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

BIM in Statutory Submission

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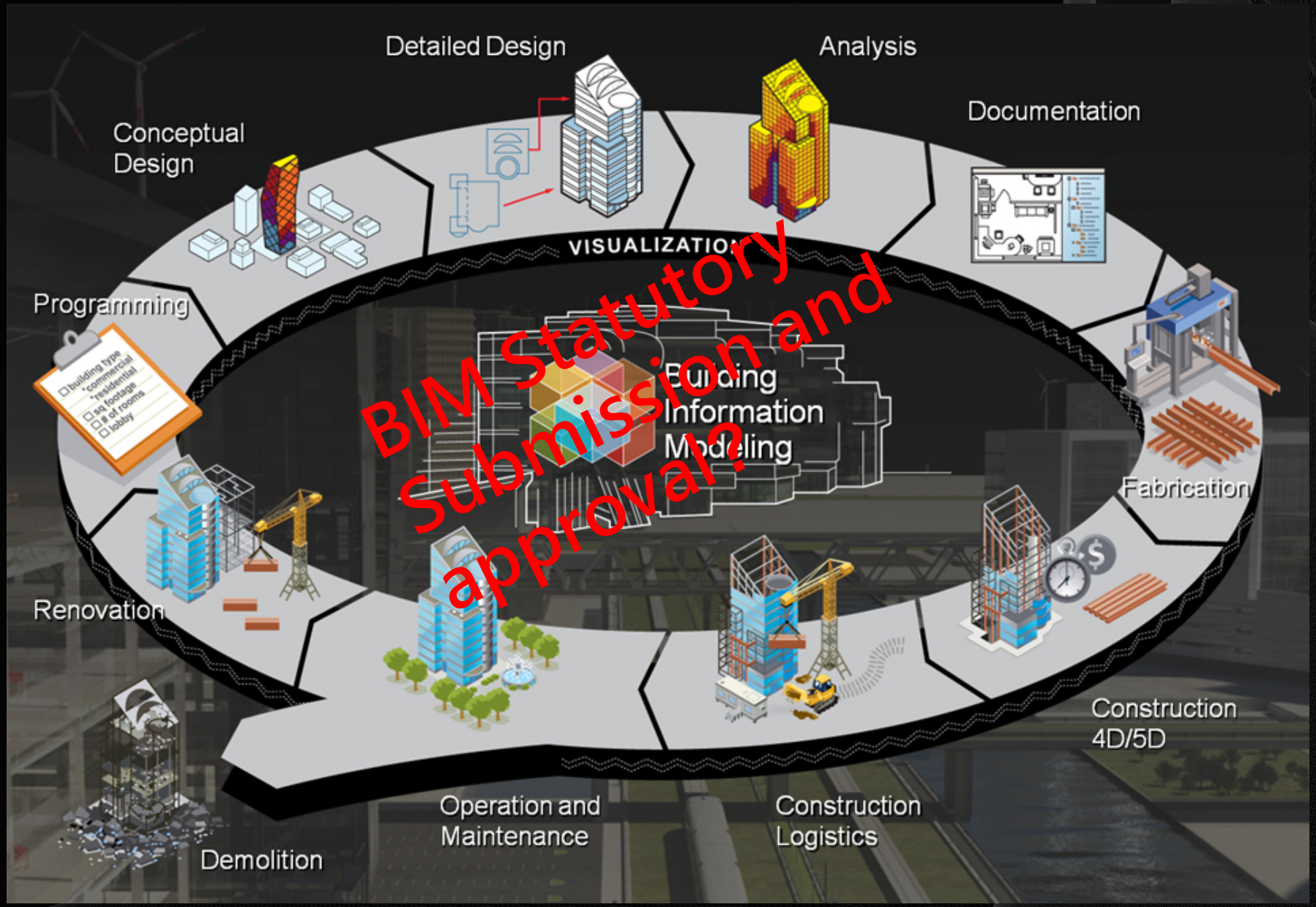
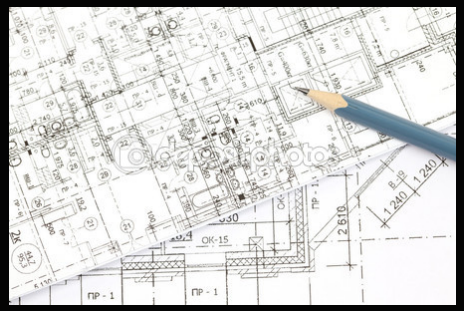
HKUSPACE Department of Architecture, Adjunct Lecturer

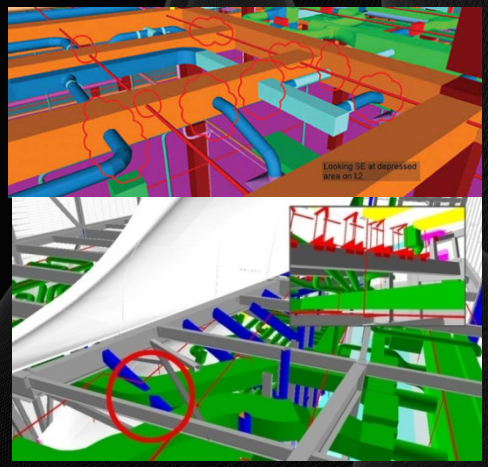


BIM Project Life Cycle

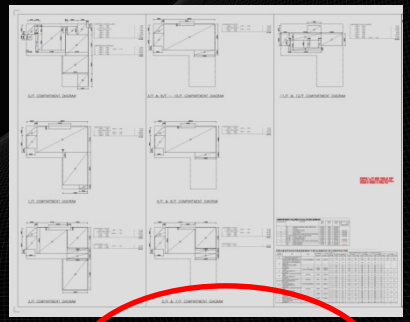


Working Drawing

BIM in Design (Single Source Database)



Clash Detection



Statutory Submission/ Approval

屋宇署 (BD)
ADV 34 BIM 輔助審批文件

- Authorized Persons (AP)
- Registered Structural Engineers (RSE)
- Registered Geotechnical Engineers (RGE)

Who will be affected by ADV-34?

- A General guidelines on BIM submissions for building proposals as **supplementary information to facilitate plan** processing by the BD.
- > Not a Compulsory but will benefit to BD Approval

- **New building** development and alteration and addition works **(A & A)** which are considered useful to facilitate the BD in processing plan submissions.
- Refer to **Appendix A**
- Project AP/RSE/RGE are **encouraged** to provide the BD with a **soft copy** of the **computer modelling information** under the specified format for consideration. **(> E.g. REVIT, ArchiCAD, Tekla Model… CObie - PA1192 standards?)**

- **AP/RSE/RGE are encouraged to present their building and/or building works proposals by the computer aid of BIM information in digital format compatible with (1) BIM viewing software or (2) real-time simulation to enhance illustration of the proposals and/or the (3) construction sequence.**

- **> Focus on this 3 submission requirements. See next slide for details.**

- The data files should be stored in non-rewritable CD-ROM in ISO 9660 format (i.e. CD format) or non-rewriteable DVD-ROM in ISO/IEC 13346:1995 format (i.e. DVD format);
- (b) BIM viewing software (but not web based BIM viewer) (> Not A360) shall be available for free download from the Internet for viewing the BIM submission (>dwfx, nwd). The link to download the viewing software should also be provided by the AP/RSE/RGE. Each individual file for viewing on BIM viewing software should also be limited to the size of 30 MB; and (>Why? Required Model management)
- (c) The real-time simulation should be in Windows Media Video (wmv) or Audio Video Interleave (avi) format and supported by Windows Media Player 11 or above. (> Naviswork, Fuzor, Lumion...etc)

- Whilst BIM is submitted as a kind of supplementary information for reference, the BD processes approval of plans under the Buildings Ordinance based on the information contained in the plans.

- In case of any discrepancy between the plans and BIM submitted, the **plans shall prevail**. (> Although not right but already a good start) To keep pace with the development of BIM in the building industry, the BD will, from time to time, review the extent of BIM application and evaluate its effectiveness in the plan submission. (> Will have addendum)

Appendix A - Examples of application of BIM to supplement Plan Submissions

	Types of Plan Submission	Examples of Building Information to be illustrated by BIM	
		Building Information Model	**Real-time Simulation**
AP	General Building Plans	● innovative building design, irregular/twisted building form; ● projecting features on external wall; ● relationship between site profiles/street levels and proposed building; ● arrangement of means of escape and compartmentation; ● spatial arrangement of building; ● relationship between existing building and proposed alteration and addition (A&A) works.	● sequence and phasing of various stages[Note 1] of new building development; ● sequence and phasing of A&A works.
AP	Drainage Plans	● complex drainage systems and/or connections ● relationship between proposed underground drainage works and foundation works/site formation works etc.	● sequence and phasing of various stages[Note 1] of new building development; ● sequence and phasing of A&A works.

Appendix A - Examples of application of BIM to supplement Plan Submissions

RSE

RSE

RSE

RGE

RGE

RSE

RSE

Superstructure Plans	• complex steel structures and/or connections; • arrangement of transfer structures and illustration of load path; • basement structures supporting adjoining ground and/or existing geotechnical features; • assembly sequence, structural arrangement and/or connection of façade/glass wall/curtain wall/cladding works, etc.; • relationship between existing structures and proposed A&A works; • working space, temporary supports and strengthening in A&A works.	• sequence and phasing of various stages[Note 1] of new building development; • sequence and phasing of A&A works.
Foundation Plans	• relationship between proposed foundations, sub-structures, E&LS works and geological ground profiles, adjoining existing foundations, geotechnical features, sensitive structures, etc.	• sequence and phasing of various stages[Note 1] of new building development; • top-down construction.
Excavation and Lateral Support (E&LS) Plans		
Site Formation Plans	• relationship between site profiles, geological ground profiles and proposed works.	• sequence and phasing of various stages[Note 1] of new building development.
Demolition Plans	• final stage of partial demolished structures.	• sequence and phasing of works, method statements and temporary precautionary measures.

Notes : Relevant stages of new building development may include demolition, foundation, E&LS, site formation, sub-structure and superstructure construction, as the case may be.

BIM 模型輔助審批文件

視頻輔助審批文件

Appendix A
(PNAP ADV-34)

Examples of application of BIM to supplement Plan Submissions

Types of Plan Submission	Examples of Building Information to be illustrated by BIM	
	Building Information Model	Real-time Simulation
General Building Plans	• innovative building design, irregular/twisted building form; • projecting features on external wall; • relationship between site profiles/street levels and proposed building; • arrangement of means of escape and compartmentation; • spatial arrangement of building; • relationship between existing building and proposed alteration and addition (A&A) works.	• sequence and phasing of various stages[Note1] of new building development; • sequence and phasing of A&A works.
Drainage Plans	• complex drainage systems and/or connections • relationship between proposed underground drainage works and foundation works/site formation works etc.	• sequence and phasing of various stages[Note1] of new building development; • sequence and phasing of A&A works.
Superstructure Plans	• complex steel structures and/or connections; • arrangement of transfer structures and illustration of load path; • basement structures supporting adjoining ground and/or existing geotechnical features; • assembly sequence, structural arrangement and/or connection of façade/glass wall/curtain wall/cladding works, etc.; • relationship between existing structures and proposed A&A works; • working space, temporary supports and strengthening in A&A works.	• sequence and phasing of various stages[Note1] of new building development; • sequence and phasing of A&A works.
Foundation Plans Excavation and Lateral Support (E&LS) Plans	• relationship between proposed foundations, sub-structures, E&LS works and geological ground profiles, adjoining existing foundations, geotechnical features, sensitive structures, etc.	• sequence and phasing of various stages[Note1] of new building development; • top-down construction.
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Notes : Relevant stages of new building development may include demolition, foundation, E&LS, site formation, sub-structure and superstructure construction, as the case may be.

建築設計

排水設計

結構設計

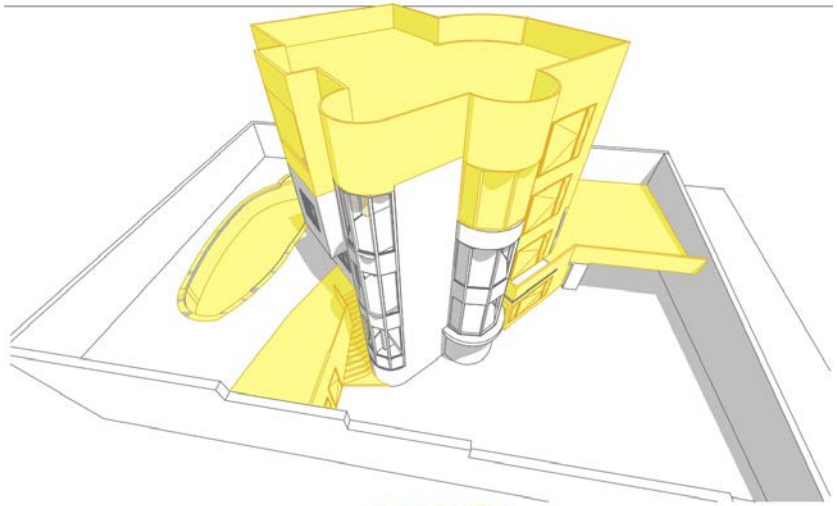
桩基礎設計

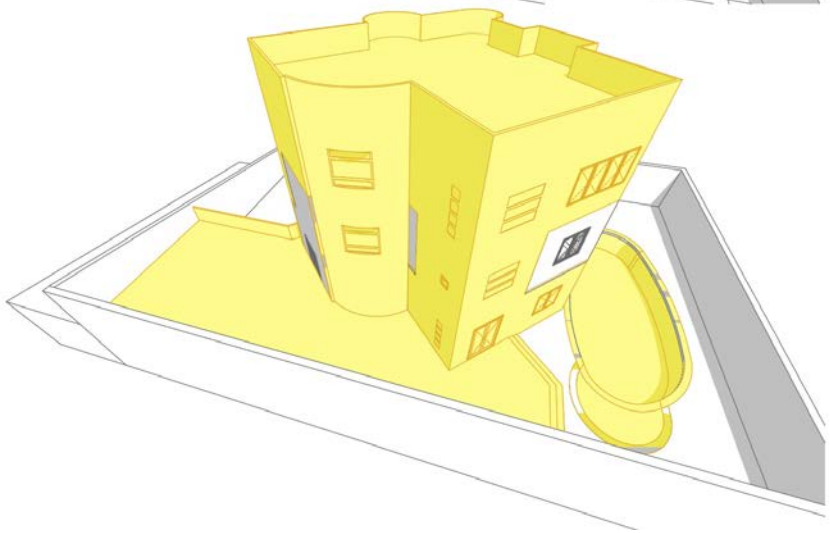
土方設計

基地平整

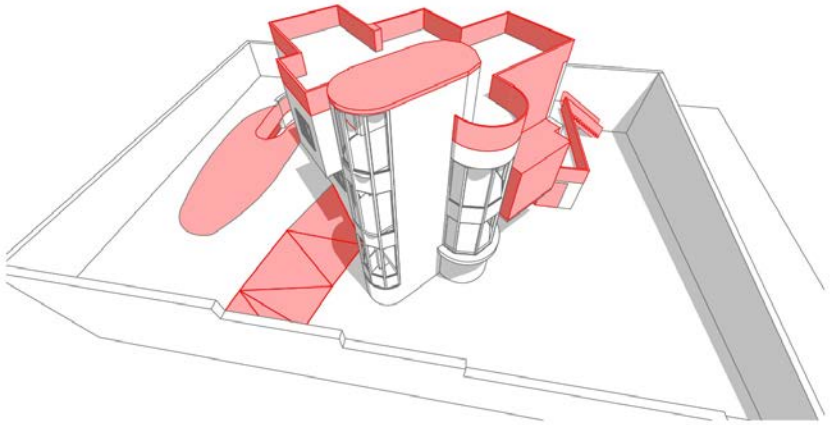
清拆

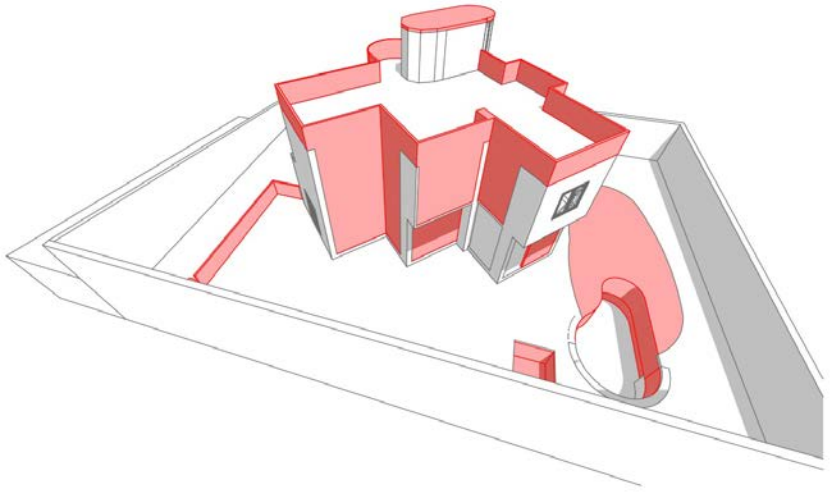
非法僭建部分





還完部分

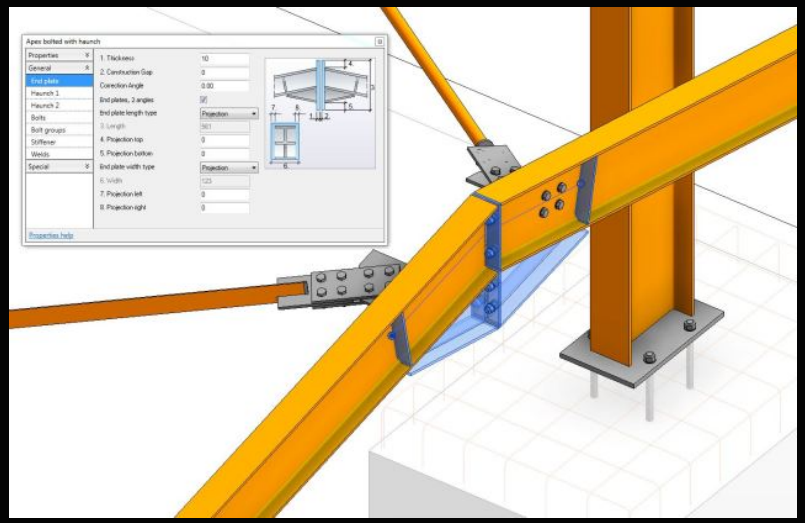


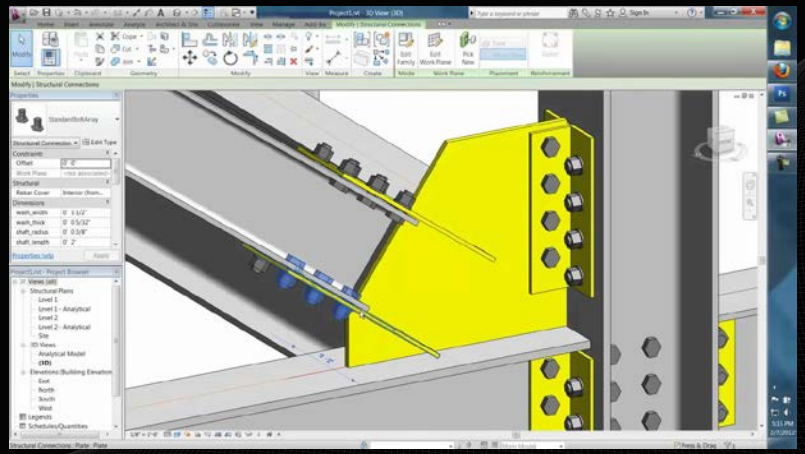


Phasing diagrams – re-instatement works for unauthorized building structures according to removal order from BD

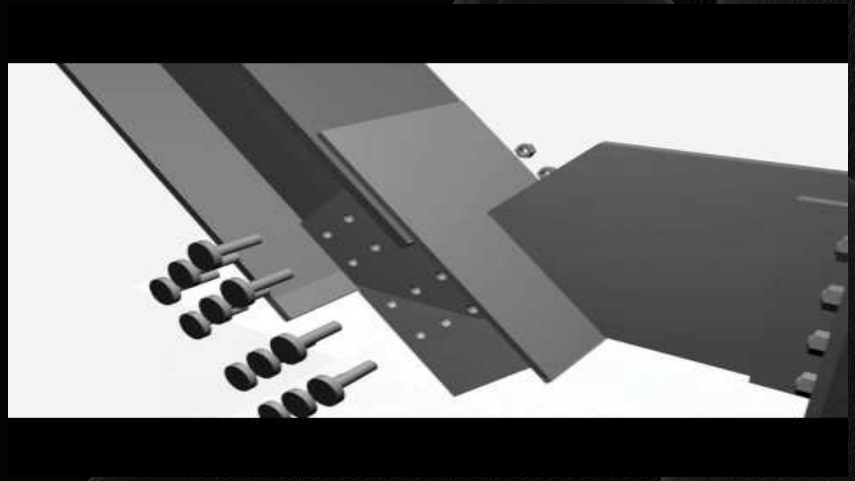
BIM 輔助審批文件

Building Information Model





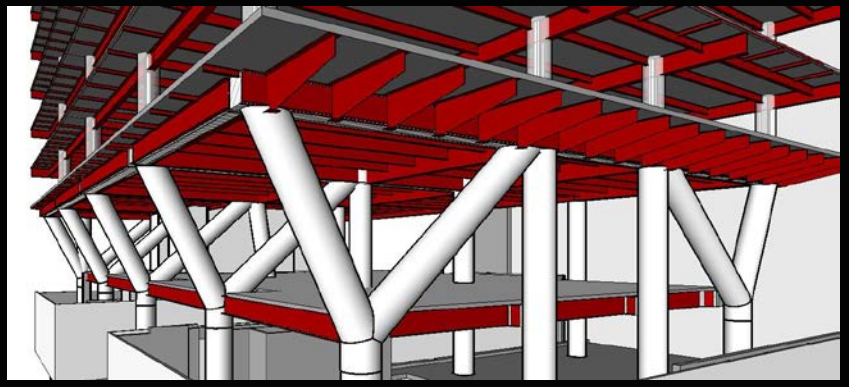
Real-time Simulation

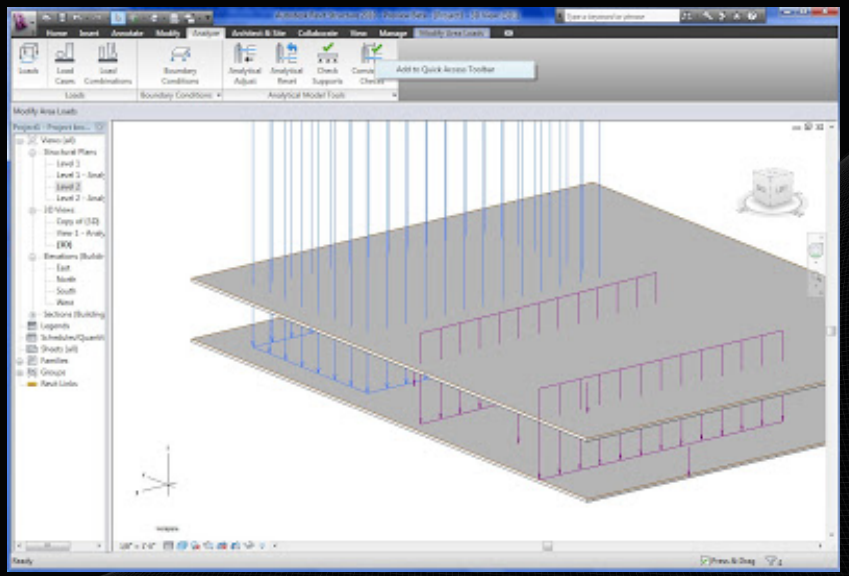


https://www.youtube.com/watch?v=4r-RW8ampdc

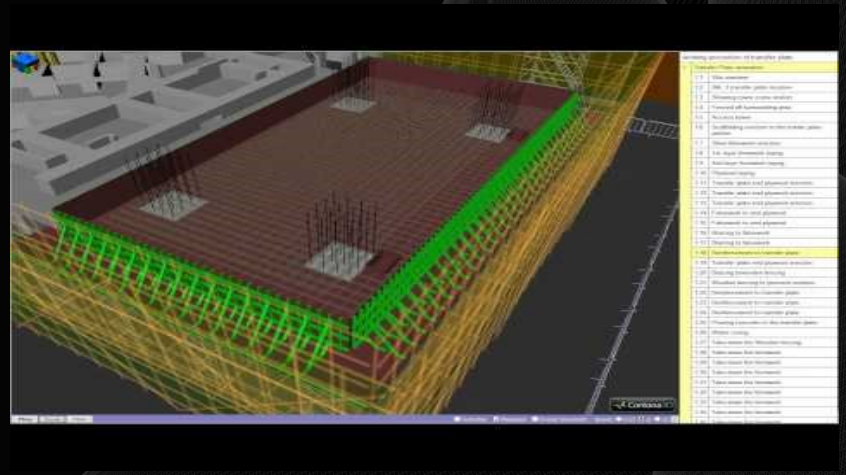
Superstructure Plans

Building Information Model





Real-time Simulation

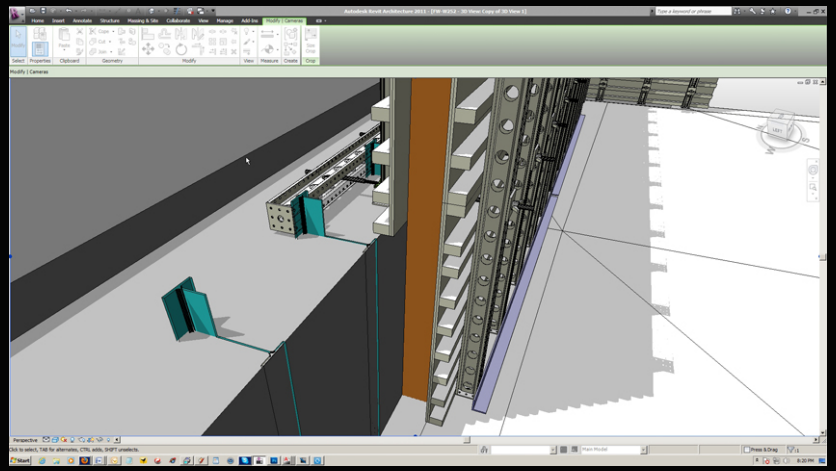


https://www.youtube.com/watch?v=lD1bcWRSKHA

Superstructure Plans

Basement structures supporting adjoining ground and/or existing geotechnical

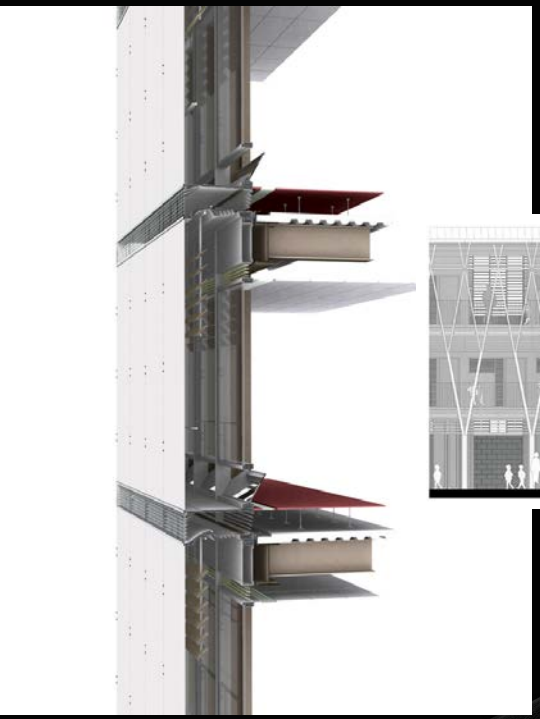
Building Information Model	Real-time Simulation

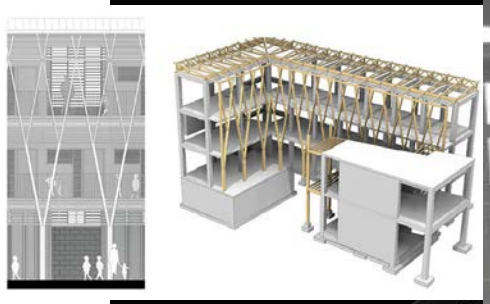


https://www.youtube.com/watch?v=eTGAGz_gSbU

Assembly sequence, structural arrangement and/or connection of facade/glass

Building Information Model	Real-time Simulation





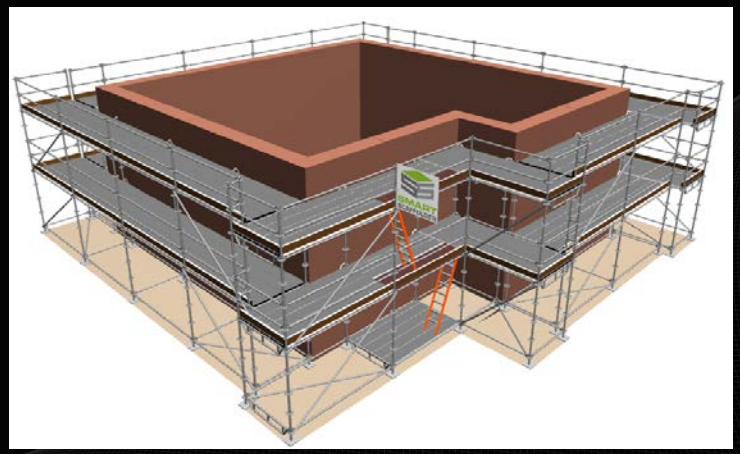
https://www.youtube.com/watch?v=PDXGs5dGxXE

Building Information Model	Real-time Simulation

https://www.youtube.com/watch?v=SqpgFaFnwWk

Superstructure Plans

Building Information Model



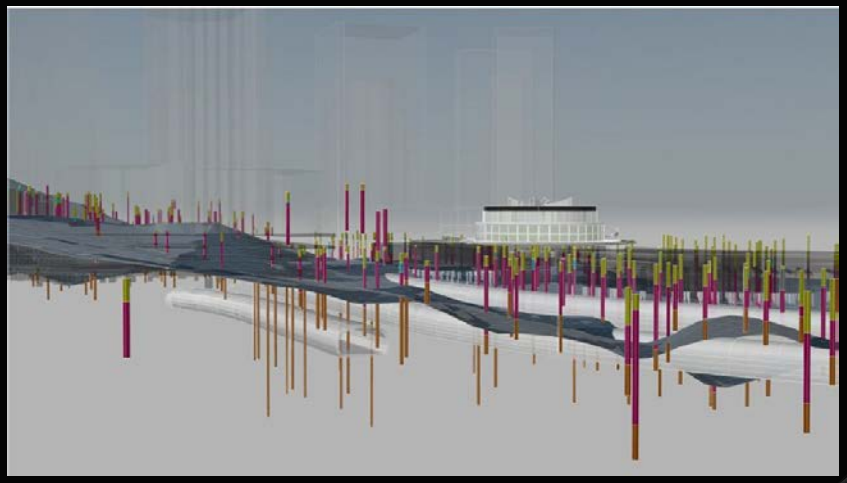
Real-time Simulation

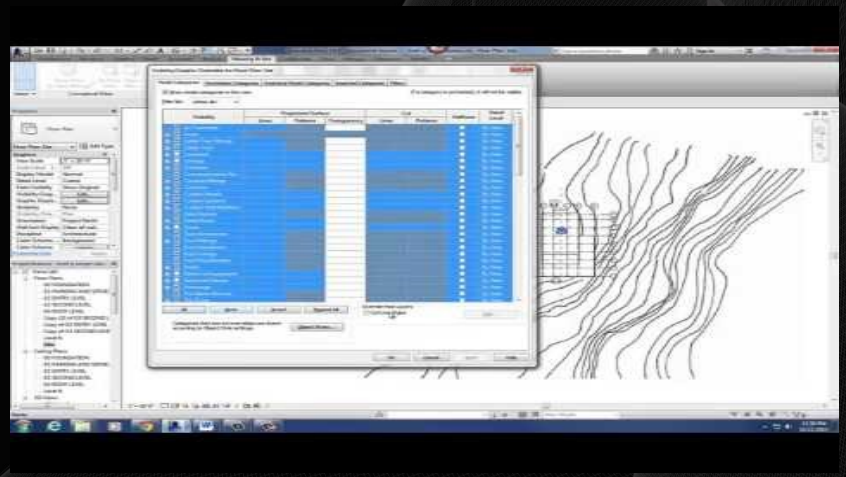
https://www.youtube.com/watch?v=5uHzLV3gf78

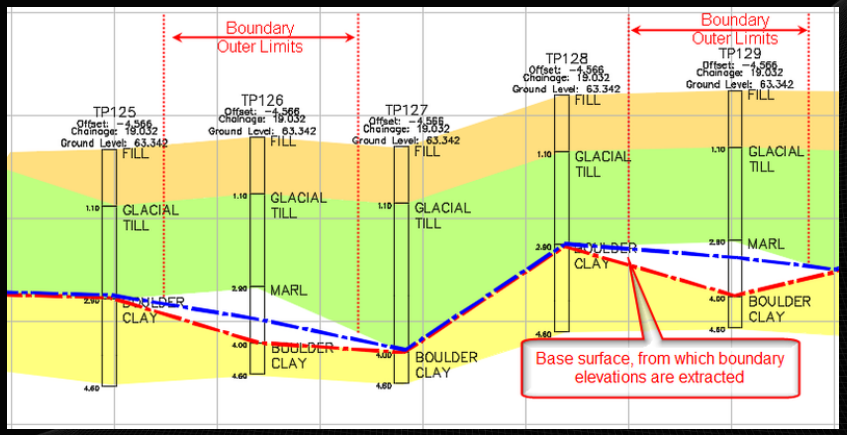
Superstructure Plans

Relationship between proposed foundations, sub-structures, E&LS works and

Building Information Model	Real-time Simulation







https://www.youtube.com/watch?v=NeK6AODwRVI

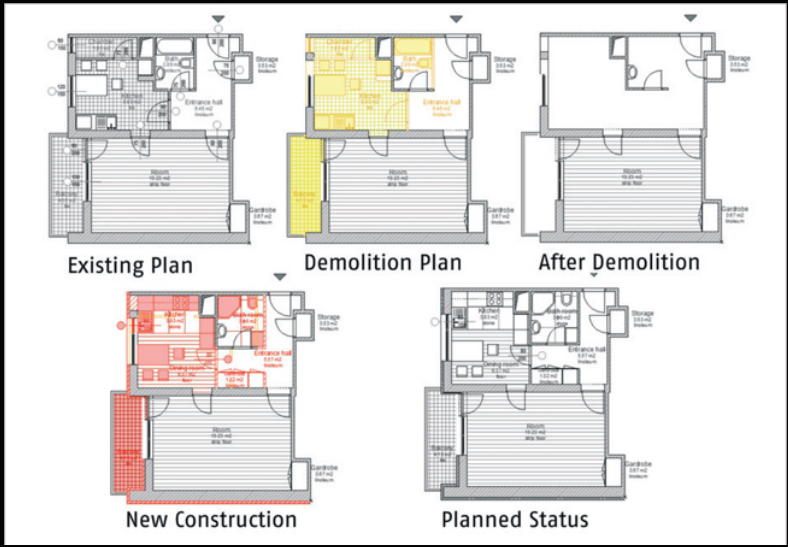
Foundation Plans, Excavation and Lateral Support (E&LS) Plans

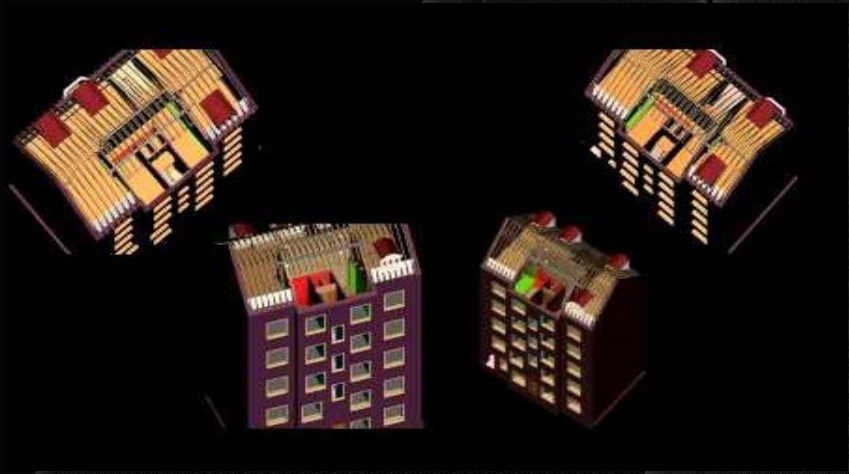
Relationship between site profiles, geological ground profiles and proposed

Building Information Model	Real-time Simulation

https://www.youtube.com/watch?v=SqpgFaFnwWk

Building Information Model	Real-time Simulation

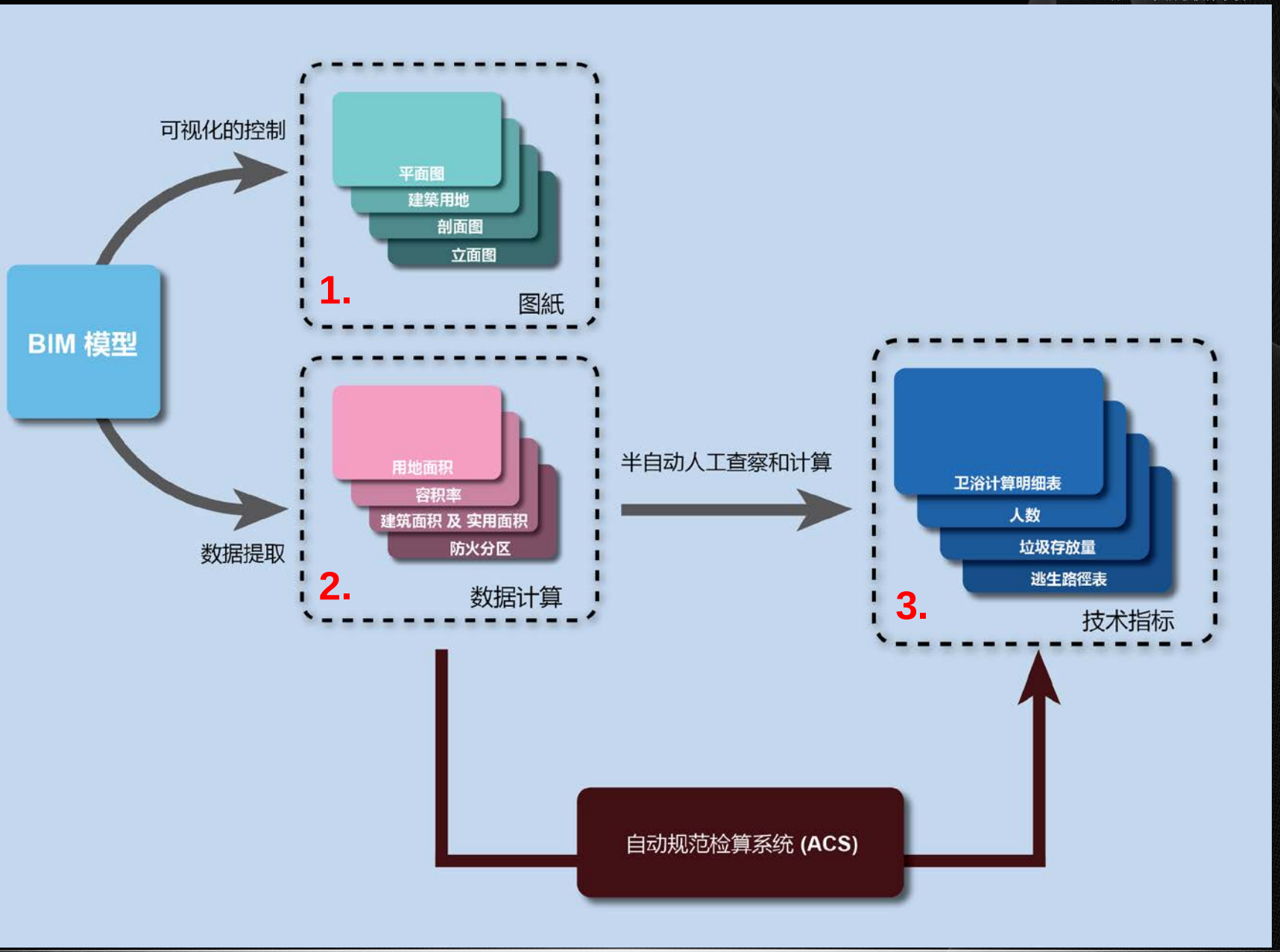




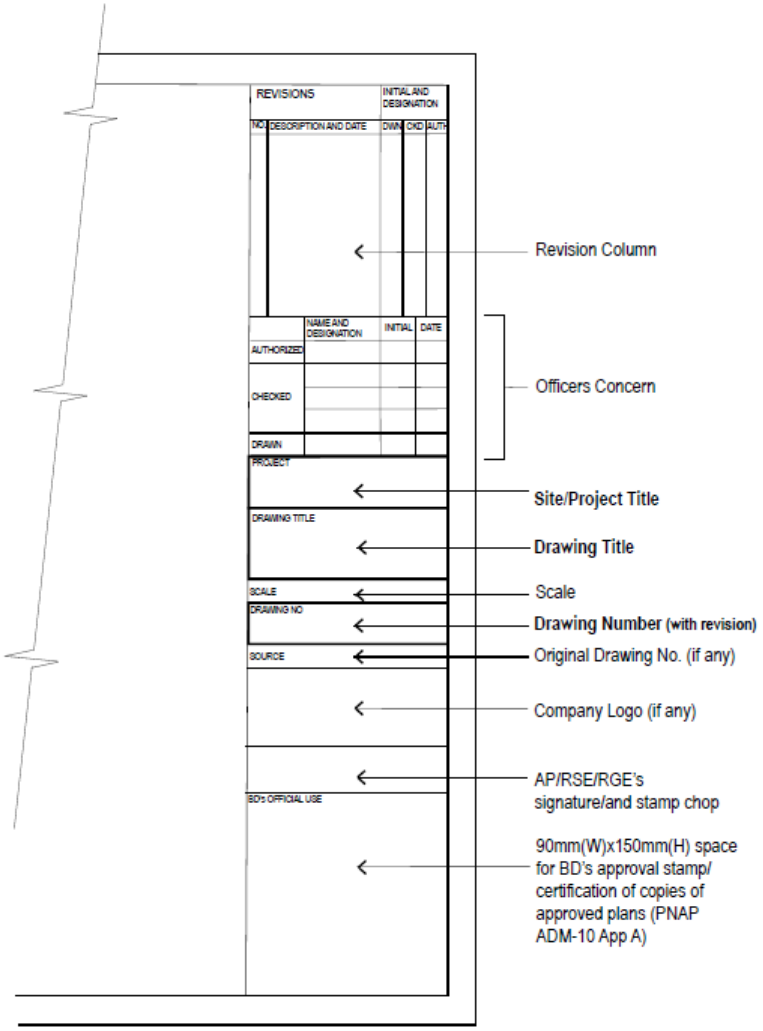
https://www.youtube.com/watch?v=QtVzRvqGXO4

Demolition Plans

Production of Statutory Drawings from BIM


可视化的控制
平面图
建築用地
剖面图
立面图
1.
图紙
BIM 模型
数据提取
用地面积
容积率
建筑面积 及 实用面积
防火分区
2.
数据计算
半自动人工查察和计算
卫浴计算明细表
人数
垃圾存放量
逃生路徑表
3.
技术指标
自动规范检算系统 (ACS)

Sample Title Panel



1

* Information box shown in bold letter is compulsory for BD submission.

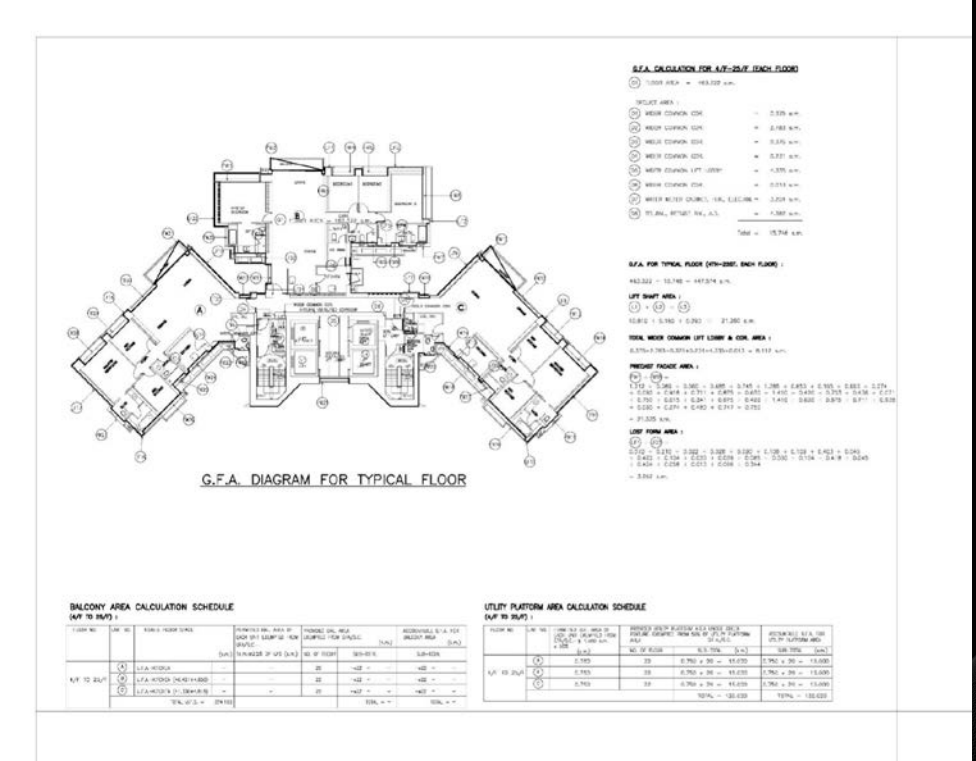
Appendix A
(PNAP ADM-9)

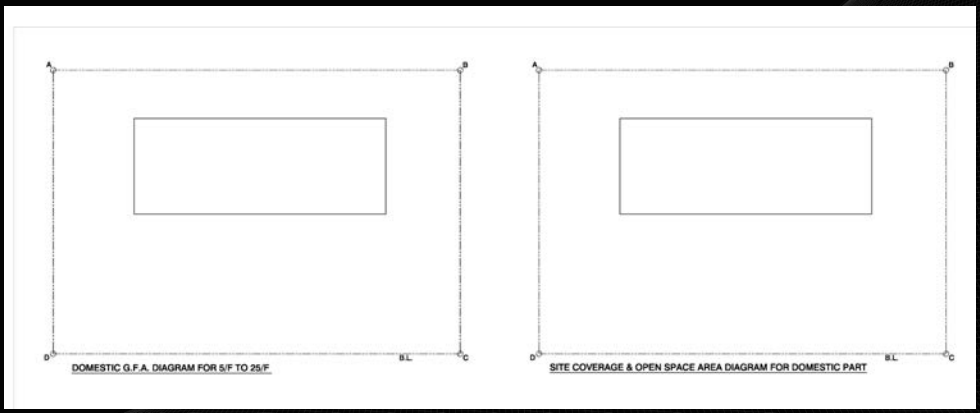
Preferred Colours

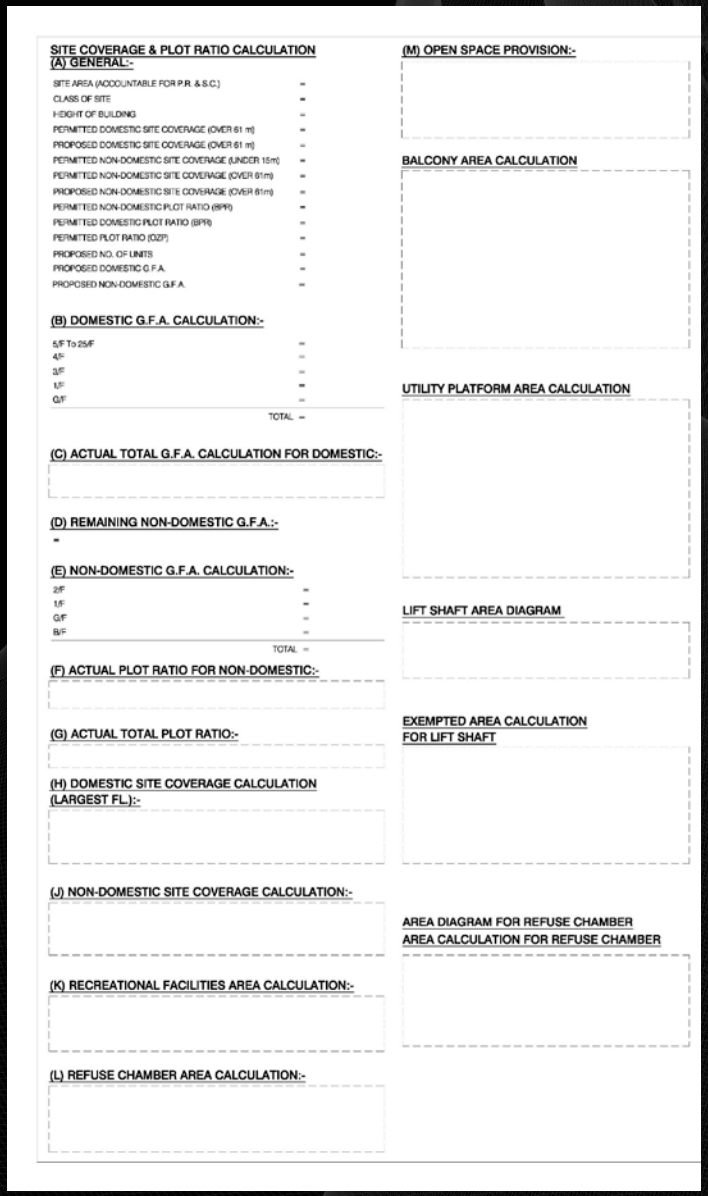
Material / Description	Preferred Colour	RGB Colour System[1]	Equivalent AutoCAD Colour Index[2]
Hardcore or Dry Fill	Putty	204, 178, 102	43
Brick	Orange Red	255, 63, 0	20
Concrete Slab (Lighter Wash)	Witch Haze	223, 255, 127	61
Concrete (Plain or Reinforced)	British Racing Green	0, 76, 38	118
Solid Concrete Blocks	Electric Blue	127, 223, 255	141
Hollow Concrete Blocks	Purple	191, 127, 255	191
Lightweight Partition (e.g. Plasterboard)	Macaroni and Cheese	255, 191, 127	31
Plaster or Cement Rendering	Wild Willow	204, 204, 102	53
Impermeable / Non-absorbent Floor or Wall	Neon Pink	255, 127, 223	221
Glass	Electric Blue	127, 255, 255	131
Timber	Muesli	153, 133, 76	45
Metal Work or Steel	Heliotrope	223, 127, 255	201
Stone Finish	Dark Grey	173, 173, 173	253
Sanitary Fittings	Yellow	255, 255, 0	50

[1] Colours are constructed from the combination of the red, green and blue colours.
[2] Plot screening setting should be 100 (i.e. full colour intensity).

1

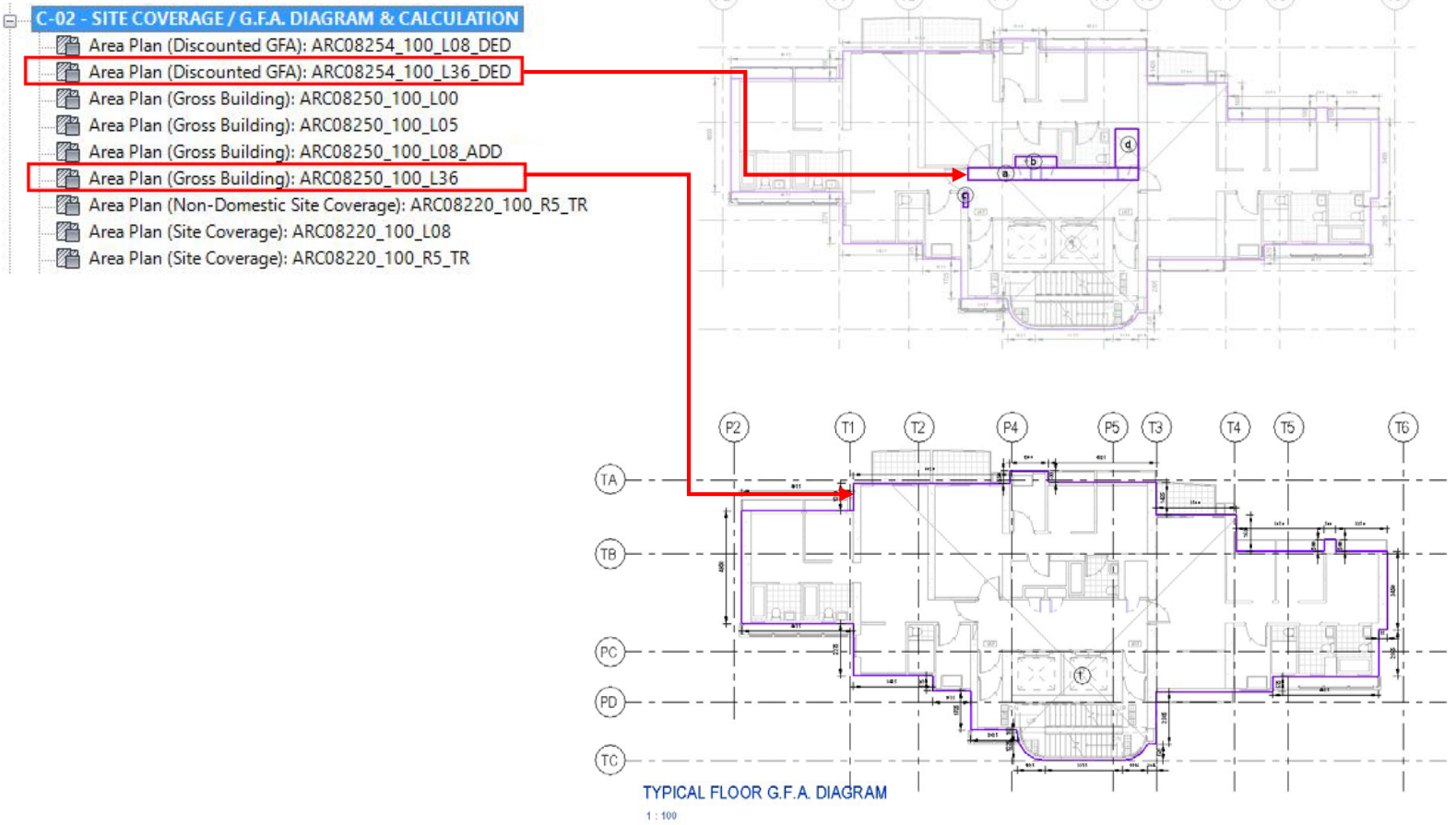




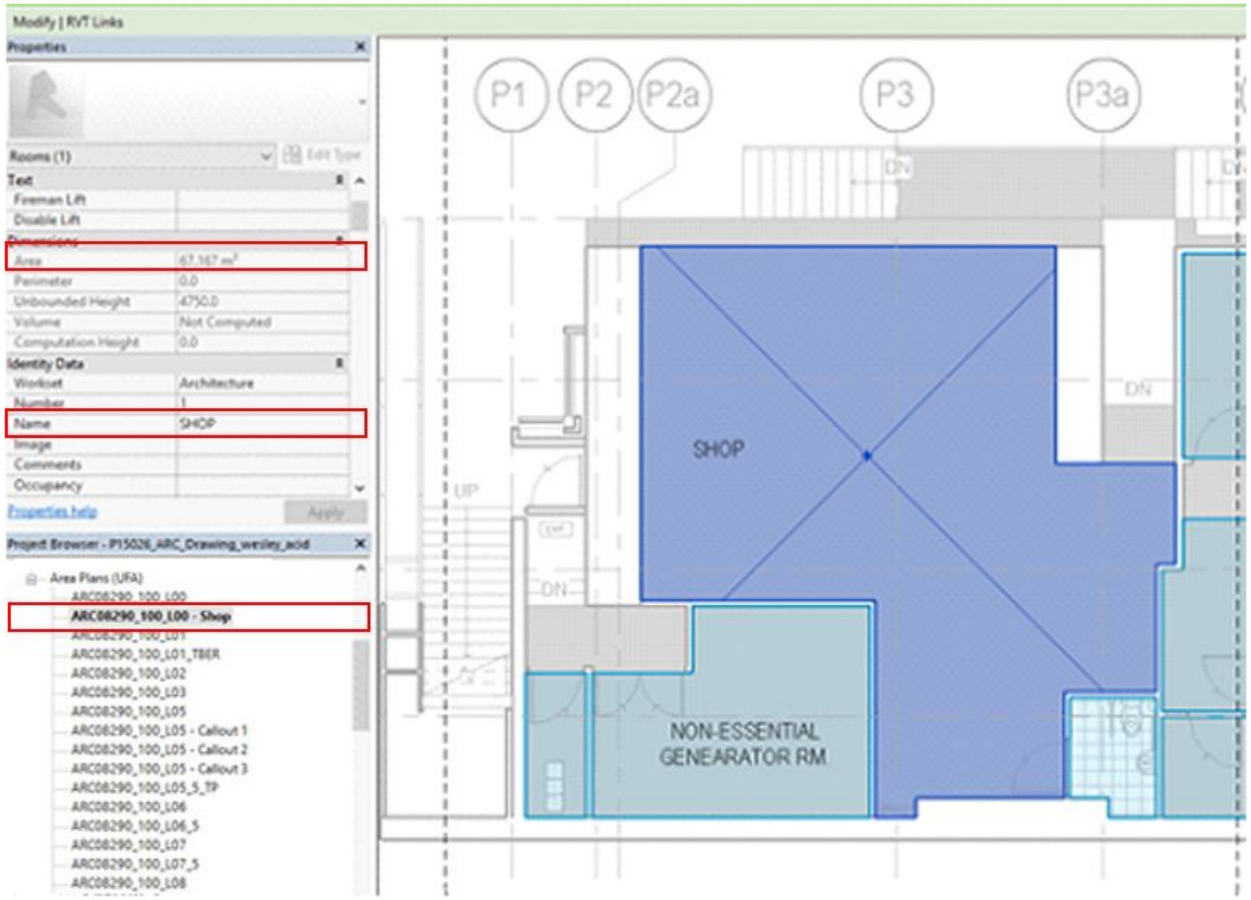


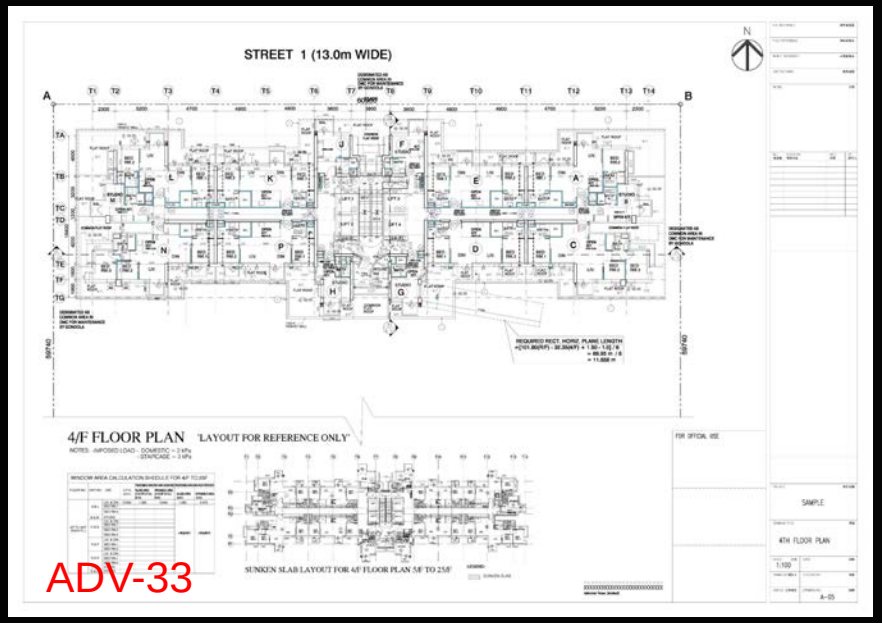
2. 數據計算要求

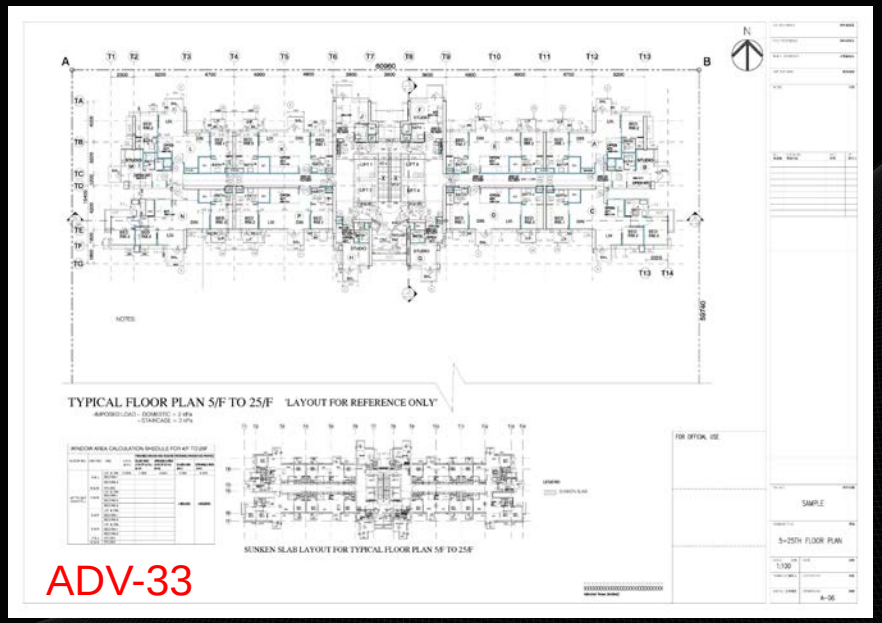
3. 技術指標要求


C-02 - SITE COVERAGE / G.F.A. DIAGRAM & CALCULATION
Area Plan (Discounted GFA): ARC08254_100_L08_DED
Area Plan (Discounted GFA): ARC08254_100_L36_DED
Area Plan (Gross Building): ARC08250_100_L00
Area Plan (Gross Building): ARC08250_100_L05
Area Plan (Gross Building): ARC08250_100_L08_ADD
Area Plan (Gross Building): ARC08250_100_L36
Area Plan (Non-Domestic Site Coverage): ARC08220_100_R5_TR
Area Plan (Site Coverage): ARC08220_100_L08
Area Plan (Site Coverage): ARC08220_100_R5_TR
P2
T1
T2
P4
P5
T3
T4
T5
T6
TA
TB
PC
PD
TC
TYPICAL FLOOR G.F.A. DIAGRAM
1 : 100

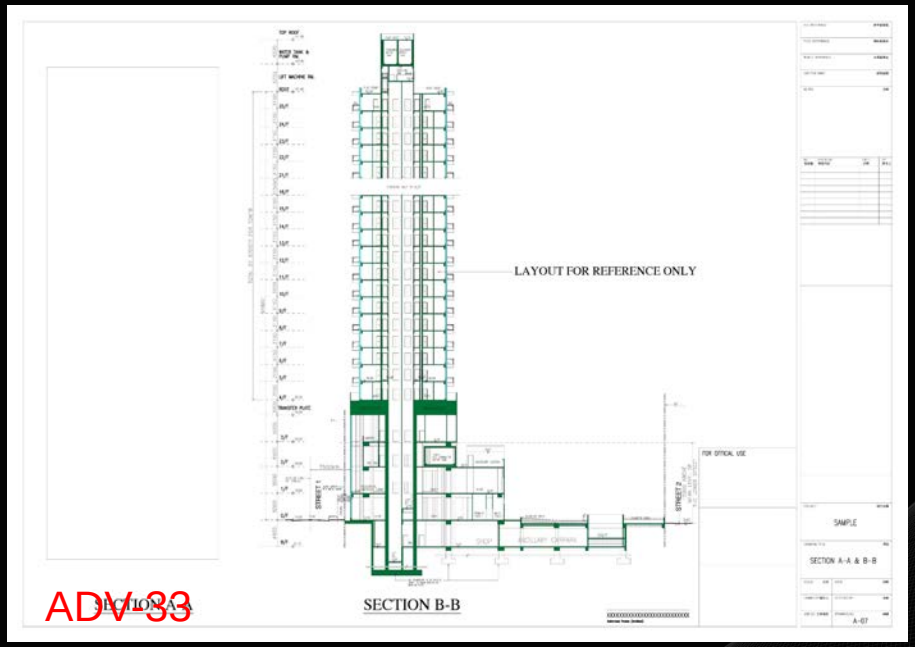
Room Tool
Usable Floor Area (U.F.A.)

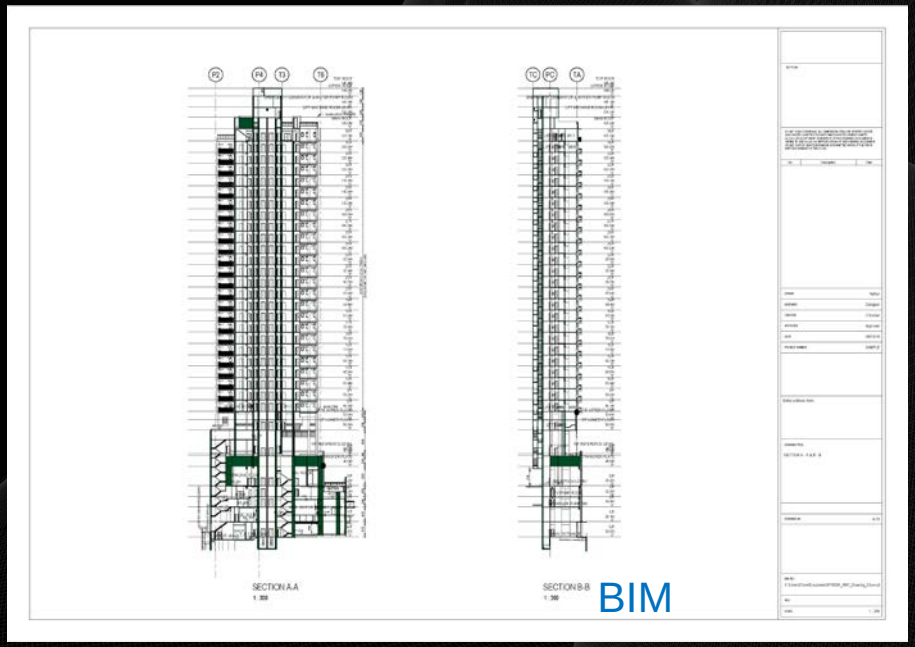






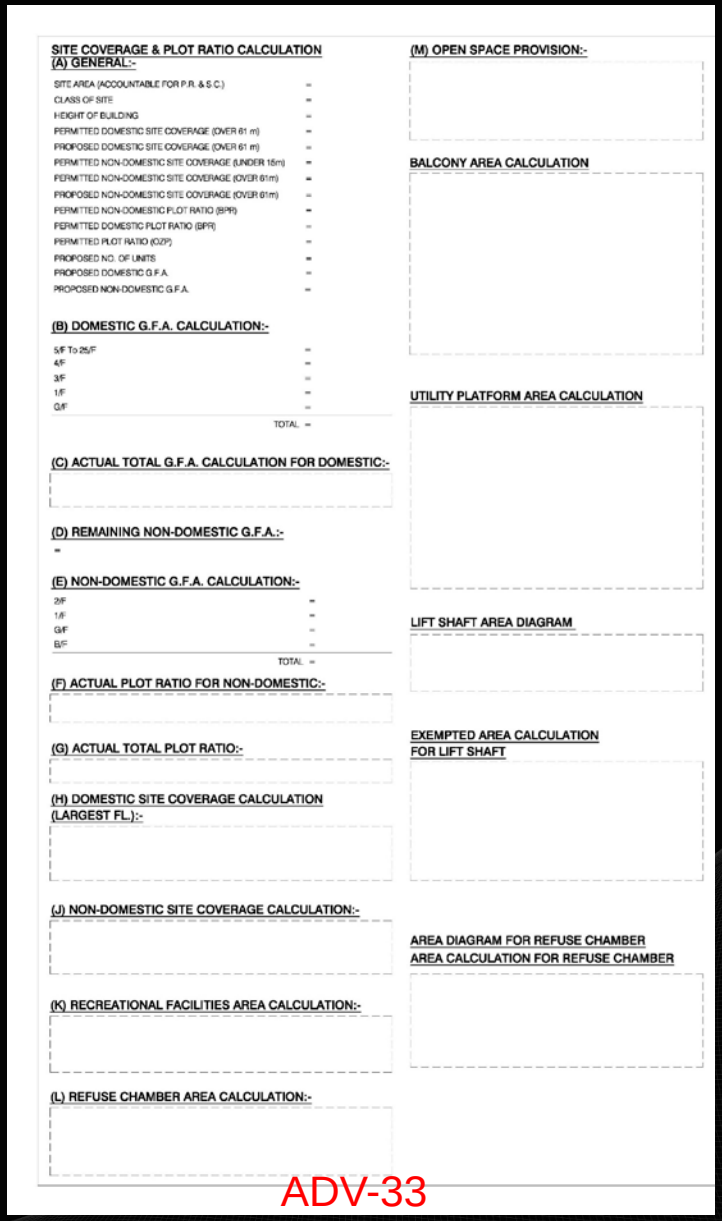
BIM - produced drawing – BIM 生产建築图纸





BIM - produced drawing – BIM 生产建築图纸

BIM - produced drawing – BIM 生产建築图纸



SITE COVERAGE & PLOT RATIO CALCULATION

(A) GENERAL:-

SITE AREA (ACCOUNTABLE FOR P.R. & S.C.) =
CLASS OF SITE =
HEIGHT OF BUILDING =
PERMITTED DOMESTIC SITE COVERAGE (OVER 61 m) =
PROPOSED DOMESTIC SITE COVERAGE (OVER 61 m) =
PERMITTED NON-DOMESTIC SITE COVERAGE (UNDER 15m) =
PERMITTED NON-DOMESTIC SITE COVERAGE (OVER 61m) =
PROPOSED NON-DOMESTIC SITE COVERAGE (OVER 61m) =
PERMITTED NON-DOMESTIC PLOT RATIO (BPR) =
PERMITTED DOMESTIC PLOT RATIO (BPR) =
PERMITTED PLOT RATIO (OZP) =
PROPOSED NO. OF UNITS =
PROPOSED DOMESTIC G.F.A. =
PROPOSED NON-DOMESTIC G.F.A. =

(B) DOMESTIC G.F.A. CALCULATION:-

5/F To 25/F =
4/F =
3/F =
1/F =
G/F =
TOTAL =

(C) ACTUAL TOTAL G.F.A. CALCULATION FOR DOMESTIC:-

(D) REMAINING NON-DOMESTIC G.F.A.:-

=

(E) NON-DOMESTIC G.F.A. CALCULATION:-

2/F =
1/F =
G/F =
B/F =
TOTAL =

(F) ACTUAL PLOT RATIO FOR NON-DOMESTIC:-

(G) ACTUAL TOTAL PLOT RATIO:-

(H) DOMESTIC SITE COVERAGE CALCULATION (LARGEST FL.):-

(J) NON-DOMESTIC SITE COVERAGE CALCULATION:-

(K) RECREATIONAL FACILITIES AREA CALCULATION:-

(L) REFUSE CHAMBER AREA CALCULATION:-

(M) OPEN SPACE PROVISION:-

BALCONY AREA CALCULATION

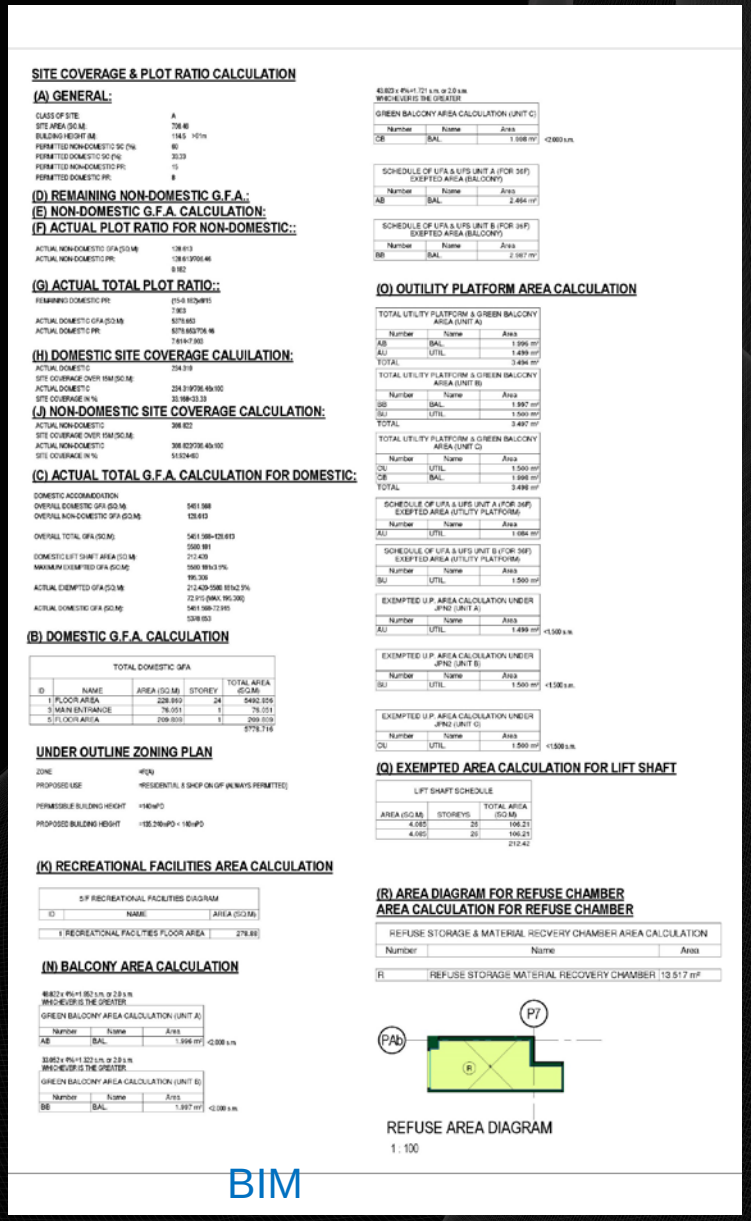
UTILITY PLATFORM AREA CALCULATION

LIFT SHAFT AREA DIAGRAM

EXEMPTED AREA CALCULATION FOR LIFT SHAFT

AREA DIAGRAM FOR REFUSE CHAMBER
AREA CALCULATION FOR REFUSE CHAMBER

ADV-33



SITE COVERAGE & PLOT RATIO CALCULATION

(A) GENERAL:

CLASS OF SITE: A
SITE AREA (SQ.M): 706.46
BUILDING HEIGHT (M): 114.5 >61m
PERMITTED NON-DOMESTIC SC (%): 60
PERMITTED DOMESTIC SC (%): 33.33
PERMITTED NON-DOMESTIC PR: 15
PERMITTED DOMESTIC PR: 9

(D) REMAINING NON-DOMESTIC G.F.A.:
(E) NON-DOMESTIC G.F.A. CALCULATION:
(F) ACTUAL PLOT RATIO FOR NON-DOMESTIC::

ACTUAL NON-DOMESTIC GFA (SQ.M): 126,613
ACTUAL NON-DOMESTIC PR: 126,613/706.46
8.952

(G) ACTUAL TOTAL PLOT RATIO::

REMAINING DOMESTIC PR: (9-8.952)x706.46
7.963
ACTUAL DOMESTIC GFA (SQ.M): 5578.663
ACTUAL DOMESTIC PR: 5578.663/706.46
7.8947.963

(H) DOMESTIC SITE COVERAGE CALUILATION:

ACTUAL DOMESTIC: 234.318
SITE COVERAGE OVER 15M (SQ.M):
ACTUAL DOMESTIC: 234.318/706.46x100
SITE COVERAGE IN %: 33.166=33.33

(J) NON-DOMESTIC SITE COVERAGE CALCULATION:

ACTUAL NON-DOMESTIC: 266.822
SITE COVERAGE OVER 15M (SQ.M):
ACTUAL NON-DOMESTIC: 266.822/706.46x100
SITE COVERAGE IN %: 37.8214=60

(C) ACTUAL TOTAL G.F.A. CALCULATION FOR DOMESTIC:

DOMESTIC ACCOMMODATION
OVERALL DOMESTIC GFA (SQ.M): 5451.568
OVERALL NON-DOMESTIC GFA (SQ.M): 126,613
OVERALL TOTAL GFA (SQ.M): 5451.568+126,613
5580.181
DOMESTIC LIFT SHAFT AREA (SQ.M): 212.439
MAXIMUM EXEMPTED GFA (SQ.M): 5580.181x3.5%
195.306
ACTUAL EXEMPTED GFA (SQ.M): 212.439<195.306x2.5%
72.915 (MAX. 195.306)
ACTUAL DOMESTIC GFA (SQ.M): 5451.568-72.915
5378.653

(B) DOMESTIC G.F.A. CALCULATION

TOTAL DOMESTIC GFA

ID	NAME	AREA (SQ.M)	STOREY	TOTAL AREA (SQ.M)
1	FLOOR AREA	228.660	24	5492.856
3	MAIN ENTRANCE	76.051	1	76.051
5	FLOOR AREA	209.809	1	209.809
				5778.716

UNDER OUTLINE ZONING PLAN

ZONE: "R(A)
PROPOSED USE: "RESIDENTIAL & SHOP ON G/F (ALWAYS PERMITTED)
PERMISSIBLE BUILDING HEIGHT: "140mPD
PROPOSED BUILDING HEIGHT: "135.240mPD < 140mPD

(K) RECREATIONAL FACILITIES AREA CALCULATION

5/F RECREATIONAL FACILITIES DIAGRAM

ID	NAME	AREA (SQ.M)
1	RECREATIONAL FACILITIES FLOOR AREA	276.66

(N) BALCONY AREA CALCULATION

40.822 x 4%=1.633 s.m. or 2.0 s.m.
WHICHEVER IS THE GREATER
GREEN BALCONY AREA CALCULATION (UNIT A)

Number	Name	Area
AB	BAL.	1.996 m²

<2.000 s.m.

32.862 x 4%=1.323 s.m. or 2.0 s.m.
WHICHEVER IS THE GREATER
GREEN BALCONY AREA CALCULATION (UNIT B)

Number	Name	Area
BB	BAL.	1.997 m²

<2.000 s.m.

40.822 x 4%=1.721 s.m. or 2.0 s.m.
WHICHEVER IS THE GREATER
GREEN BALCONY AREA CALCULATION (UNIT C)

Number	Name	Area
CB	BAL.	1.998 m²

<2.000 s.m.

SCHEDULE OF U/FA & U/FS UNIT A (FOR 36F)
EXEPTED AREA (BALCONY)

Number	Name	Area
AB	BAL.	2.464 m²

SCHEDULE OF U/FA & U/FS UNIT B (FOR 36F)
EXEPTED AREA (BALCONY)

Number	Name	Area
BB	BAL.	2.067 m²

(O) OUTILITY PLATFORM AREA CALCULATION

TOTAL UTILITY PLATFORM & GREEN BALCONY AREA (UNIT A)

Number	Name	Area
AB	BAL.	1.996 m²
AU	UTIL.	1.499 m²
TOTAL		3.496 m²

TOTAL UTILITY PLATFORM & GREEN BALCONY AREA (UNIT B)

Number	Name	Area
BB	BAL.	1.997 m²
BU	UTIL.	1.500 m²
TOTAL		3.497 m²

TOTAL UTILITY PLATFORM & GREEN BALCONY AREA (UNIT C)

Number	Name	Area
CU	UTIL.	1.500 m²
CB	BAL.	1.996 m²
TOTAL		3.496 m²

SCHEDULE OF U/FA & U/FS UNIT A (FOR 36F)
EXEPTED AREA (UTILITY PLATFORM)

Number	Name	Area
AU	UTIL.	1.684 m²

SCHEDULE OF U/FA & U/FS UNIT B (FOR 36F)
EXEPTED AREA (UTILITY PLATFORM)

Number	Name	Area
BU	UTIL.	1.500 m²

EXEMPTED U.P. AREA CALCULATION UNDER JPN2 (UNIT A)

Number	Name	Area
AU	UTIL.	1.499 m²

<1.500 s.m.

EXEMPTED U.P. AREA CALCULATION UNDER JPN2 (UNIT B)

Number	Name	Area
BU	UTIL.	1.500 m²

<1.500 s.m.

EXEMPTED U.P. AREA CALCULATION UNDER JPN2 (UNIT C)

Number	Name	Area
CU	UTIL.	1.500 m²

<1.500 s.m.

(Q) EXEMPTED AREA CALCULATION FOR LIFT SHAFT

LIFT SHAFT SCHEDULE

AREA (SQ.M)	STOREYS	TOTAL AREA (SQ.M)
4.065	25	106.21
4.065	25	106.21
		212.42

(R) AREA DIAGRAM FOR REFUSE CHAMBER
AREA CALCULATION FOR REFUSE CHAMBER

REFUSE STORAGE & MATERIAL RECOVERY CHAMBER AREA CALCULATION

Number	Name	Area
R	REFUSE STORAGE MATERIAL RECOVERY CHAMBER	13.517 m²

REFUSE AREA DIAGRAM
1 : 100

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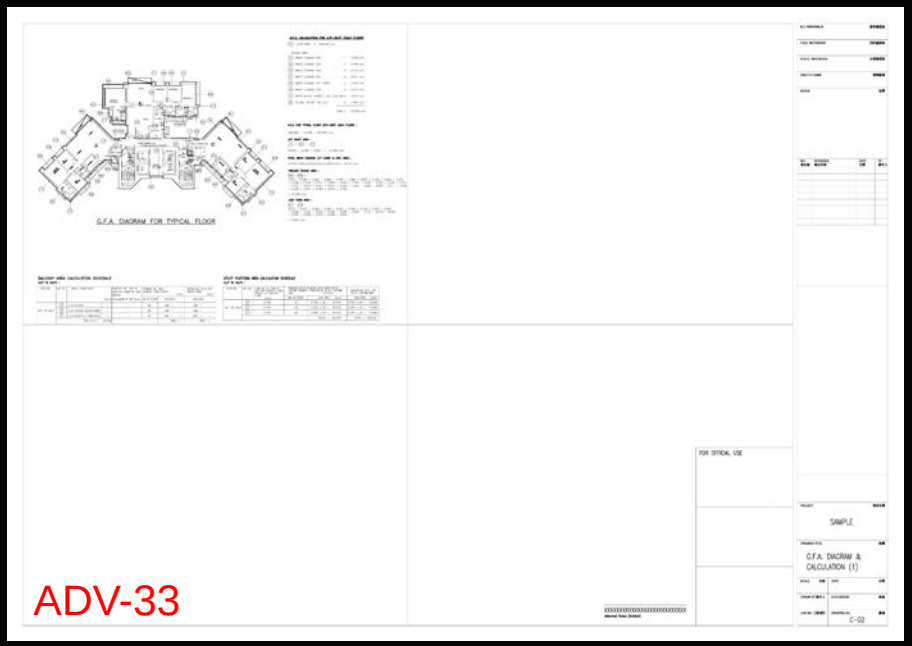

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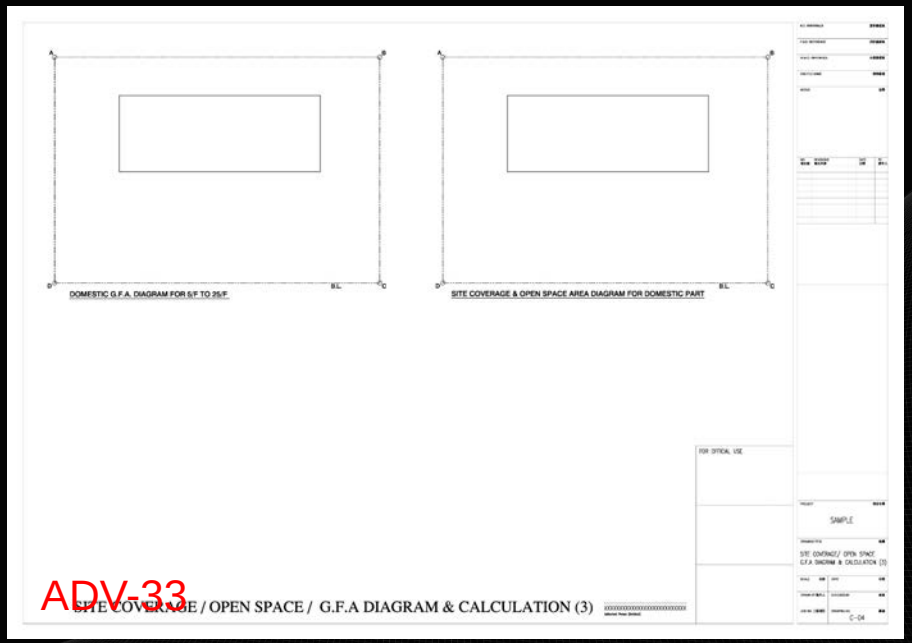

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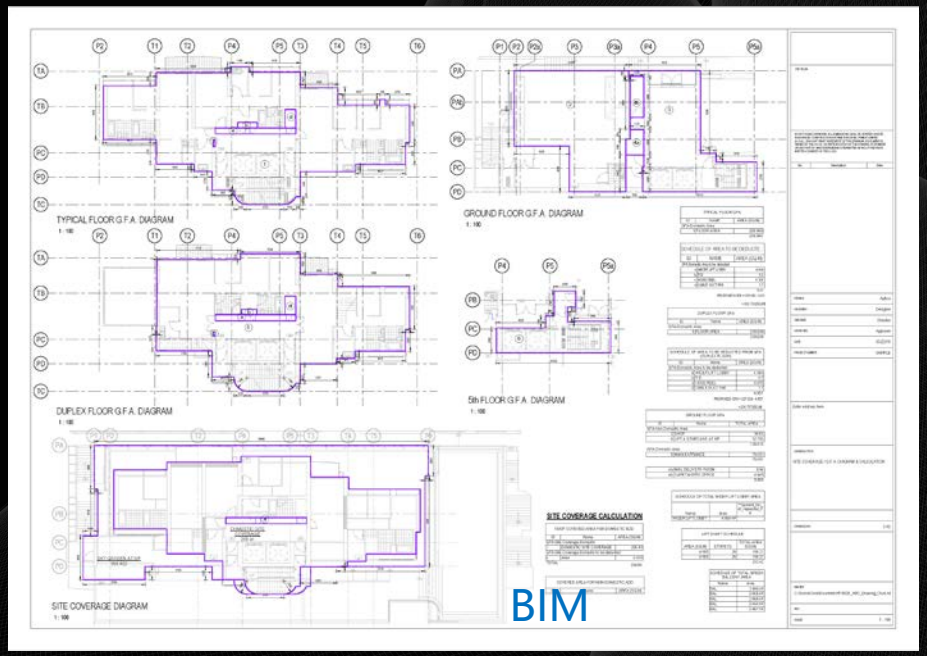

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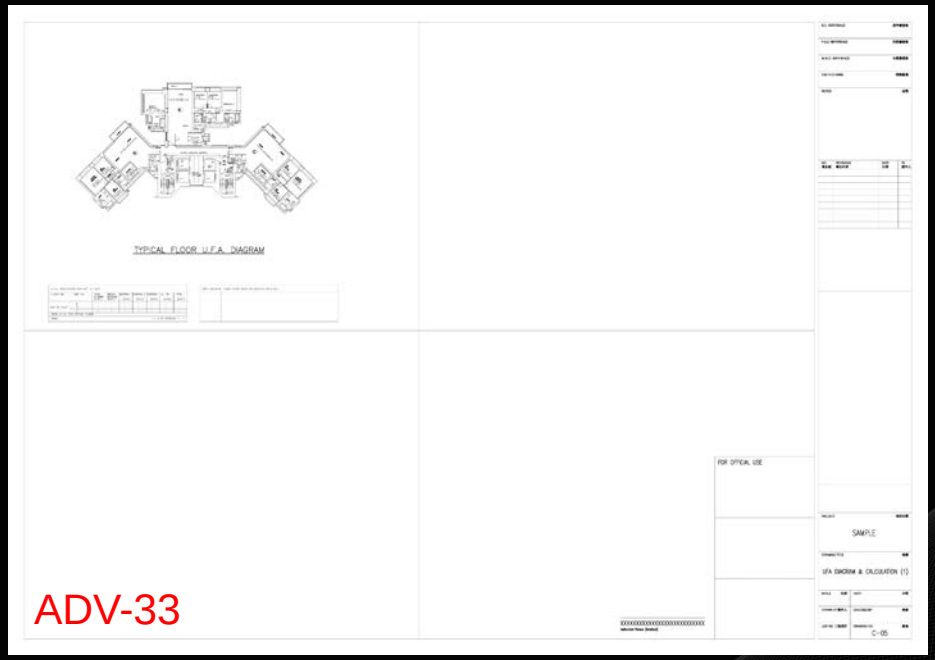

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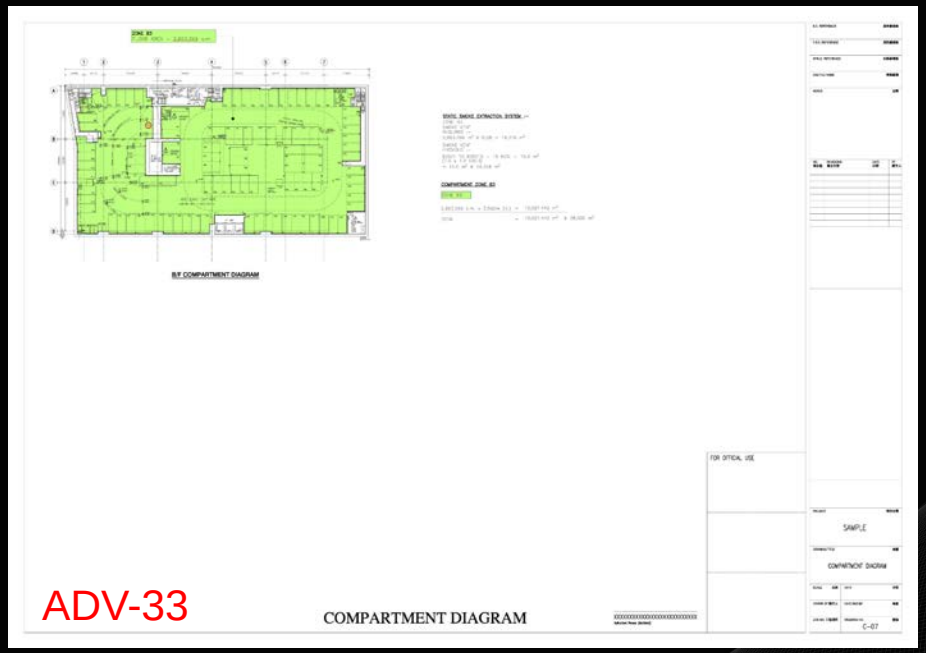

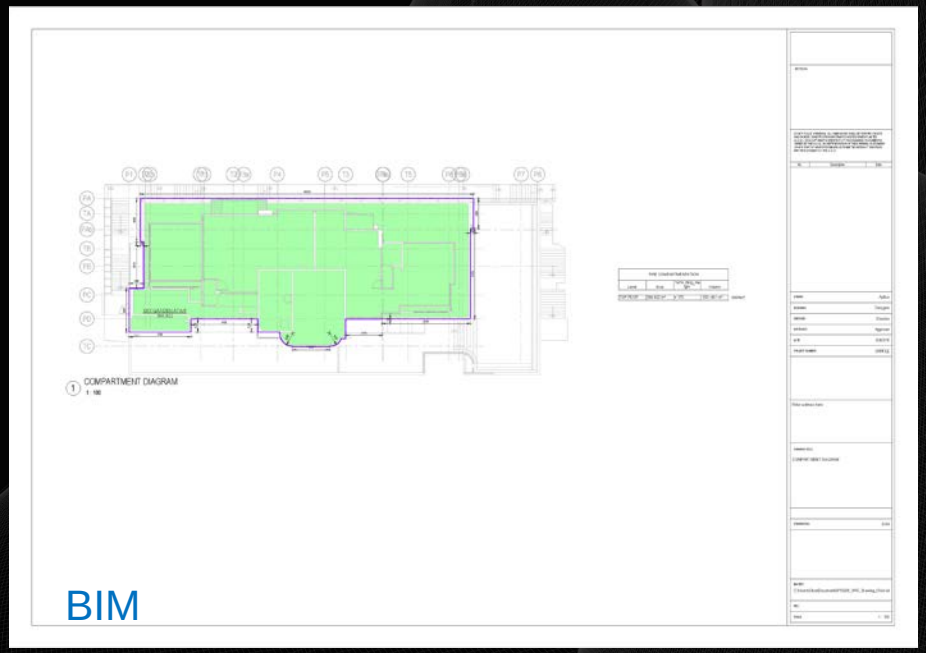

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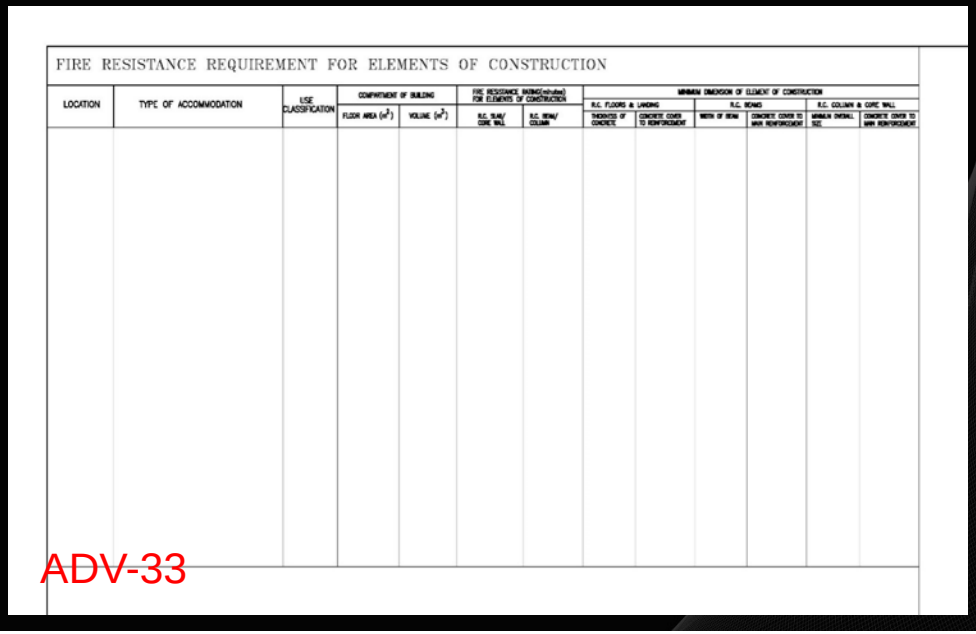

FIRE RESISTANCE REQUIREMENT FOR ELEMENTS OF CONSTRUCTION

LOCATION	TYPE OF ACCOMMODATION	USE CLASSIFICATION	COMPARTMENT OF BUILDING		FIRE RESISTANCE RATING (minutes) FOR ELEMENTS OF CONSTRUCTION		MINIMUM DIMENSION OF ELEMENT OF CONSTRUCTION					
							R.C. FLOORS & LANDING		R.C. BEAMS		R.C. COLUMN & CORE WALL	
			FLOOR AREA (m^2)	VOLUME (m^3)	R.C. SLAB/ CORE WALL	R.C. BEAM/ COLUMN	THICKNESS OF CONCRETE	CONCRETE COVER TO REINFORCEMENT	WIDTH OF BEAM	CONCRETE COVER TO MAIN REINFORCEMENT	MINIMUM OVERALL SIZE	CONCRETE COVER TO MAIN REINFORCEMENT

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FIRE RESISTANCE REQUIREMENT FOR ELEMENTS OF CONSTRUCTION

LEVEL	NAME	CLASS	FRP REQ'D	R.C. WALL => 1% V.R		R.C. SLAB		R.C. BEAM		R.C. COLUMN		R.C. STAIR	
				THK.	COVER TO STEEL	THK.	COVER TO STEEL	THK.	COVER TO STEEL	THK.	COVER TO STEEL	THK.	COVER TO STEEL
G/F	LOADING / UNLOADING		60	75	15	100	20	200	30	200	25	95	20
G/F	MAIN ENTRANCE	1a (Residential - House type dwellings)	60	75	15	100	20	200	30	200	25	95	20
G/F	SHOP	4a (Commercial - Business facilities)	60	75	15	100	20	200	30	200	25	95	20
1/F	TRANSFER PUMP ROOM		120	100	25	125	25	200	40	300	35	125	35
1/F	ELECTRICAL ROOM		120	100	25	125	25	200	40	300	35	125	35
1/F	TBE ROOM		120	100	25	125	25	200	40	300	35	125	35
1/F	MAIN SWITCH ROOM		120	100	25	125	25	200	40	300	35	125	35
1/F	TRANSFORMER ROOM		240	180	25	170	45*	280	60*	450	35	170	55*
2/F	SPRINKLER PUMP RM		120	100	25	125	25	200	40	300	35	125	35
2/F	MAIN SWITCH ROOM		120	100	25	125	25	200	40	300	35	125	35
2/F	TRANSFORMER ROOM		240	180	25	170	45*	280	60*	450	35	170	55*
3/F	FS PUMP RM		120	100	25	125	25	200	40	300	35	125	35
3/F	CLEANSING WATER PUMP RM		120	100	25	125	25	200	40	300	35	125	35
5/F	E/M ROOM		120	100	25	125	25	200	40	300	35	125	35
5/F	E/M ROOM		120	100	25	125	25	200	40	300	35	125	35
5/F	E/M ROOM		120	100	25	125	25	200	40	300	35	125	35
5/F	READING ROOM	5a (Assembly - Places of Public Entertainment)	60	75	15	100	20	200	30	200	25	95	20
5/F	SWIMMING POOL	5a (Assembly - Places of Public Entertainment)	60	75	15	100	20	200	30	200	25	95	20
5/F	GYMNASIUM	5d (Assembly - Other Assembly Premises)	60	75	15	100	20	200	30	200	25	95	20
6/F	E/M ROOM		120	100	25	125	25	200	40	300	35	125	35
6/F	SKY GARDEN		60	75	15	100	20	200	30	200	25	95	20
7/F LOWER FLOOR	REFUGE FLOOR	1a (Residential - House type dwellings)	120	100	25	125	25	200	40	300	35	125	35
7/F LOWER FLOOR	REFUGE FLOOR	1a (Residential - House type dwellings)	120	100	25	125	25	200	40	300	35	125	35
8/F	DOMESTIC	1b (Residential - Flats)	60	75	15	100	20	200	30	200	25	95	20
LIFT MACHINE ROOM LEVEL	LIFT MACHINE ROOM		120	100	25	125	25	200	40	300	35	125	35
LIFT MACHINE ROOM LEVEL	METER ROOM		120	100	25	125	25	200	40	300	35	125	35
EMERGENCY GENERATOR & WATER PUMP ROOM	LIFT MACHINE ROOM		120	100	25	125	25	200	40	300	35	125	35
EMERGENCY GENERATOR & WATER PUMP ROOM	PUMP ROOM		120	100	25	125	25	200	40	300	35	125	35

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GENERAL NOTES:

1. ALL DIMENSIONS SHOWN ON DRAWINGS ARE STRUCTURAL MEASUREMENT IN MILLIMETRES AND ALL LEVELS SHOWN IN METERS ABOVE PRINCIPAL DATUM UNLESS OTHERWISE STATED.

2. EVERY REQUIRED STAIRCASE SHALL:
(a) HAVE A CLEAR HEIGHT OF NOT LESS THAN 2000mm;
(b) BE CONSTRUCTED WITH TREADS NOT LESS THAN 280mm IN WIDTH AND RISERS NOT EXCEEDING 150mm IN HEIGHT FOR THE RESTAURANT
(c) BE PROVIDED WITH HANDRAILS ON BOTH SIDES AT A HEIGHT NOT LESS THAN 900mm NOR MORE THAN 965mm AND EXTENDED 300mm TO LANDING IN ACCORDANCE WITH CODE OF PRACTICE FOR FIRE SAFETY IN BUILDINGS 2011 (FSD 2011) CLAUSE 5.14.6 & (SFA 2008) CLAUSE 3b.32.

3. ALL DOORS REQUIRED TO HAVE AN FRR SHALL COMPLY WITH (b)(3)(i) & (FSD 2011) CLAUSE C16.

4. THE LOCKING DEVICE PROVIDED FOR EXIT DOORS, IF NECESSARY, SHALL BE OF THE TYPE, WHICH IS CAPABLE OF BEING OPENED FROM THE INSIDE WITHOUT USING A KEY.

5. PROTECTIVE BARRIERS (SUCH AS PARAPET WALL AND RAILING) SHOULD BE PROVIDED IN ACCORDANCE WITH (b)(9)(i)(A & B)(3)(i) 5.

6. A VERTICAL BARRIER PROVIDED TO SURROUND THE INTERNAL UNPROTECTED OPENING IN FLOORS WITHIN A COMPARTMENT FOR AGAINST SPREAD OF FIRE, SUCH AS THOSE FOR ESCALATORS, CIRCULATION STAIRCASES OR WALKWAYS IN AN ATRIUM, SHALL HAVE AN FRR OF NOT LESS THAN 60 MIN. AND EXTEND NOT LESS THAN 450mm FROM THE UNDERSIDE OF THE FLOOR OR BELOW THE FALSE CEILING IF THE FALSE CEILING ARE HUNG IN THE VICINITY OF THE OPENING (FSD 2011) CLAUSE C10.1

7. THE GLAZING MATERIALS IN SKYLIGHT SHALL MEET THE FOLLOWING CRITERIA :-
(a) IT SHOULD NOT BE OF THE TYPE WHICH WILL MELT AND FORM BURNING DROPLETS UNDER FIRE SITUATIONS; AND
(b) WHEN IT IS SHATTERED, IT DOES NOT FORM SHARPENING AND HARMFUL PIECES.

8. EVERY PART OF AN EXIT ROUTE SHOULD BE PROVIDED WITH ARTIFICIAL LIGHTING PROVIDING A HORIZONTAL ILLUMINANCE AT FLOOR LEVEL OF NOT LESS THAN 30 LUX (AND COMPLY WITH CAP FOR MIN. F.S. INSTALLATION AND EQUIPMENT)

9. EVERY OPENING FORMED FOR DUCTS OR PIPES PASSING THROUGH FIRE BARRIERS WOULD COMPLY WITH (FSD 2011) CLAUSE C6.

10. ELEMENTS OF CONSTRUCTION OTHER THAN REINFORCED CONCRETE FOR SEPARATING COMPARTMENTS TO BE PROVIDED WITH STABILITY, INTEGRITY AND INSULATION AS STATED IN (FSD 2011) TABLE C2.

11. ONE LEAF OF A PAIR OF DOUBLE DOORS SHALL HAVE A CLEAR WIDTH OF NOT LESS THAN 800mm BETWEEN THE OPEN DOOR AND THE OTHER LEAF.

12. CAT LADDER AT PUBLIC ACCESSIBLE AREA WOULD BE PROVIDED WITH LOCKABLE PLATE.

13. DOORS OF ALL PROTECTED LOBBY SHOULD BE PROVIDED WITH SMOKE SEALS (FSD 2011) CLAUSE C10.5

14. ALL LIFT WELLS & 'DUMB WATER SHAFT' SHOULD BE SEPARATED FROM THE REST OF THE BUILDING BY FIRE BARRIERS HAVING AN FRR OF NOT LESS THAN 120/120/120, AND ALL DOORS PROVIDED AT A LIFT LANDING SHOULD HAVE AN FRR OF NOT LESS THAN -/120 - IN ACCORDANCE WITH (FSD 2011) CLAUSE C9.1.

15. WHERE THE HEADROOM IS 2000mm OR LESS FROM THE FINISHED FLOOR LEVEL, A WARNING GUARDRAIL OR OTHER BARRIER SHALL BE PROVIDED FOR DETECTION, HAVING ITS LOWING EDGE AT OR BELOW 600mm ABOVE THE FINISHED FLOOR LEVEL (SFA 2008 CLAUSE 3d).

16. ALL EXISTING DISABLED RAMP SHOULD COMPLY WITH SFA 2008.

FIRE SERVICES NOTES :

THE FIRE SERVICE INSTALLATIONS ARE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE CURRENT EDITION OF THE CODES OF PRACTICE FOR MINIMUM FIRE SERVICE INSTALLATIONS AND EQUIPMENT AND INSPECTION, TESTING AND MAINTENANCE OF INSTALLATIONS AND EQUIPMENT AND THE CURRENT ISSUE OF THE FSD CIRCULAR LETTERS. THE PARTICULARS OF THE FIRE SERVICE INSTALLATIONS TO BE PROVIDED FOR THE BUILDING ARE AS FOLLOWS:-

1) AUTOMATIC FIXED INSTALLATIONS USING WATER
a. AUTOMATIC SPRINKLER SYSTEM DESIGNED TO OH(I) IN ACCORDANCE WITH "LPC RULES INCORPORATING BS EN 12845:2003 FOR AUTOMATIC SPRINKLER INSTALLATIONS" TO BE PROVIDED FOR ALL AREAS INCLUDING STAIRCASES, SEATING AREA, KITCHEN, PANTRY AND UNISEX TOILETS BUT EXCLUDE CONSUMER ELECTRICAL EQUIPMENT, MECHANICAL PLANT ROOM AS INDICATED ON THE DRAWINGS. SPRINKLER ANNUNCIATION PANEL TO BE PROVIDED AT G/F FIRE CONTROL CENTRE AS INDICATED ON THE DRAWINGS. ALARM SIGNAL TO BE TRANSMITTED TO F.S. COMMUNICATION CENTRE VIA DIRECT TELEPHONE LINK. WATER SUPPLY TO SPRINKLER TANK TO BE SINGLE END FED. CAPACITY OF SPRINKLER TANK TO BE 37m3.
b. SPRINKLER SYSTEM WILL NOT BE PROVIDED FOR ALL EXTERNAL CANOPIES WHERE GOODS ARE NOT STORED OR HANDLED IN ACCORDANCE WITH FSD CIRCULAR NO. 3/2006, LIST TWO ITEM 2.(iii).

2) EMERGENCY POWER SUPPLY
a. THE ELECTRICITY SUPPLIES TO ALL EMERGENCY ELECTRICAL EQUIPMENT TO BE FED FROM THE INCOMING POWER SUPPLY BY THE POWER COMPANY AT BOTH BEFORE AND AFTER THE MAIN SWITCH, AUTOMATIC CHANGE OVER DEVICE TO BE PROVIDED AND TO ENERGIZE IN CASE OF FAILURE OF THE MAIN POWER SWITCH.

3) EMERGENCY LIGHTING
a. TO BE PROVIDED THROUGHOUT THE ENTIRE BUILDING AND FOR ALL EXIT SIGNS AND BACKED UP BY SELF CONTAINED/SECONDARY BATTERY.

4) EXIT SIGN
a. SUFFICIENT EXIT OF SELF CONTAINED BATTERY TYPE, TO BE PROVIDED AT LOCATIONS AS INDICATED ON THE DRAWINGS.

5) FIRE ALARM SYSTEM
a. MANUALLY OPERATED FIRE ALARM SYSTEM COMPRISING MANUAL BREAK-GLASS AND ALARM BELL TO BE PROVIDED AT EACH HOSE REEL LOCATION AS INDICATED ON THE DRAWINGS. THE SYSTEM TO BE LINKED TO THE AUTOMATIC FIRE ALARM SYSTEM AND F.S. COMMUNICATION CENTRE VIA DIRECT TELEPHONE LINE.
b. VISUAL FIRE ALARM SYSTEM TO BE PROVIDED FOR THE AREA WHICH IS INTENDED TO BE ACCESSIBLE TO PUBLIC AS INDICATED ON THE DRAWINGS IN ACCORDANCE WITH FSD CIRCULAR LETTERS 2/2012 OF BS 5839-1:2002+A2:2008 AND BARRIER FREE ACCESS 2008 CODE, AND THE ALARM SIGNAL SHALL FORM PART OF THE FIRE ALARM SYSTEM.
c. FIRE ALARM CONTROL PANEL TO BE PROVIDED AT LOCATION AS INDICATED ON THE DRAWINGS.

6) FIRE DETECTION SYSTEM
a. AUTOMATIC FIRE ALARM AND DETECTION SYSTEM IN ACCORDANCE WITH "RULES OF THE LOSS PREVENTION COUNCIL FOR AUTOMATIC FIRE DETECTION AND ALARM SYSTEMS FOR THE PROTECTION OF PROPERTY" (LPC RULES) AND BS 5839-1:2002+A2:2008 WITH MODIFICATIONS AS REQUIRED IN FSD CIRCULAR LETTER NO. 1/2002 & 2/2012 TO BE PROVIDED FOR AREAS NOT PROTECTED BY AUTOMATIC SPRINKLER SYSTEM. HEAT DETECTION SYSTEM TO BE PROVIDED FOR CONSUMER ELECTRICAL EQUIPMENT/MECHANICAL PLANT/STORE ROOM. AUTOMATIC FIRE ALARM PANEL TO BE PROVIDED AT G/F FIRE CONTROL CENTRE AS INDICATED ON THE DRAWINGS. ALARM SIGNAL TO BE TRANSMITTED TO F.S. COMMUNICATION CENTRE VIA DIRECT TELEPHONE LINE.

7) FIRE HYDRANT / HOSE REEL INSTALLATION
a. TO BE PROVIDED AT LOCATIONS AS INDICATED ON THE DRAWINGS. CAPACITY OF THE WATER TANK TO BE 27m³.
b. SINGLE OUTLET TYPE HYDRANTS TO BE PROVIDED. HOSE REEL TO BE PROVIDED THAT EVERY PART OF THE BUILDING CAN BE REACHED BY A LENGTH OF NOT MORE THAN 30m HOSE REEL TUBING.

8) PORTABLE HAND-OPERATED APPROVED APPLIANCES
a. TO BE PROVIDED AT LOCATIONS AS INDICATED ON THE DRAWINGS.

9) VENTILATING/AIR-CONDITIONING CONTROL SYSTEM
a. NOT TO BE PROVIDED FOR ALL BUILDINGS.

10) ADDITIONAL REQUIREMENTS
a. ALL LININGS FOR ACOUSTIC AND THERMAL INSULATION PURPOSES IN DUCTING AND CONCEALED LOCATIONS SHALL BE TESTED IN ACCORDANCE WITH CODE OF PRACTICE FOR FIRE SAFETY IN BUILDINGS 2011 (COP FOR F.S.I.) SUB SECTION E15.1
b. ALL LININGS FOR ACOUSTIC, THERMAL INSULATION AND DECORATIVE PURPOSES WITHIN PROTECTED MEANS OF ESCAPE SHALL BE TESTED IN ACCORDANCE WITH CODE OF PRACTICE FOR FIRE SAFETY IN BUILDINGS 2011 (FSD 2011) SUB SECTION E13.2.

COLOUR INDICATION :

- BRICK
- CONCRETE SLAB (LIGHTER WASH)
- CONCRETE (PLAIN OR REINFORCED)
- SOLID CONCRETE BLOCK
- HOLLOW CONCRETE BLOCK
- LIGHTWEIGHT PARTITION
- PLASTER OR CEMENT RENDERING
- MOSAIC OR OTHER NON-ABSORBENT FLOOR / WALL TILES
- GLASS
- TIMBER
- METAL WORK OR STEEL
- STONE FINISH
- SANITARY FITTINGS
- PROVISION FOR THE DISABLED
- EARTH (UNEXCAVATED)
- EXISTING STRUCTURE
- EXISTING WOOD DECK

LEGEND AND ABBREVIATIONS:

1. GENERAL & ABBREVIATION

- ABOVE FINISHED FLOOR LEVEL
- ABOVE STRUCTURAL FLOOR LEVEL
- FINISHED FLOOR LEVEL
- STRUCTURAL FLOOR LEVEL
- CAT LADDER
- METAL LOUVRE
- WINDOW OPENING
- FLOOR DRAIN
- FRESH AIR INTAKE
- PIPE DUCT
- MVAC — MECHANICAL VENTILATION & ARTIFICIAL LIGHTING
- AL — ARTIFICIAL LIGHTING
- EXHAUST AIR
- SUBMISSION BOUNDARY
- SITE BOUNDARY
- 1500 x 1500 TEMPORARY REFUGE SPACES
- 1500 x1500 MANOEUVRING SPACE
- 800 x1500 MANOEUVRING SPACE

2. FITTINGS LEGENDS & ABBREVIATIONS

PLAN ELE.

- WATER CLOSET
- URINAL
- WASH
- SINK

3. TACTILE TYPES

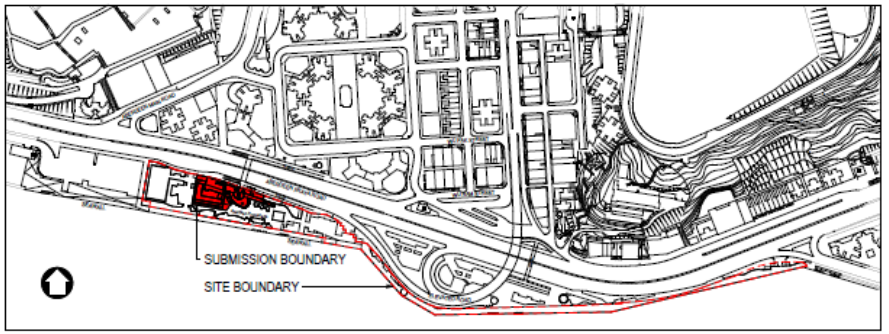
- TACTILE WARNING STRIP

4. HANDRAIL TYPES

- HL-1 — 40mm DIAMETER HANDRAIL SIDE HANDRAILS WALL MOUNT TYPE WITH BARRIER FREE REQUIREMENTS
- HL-2 — 40mm DIAMETER HANDRAIL SIDE HANDRAILS FLOOR MOUNT TYPE WITH BARRIER FREE REQUIREMENTS

5. FIRE SERVICES

- F.E. — 4.5kg CO_2 F.E. FIRE EXTINGUISHER
- F.H. — FIRE HYDRANT
- F.S.I. — FIRE SERVICES INLET
- H.R. — HOSE REEL
- EXIT — EXIT SIGN
- DIR — DIRECTIONAL SIGN (PROPRIETARY PRODUCT PROVIDED BY S.S.)
- ACCESSIBLE LIFT
- DOOR WITH TRANSPARENT UPPER VIEW PANEL
- FRR -/60/60 SELF CLOSING DOOR
- FRR -/60/60 SELF CLOSING DOOR WITH TRANSPARENT UPPER VIEW PANEL



LOCATION PLAN SCALE 1:2000

NOTES

no.	date	description	initial
REVISION			

	name	date
designed		
drawn		
checked		
approved		
Chief Architect		
Senior Architect		
Project Architect		

contract

contract no.

Site no.

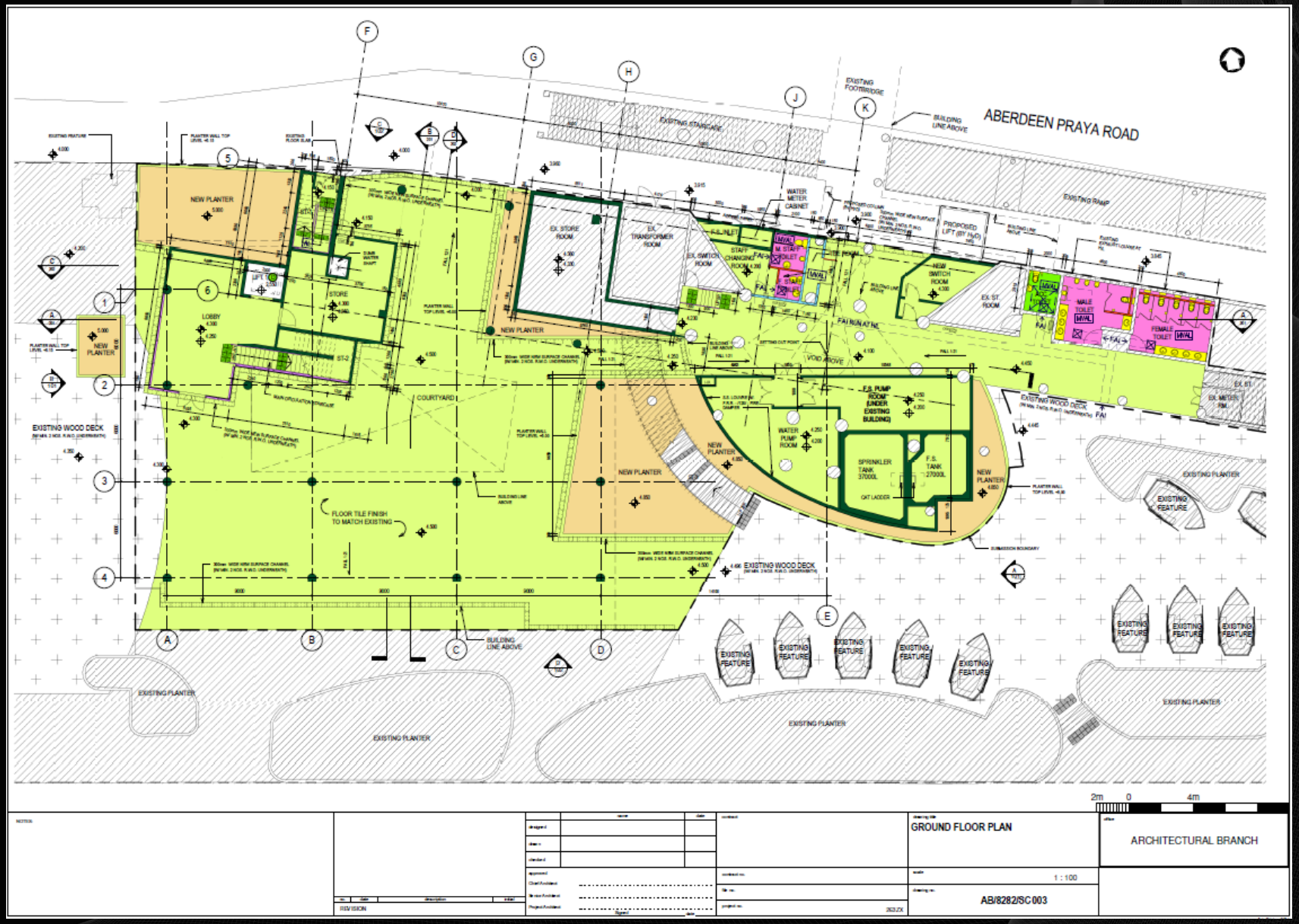
project no. 262.ZX

drawing title: GENERAL NOTES, COLOR CHART, LEGEND & LOCATION PLAN

scale: As indicated

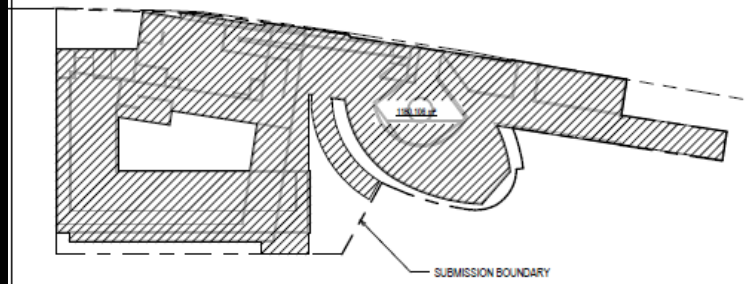
drawing no. AB/8282/SC 001

office: ARCHITECTURAL BRANCH



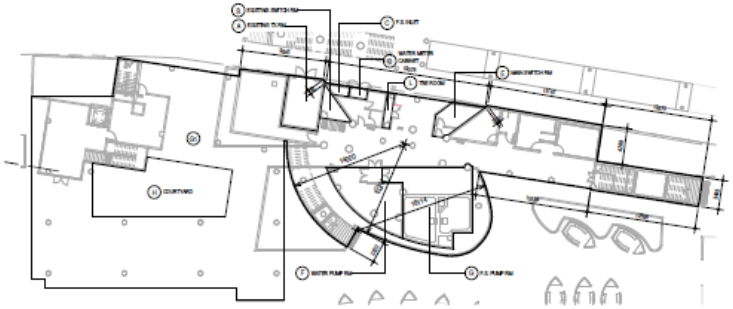
BIM - produced drawing – BIM 生产建築图纸

SITE COVERAGE DIAGRAM (FOR SUBMISSION BOUNDARY)

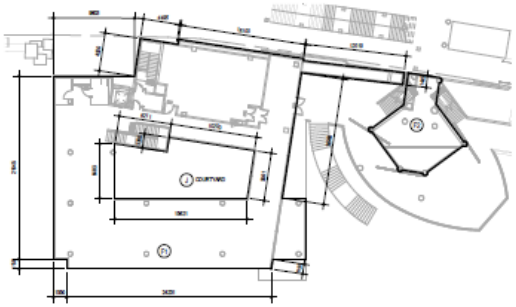


GROSS FLOOR AREA CALCULATION

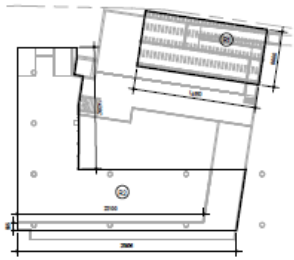
GROSS FLOOR AREA DIAGRAM OF GROUND FLOOR



GROSS FLOOR AREA DIAGRAM OF FIRST FLOOR



GROSS FLOOR AREA DIAGRAM OF ROOF FLOOR



PLOT RATIO AND PERSENTAGE OF SITE COVERAGE

CLASS OF SITE:	=A
SITE AREA (SQ.M):	=1471.200
MEAN STREET LEVEL:	=(3.800 + 3.500)/2 = +3.700mPD
ROOF LEVEL:	=(+14.450mPD)
BUILDING HEIGHT (M):	=(0.75 mPD
PERMITTED NON-DOMESTIC SITE COVERAGE (%):	=100
PERMITTED NON-DOMESTIC PLOT RATIO:	=5
PROPOSED SITE COVERAGE (SQ.M):	=1150.106
PROPOSED SITE COVERAGE IN %:	=1150.106/1471.200x100 =60.21=100 (PROVIDED) < (PERMITTED)
PROPOSED NON-DOMESTIC GFA (SQ.M):	=2121.173
PROPOSED NON-DOMESTIC PLOT RATIO:	=2121.173/1471.200 =1.44=5 (PROVIDED) < (PERMITTED)

GFA

ID	AREA (SQ.M)	TOTAL AREA (SQ.M)
GF:		
G1	1306.052	1306.052
		1306.052
1F:		
F1	735.243	735.243
F2	73.024	73.024
		808.267
ROOF:		
R1	90.63	90.63
R2	297.253	297.253
		387.240
TOTAL		2510.561

SCHEDULE OF AREA TO BE DEDUCTED FROM GFA

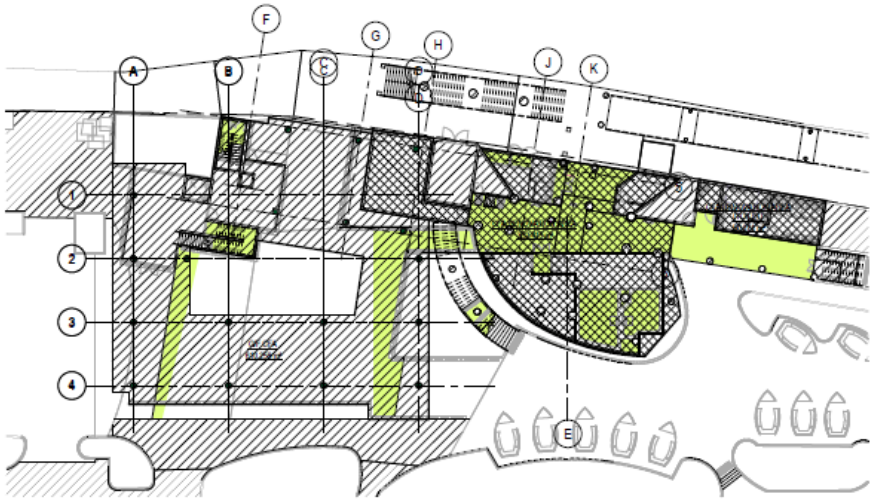
ID	Name	AREA (SQ.M)	TOTAL AREA (SQ.M)
GF:			
A	EXISTING TX RM	26.749	26.749
B	EXISTING SWITCH RM	7.613	7.613
C	F.S. INLET	3.104	3.104
D	WATER METER CABINET	2.08	2.08
E	MAIN SWITCH RM	13.414	13.414
F	WATER PUMP RM	45.018	45.018
G	F.S. PUMP RM	77.040	77.040
H	COURTYARD	99.853	99.853
I	TSE ROOM	3.557	3.557
		SUB-TOTAL:	279.520
1F:			
J	COURTYARD	99.853	99.853
		SUB-TOTAL:	99.853
TOTAL			379.388

PROPOSED GFA = 2510.561 - 379.388
=2131.173(SQM)

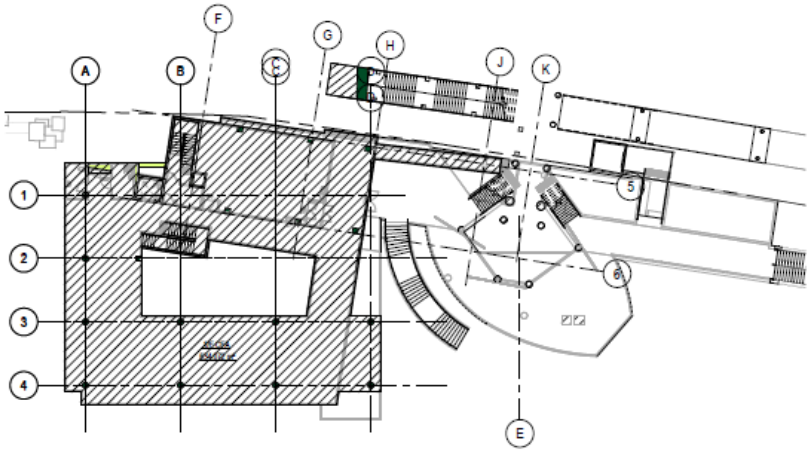
GFA CALCULATION, PLOT RETIO & SITE COVERAGE	ARCHITECTURAL BRANCH
1 : 250	
AB/8282/SIC 301	

REVISION

BIM - produced drawing – BIM 生产建築图纸



G/F - CFA DIAGRAM



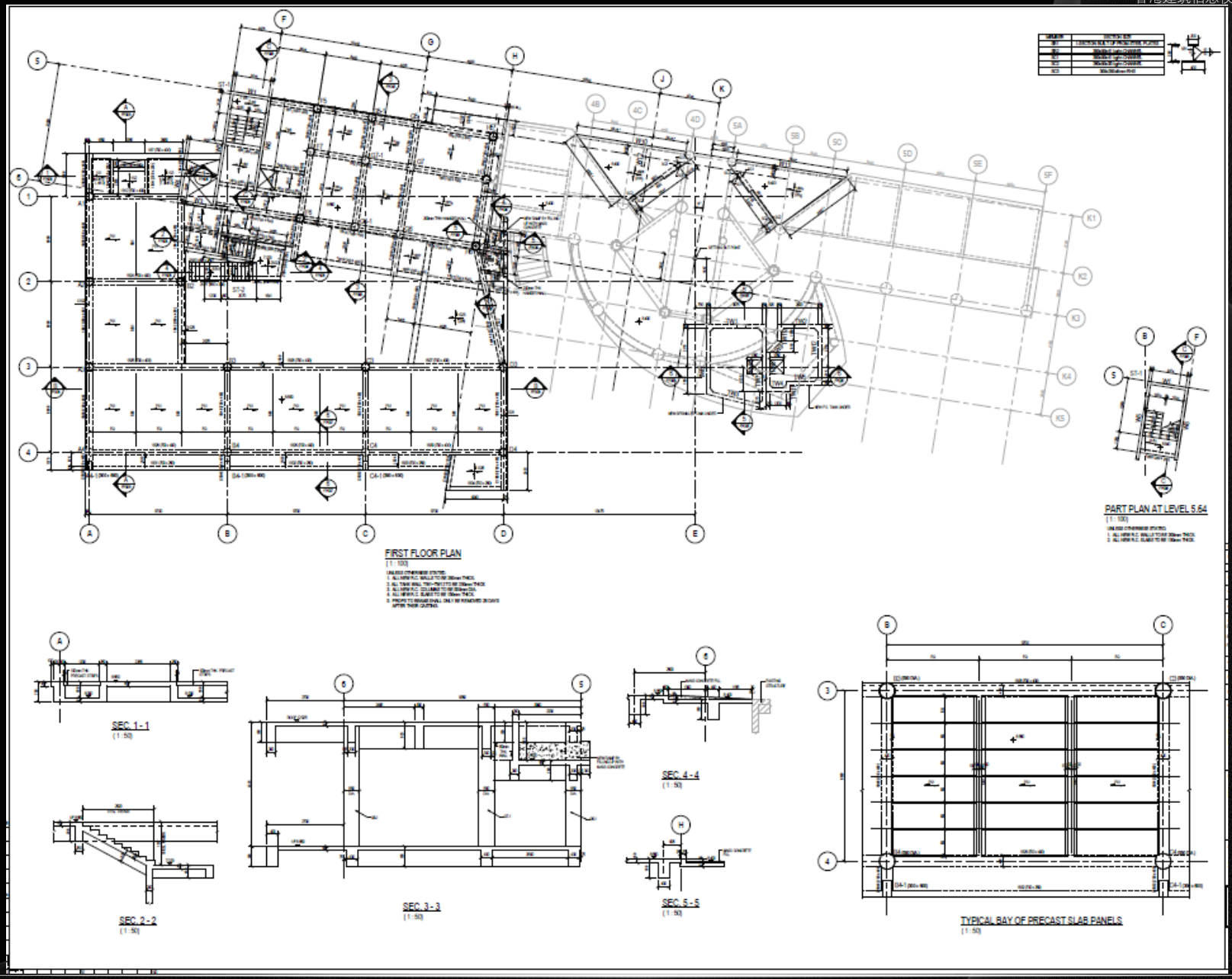
1/F - CFA DIAGRAM

CFA SCHEDULE

LEVEL	AREA NAME	AREA
G/F	G/F CFA	610.258 m²
G/F	CFA RENOVATION AREA	332.413 m²
G/F	CFA RENOVATION AREA (TOILET)	50.27 1 m²
G/F: 3		992.942 m²
1/F	1/F CFA	634.072 m²
1/F: 1		634.072 m²
Grand total: 4		1627.014 m²

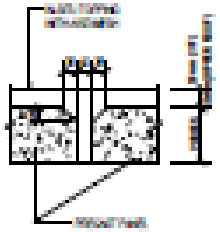
		CFA CALCULATION	ARCHITECTURAL BRANCH
		1 : 200	
		AB/8282/SC SK01	

BIM - produced drawing – BIM 生产建築图纸

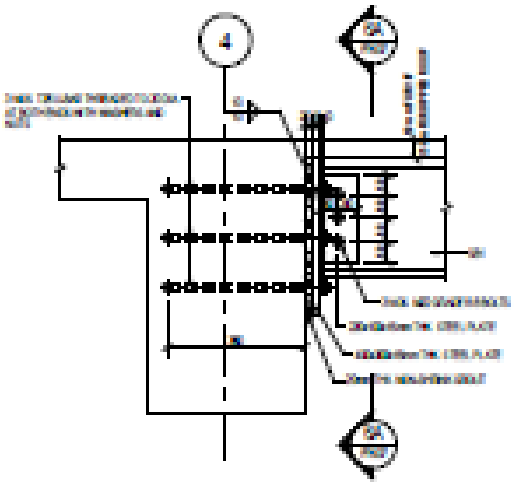


BIM - produced drawing – BIM 生产结构图纸

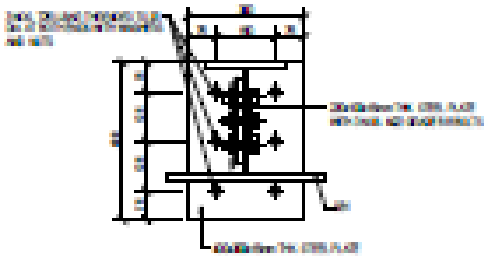
TYPICAL DETAIL OF PRECAST SLAB
(1 : 20)



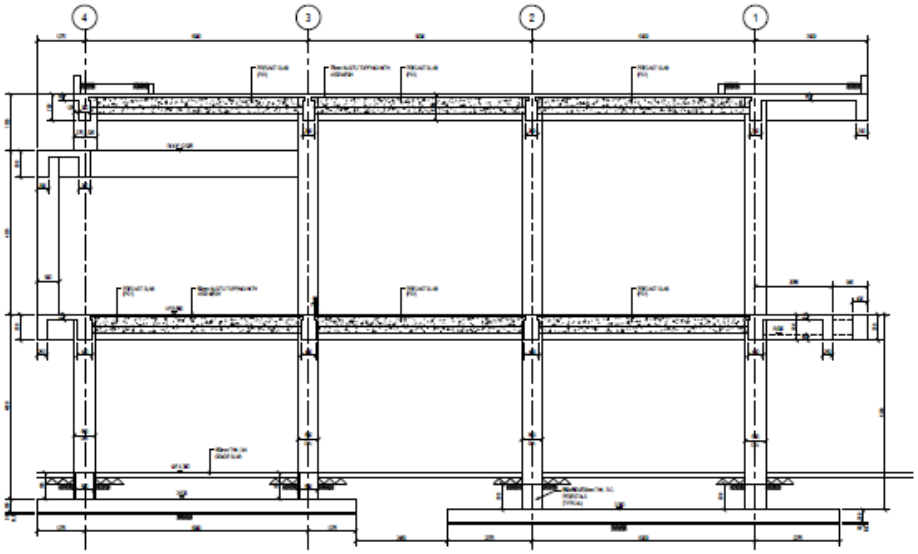
TYPICAL DETAIL OF CONSTRUCTION JOINT
BETWEEN PRECAST SLAB PANEL (1 : 10)



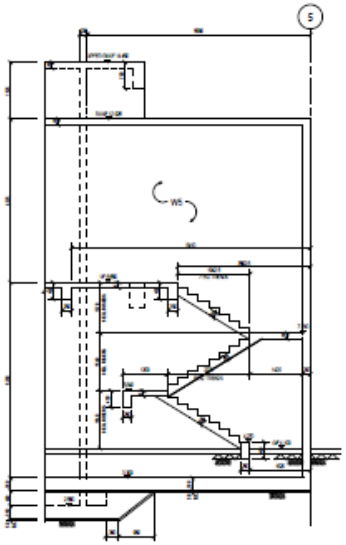
SEC. 6 - 6 (FP306)
(1 : 10)
(SHOWING TYPICAL CONNECTION
DETAILS BETWEEN SBI & R.C. BEAM)



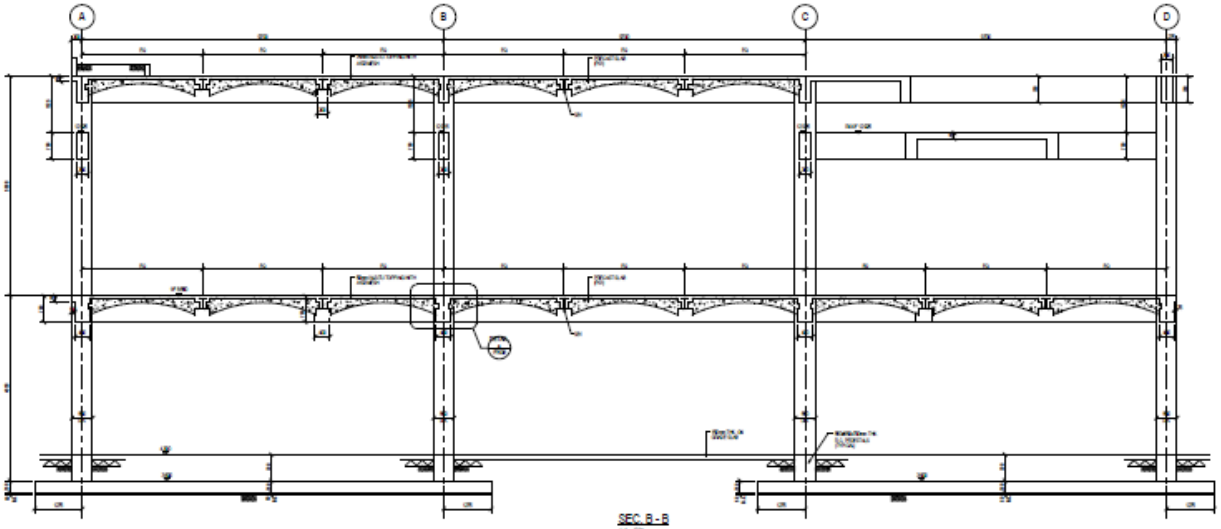
SEC. 6A - 6A
(1 : 10)



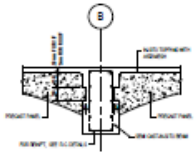
SEC. A - A
(1 : 50)



SEC. C - C
(1 : 50)

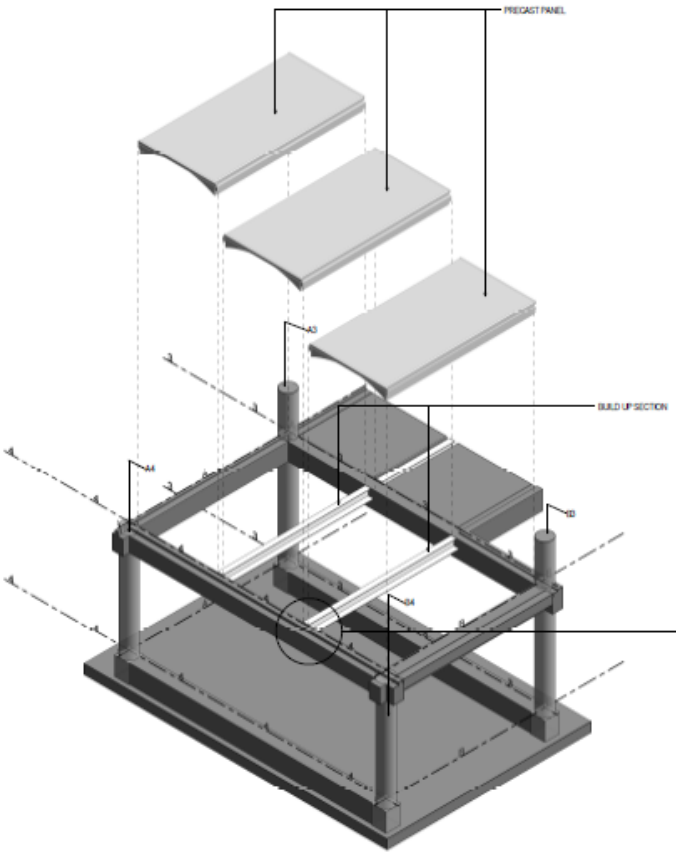


SEC. B - B
(1 : 50)

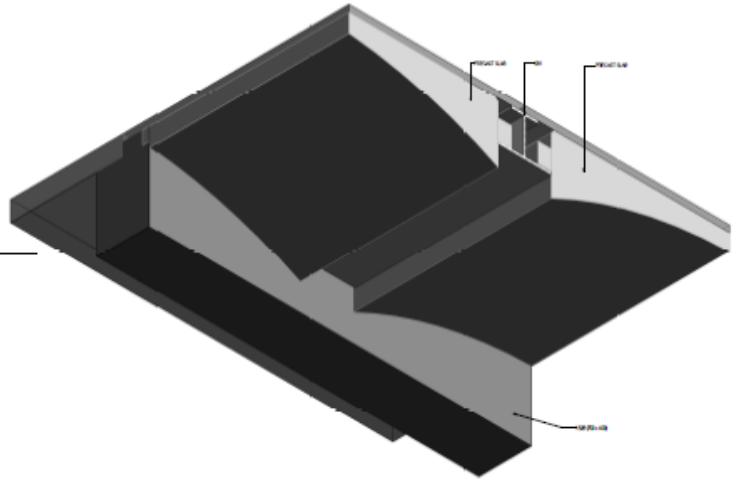


DETAIL A
(1 : 20)
SHOWING TYPICAL DETAILS BETWEEN PRECAST PANEL AND R.C. BEAM

BIM - produced drawing – BIM 生产结构图纸

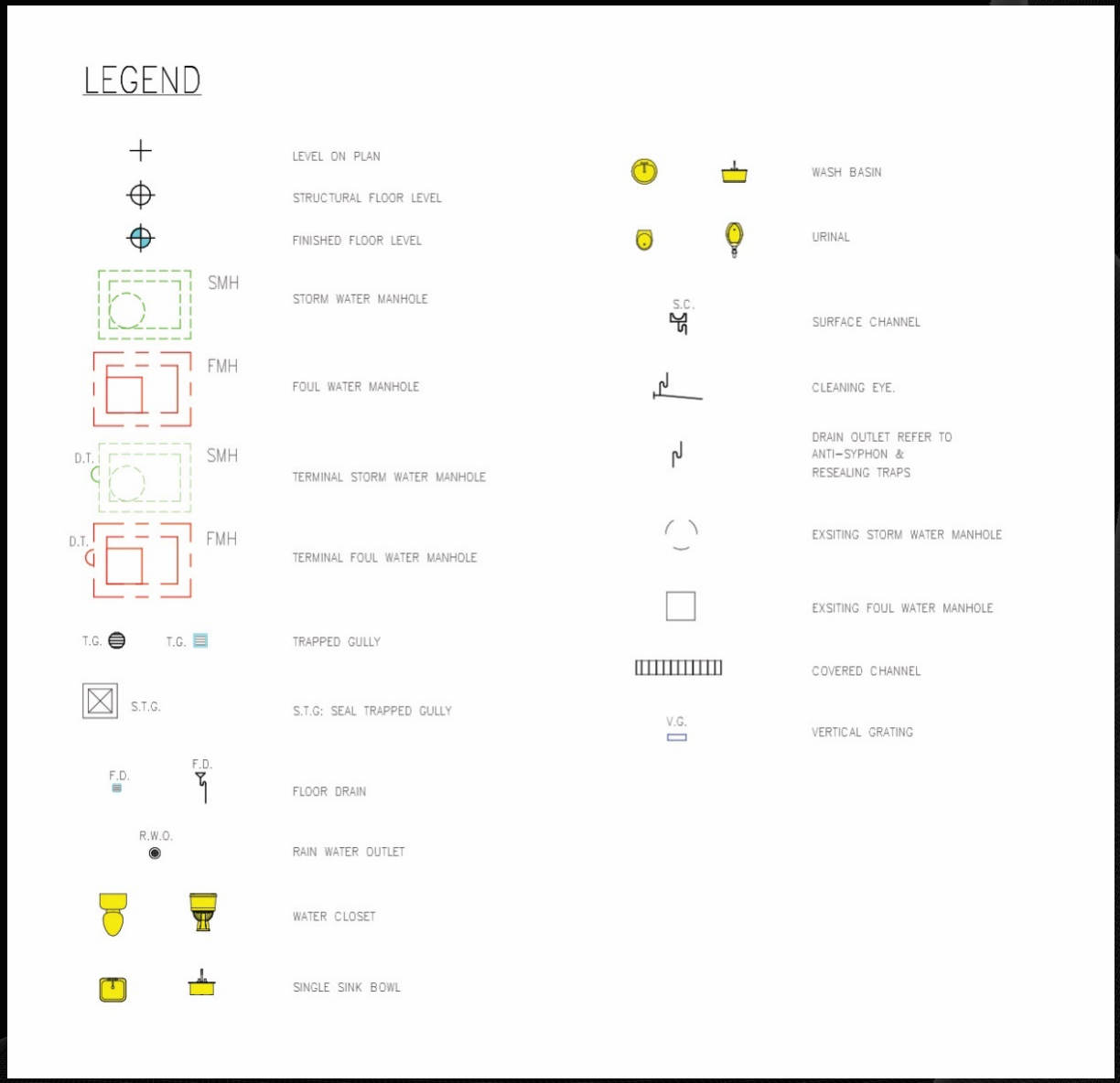


PRECAST SLAB
(1 : 50)



PRECAST SLAB
(1 : 10)

BIM - produced drawing – BIM 生产结构图纸



符号与说明

BIM - produced drawing – BIM 生产给排水系统图纸

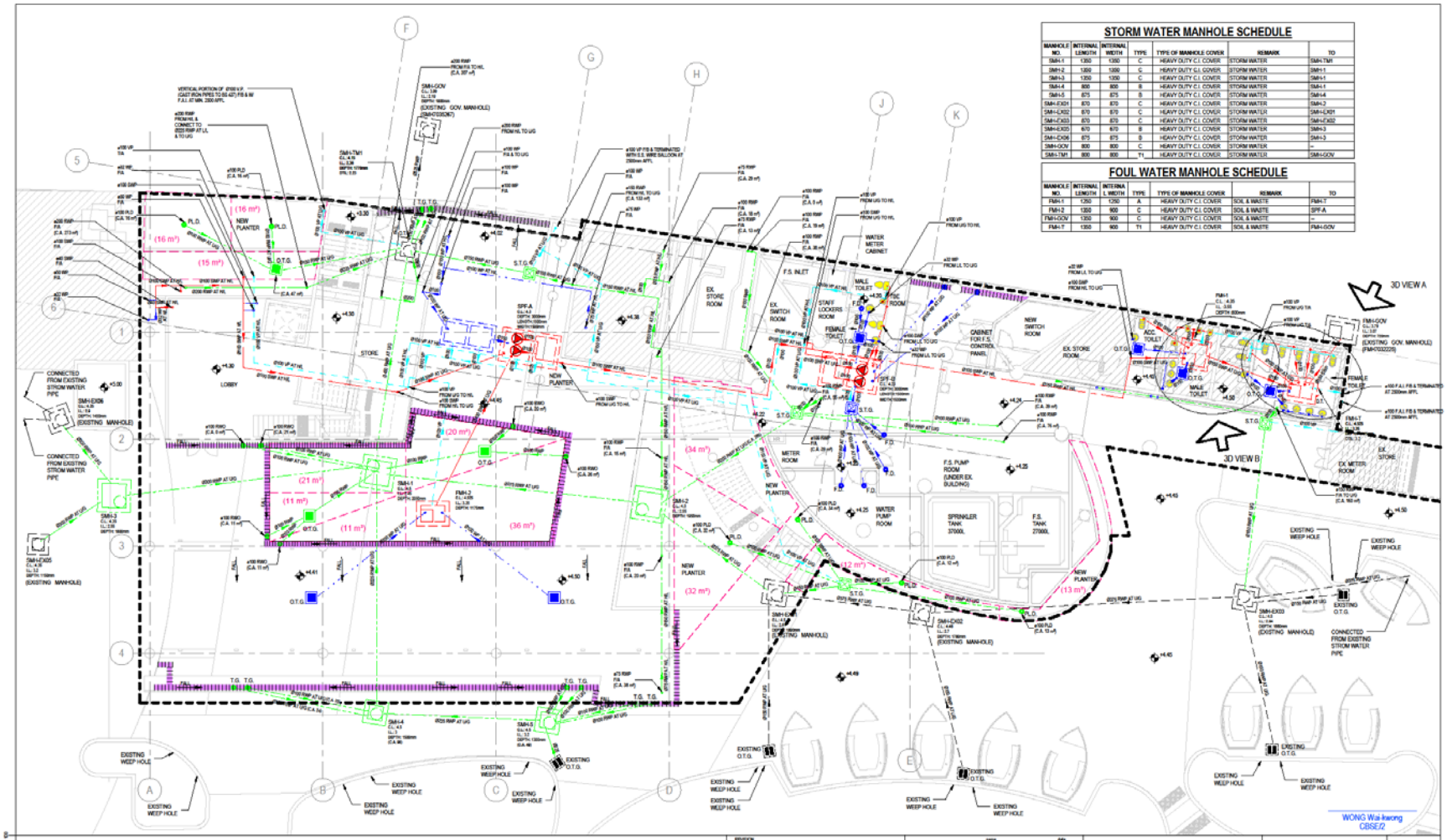
STORM WATER MANHOLE SCHEDULE

MANHOLE NO.	COVER LEVEL	INVERT LEVEL	DEPTH	INTERNAL LENGTH	INTERNAL WIDTH	TYPE	TYPE OF MANHOLE COVER	REMARK
SMH-1	4.50	2.45	2050	1350	1350	C	Heavy duty C.I. cover	Storm water
SMH-2	4.50	2.55	1950	1350	1350	C	Heavy duty C.I. cover	Storm water
SMH-3	4.35	2.55	1800	1350	1350	C	Heavy duty C.I. cover	Storm water
SMH-4	4.50	3.00	1500	800	800	B	Heavy duty C.I. cover	Storm water
SMH-5	4.50	3.20	1300	875	875	B	Heavy duty C.I. cover	Storm water
SMH-6	4.35	3.20	1150	670	670	B	Heavy duty C.I. cover	Storm water
SMH-7	4.35	2.90	1450	875	875	B	Heavy duty C.I. cover	Storm water
SMH-EX01	4.50	2.61	1890	870	870	C	Heavy duty C.I. cover	Storm water
SMH-EX02	4.48	2.70	1780	870	870	C	Heavy duty C.I. cover	Storm water
SMH-EX03	4.50	2.84	1660	870	870	C	Heavy duty C.I. cover	Storm water
SMH-EX04	4.50	2.94	1560	870	870	C	Heavy duty C.I. cover	Storm water
SMH-TM1	4.15	2.38	1770	800	800	C	Heavy duty C.I. cover	Storm water

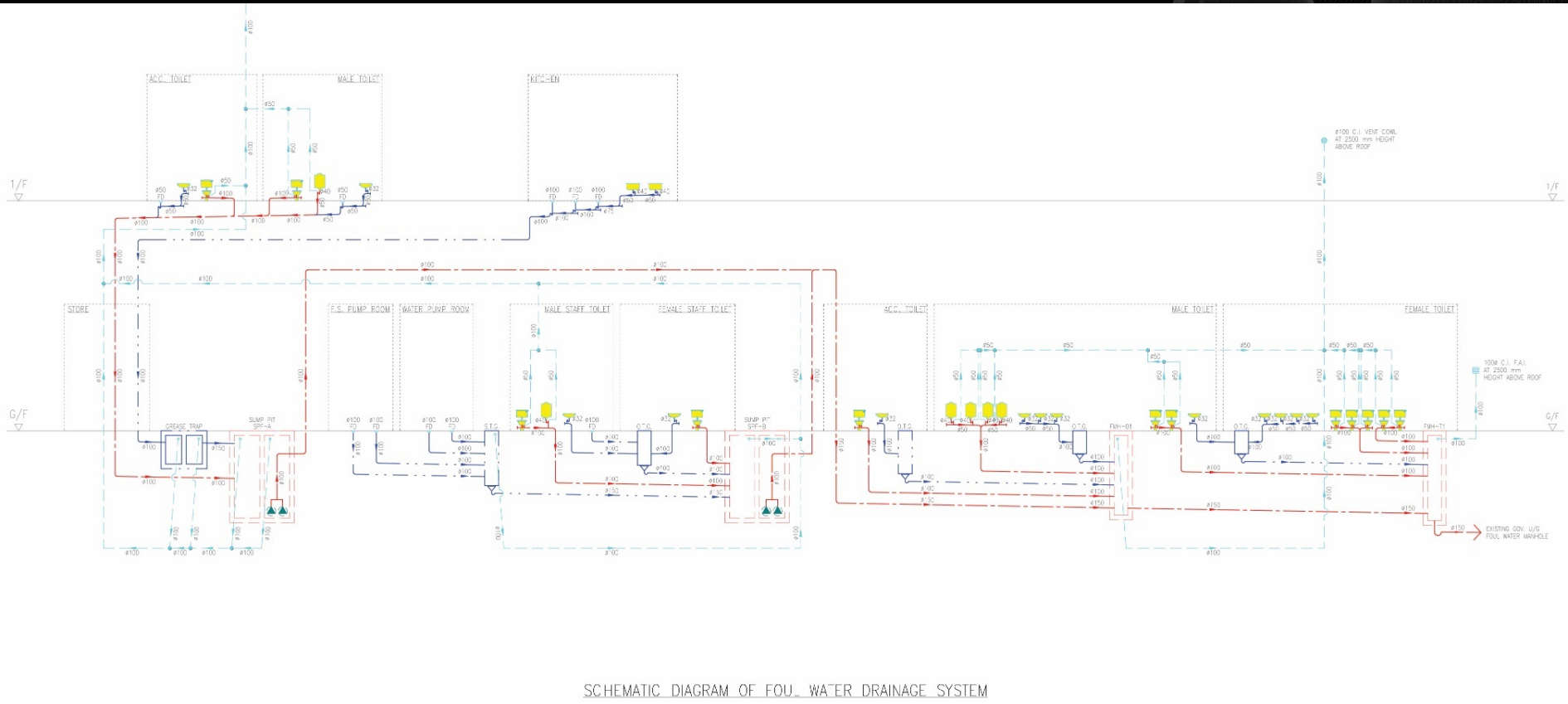
FOUL WATER MANHOLE SCHEDULE

MANHOLE NO.	COVER LEVEL	INVERT LEVEL	DEPTH	INTERNAL LENGTH	INTERNAL WIDTH	TYPE	TYPE OF MANHOLE COVER	REMARK
FMH-T	4.525	3.35	1175	1350	900	C	Heavy duty C.I. cover	Soil & waste
FMH-1	4.35	3.55	800	1250	1250	A	Heavy duty C.I. cover	Soil & waste

Automatic Scheduling 集水井自動計算



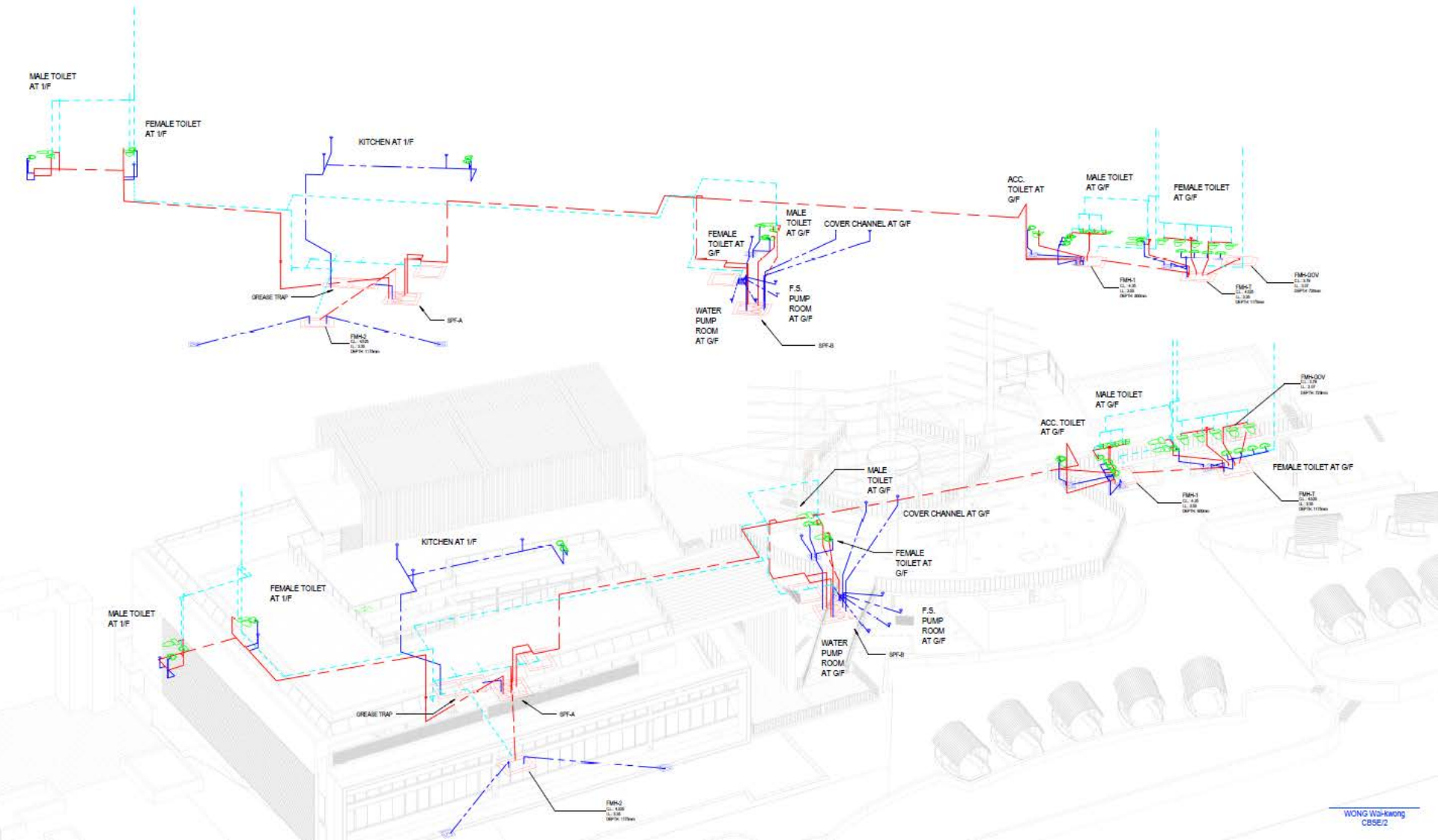
BIM - produced drawing – BIM 生产给排水系统图纸



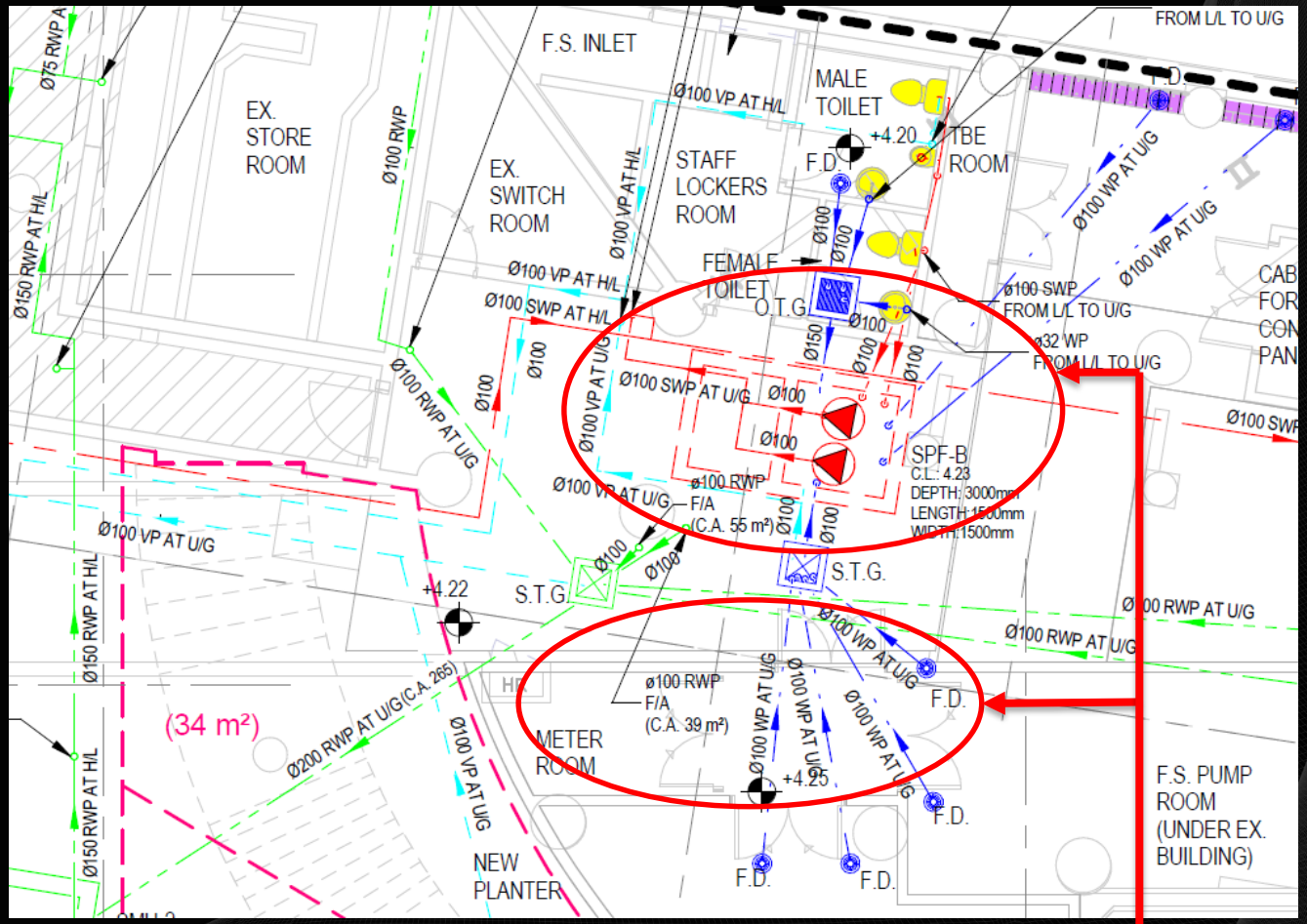
SCHEMATIC DIAGRAM OF FOUL WATER DRAINAGE SYSTEM

Schematic Diagram 系統示意图

BIM - produced drawing – BIM 生产给排水系统图纸



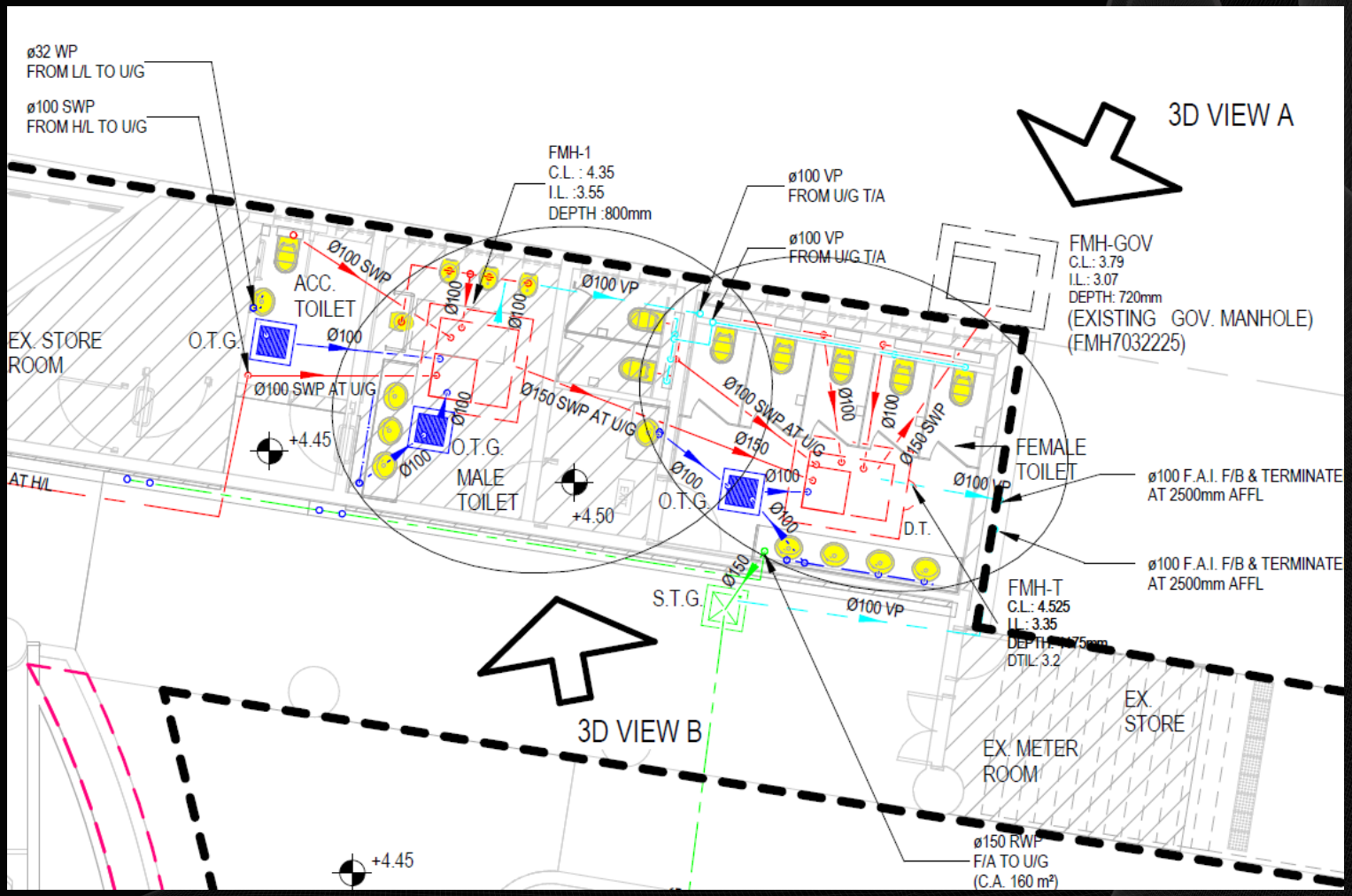
BIM - produced drawing – BIM 生产给排水系统图纸



Drawing showing underground drainage symbols (Showing 2D symbols for 3D objects)

图纸展示了地下给排水符号
(在三維物件上展示二維符号)

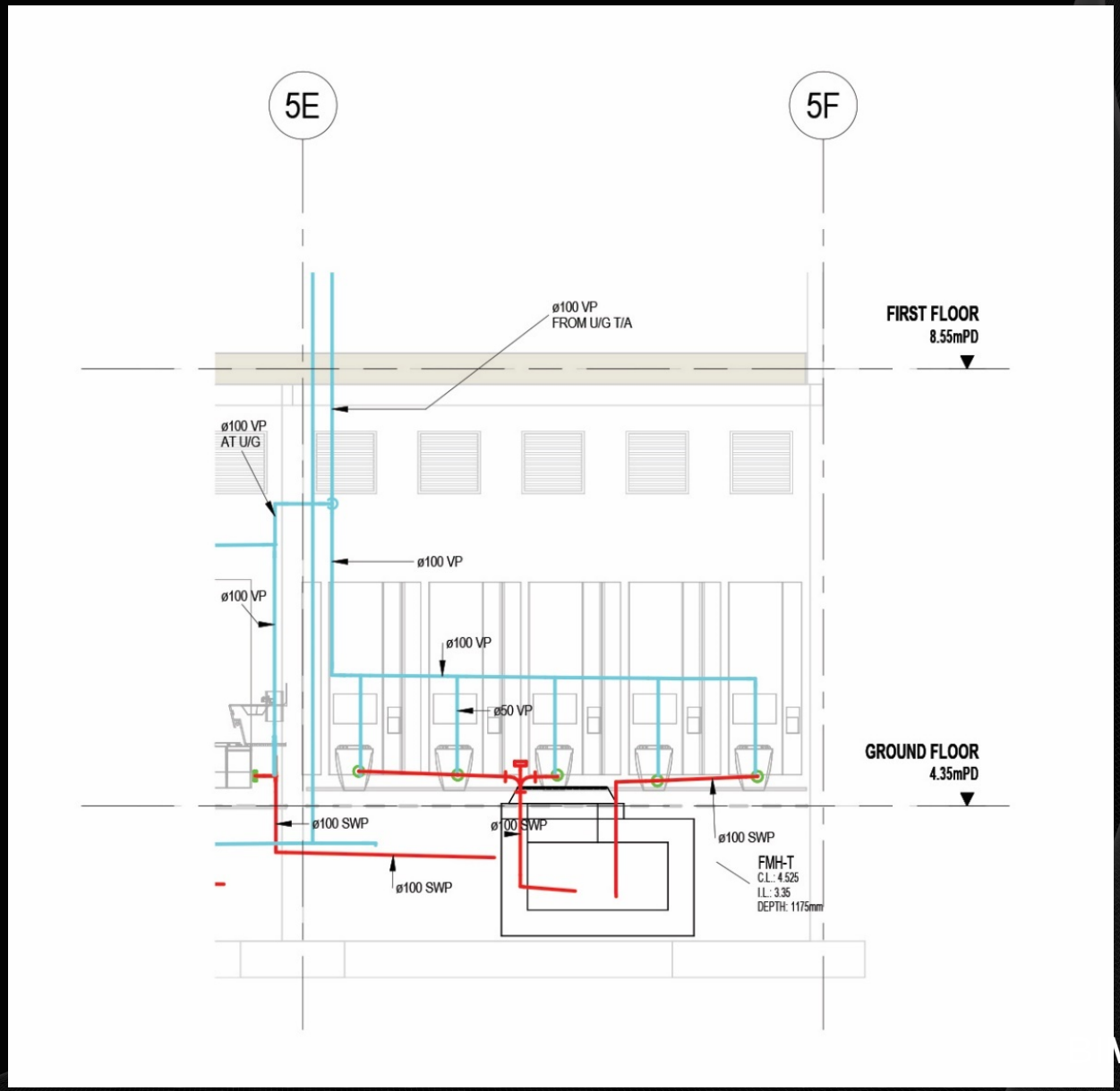
BI



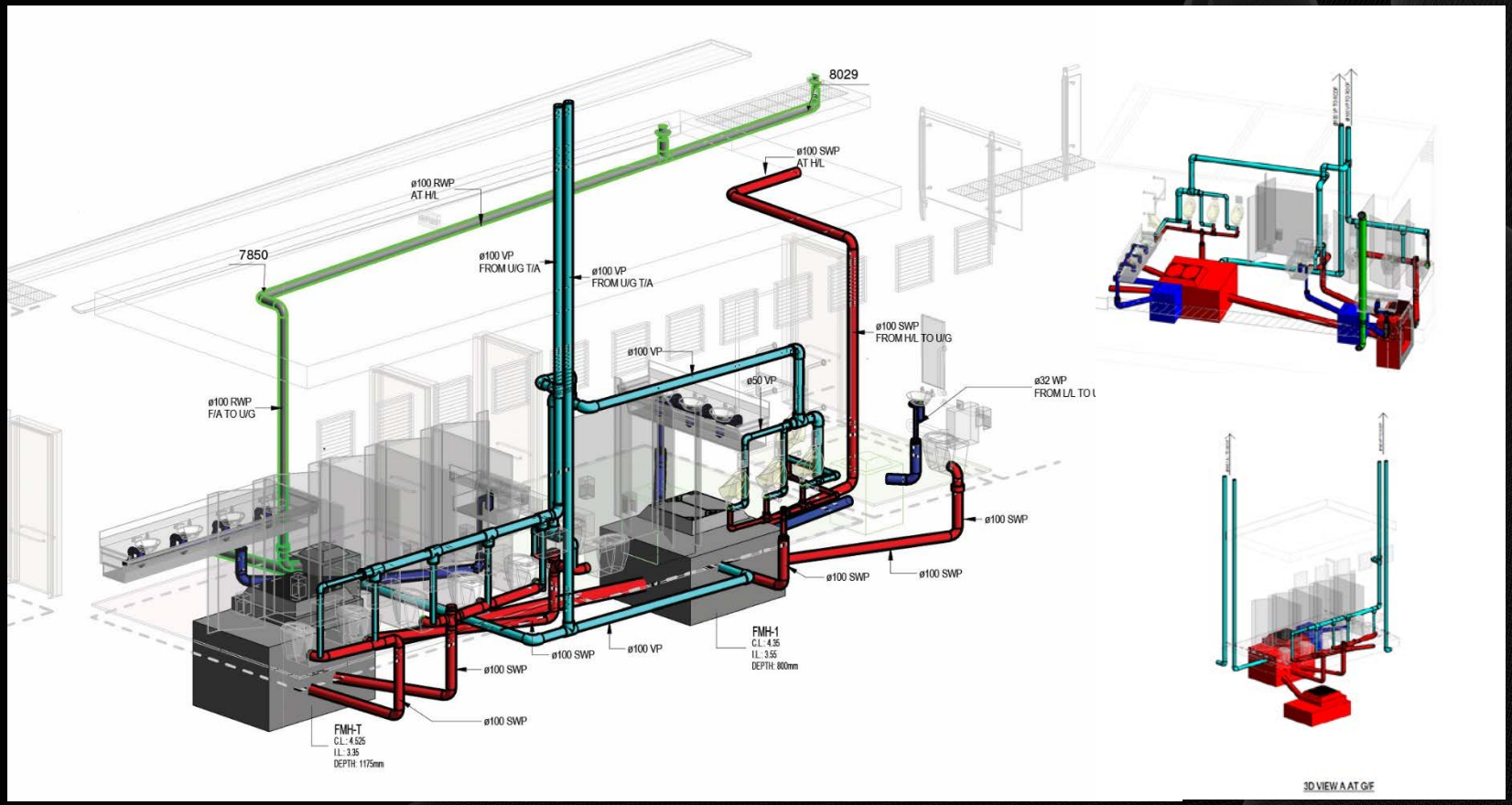
Drawing showing difficultly, vertical stack pipes in toilet can hardly be illustrated.

图纸以图解说明展示了厕所中複雜，垂直的栈管

BIM - produced drawing – BIM 生产给排水系统图纸


5E
5F
ø100 VP
FROM U/G T/A
FIRST FLOOR
8.55mPD
ø100 VP
AT U/G
ø100 VP
ø100 VP
ø100 VP
ø50 VP
GROUND FLOOR
4.35mPD
ø100 SWP
ø100 SWP
ø100 SWP
ø100 SWP
FMH-T
C.L.: 4.525
I.L.: 3.35
DEPTH: 1175mm

厕所面积的立面图



3D Isometric of toilet area – Make architectural / structural elements transparent. Drainage elements are shown clearly.

厕所范围的三維等距 – 令建筑的 / 结构的 元素透明。 清晰地展示给排水元素。

BIM - produced drawing – BIM 生产给排水系统图纸

Thank You