

The logo consists of the letters 'NCID' in a bold, white, sans-serif font. The letters are stylized with thick strokes and sharp angles, giving it a modern, architectural feel. The 'N' and 'C' are connected, as are the 'I' and 'D'.

NCID

A DVANCED  
C ONSTRUCTION  
I NFORMATION  
D EVELOPMENT

# I BIM Manager Training

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*Managing Director, A.C.I.D.*



- Fake BIM
- **M + ?**
- JUST 3D MODEL – NOT BIM



# DESIGN

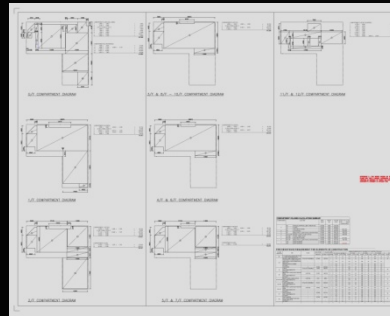
CAD

CAD

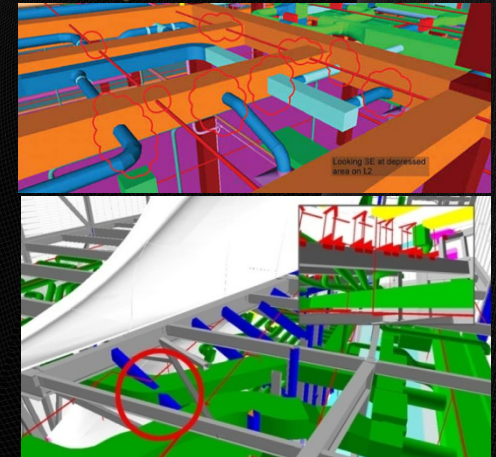
REVIT / NAVISWORKS



CONSTRUCTION  
INFORMATOIN

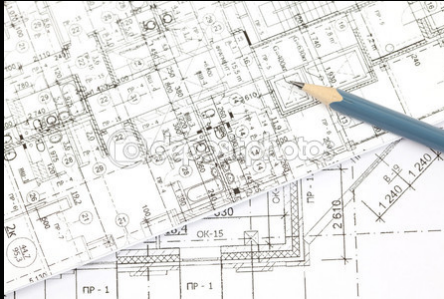


STATUTORY  
SUBMISSION



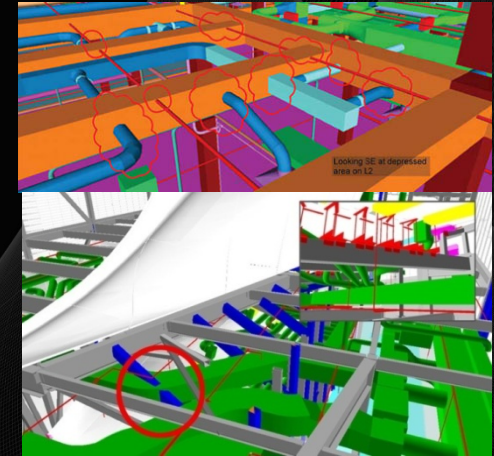
CLASH  
DETECTION



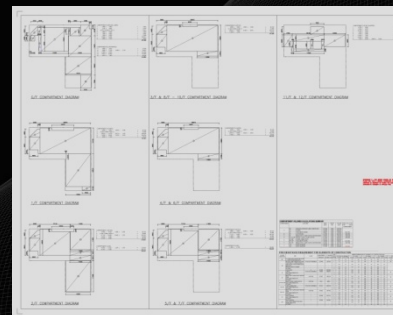


CONSTRUCTION  
INFORMATOIN

# DESIGN in BIM



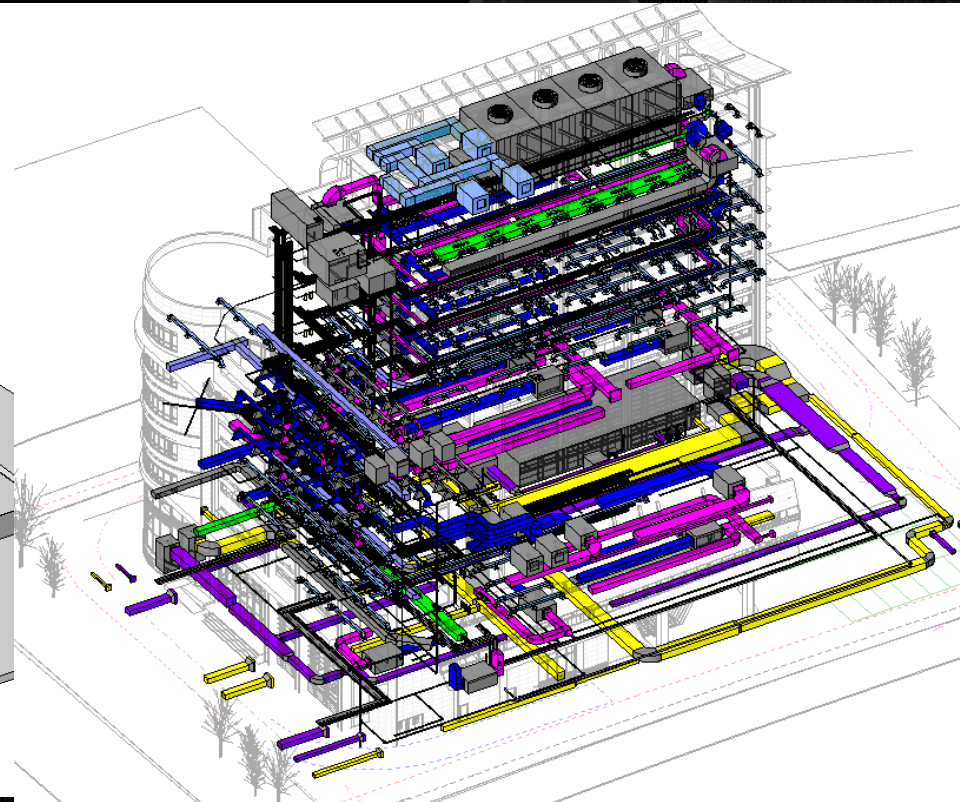
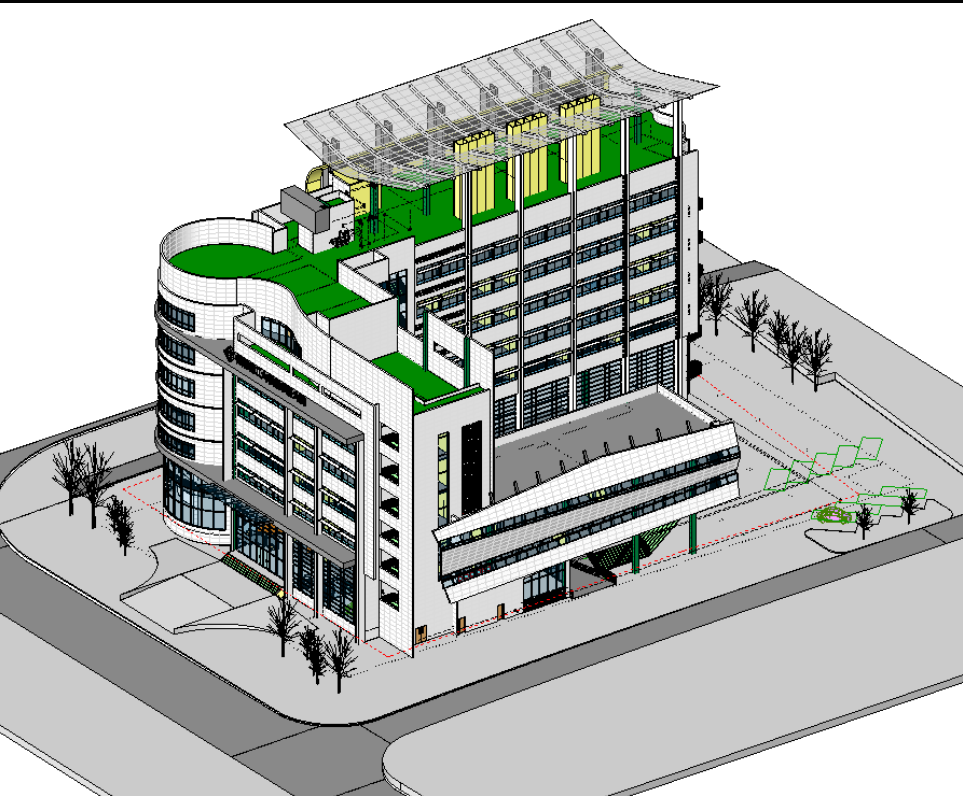
CLASH  
DETECTION



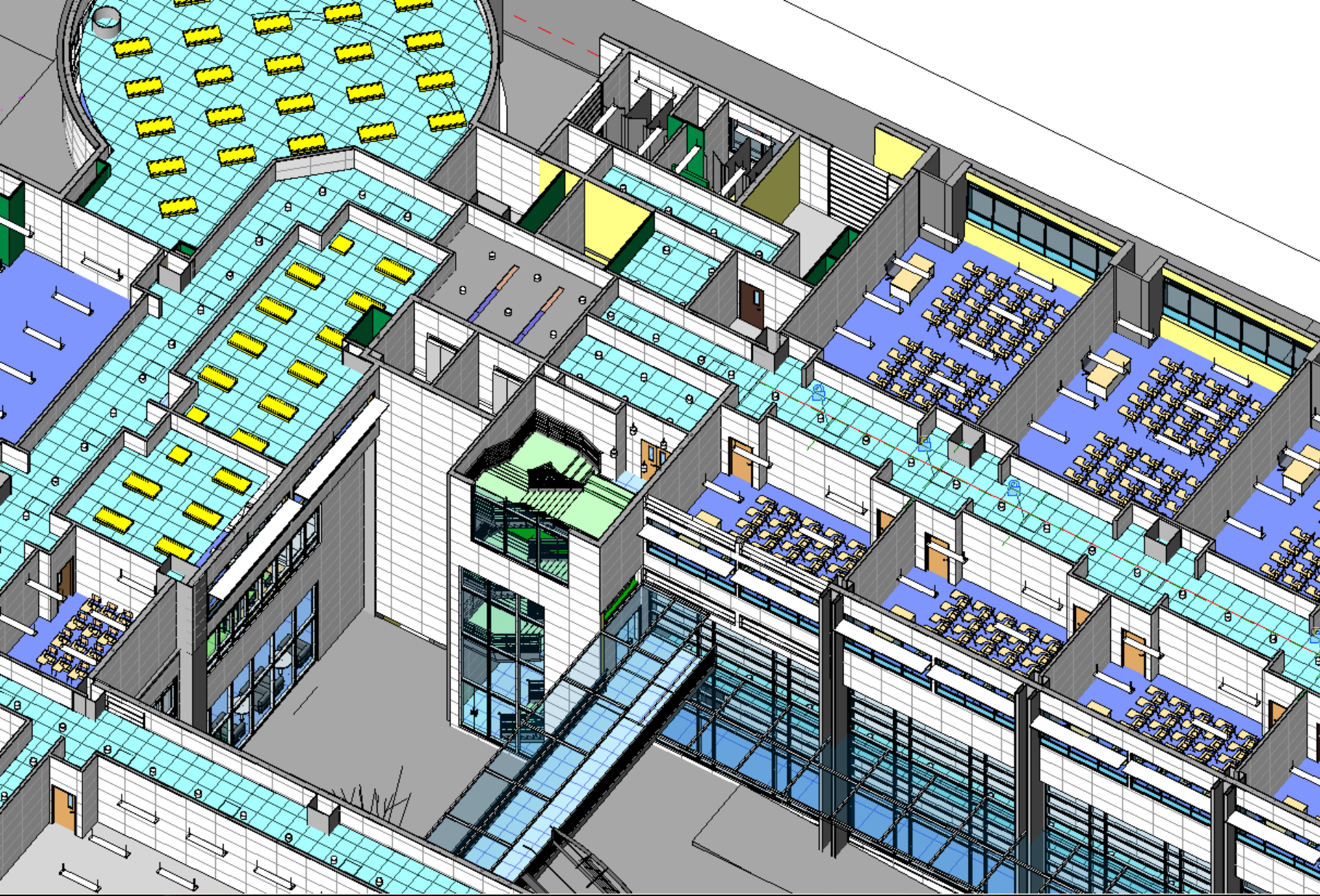
STATUTORY  
SUBMISSION



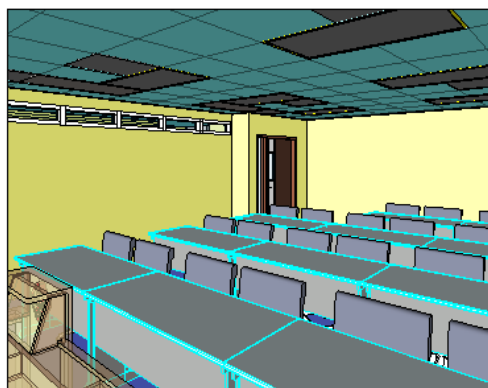




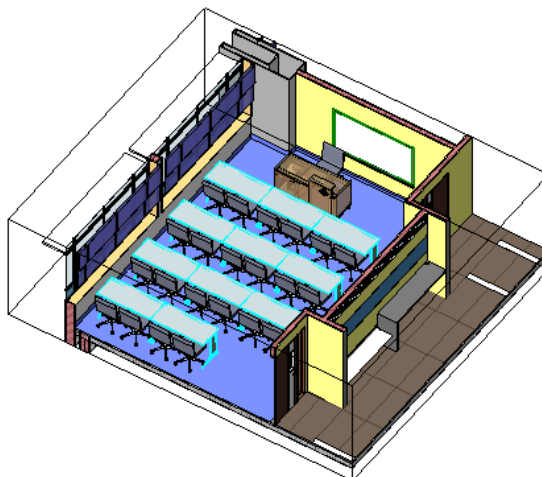




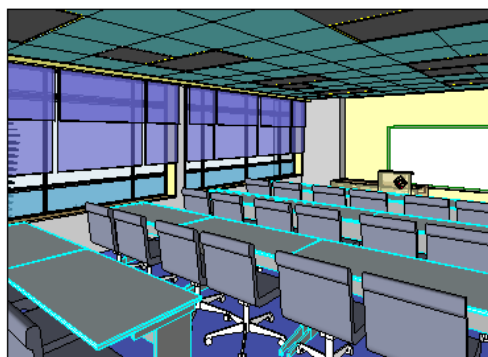




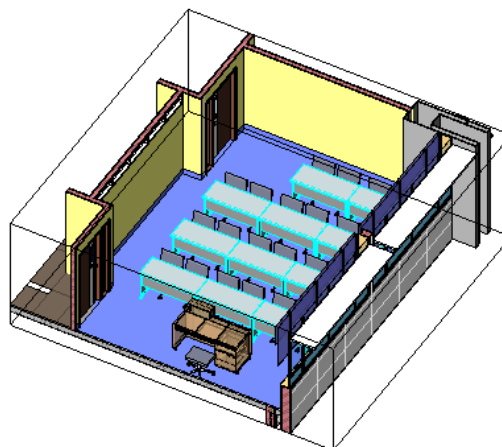
6 行政人员培训室立体示意图2



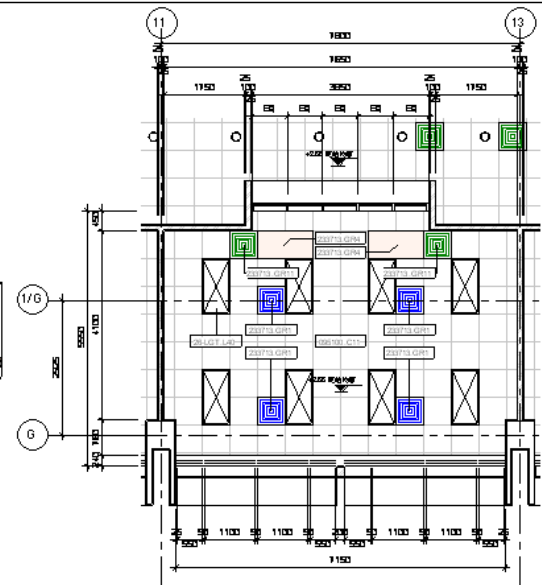
4 行政人员培训室立体剖面示意图2



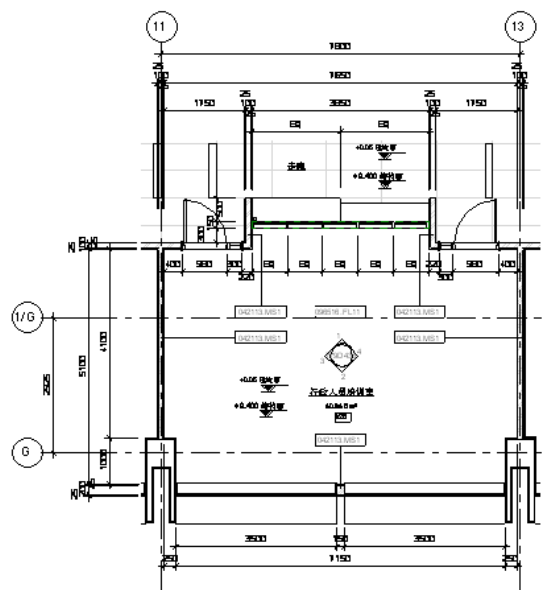
5 行政人員培訓室立體示意圖1



3 行政人员培训室立体剖面示意图1



2 行政人员培训室天花平面图(高楼三层) 1:50

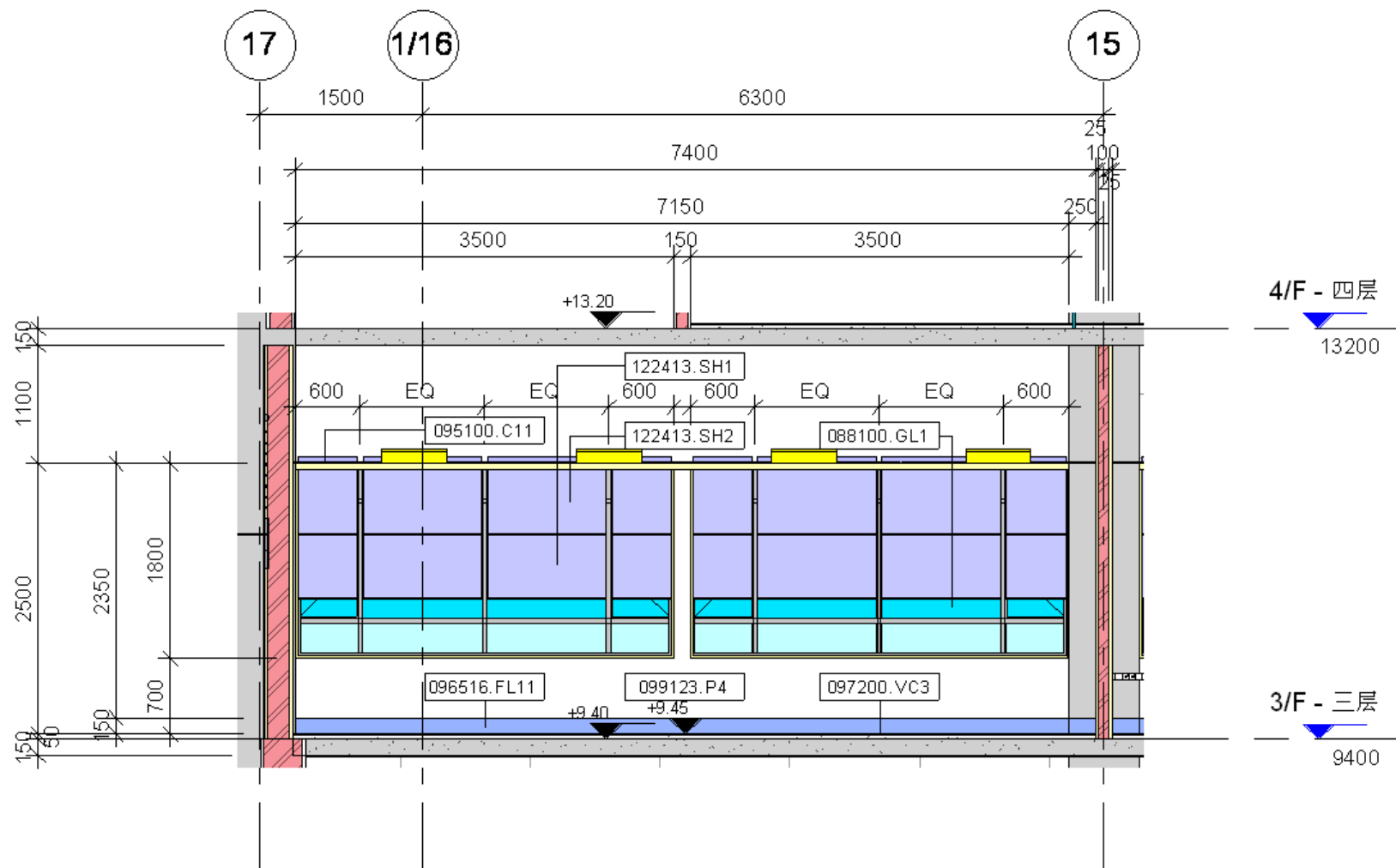


1 行政人员培训室平面图(高楼三层) 1

[illegible]



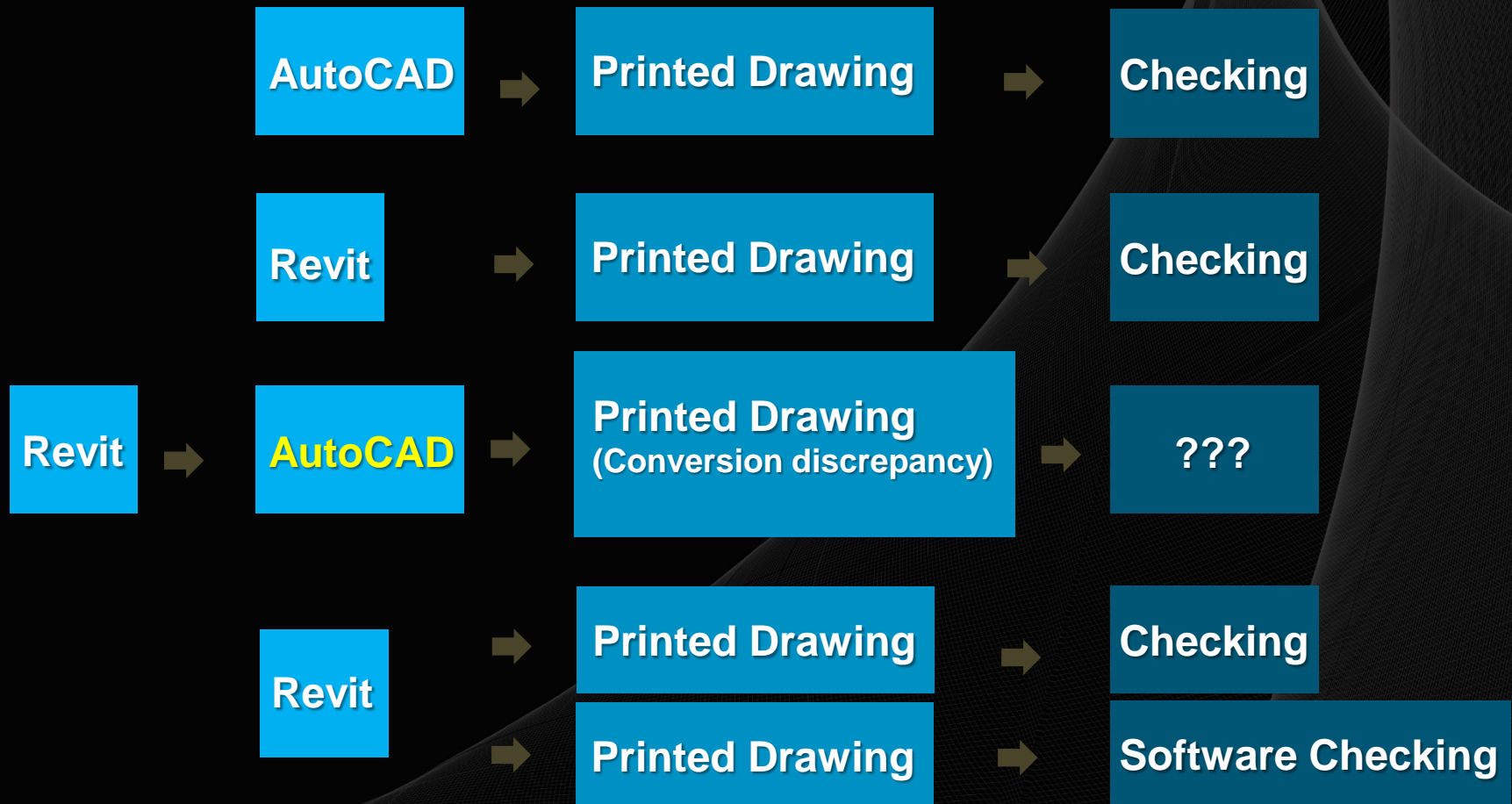




2

行政人员培训室立面图(高楼三层)6

1:50





## Purpose:

To demonstrate a development complies with statutory requirement and seek government approval using BIM

## Applicable Development:

Applied to new building & alteration and addition works in Hong Kong

## Content of Submission:

Plans, sections, elevations, calculations and other relevant documents

## An area based calculation

convert areas into following figures through checking of regulations & codes of practice:

plot ratio

site coverage

room capacity

width of escape route

fire compartment

fire resisting period

sanitary fitment provision etc.



Height of building in metres	Domestic buildings						Non-domestic buildings					
	Percentage site coverage			Plot ratio			Percentage site coverage			Plot ratio		
	Class A site	Class B site	Class C site	Class A site	Class B site	Class C site	Class A site	Class B site	Class C site	Class A site	Class B site	Class C site
Not exceeding 15 m	66.6	75	80	3.3	3.75	4.0	100	100	100	5	5	5
Over 15 m but not exceeding 18 m	60	67	72	3.6	4.0	4.3	97.5	97.5	97.5	5.8	5.8	5.8
Over 18 m but not exceeding 21 m	56	62	67	3.9	4.3	4.7	95	95	95	6.7	6.7	6.7
Over 21 m but not exceeding 24 m	52	58	63	4.2	4.6	5.0	92	92	92	7.4	7.4	7.4
Over 24 m but not exceeding 27 m	49	55	59	4.4	4.9	5.3	89	90	90	8.0	8.1	8.1
Over 27 m but not exceeding 30 m	46	52	55	4.6	5.2	5.5	85	87	88	8.5	8.7	8.8
Over 30 m but not exceeding 36 m	42	47.5	50	5.0	5.7	6.0	80	82.5	85	9.5	9.9	10.2
Over 36 m but not exceeding 43 m	39	44	47	5.4	6.1	6.5	75	77.5	80	10.5	10.8	11.2
Over 43 m but not exceeding 49 m	37	41	44	5.9	6.5	7.0	69	72.5	75	11.0	11.6	12.0
Over 49 m but not exceeding 55 m	35	39	42	6.3	7.0	7.5	64	67.5	70	11.5	12.1	12.6
Over 55 m but not exceeding 61 m	34	38	41	6.8	7.6	8.0	60	62.5	65	12.2	12.5	13.0
Over 61 m	33.33	37.5	40	8.0	9.0	10.0	60	62.5	65	15	15	15

(L.N. 294 of 1976)

Table 2

Table showing minimum number of exit doors from a room, or exit routes from a storey, and required minimum width thereof

Capacity of room or storey	Min. No. of exit doors (from room) or exit routes (from storey)	Min. Total Width of		Min. Width of each	
		exit doors	exit routes	exit door	exit route
4 - 30	1			750 mm	1050 mm
31 - 200	2	1750 mm	2100 mm	850 mm	1050 mm
201 - 300	2	2500 mm	2500 mm	1050 mm	1050 mm
301 - 500	2	3000 mm	3000 mm	1050 mm	1050 mm
501 - 750	3	4500 mm	4500 mm	1200 mm	1200 mm
751 - 1000	4	6000 mm	6000 mm	1200 mm	1200 mm
1001 - 1250	5	7500 mm	7500 mm	1350 mm	1350 mm
1251 - 1500	6	9000 mm	9000 mm	1350 mm	1350 mm
over 1500	7 or such greater number as the Building Authority may require	to be calculated at the rate of 300mm per 50 persons		1500 mm	1500 mm

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Table 5 : Discharge Value of a Staircase in a Non-sprinklered Building

No. of Storey served	Width of Staircase						
	1050mm but under 1200mm	1200mm but under 1350mm	1350mm but under 1500mm	1500mm but under 1600mm	1600mm but under 1700mm	1700mm but under 1800mm	1800mm but under 1900mm
1	210	240	270	300	320	340	360
2	242	278	315	351	377	402	428
3	274	316	360	402	434	464	496
4	306	354	405	453	491	526	564
5	338	392	450	504	548	588	632
6	370	430	495	555	605	650	700
7	402	468	540	606	662	712	768
8	434	506	585	657	719	774	836
9	466	544	630	708	776	836	904
10	498	582	675	759	833	898	972
Each additional storey add	32	38	45	51	57	62	68

Table 1

Intended use of storey	Factor representing usable floor area in m <sup>2</sup> per person
(a) Assembly halls, auditoria and stadia without seating or with movable seating	0.5
(b) Areas accessible to the public in viewing galleries, banking halls, betting centres and places where public service counters are provided	0.5
(c) Dance halls (calculated on dancing area), disco and reception area for restaurant	0.75
(d) Restaurants (calculated on dining area), dining area, lounges, committee rooms, conference rooms, meeting rooms, common rooms, function room and waiting rooms	1
(e) Kitchens attached to restaurants	4.5
(f) Museums, exhibition halls, trademarks and display areas	2
(g) Supermarkets, showrooms, jewellery and goldsmith shops, pawn shops and money changers	2
(h) Shopping arcades, department stores and shopping areas	
- basement, G/F, 1/F & 2/F	3
- 3/F & above	4.5
(i) Offices	9
(j) Tenement houses, barracks, dormitories, and self-contained flats comprising a single room or having the main living area subdivided by rooms	3
(k) Self-contained flats with corridor or balcony access having five or more flats on each floor served by each staircase	4.5
(l) Flats not covered by (j) or (k)	9
(m) Flatted factories	4.5
(n) Warehouses, godowns and storage areas	30
(o) Classrooms of school not covered by Education Ordinance and other lecture rooms, library and study rooms	2

TABLE A

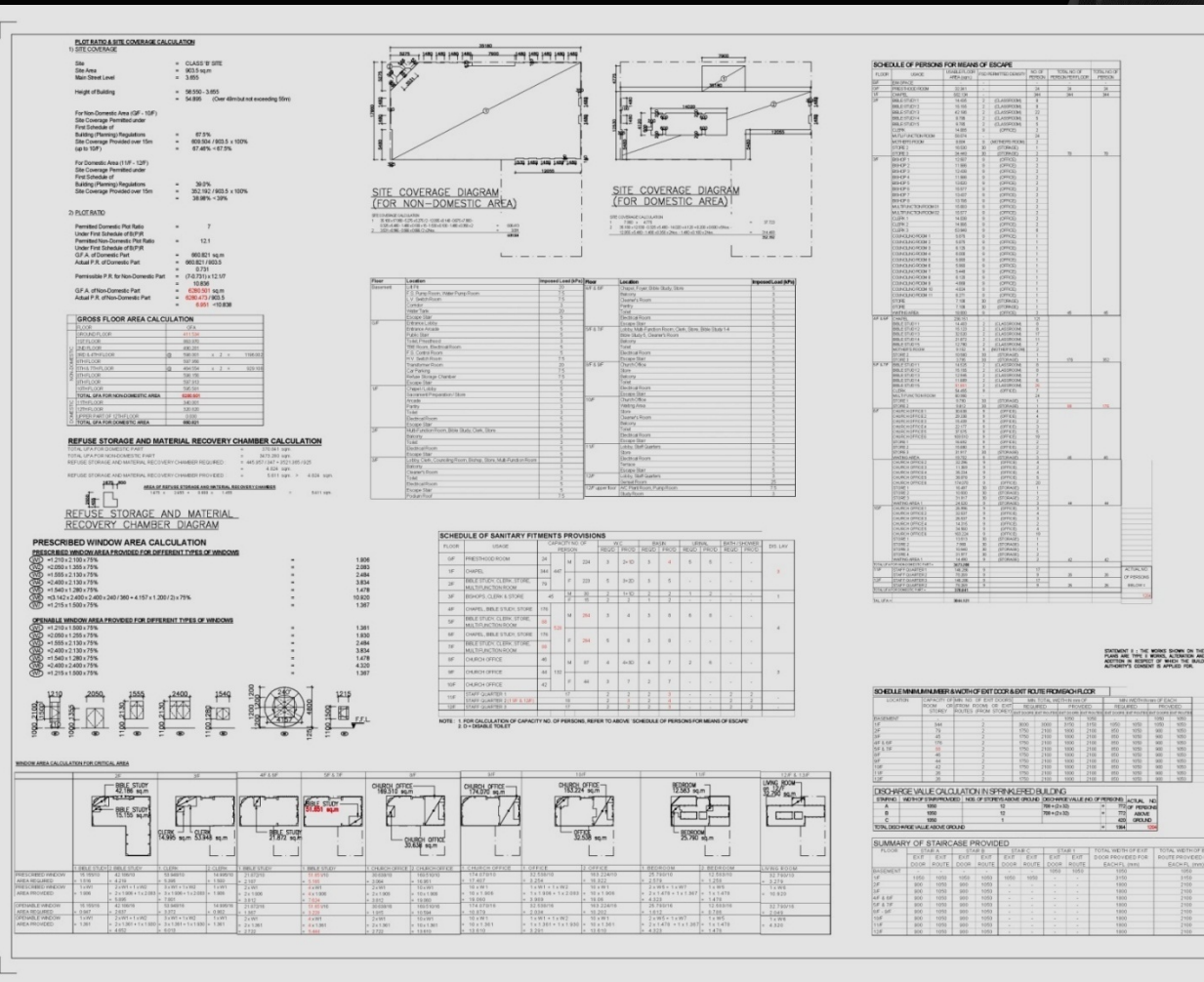
WALLS CONSTRUCTED WHOLLY OF NON-COMBUSTIBLE MATERIALS

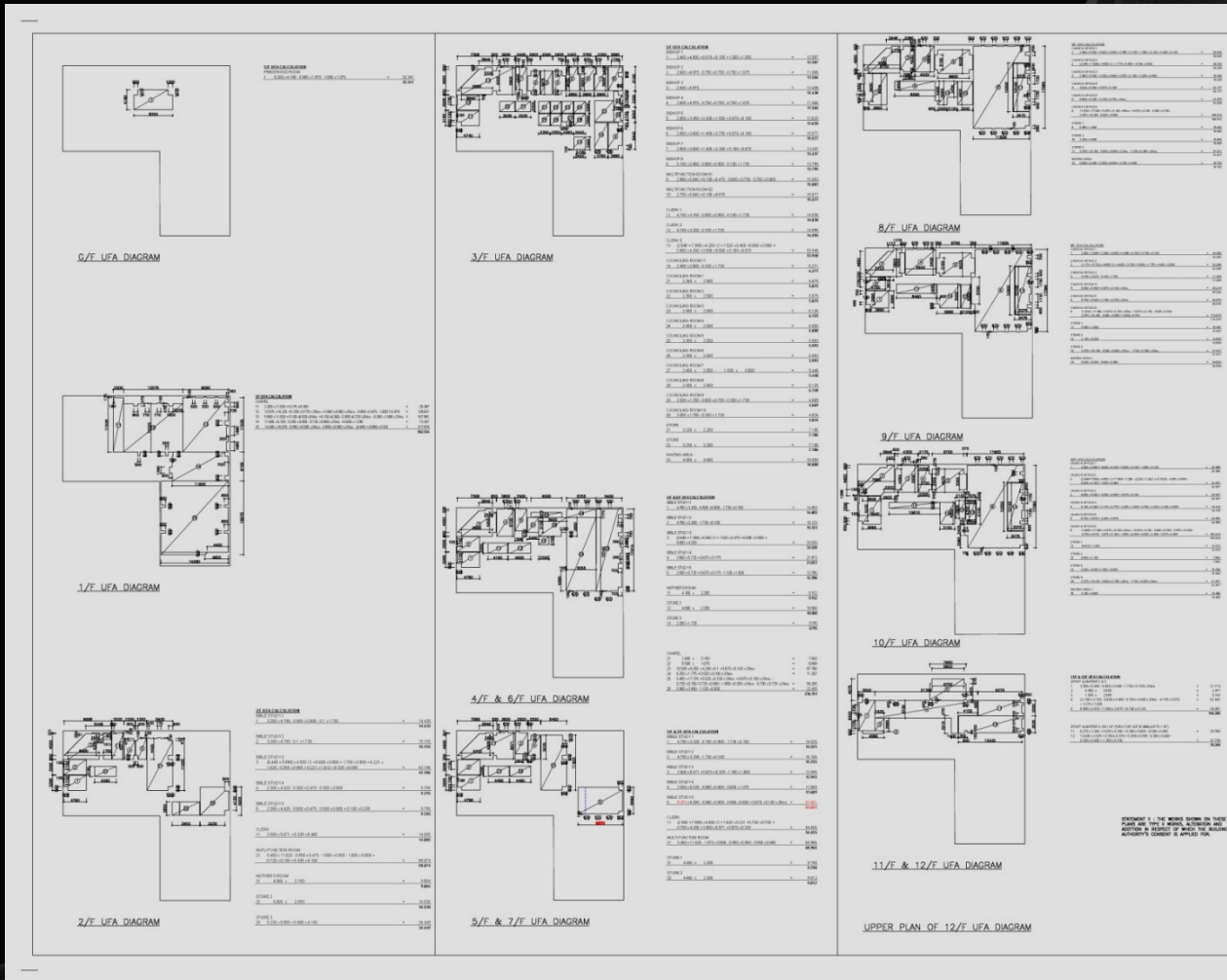
Construction and Materials	Minimum thickness in mm (excluding plaster) for period of		
	4 hrs.	2 hrs.	1 hr.
<b>SOLID CONSTRUCTION</b>			
Solid bricks of clay, concrete or sand lime without plaster	225	225*	100
Reinforced concrete -			
(a) containing not less than 1 per cent of vertical reinforcement	180	100	75
Concrete cover to main reinforcement	25	25	15
(b) containing less than 1 per cent of vertical reinforcement	240	160	120
Concrete cover to main reinforcement	25	25	25
<b>HOLLOW BLOCK CONSTRUCTION</b>			
Clay blocks (outer web not less than 13 mm thick) of 2 cells not less than 50 per cent solid finished with 13 mm gypsum plaster on each side		100	100
Concrete blocks of one cell in wall thickness not less than 50 per cent solid finished with 13 mm gypsum plaster on each side			190

\* Where finished with 13 mm gypsum plaster on each side, the thickness may be reduced to 100 mm.











## Outline area

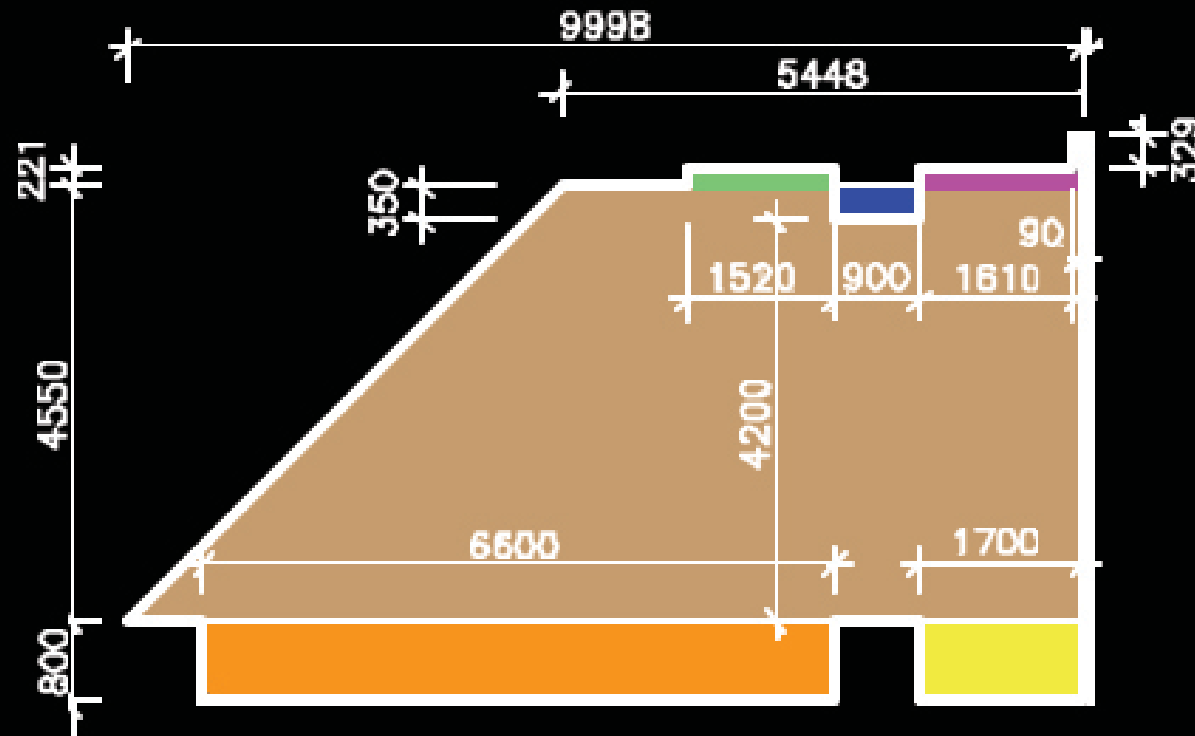


**Subdivide area into simple geometry such as rectangle, triangle, circle, etc.**

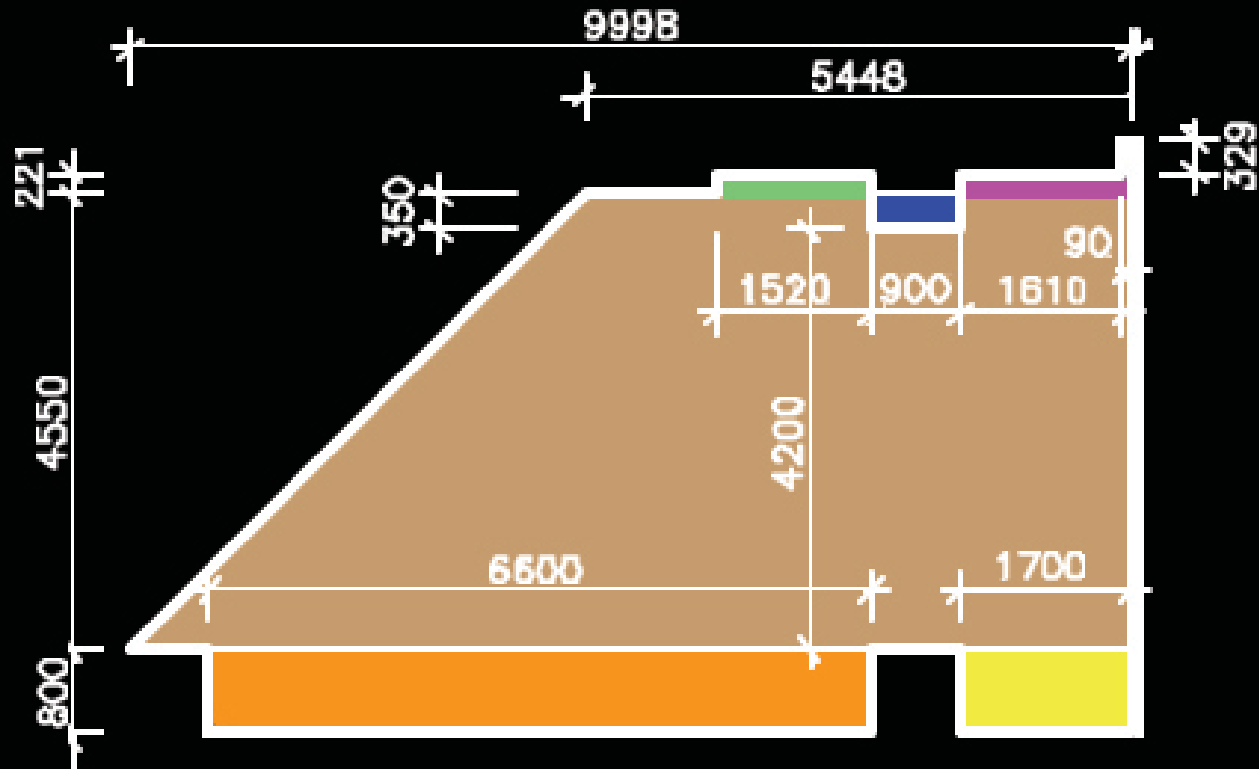




## Measure dimension

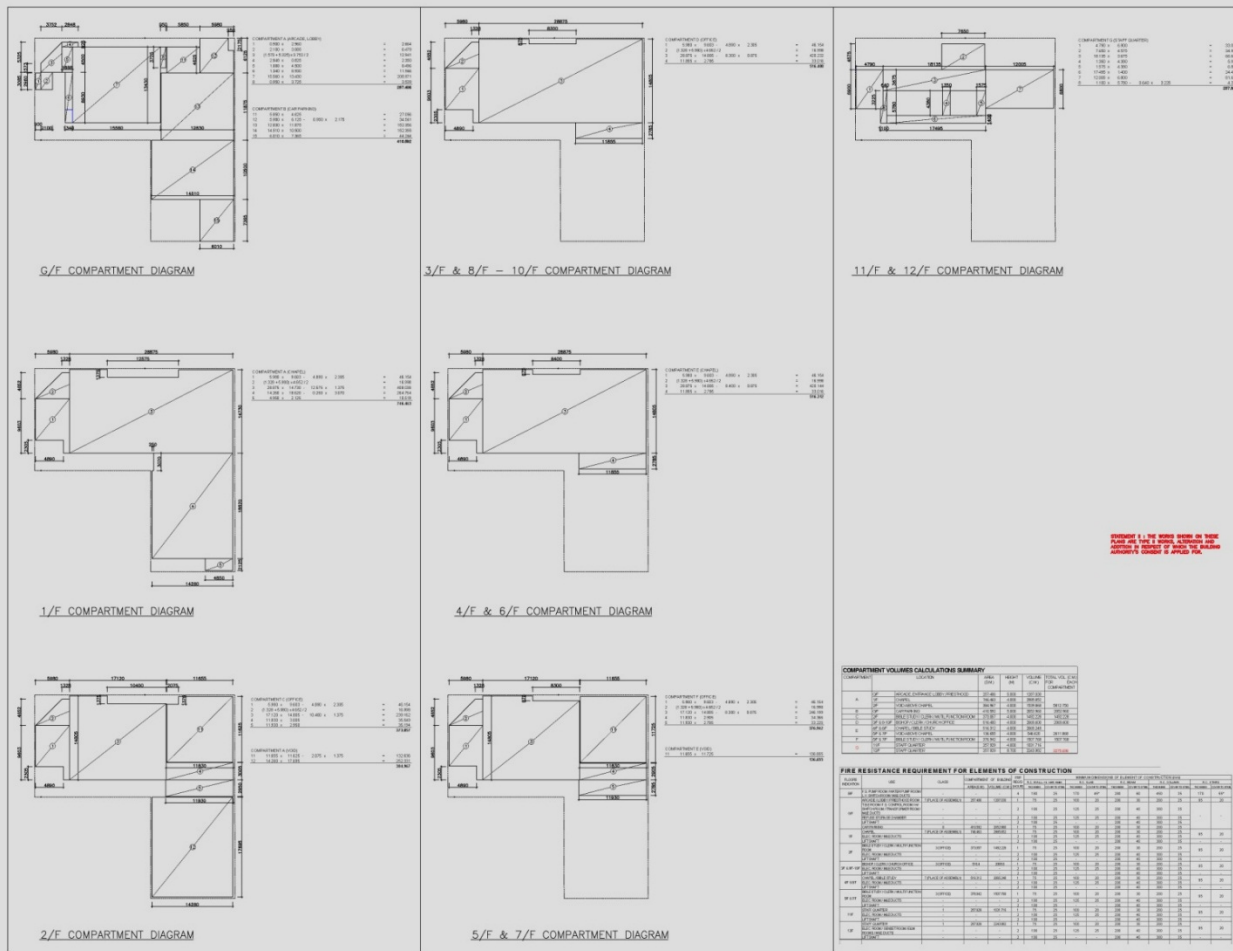


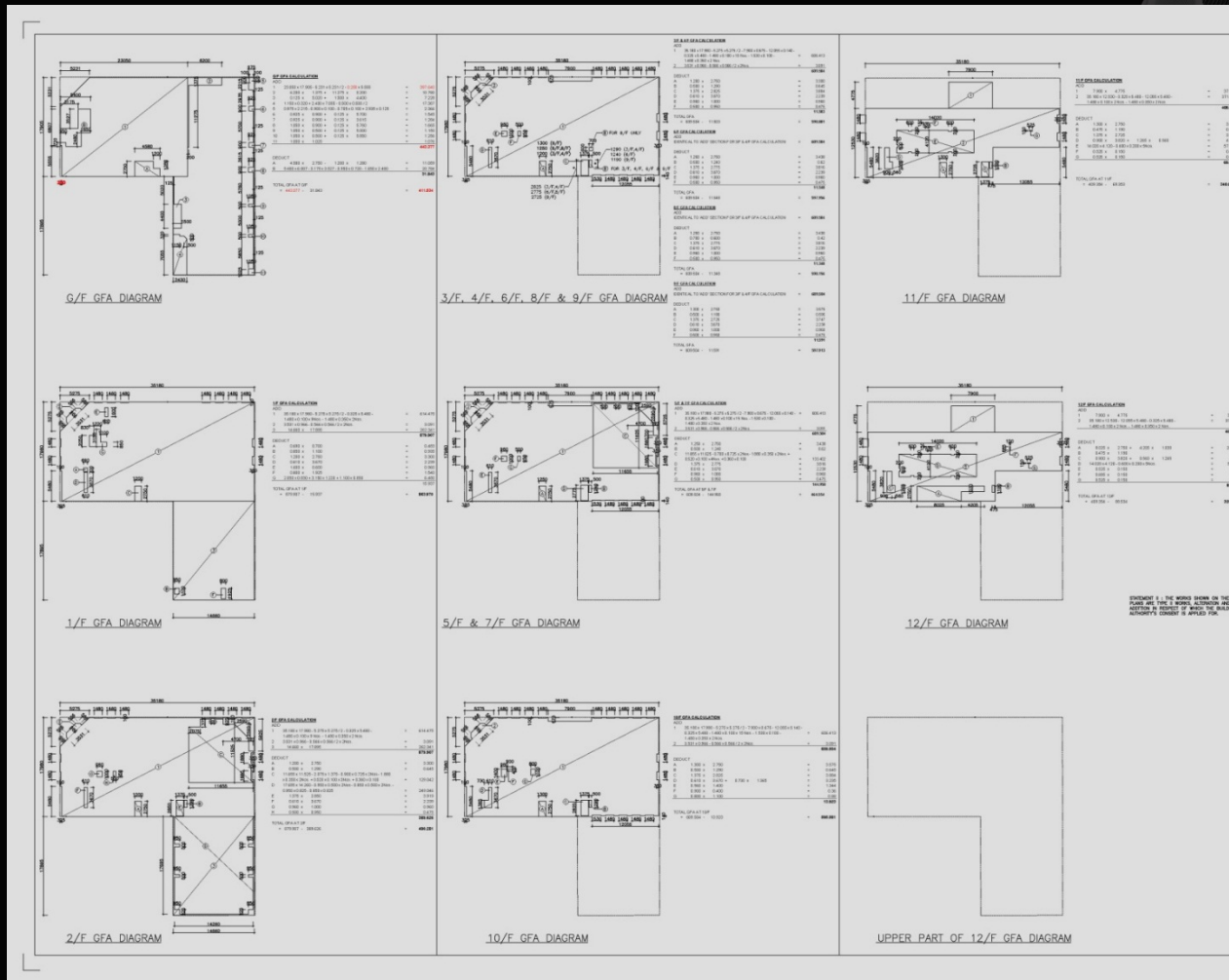
Calculate area by applying geometric formula



$$(5.448+9.998) \times 4.550 / 2 + 6.600 \times 0.800 + 1.700 \times 0.800 + 0.221 \times 1.520 - 0.350 \times 0.900 + 0.221 \times 1.610 + 0.329 \times 0.090 = 42.186$$









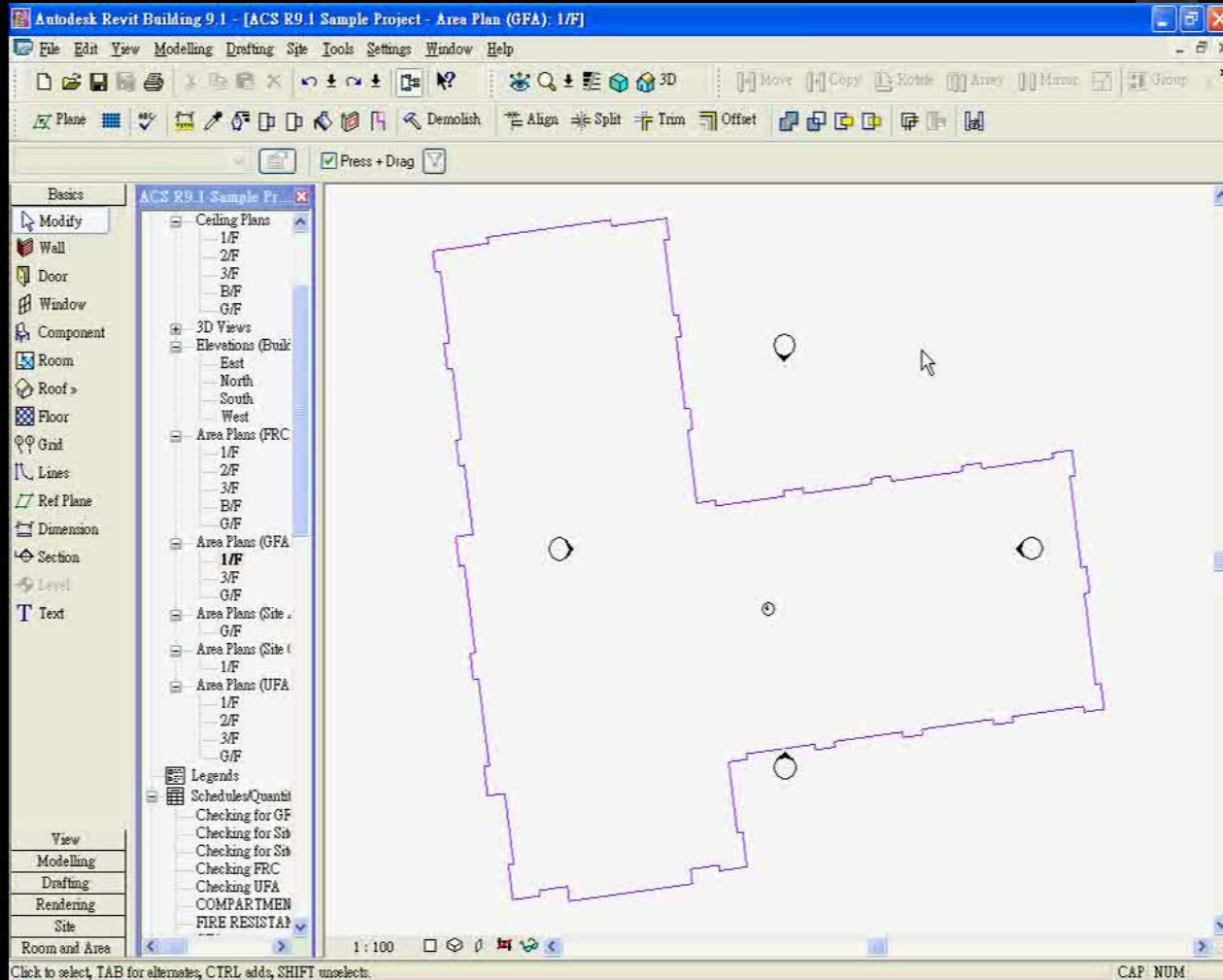
## Previous Submission Involves

- ~1200 raw data
- ~1700 mathematical operations
- ~1000 statutory checking
- ~5000 data input

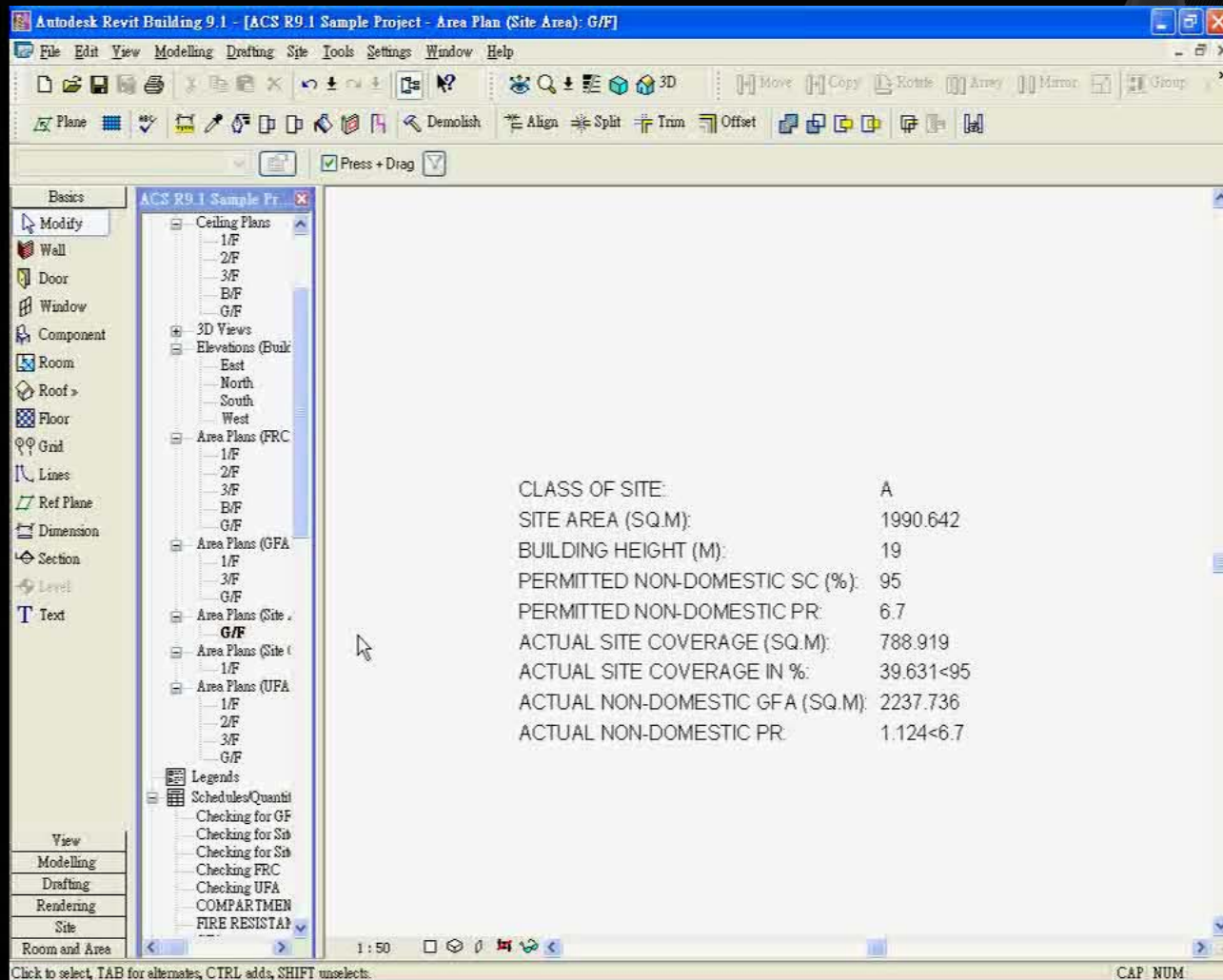
Require 2 weeks to complete

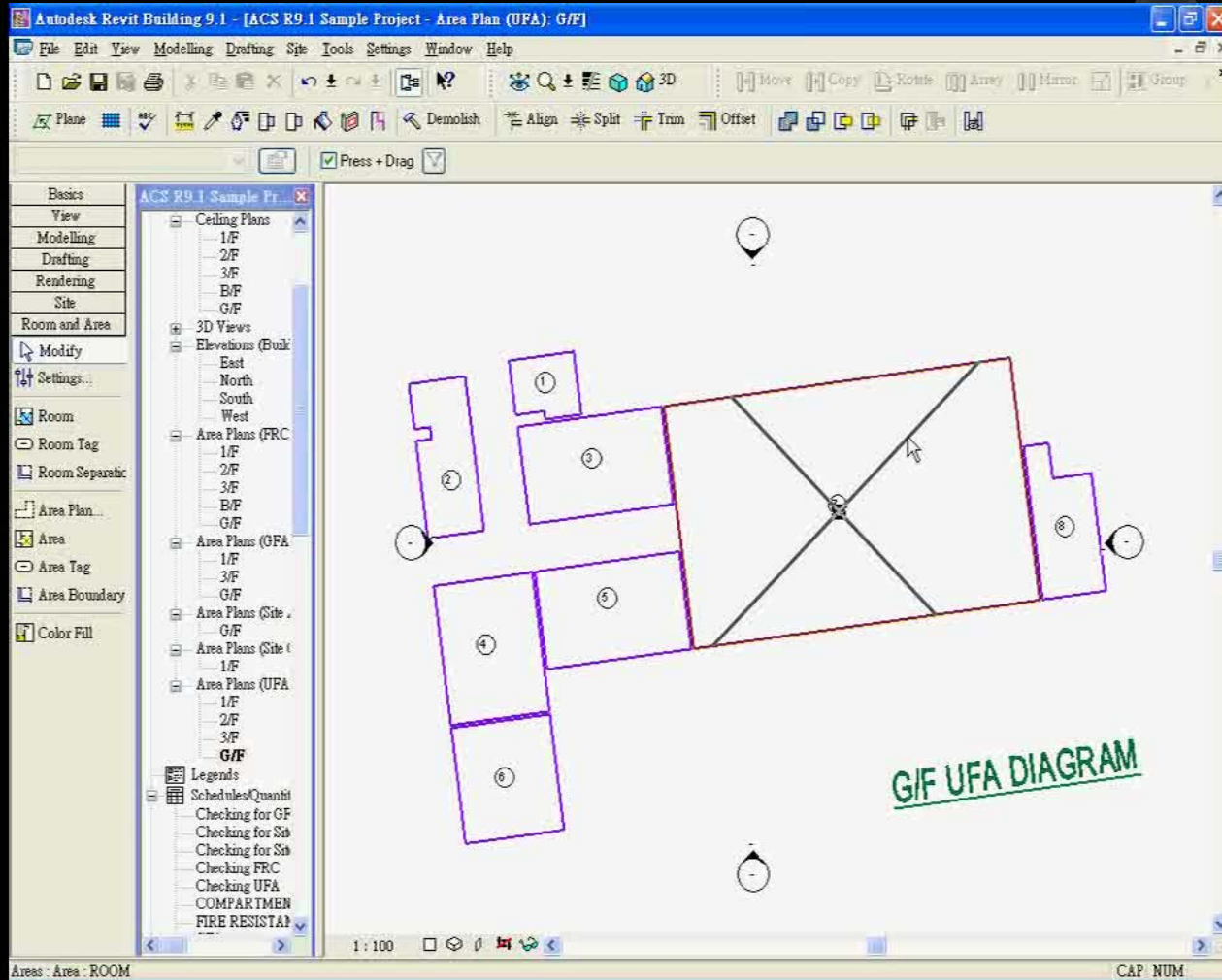
a step by step calculation: any change in layout will affect the calculation significantly

Takes another 1 week in average for every amendment submission

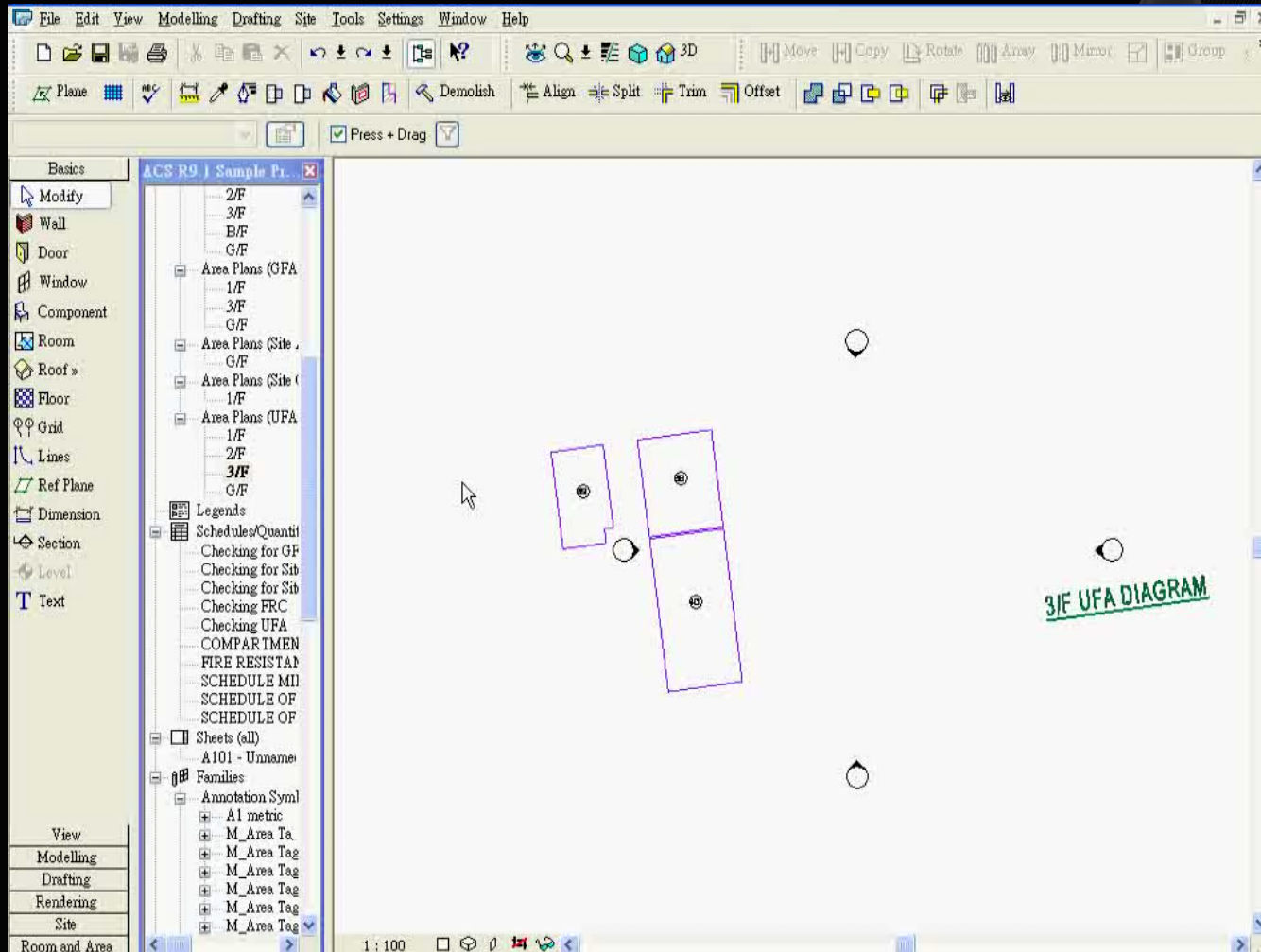


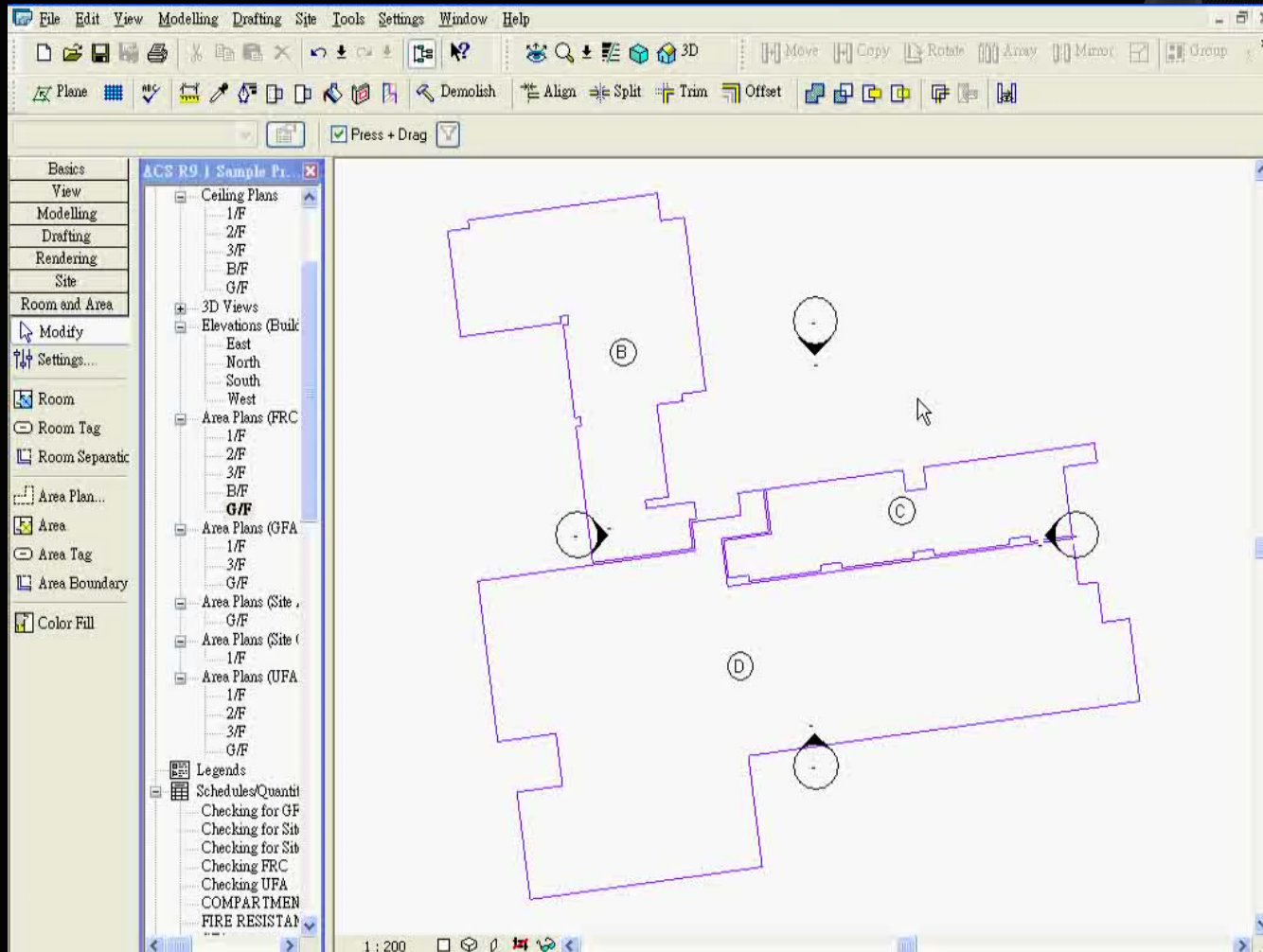




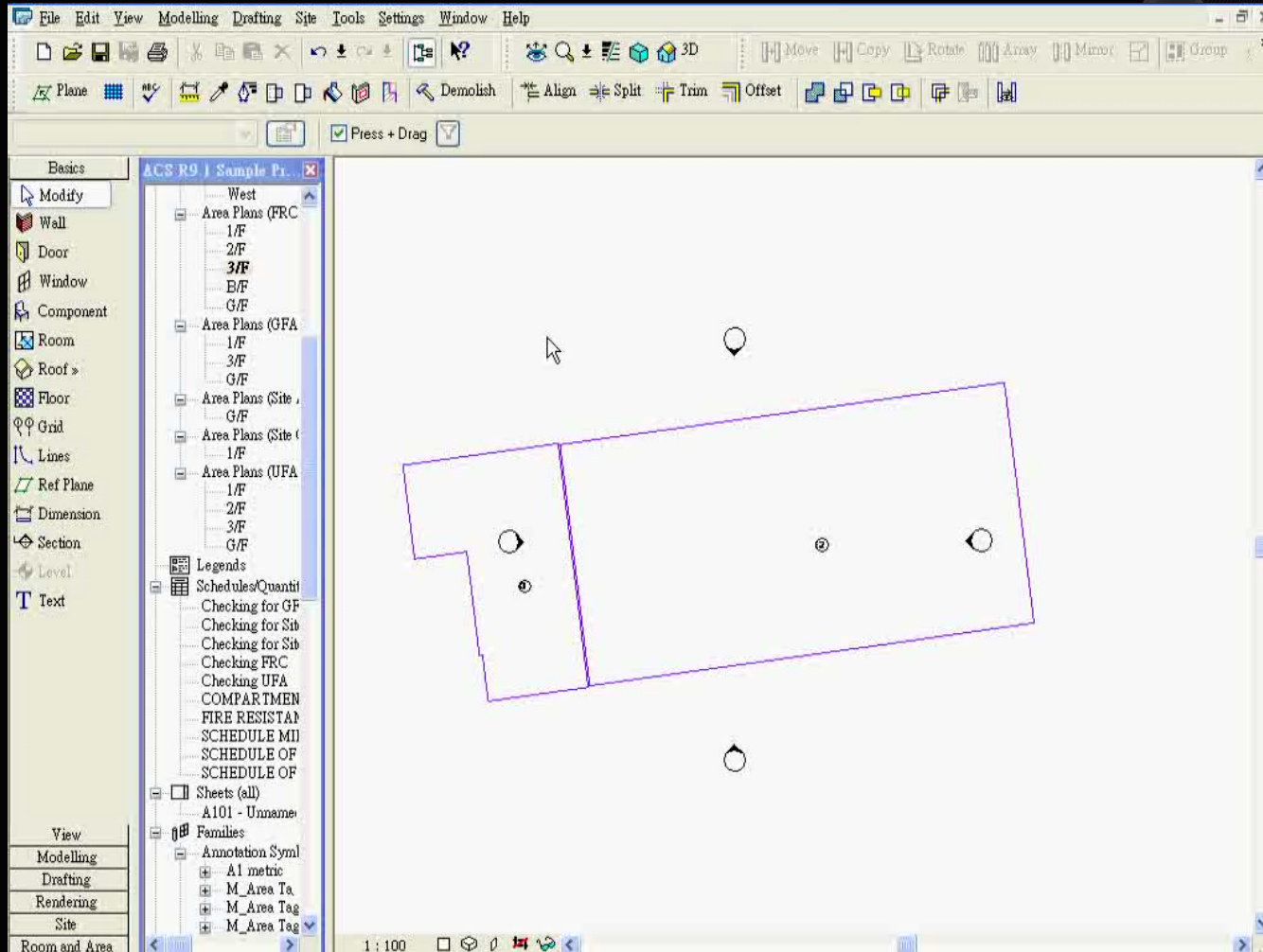


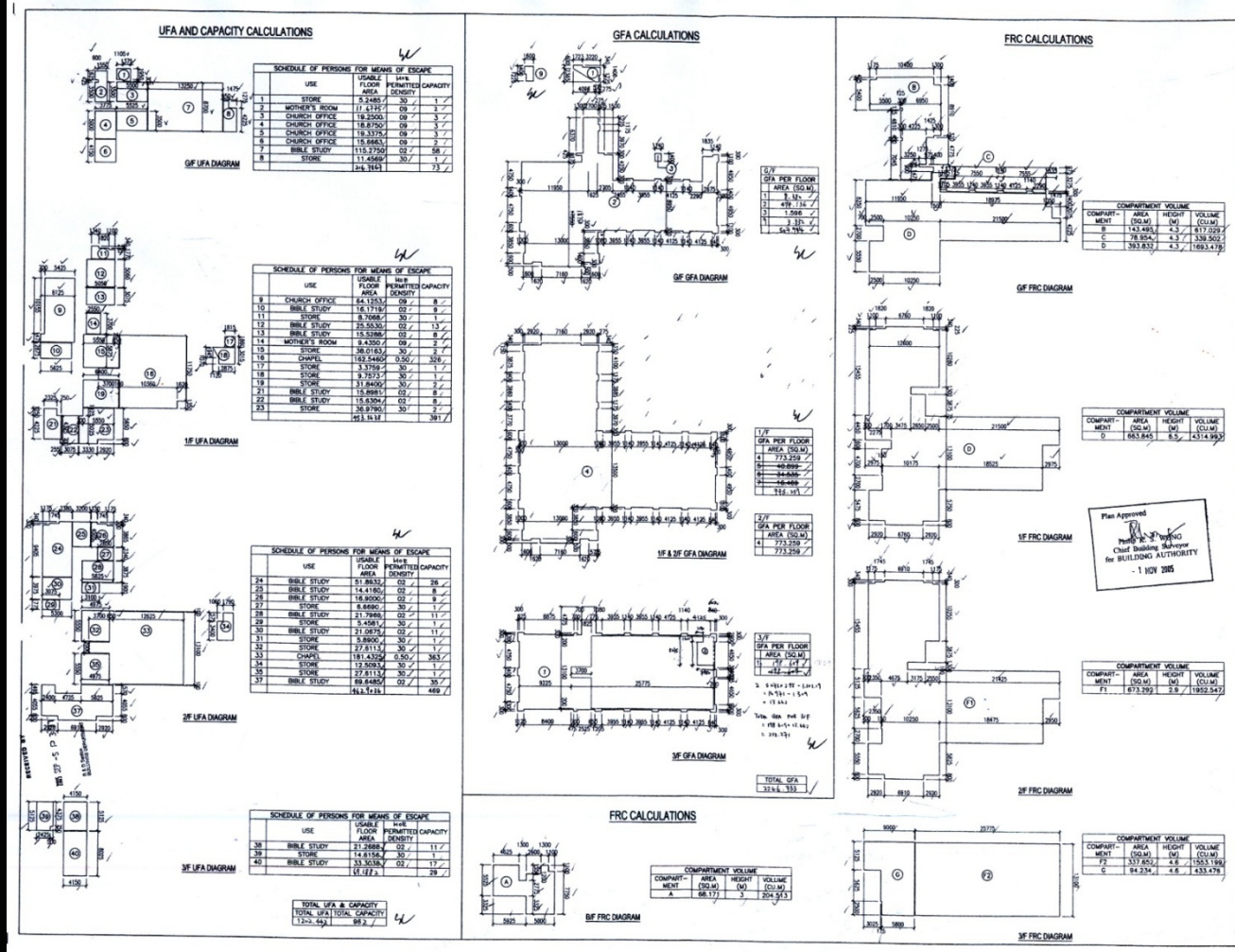










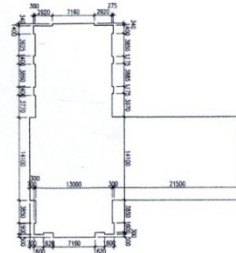




# SITE COVERAGE & PLOT RATIO CALCULATION

## 1. UNDER BUILDING REGULATION

- A. CLASS OF SITE = A
- B. AREA OF SITE (FROM LEASE) = 1990.8 a.m.
- PROPOSED USE OF SITE = NON-DOMESTIC
- MEAN STREET LEVEL = 12.000
- BUILDING TOP LEVEL = 33.9999 m
- PROPOSED HEIGHT OF BUILDING = 84.0 m p.s.
- NON-DOMESTIC PERMITTED PERCENTAGE SITE COVERAGE = 95 %
- NON-DOMESTIC PERMITTED PLOT RATIO = 6.7
- C. SITE COVERAGE = 788.919 a.m.
- THEREFORE SITE COVERAGE = 39.63 % < 95 %
- D. PLOT RATIO = 24.4 / 3.7 = 6.6
- PROPOSED NON-DOMESTIC GROSS FLOOR AREA = 24.4 / 3.7 = 6.6
- PROPOSED NON-DOMESTIC PLOT RATIO = 2336.567 a.m. / 1990.8 a.m. = 1.19 < 6.7 (O.K.)



SITE COVERAGE DIAGRAM

## 2. UNDER LEASE CONDITION

- A. PERMITTED USE OF SITE = CHURCH TOGETHER WITH ANCILLARY CHURCH FACILITIES
- PROPOSED USE OF SITE = AS ABOVE
- B. GROSS FLOOR AREA : MAXIMUM PERMISSIBLE GFA UNDER LEASE = 2,520 a.m.
- TOTAL GFA OF PROPOSED DEVELOPMENT = 2,441.21 a.m.
- C. BUILDING HEIGHT : MEAN FORMATION LEVEL OF SITE : 12.000
- BUILDING TOP LEVEL : 84.000 a.m.
- BUILDING HEIGHT : 84.000 m p.s.
- D. SITE COVERAGE : MAXIMUM PERMISSIBLE SITE COVERAGE : 40%
- PROPOSED SITE COVERAGE : 39.63% < 40% (O.K.)
- E. PARKING SPACE : PARKING REQUIREMENT UNDER LEASE = 14 CARPARKING SPACES
- PROPOSED PARKING PROVISION = AND 1 U/LA BAY SAME AS ABOVE

STAIR WIDTH OF STAIR PROVIDED (NO. OF STOREY SERVED ABOVE GROUND DISCHARGE VALUE)	ACTUAL	NO. OF PERSONS ABOVE GROUND
ST-A 150	2	258
ST-B 150	2	258
ST-C 175	3	484
		1504

FLOOR	CAPACITY OF ROOM OR STOREY	MIN. NO. OF EXIT DOORS (FROM ROOM OR STOREY)	MIN. WIDTH OF EXIT ROUTES (FROM ROOM OR STOREY)							
			EXIT DOORS	EXIT ROUTES	EXIT DOORS	EXIT ROUTES	EXIT DOORS	EXIT ROUTES	EXIT DOORS	EXIT ROUTES
1/F	281	2	3500	3500	3500	3578	1050	1050	1050	1050
2/F	488	2	3500	3500	3500	3578	1050	1050	1050	1050
3/F	28	1	1700	2350	750	1050	850	1050		

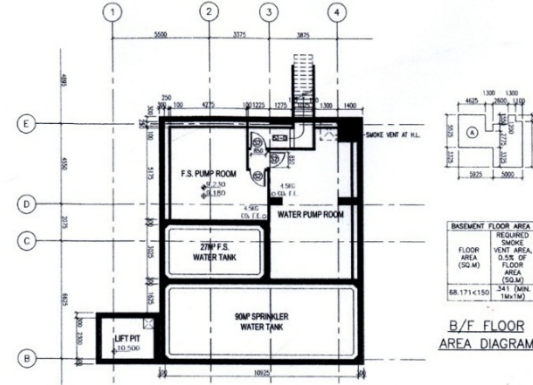
SCHEDULE OF SANITARY FITMENTS PROVISIONS														
LOCATION	USE	CAPACITY		W.C.				BASIN				URINAL		
				M		F		M		F		M		
		TOTAL	F	REQ'D	PRO'D	REQ'D	PRO'D	REQ'D	PRO'D	REQ'D	PRO'D	REQ'D	PRO'D	
G/1-2/F	OFFICE	18	13	6	1	1	1	1	1	1	1	1	1	
G/1-3/F	PLACE OF PUBLIC	843	472	471	5	3+30	7	10	5	7+30	5	8	10	11

COMPARTMENT	CLASS	COMPARTMENT VOLUME	PROP. RESIST.	FIRE RESISTANCE REQUIREMENT FOR ELEMENTS OF CONSTRUCTION									
				R.C. WALL	R.C. SLAB	R.C. COLUMN	R.C. BEAM	R.C. STAIR	R.C. COVER	R.C. COVER	R.C. COVER	R.C. COVER	R.C. COVER
A	(BASEMENT)	204.813	4	180	25	170	45*	35	450	280	80*	170	50*
B	(CARPARKING)	817.028	1	75	15	100	20	25	200	200	30	85	20
C	(CARPARKING)	338.502	1	75	15	100	20	25	200	200	30	85	20
D	(PLACE OF ASSEMBLY)	1683.478	1	75	15	100	20	25	200	200	30	85	20
E	(PLACE OF ASSEMBLY)	4314.893	1	75	15	100	20	25	200	200	30	85	20
F	(PLACE OF ASSEMBLY)	3508.148	1	75	15	100	20	25	200	200	30	85	20
G	(PLACE OF ASSEMBLY)	433.478	1	75	15	100	20	25	200	200	30	85	20
H	(WALL PLANT BETWEEN DIFFERENT USES/LEAS)	-	2	100	25	125	25	35	300	200	40	125	35

## REFUSE STORAGE CALCULATION

UFR = 1341.440 a.m. < 3,980 a.m.

THEREFORE, STORAGE CHAMBER IS NOT REQUIRED ACCORDING TO BCR/SCM, 53(3)



B/F PLAN, 1:100

FLOOR	USE	CAPACITY OF ROOM OR STOREY	MIN. WIDTH OF EXIT ROUTES (FROM ROOM OR STOREY)							
			EXIT DOORS	EXIT ROUTES	EXIT DOORS	EXIT ROUTES	EXIT DOORS	EXIT ROUTES	EXIT DOORS	EXIT ROUTES
1/F	CHURCH OFFICE	18	13	1	1	1	1	1	1	1
2/F	CHURCH OFFICE	84	147	1	1	1	1	1	1	1

FLOOR	USE	CAPACITY OF ROOM OR STOREY	MIN. WIDTH OF EXIT ROUTES (FROM ROOM OR STOREY)							
			EXIT DOORS	EXIT ROUTES	EXIT DOORS	EXIT ROUTES	EXIT DOORS	EXIT ROUTES	EXIT DOORS	EXIT ROUTES
1/F	CHURCH OFFICE	18	13	1	1	1	1	1	1	1
2/F	CHURCH OFFICE	84	147	1	1	1	1	1	1	1

FLOOR	USE	CAPACITY OF ROOM OR STOREY	MIN. WIDTH OF EXIT ROUTES (FROM ROOM OR STOREY)							
			EXIT DOORS	EXIT ROUTES	EXIT DOORS	EXIT ROUTES	EXIT DOORS	EXIT ROUTES	EXIT DOORS	EXIT ROUTES
1/F	CHURCH OFFICE	18	13	1	1	1	1	1	1	1
2/F	CHURCH OFFICE	84	147	1	1	1	1	1	1	1

FLOOR	USE	CAPACITY OF ROOM OR STOREY	MIN. WIDTH OF EXIT ROUTES (FROM ROOM OR STOREY)							
			EXIT DOORS	EXIT ROUTES	EXIT DOORS	EXIT ROUTES	EXIT DOORS	EXIT ROUTES	EXIT DOORS	EXIT ROUTES
1/F	CHURCH OFFICE	18	13	1	1	1	1	1	1	1
2/F	CHURCH OFFICE	84	147	1	1	1	1	1	1	1

Plan Approved  
 K. S. S. WONG  
 Chief Building Engineer  
 for BUILDING AUTHORITY  
 - 1 NOV 2005

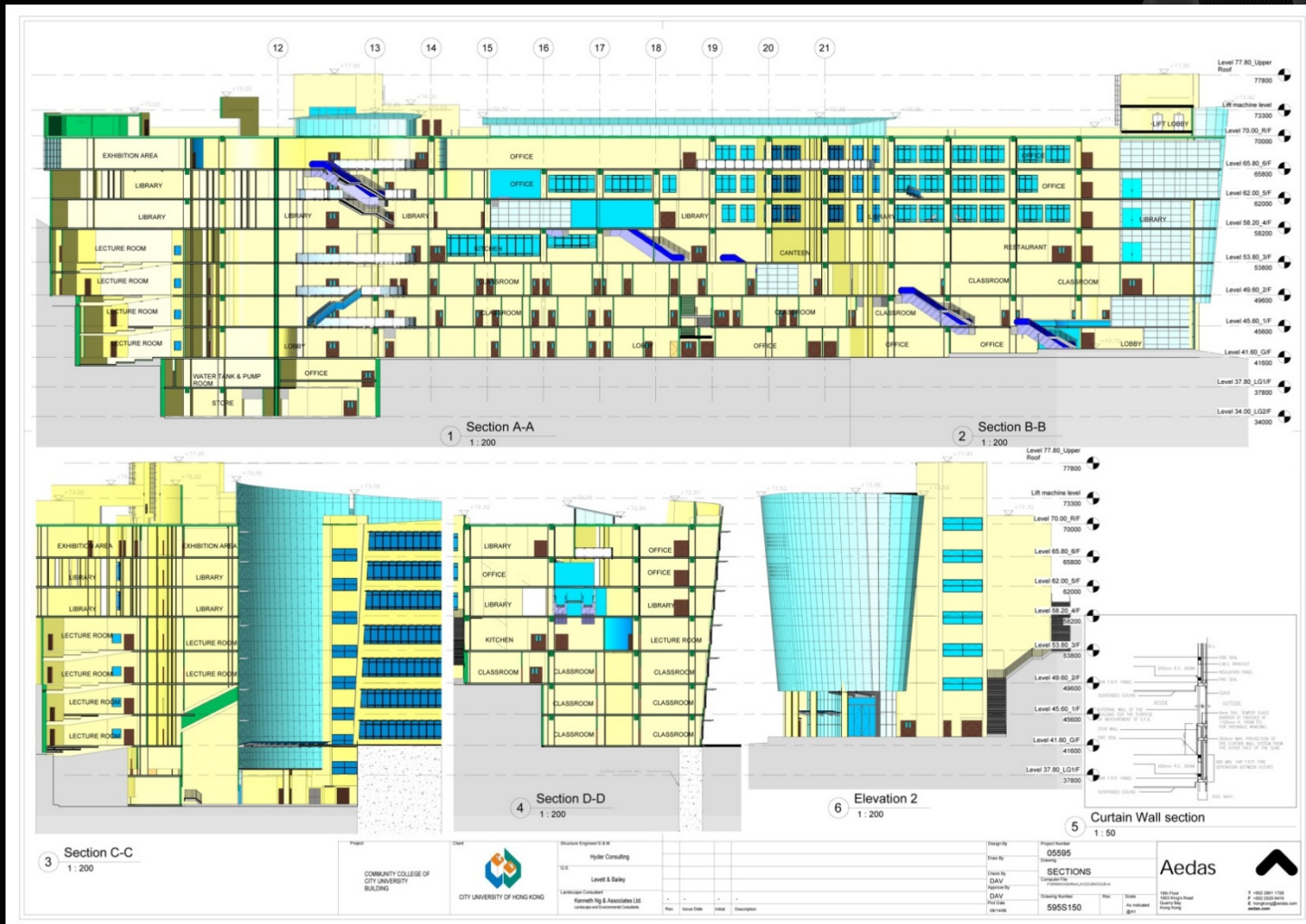












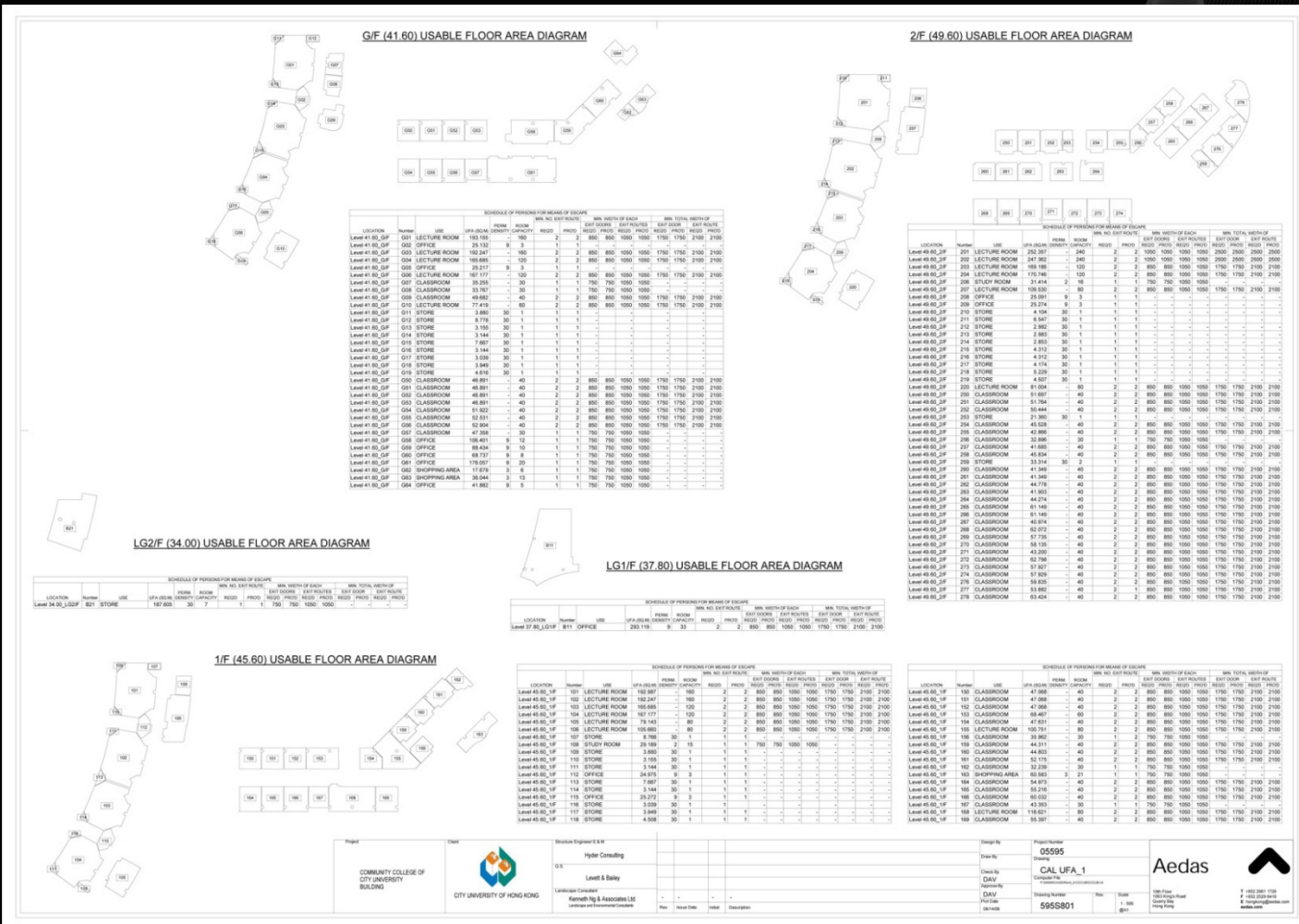




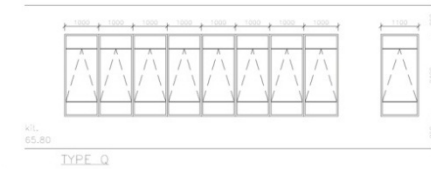
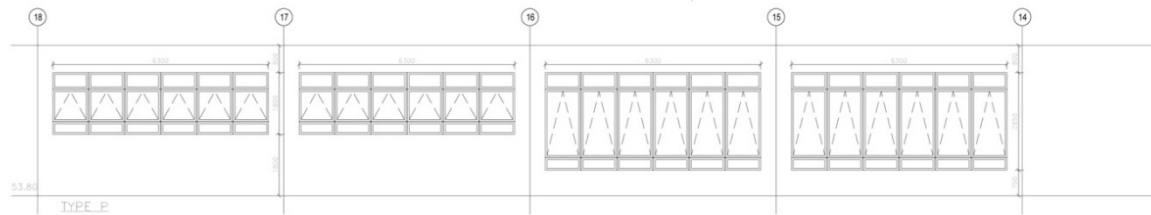












Discharge Value Calculation				
Staircase No.	No. of story served	Width of Staircase (mm)	Discharge Value (Person)	Factor
ST-01	6	2400	1400	"0.8
ST-02	6	1800	1060	
ST-03	4	1800	739	
ST-04	8	1800	1196	
ST-05	8	1800	1196	
ST-06	8	1800	1196	
ST-07	8	2400	1688	
ST-08	2	1800	788	
Permitted discharge value			9175	
Actual capacity of CCUBU			8788	
Therefore, Permitted Discharge Value (Person) > Actual Capacity (Person)				

OFFICE (CURTAIN WALL)	OPENABLE WINDOW AREA					PROVIDED (#% EFFECTIVE)	REQUIRE (1/100 UFA)
LOCATION	UFA (sq. m)	TOTAL LENGTH	HEIGHT	NUMBER		(sq. m)	UFA (sq. m)
LEVEL +37.80 Gridline 12-13A-C	293.119	1.115	0.900	12		10.236	> 2.931
LEVEL +62.00 Gridline 14-29B-J	2615.38	1.240	1.800	15		28.458	> 26.154
LEVEL +65.80 Gridline 14-29B-J	2022.023	1.240	1.800	15		28.458	> 20.220

SCHEDULE OF AC PLANT ROOM AREA				
LOCATION	LOCATION OF THE PLANT ROOM	TOTAL S.F.A. OF FLOOR WHERE THE PLANT ROOM SITUATED	TOTAL AREA	PERCENTAGE RM AT S.F. FLOOR
	GRID 18-18A		24,369	
	GRID 22-22C		24,471	
GF (+1.00)	GRID 22-22C	451,287	87,154	1.93%
	GRID 18-18A		24,369	
	GRID 22-22C		24,471	
1F (+5.00)	GRID 22-22A	452,375	84,721	1.87%
	GRID 22-22B		10,549	
	GRID 22-22C		24,471	
	GRID 18-18A		31,350	
2F (+8.00)	GRID 22-22A	523,757	112,816	2.15%
	GRID 22-22B		17,554	
	GRID 22-22C		24,471	
	GRID 18-18A		28,851	
3F (+8.00)	GRID 22-22A	538,726	111,718	2.07%
	GRID 22-22B		18,303	
	GRID 22-22C		24,471	
	GRID 22A-18B		2,564	
4F (+8.00)	GRID 22-22A	551,620	100,492	1.79%
	GRID 22-22B		21,274	
	GRID 22A-18B		25,365	
	GRID 22-22C		27,723	
5F (+2.00)	GRID 22-22A	554,817	102,232	1.84%
	GRID 22-22B		23,478	
	GRID 22A-18B		2,564	
6F (+5.00)	GRID 22-22A	5416,730	97,063	1.79%

[illegible]

1. For latrines and urinals connected a flush system to the requirement shall be -

- a) For boys - Two urinals for every 30 pupils  
b) For girls - One pan for every 20 pupils

Project	Client	Service Engineer's EIR	Design No.	Project Number	
COMMUNITY COLLEGE OF CITY UNIVERSITY BUILDING	 CITY UNIVERSITY OF HONG KONG	Hyler Consulting Lewitt & Bailey Landscape Consultant Kenneth Ng & Associates Ltd Architect and Landscape Architect	Drawn By	05595	
			Drawn By	05595	
			Checked By	Windows Calculation	
			Checked By	05595	
			Checked By	05595	
Rev.	Issued Date	Issued By	Issued For	Issued By	Issued For
1	1/1/2018	1/1/2018	1/1/2018	1/1/2018	1/1/2018