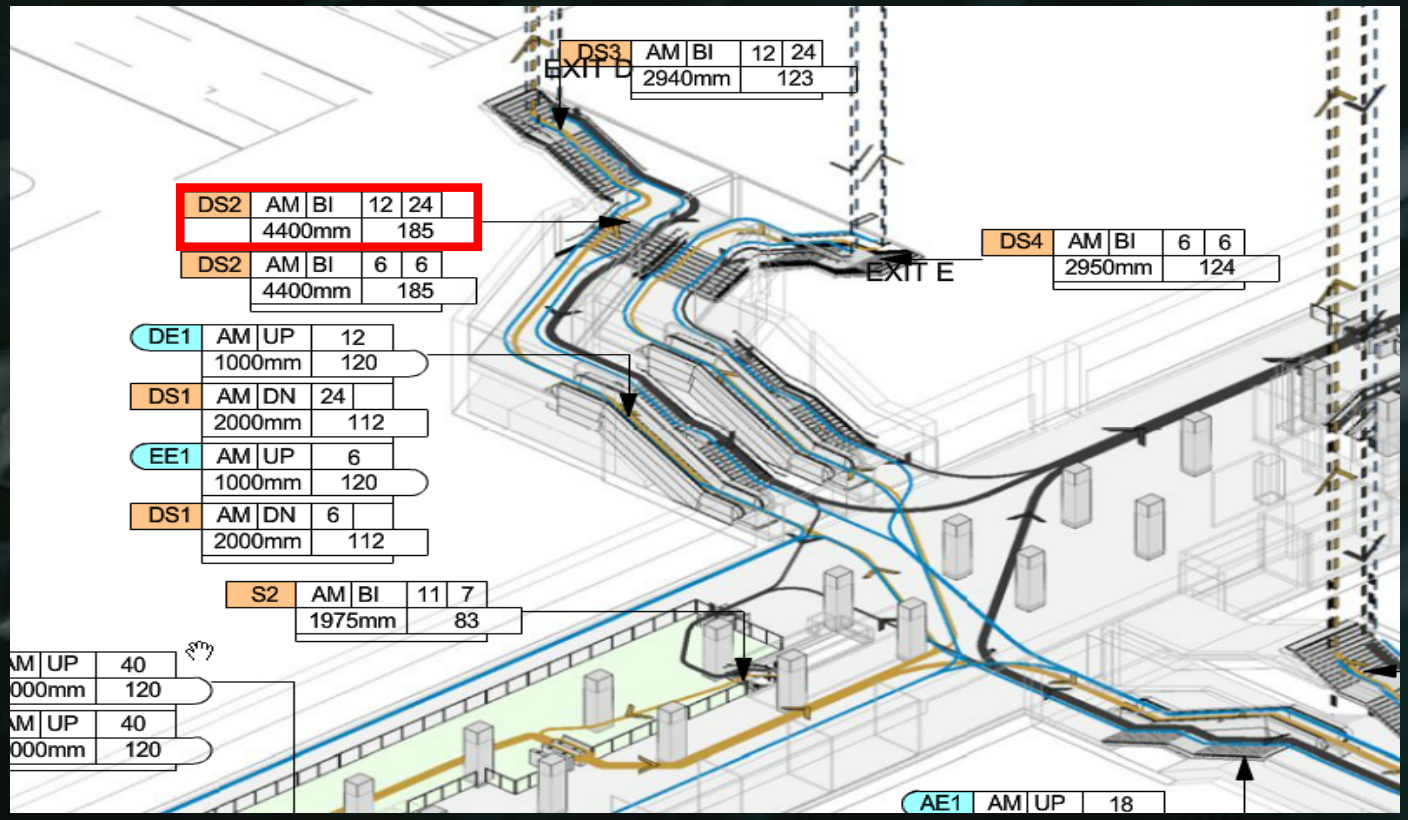
M + I = B (安全)


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

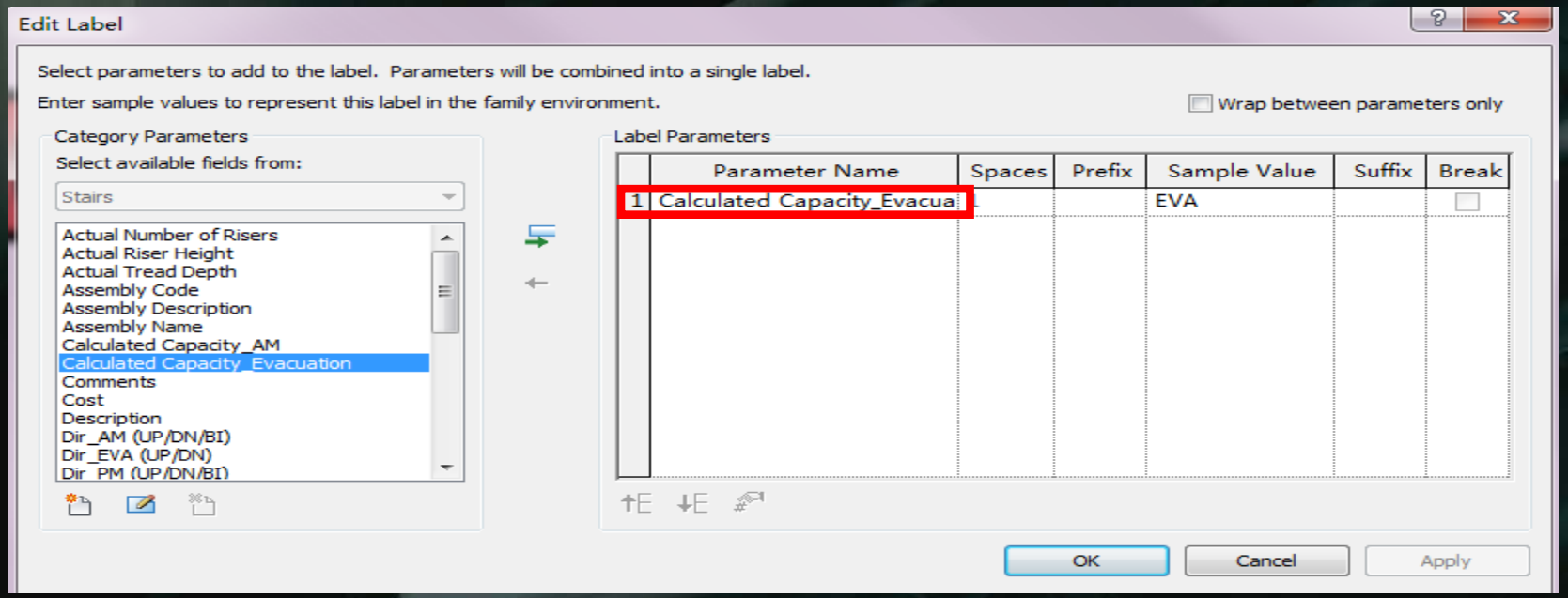
真BIM

STAIR SCHEDULE

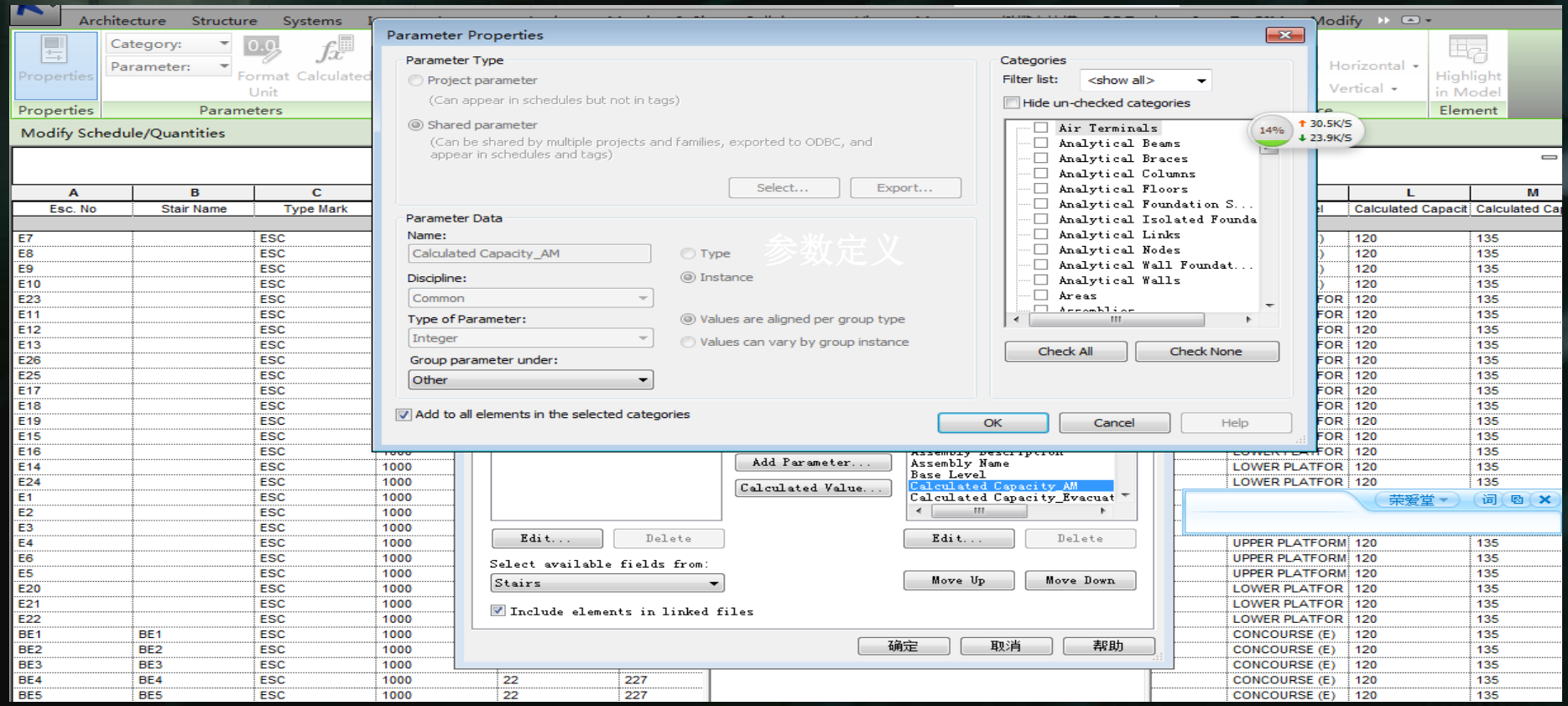
NAME	STAIR WIDTH (mm)	NORMAL AM PEAK					
		DIR. (UP/DN/BI)	CAL.CAP.			TOTAL CAPACITY	(U
			UP	DN	BI		
AS1	2050	DN	103	115	86	115	
AS2	4400	BI	220	246	185	185	
AS2E	4400	UP	220	246	185	220	
BS1	2000	UP	100	112	84	100	
BS2	2000	UP	100	112	84	100	
BS3	4450	BI	223	249	187	187	
BS4	4370	BI	219	245	184	184	
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

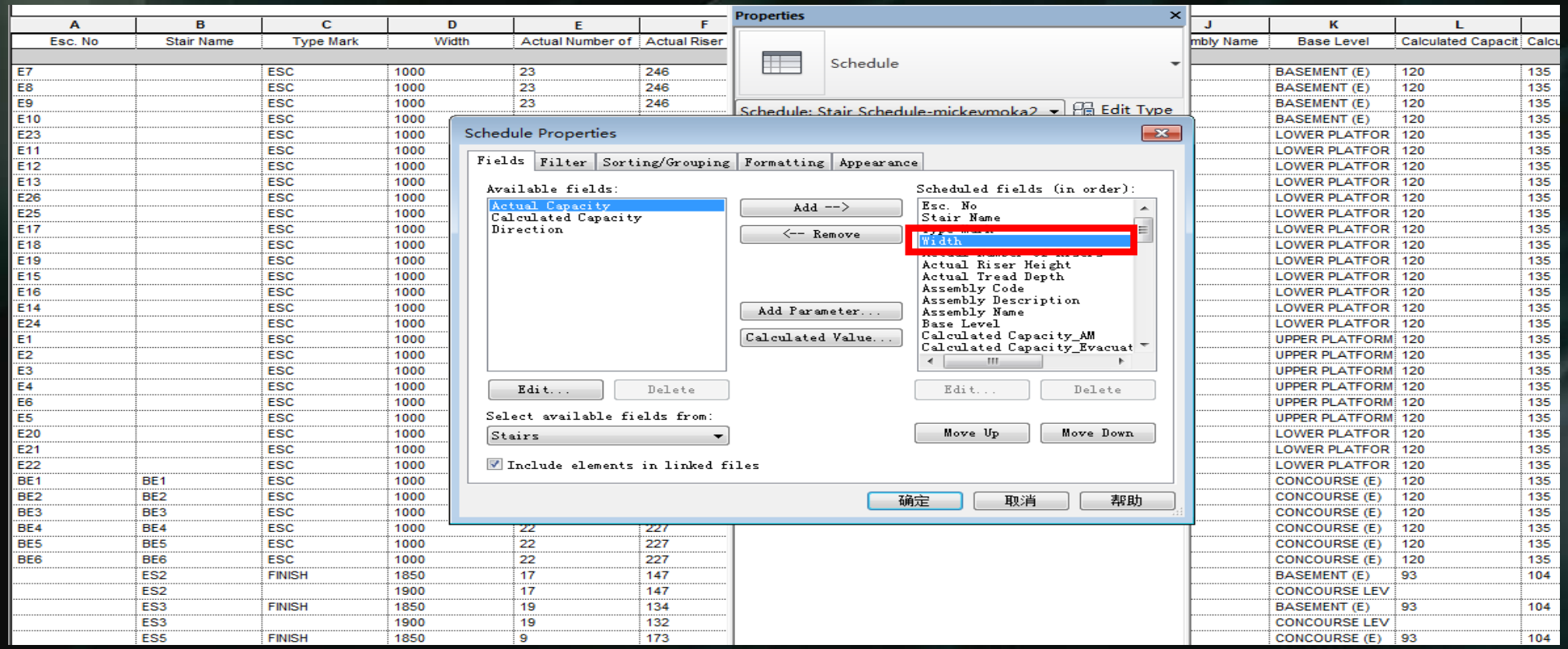

Edit Label
Select parameters to add to the label. Parameters will be combined into a single label.
Enter sample values to represent this label in the family environment.
Wrap between parameters only
Category Parameters
Select available fields from:
Stairs
Actual Number of Risers
Actual Riser Height
Actual 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



A	B	C				L	M
Esc. No	Stair Name	Type Mark				Calculated Capacit	Calculated Ca
E7		ESC				120	135
E8		ESC				120	135
E9		ESC				120	135
E10		ESC				120	135
E23		ESC				FOR 120	135
E11		ESC				FOR 120	135
E12		ESC				FOR 120	135
E13		ESC				FOR 120	135
E26		ESC				FOR 120	135
E25		ESC				FOR 120	135
E17		ESC				FOR 120	135
E18		ESC				FOR 120	135
E19		ESC				FOR 120	135
E15		ESC				FOR 120	135
E16		ESC				FOR 120	135
E14		ESC	1000			LOWER PLATFOR 120	135
E24		ESC	1000			LOWER PLATFOR 120	135
E1		ESC	1000				
E2		ESC	1000				
E3		ESC	1000				
E4		ESC	1000			UPPER PLATFORM 120	135
E6		ESC	1000			UPPER PLATFORM 120	135
E5		ESC	1000			UPPER PLATFORM 120	135
E20		ESC	1000			LOWER PLATFOR 120	135
E21		ESC	1000			LOWER PLATFOR 120	135
E22		ESC	1000			LOWER PLATFOR 120	135
BE1	BE1	ESC	1000			CONCOURSE (E) 120	135
BE2	BE2	ESC	1000			CONCOURSE (E) 120	135
BE3	BE3	ESC	1000			CONCOURSE (E) 120	135
BE4	BE4	ESC	1000	22	227	CONCOURSE (E) 120	135
BE5	BE5	ESC	1000	22	227	CONCOURSE (E) 120	135

真BIM



A	B	C	D	E	F	J	K	L	
Esc. No	Stair Name	Type Mark	Width	Actual Number of	Actual Riser	mbly Name	Base Level	Calculated Capacit	Calcu
E7		ESC	1000	23	246		BASEMENT (E)	120	135
E8		ESC	1000	23	246		BASEMENT (E)	120	135
E9		ESC	1000	23	246		BASEMENT (E)	120	135
E10		ESC	1000				BASEMENT (E)	120	135
E23		ESC	1000				LOWER PLATFOR	120	135
E11		ESC	1000				LOWER PLATFOR	120	135
E12		ESC	1000				LOWER PLATFOR	120	135
E13		ESC	1000				LOWER PLATFOR	120	135
E26		ESC	1000				LOWER PLATFOR	120	135
E25		ESC	1000				LOWER PLATFOR	120	135
E17		ESC	1000				LOWER PLATFOR	120	135
E18		ESC	1000				LOWER PLATFOR	120	135
E19		ESC	1000				LOWER PLATFOR	120	135
E15		ESC	1000				LOWER PLATFOR	120	135
E16		ESC	1000				LOWER PLATFOR	120	135
E14		ESC	1000				LOWER PLATFOR	120	135
E24		ESC	1000				LOWER PLATFOR	120	135
E1		ESC	1000				UPPER PLATFORM	120	135
E2		ESC	1000				UPPER PLATFORM	120	135
E3		ESC	1000				UPPER PLATFORM	120	135
E4		ESC	1000				UPPER PLATFORM	120	135
E6		ESC	1000				UPPER PLATFORM	120	135
E5		ESC	1000				UPPER PLATFORM	120	135
E20		ESC	1000				LOWER PLATFOR	120	135
E21		ESC	1000				LOWER PLATFOR	120	135
E22		ESC	1000				LOWER PLATFOR	120	135
BE1	BE1	ESC	1000				CONCOURSE (E)	120	135
BE2	BE2	ESC	1000				CONCOURSE (E)	120	135
BE3	BE3	ESC	1000				CONCOURSE (E)	120	135
BE4	BE4	ESC	1000	22	227		CONCOURSE (E)	120	135
BE5	BE5	ESC	1000	22	227		CONCOURSE (E)	120	135
BE6	BE6	ESC	1000	22	227		CONCOURSE (E)	120	135
	ES2	FINISH	1850	17	147		BASEMENT (E)	93	104
	ES2		1900	17	147		CONCOURSE LEV		
	ES3	FINISH	1850	19	134		BASEMENT (E)	93	104
	ES3		1900	19	132		CONCOURSE LEV		
	ES5	FINISH	1850	9	173		CONCOURSE (E)	93	104

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...
Edit...
Delete

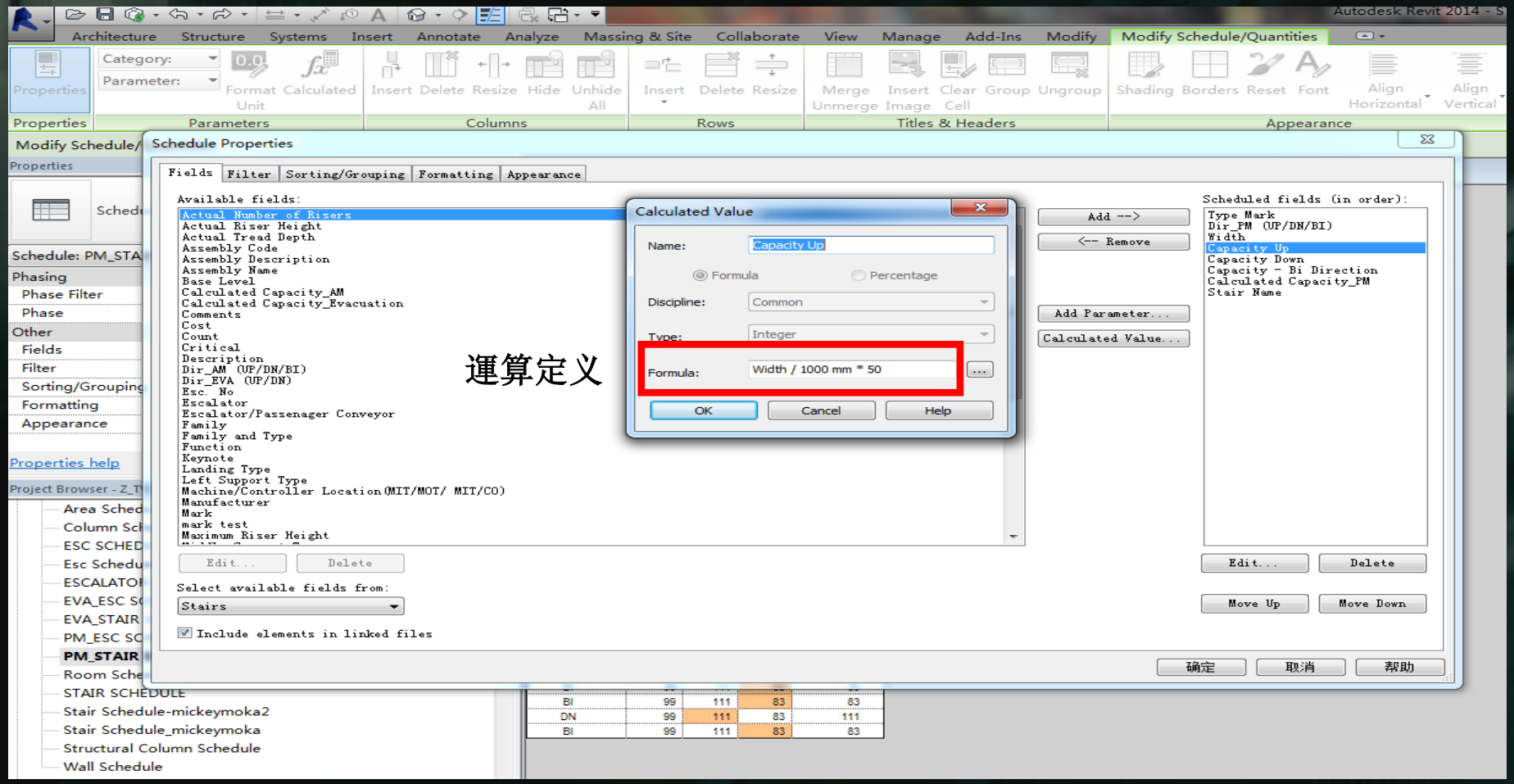
Scheduled fields (in order):
- Esc. No
- Stair Name
- Width
- Actual Riser Height
- Actual Tread Depth
- Assembly Code
- Assembly Description
- Assembly Name
- Base Level
- Calculated Capacity_AM
- Calculated Capacity_Evacuat

Edit...
Delete
Move Up
Move Down

Select available fields from: Stairs

Include elements in linked files

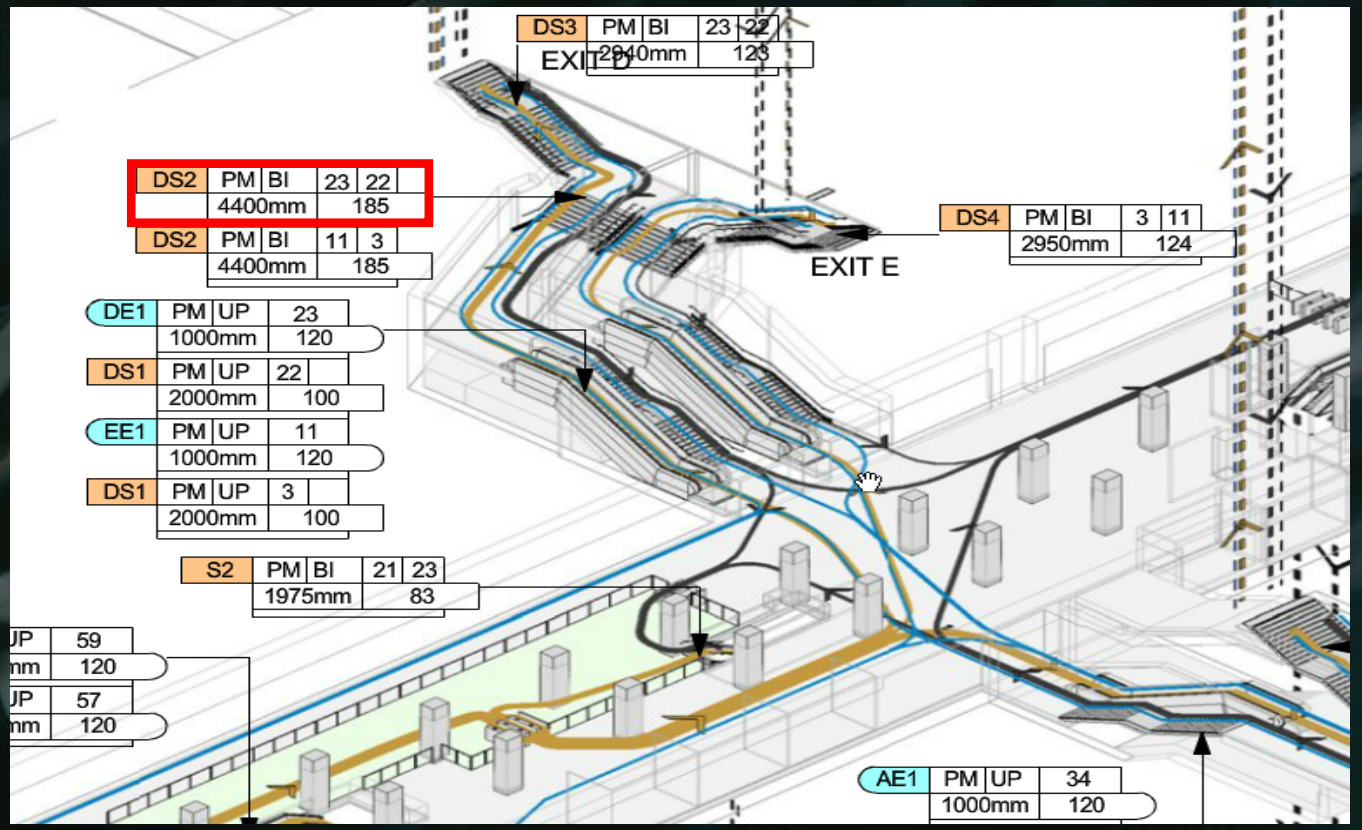
确定 | 取消 | 帮助


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
Calculated
Insert
Delete
Resize
Hide
Unhide
Merge
Unmerge
Insert
Image
Clear
Cell
Group
Ungroup
Shading
Borders
Reset
Font
Align
Horizontal
Align
Vertical
Parameters
Columns
Rows
Titles & Headers
Appearance
Modify Schedule/
Properties
Schedule: PM_STA
Phasing
Phase Filter
Phase
Other
Fields
Filter
Sorting/Grouping
Formatting
Appearance
Properties help
Project Browser - Z_T
Area Sched
Column Sch
ESC SCHED
Esc Schedu
ESCALATOR
EVA_ESC S
EVA_STAIR
PM_ESC SC
PM_STAIR
Room Sche
STAIR SCHEDULE
Stair Schedule-mickeymoka2
Stair Schedule_mickeymoka
Structural Column Schedule
Wall Schedule
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/Passenger 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
運算定义
Calculated Value
Name:
Capacity Up
Formula
Percentage
Discipline:
Common
Type:
Integer
Formula:
Width / 1000 mm * 50
OK
Cancel
Help
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
BI 99 111 83 83
DN 99 111 83 111
BI 99 111 83 83

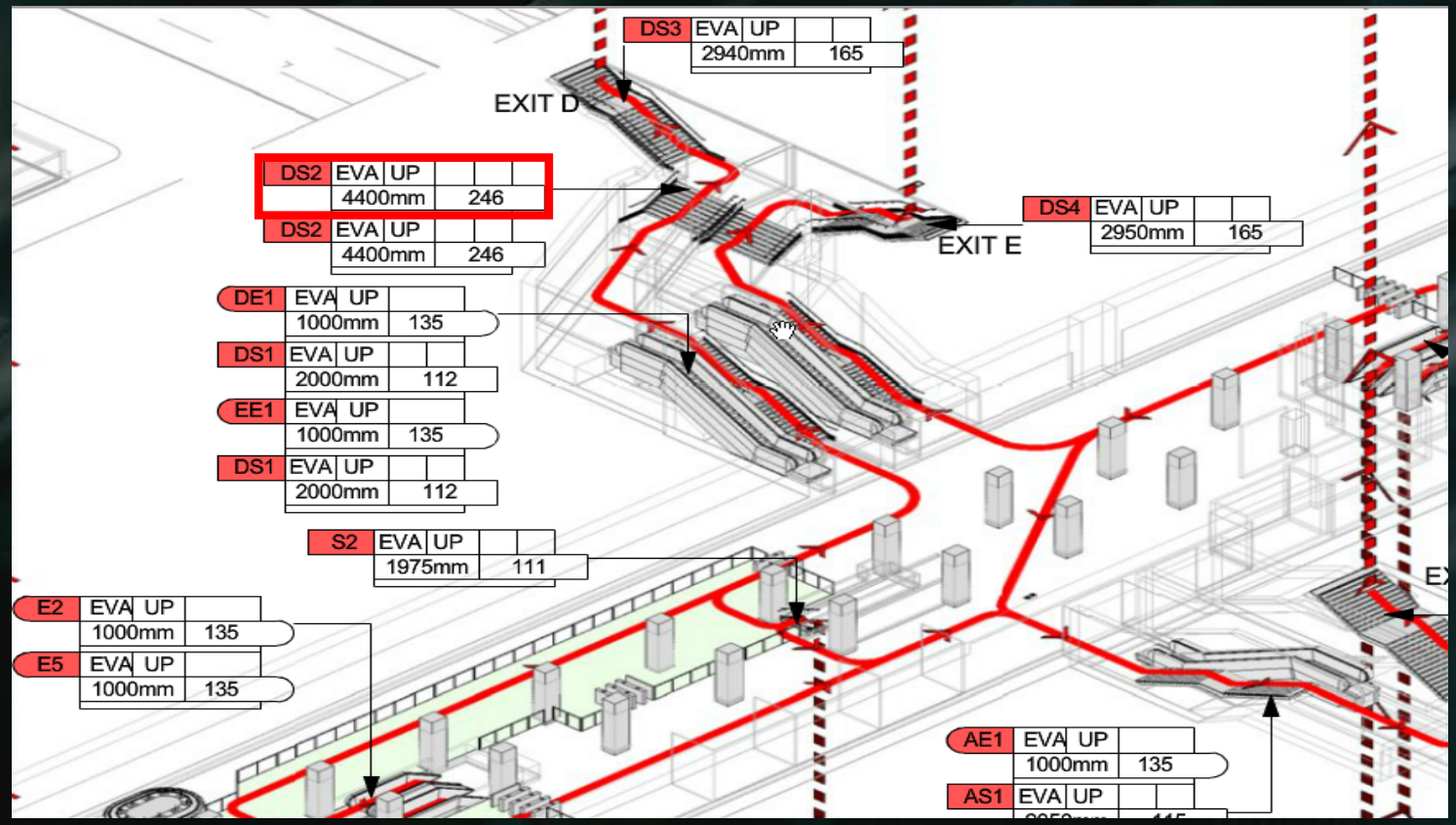
真BIM

(23 + 22) / 185
= 24.3%
= 安全

(安全指標超過80%可能會有危機)



真BIM

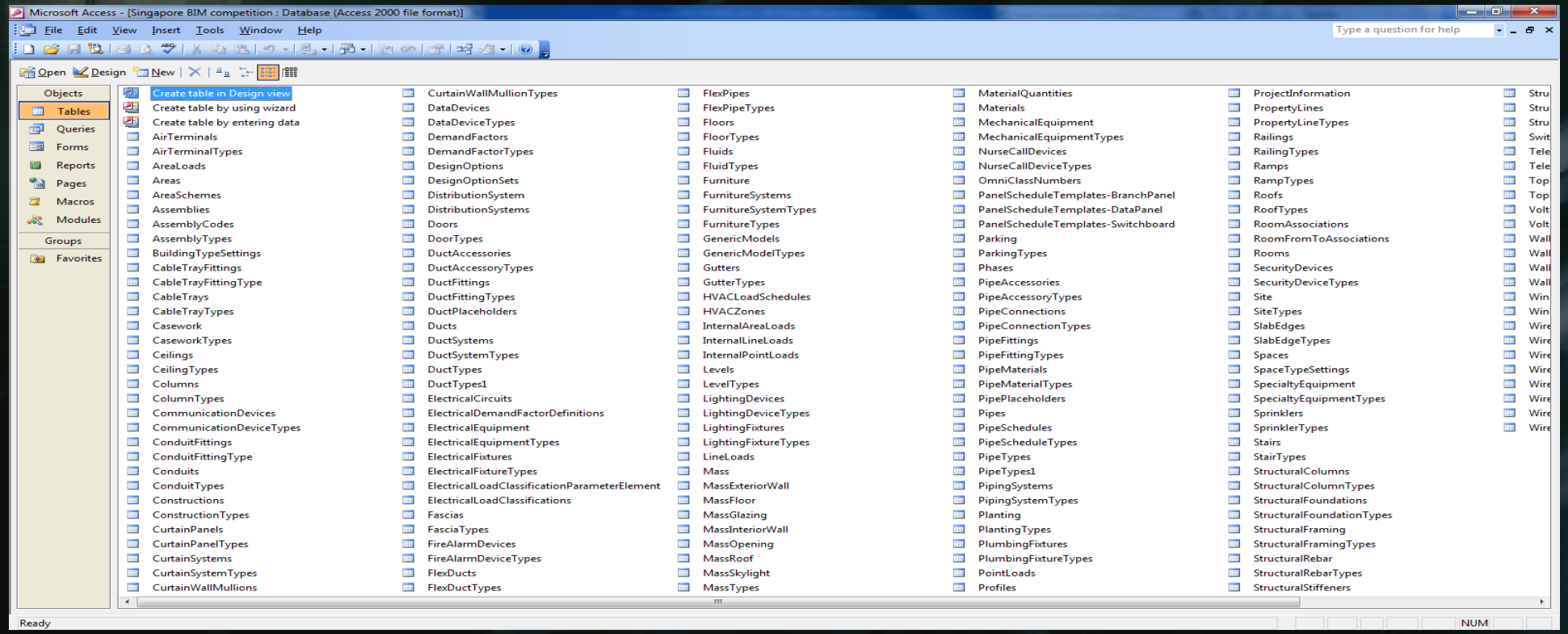

DS3 EVA UP 2940mm 165
EXIT D
DS2 EVA UP 4400mm 246
DS2 EVA UP 4400mm 246
DS4 EVA UP 2950mm 165
EXIT E
DE1 EVA UP 1000mm 135
DS1 EVA UP 2000mm 112
EE1 EVA UP 1000mm 135
DS1 EVA UP 2000mm 112
S2 EVA UP 1975mm 111
E2 EVA UP 1000mm 135
E5 EVA UP 1000mm 135
AE1 EVA UP 1000mm 135
AS1 EVA UP

案例四

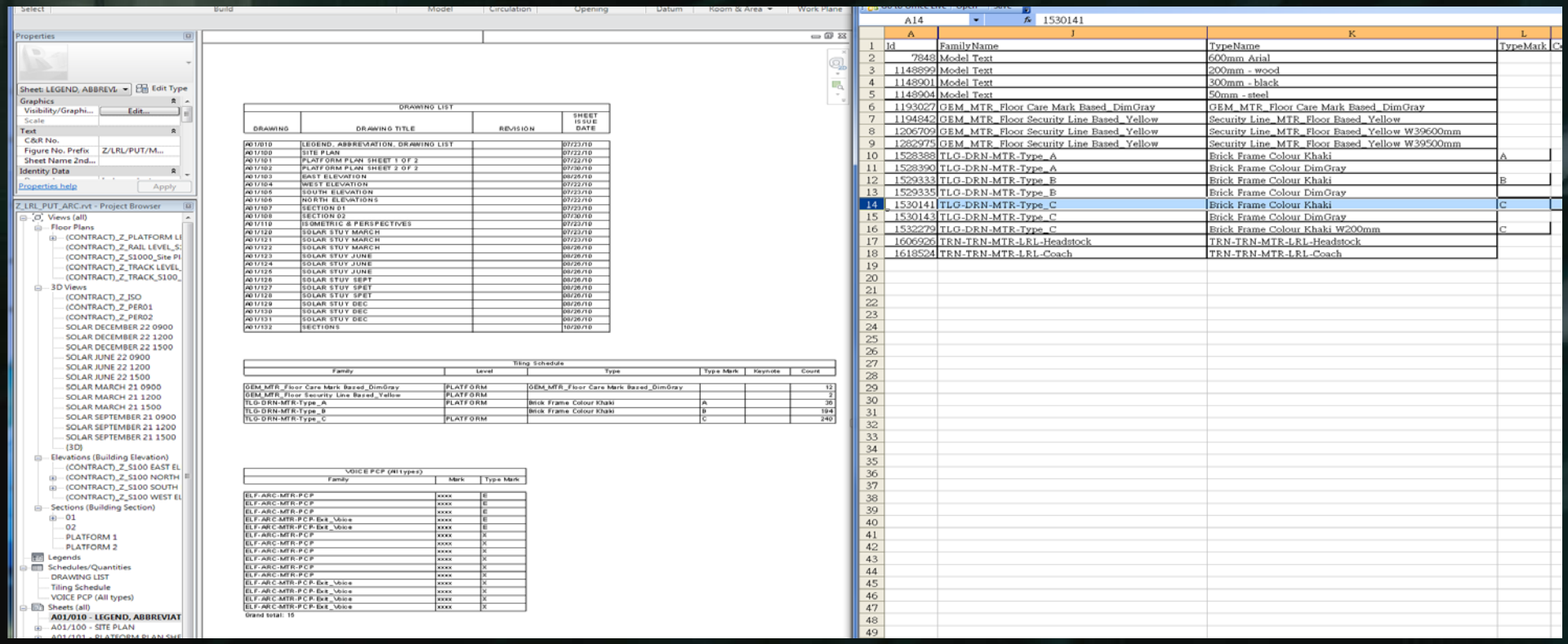
真BIM (营运阶段)

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



DRAWING LIST

DRAWING	DRAWING TITLE	REVISION	SHEET ISSUE DATE
A01/010	LEGEND, ABBREVIATION, DRAWING LIST		07/23/10
A01/100	SITE PLAN		07/22/10
A01/101	PLATFORM PLAN SHEET 1 OF 2		07/22/10
A01/102	PLATFORM PLAN SHEET 2 OF 2		07/30/10
A01/103	EAST ELEVATION		08/26/10
A01/104	WEST ELEVATION		07/22/10
A01/105	SOUTH ELEVATION		07/23/10
A01/106	NORTH ELEVATIONS		07/22/10
A01/107	SECTION 01		07/23/10
A01/108	SECTION 02		07/30/10
A01/110	ISOMETRIC & PERSPECTIVES		07/23/10
A01/120	SOLAR STUY MARCH		07/23/10
A01/121	SOLAR STUY MARCH		07/23/10
A01/122	SOLAR STUY MARCH		08/26/10
A01/123	SOLAR STUY JUNE		08/26/10
A01/124	SOLAR STUY JUNE		08/26/10
A01/125	SOLAR STUY JUNE		08/26/10
A01/126	SOLAR STUY SEPT		08/26/10
A01/127	SOLAR STUY SPET		08/26/10
A01/128	SOLAR STUY SPET		08/26/10
A01/129	SOLAR STUY DEC		08/26/10
A01/130	SOLAR STUY DEC		08/26/10
A01/131	SOLAR STUY DEC		08/26/10
A01/132	SECTIONS		10/20/10

Tiling Schedule

Family	Level	Type	Type Mark	Keynote	Count
GEM_MTR_Floor Care Mark Based_DimGray	PLATFORM	GEM_MTR_Floor Care Mark Based_DimGray			12
GEM_MTR_Floor Security Line Based_Yellow	PLATFORM				2
TLG-DRN-MTR-Type_A	PLATFORM	Brick Frame Colour Khaki	A		36
TLG-DRN-MTR-Type_B		Brick Frame Colour Khaki	B		194
TLG-DRN-MTR-Type_C	PLATFORM		C		240

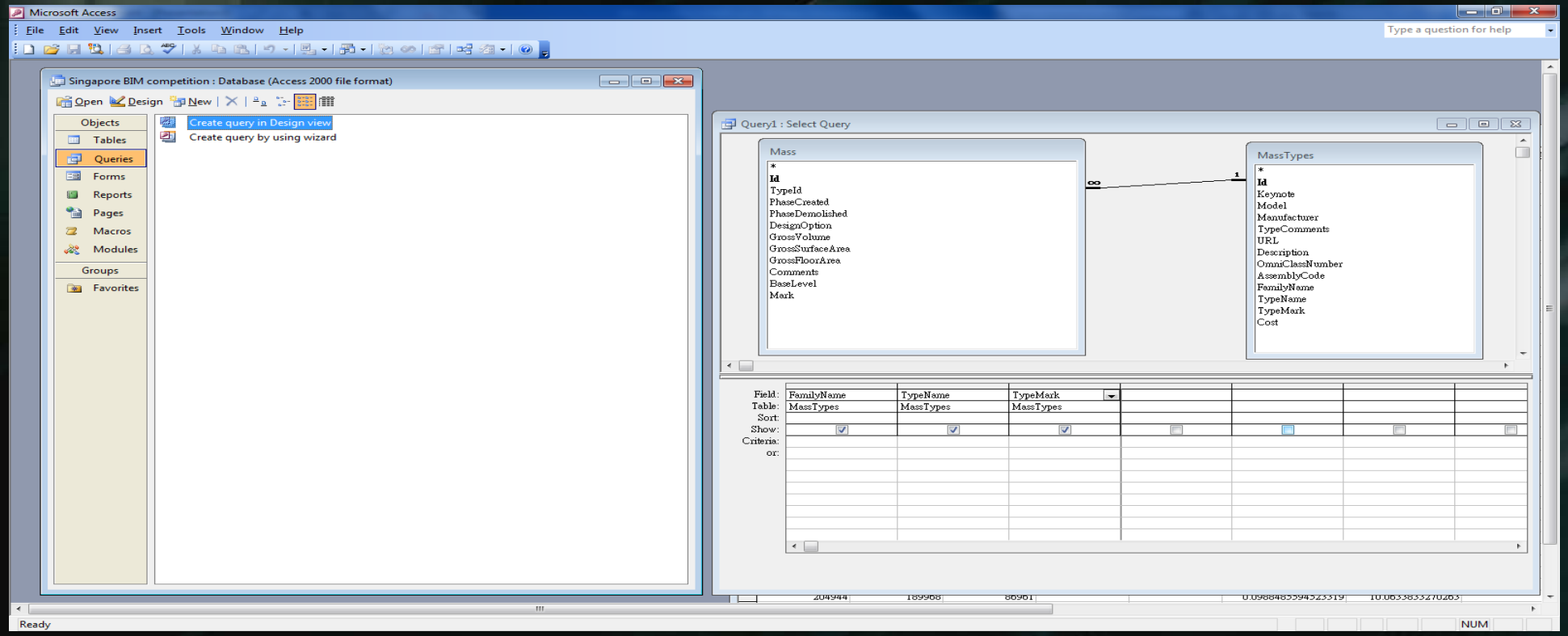
VOICE PCP (All types)

Family	Mark	Type Mark
ELF-ARC-MTR-PCP	xxxx	E
ELF-ARC-MTR-PCP	xxxx	E
ELF-ARC-MTR-PCP	xxxx	E
ELF-ARC-MTR-PCP-Exit_Voice	xxxx	E
ELF-ARC-MTR-PCP-Exit_Voice	xxxx	E
ELF-ARC-MTR-PCP	xxxx	X
ELF-ARC-MTR-PCP	xxxx	X
ELF-ARC-MTR-PCP	xxxx	X
ELF-ARC-MTR-PCP	xxxx	X
ELF-ARC-MTR-PCP	xxxx	X
ELF-ARC-MTR-PCP-Exit_Voice	xxxx	X
ELF-ARC-MTR-PCP-Exit_Voice	xxxx	X
ELF-ARC-MTR-PCP-Exit_Voice	xxxx	X
ELF-ARC-MTR-PCP-Exit_Voice	xxxx	X

Grand total: 16

	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:
Table:
Sort:
Show:
Criteria:
or:
FamilyName
TypeName
TypeMark
MassTypes
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

Room No. 3.3 - Cleaners' Room

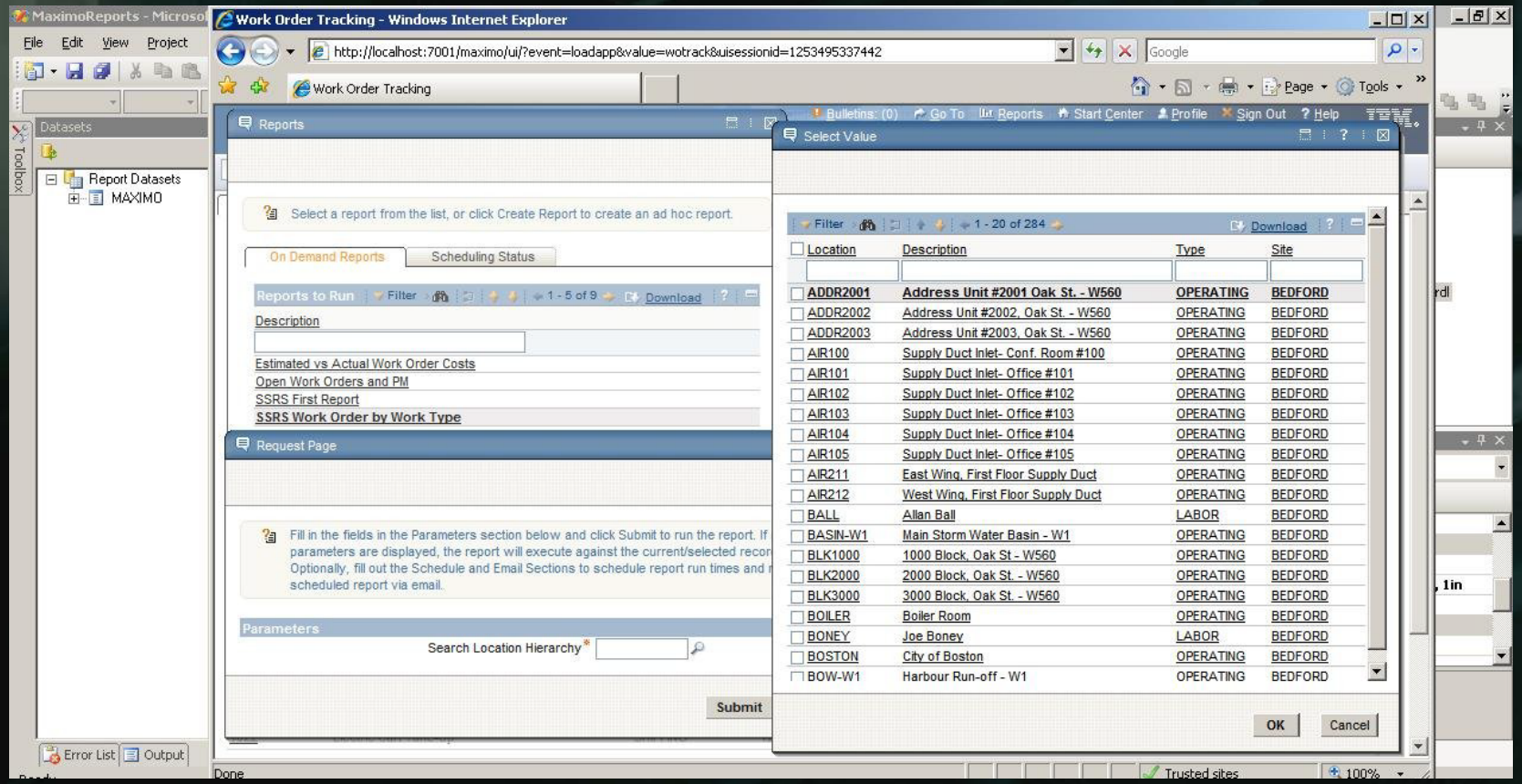
Function	A room for storage of small volume of cleansing materials, tools and short stay of cleaners							
Size	15 - 20 m²							
Occupants	3-5 persons							
Location	Non-public area							
Fire Rating	# In accordance with Fire Safety Standard for KTL/TWL/ISL Stations - S/ARC/PD/005							
Security Level	Low							
Finish	Floor		Skirting		Wall		Ceiling	
	Vitrified ceramic tiles, 150x150x8, on c/s screed - "Pilkington Dorset, colour Dark Grey" or equal approved; on liquid-applied waterproof membrane - "Lacticrete 9235 with fabric reinforcement" or equal approved		Coved ceramic tiles, 150x150x8, on c/s backing - "Pilkington Dorset, colour Dark Grey" or equal approved; on liquid-applied waterproof membrane - "Lacticrete 9235 with fabric reinforcement" or equal approved		Glazed ceramic tiles, 150x150x6.5, on c/s backing - "Pilkington Architectural Colours, colour Vellum White" or equal approved; Durallie paint on c/s render above 2100 high - "Alphadecor, colour 9010 White" or equal approved		Durable paint on fairface concrete - "Alphadecor, colour 9010 White" or equal approved	
Door Set	Size	Fire Rating	Acting	Frame	Inside Finish	Outside Finish	Air Resistance	Others
	900 x 2100 mm	# (see above)	Swing In 90°	Painted/ S/S *	Painted/ S/S *	Painted/ S/S *	N/A	Durable kickplate to u/s of push plate
Ironmongery	Lock Set	Security Level	Access Card: Inside	Access Card: Outside	Remote Control	Inside Handle	Outside Handle	Accessories
	Night Latch	Low	No	No	No	Lever handle on back plate	Pull handle on back plate	Door closer, door stop
Signage	Door Plate (supply by Ops)							
Environment	Temperature	Ventilation	Humidity			Acoustic		Thermal
	24 °C A/C	N/A	50% ± 10%			NC 50		---
Lighting	Normal Illuminance	Emergency Illuminance	Type			Diffusers		Source
	300 Lux	10 Lux	Fluorescent, surface mounted			---		Direct
Fire	Detection		Suppression			Extinguisher		Smoke Extraction
	Smoke Detectors		N/A			Relocate existing		---
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

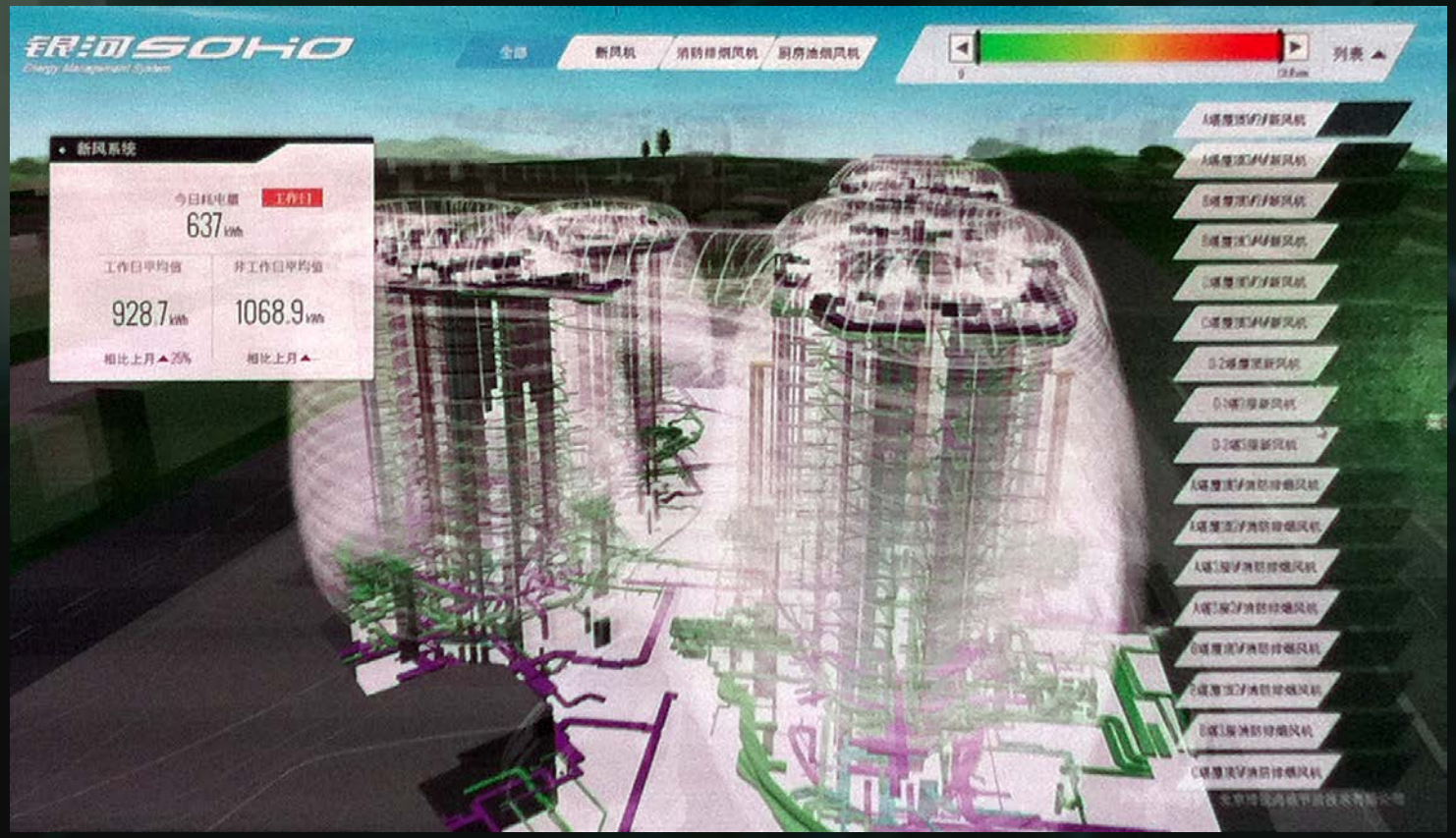
* Dependent on location - stainless steel door to be used when facing public areas.
- painted doors to be used when facing BofH areas.

ROOM DATA SHEET

物业管理 - 维修保护


MaximoReports - Microsoft Visual Studio
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
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



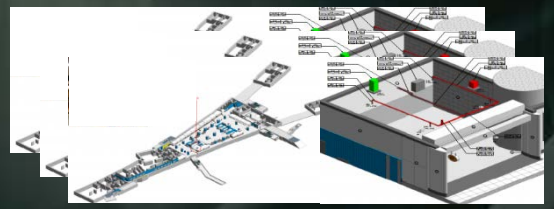
BIM 在物业管理中概念

独立模 型 (M)+ 独立数字库 (I)

团队数字库 (I)

应用 (B)

S1



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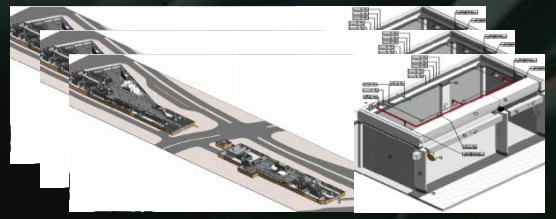
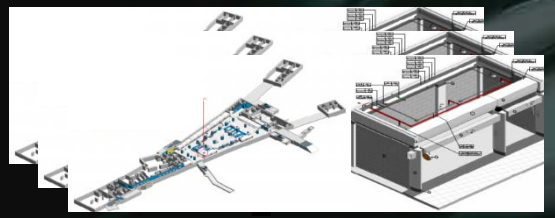


S3



超级数字库

其他单位
数字库

APP 1

业务

APP 2

保安

APP 3

维修

- 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