

CPD Seminar



Why BIM Fails? (In Hong Kong)



David Fung

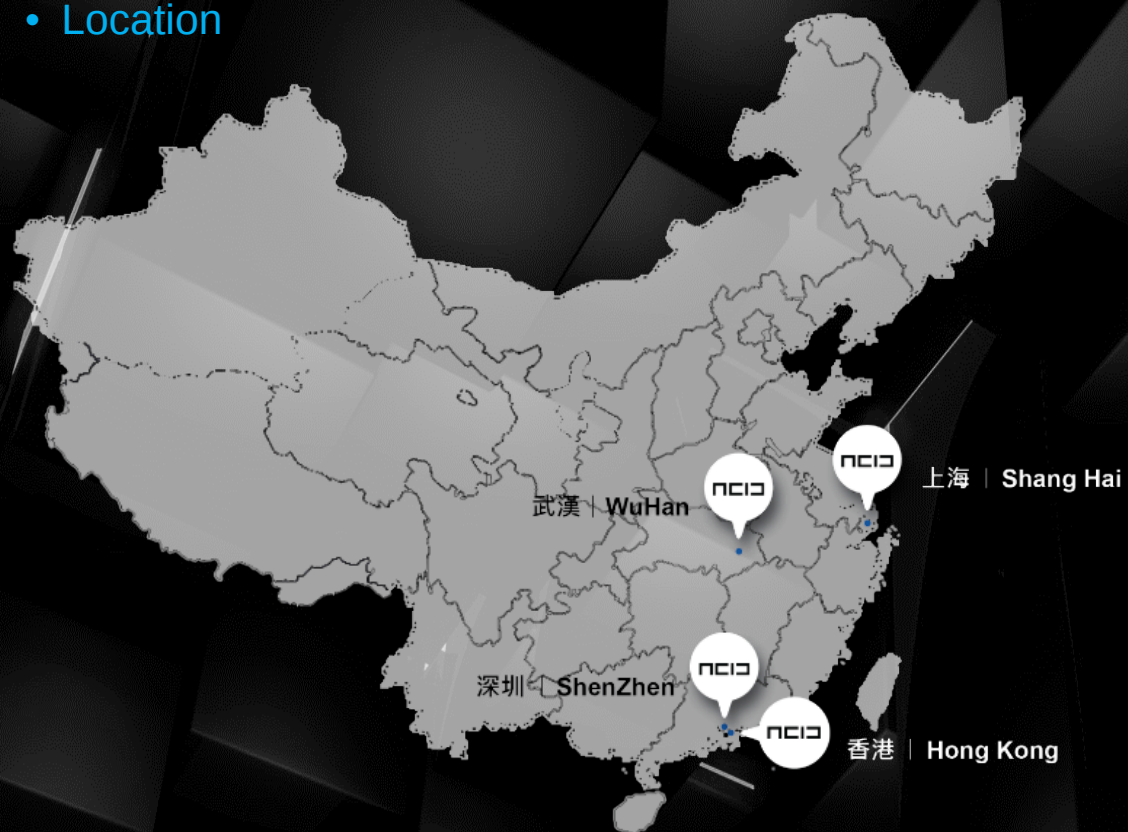
***Registered Architect, HKIA
Managing Director, A.C.I.D.
HKIBIM Chairman
HKUSPACE Department of Architecture, Adjunct Lecturer***

NCIO

NCIO

A DVANCED
C ONSTRUCTION
I NFORMATION
D EVELOPMENT

- Hong Kong, Wuhan, Shanghai and Shenzhen Office
- Over 100 qualified Professional and Technical Staff
- Location



我们是
中华人民共和国住建部
《建筑工程设计信息模型交付标准》参编单位
《建筑工程设计信息模型分类和编码标准》参编单位
《建筑工程设计信息模型出图标准》参编单位

buildingSMART中国分部理事单位

香港建筑信息模拟学会（HKIBIM）发起人及现任会长（David Fung）
香港建筑师学会（HKIA）公司会员(ACID-HK)
中国数字建筑设计专业委员会（DADA）联合发起人
香港房屋署、建筑署BIM技术管理顾问及培训导师团队

行业荣誉

设计获奖/Design Award

- 荣获2013国际绿色建筑设计银奖/Award Silver Medal of International Green Architecture 2013
- 荣获2013欧洲设计年TOP50设计/Award TOP50 Design of 2013 European Design Year
- 荣获2012年公民建筑奖提名
- 荣获2014WA中国建筑奖社会公平奖佳作奖/Excellence Award of 2014 WA Social Equality Award
- 荣获2014WA中国建筑奖设计实验奖入围奖

BIM 获奖/BIM Award

- ACID-HK HIM 项目（BIM技术古建保护应用）荣获：
香港2015buildingSMART大奖
香港BIM大奖 2015
- ACID-HK 為香港BIM Award 2014贊助機構
- ACID-HK香港董事总经理冯树坚先生：
荣获香港建造業議會2014卓越建築信息模擬獎BIM Excellence Award
被选为香港建筑模拟学会（HKIBIM）会长 2015-16
被选为香港建筑师学会(HKIA)BIM 及IT 小組副会长 2015-16
接受亚洲电视台采访發表對香港BIM 發展的意見及討論



香港建築師學會
The Hong Kong Institute of Architects

This is to certify that

Advanced Construction Information Development Limited

was admitted as a **Corporate Member**
of the Institute on the **Twenty-fifth**
day of **April 2015**

thereby accepting the privileges and responsibility of
membership and undertaking to comply with the Rules of
the Institute.

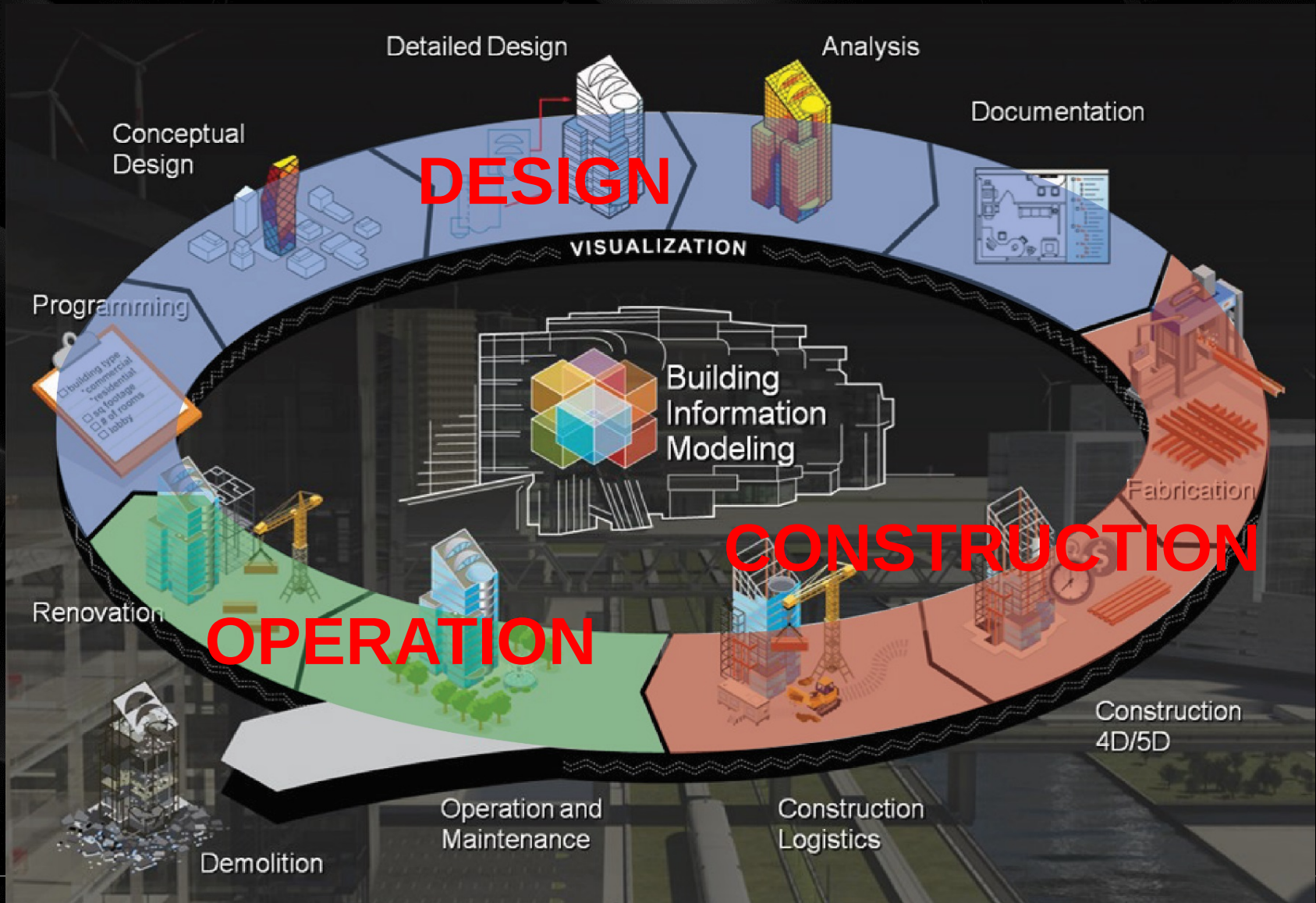
President

Registrar



The Hong Kong Society of Architects was founded in the
year 1956. It was reconstituted in the year 1972 as the
Hong Kong Institute of Architects.

Project Life Cycle 全生命周期



What happen to BIM in:



- **Design Adoption**
- **Construction Connectivity**
- **Authority Support**
- **BIM Practice and Standard**
- **BIM Consultancy**
- **BIM Procurement**

What happen to BIM in:



- **Design Adoption**
- Construction Connectivity
- Authority Support
- BIM Practice and Standard
- BIM Consultancy
- BIM Procurement

B

= Building

建築

I

= Information

資訊

M

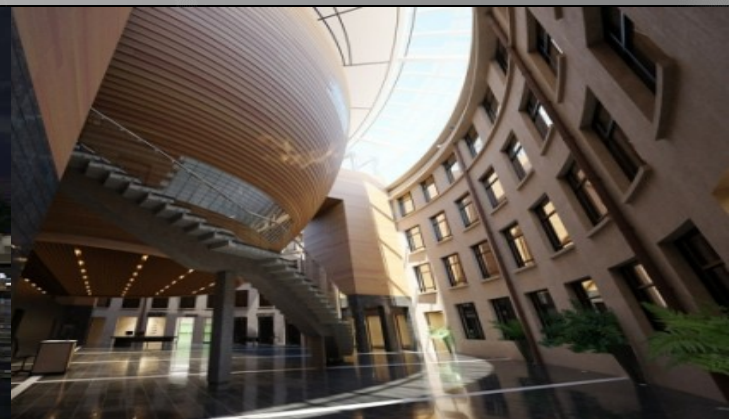
= Modelling

模型 / 模擬

Fake BIM

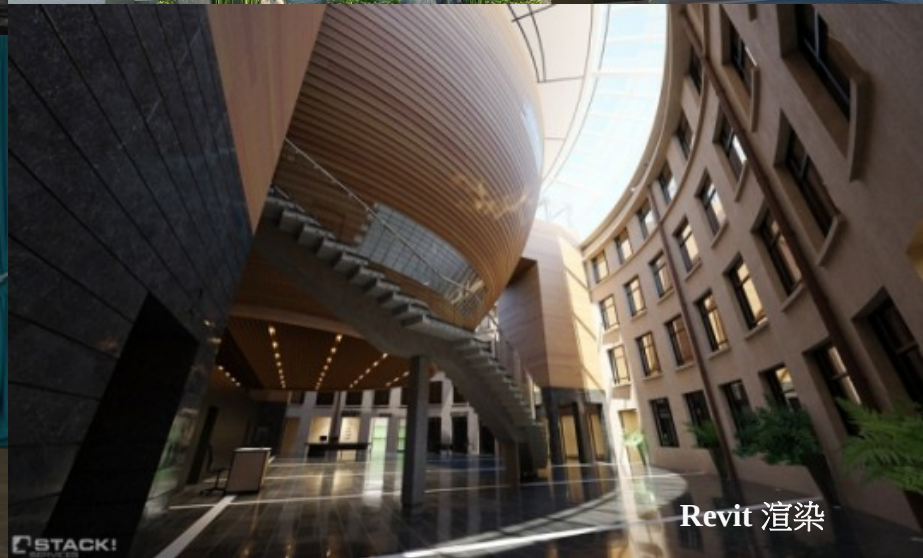
M + ?

JUST 3D MODEL – NOT BIM



Fake BIM

NCIO



Fake BIM

- Rendering
- CG (Computer Graphic)
- Animations
- Interactive Gaming

**Use BIM tools not
necessarily means
BIM!**

NCIO

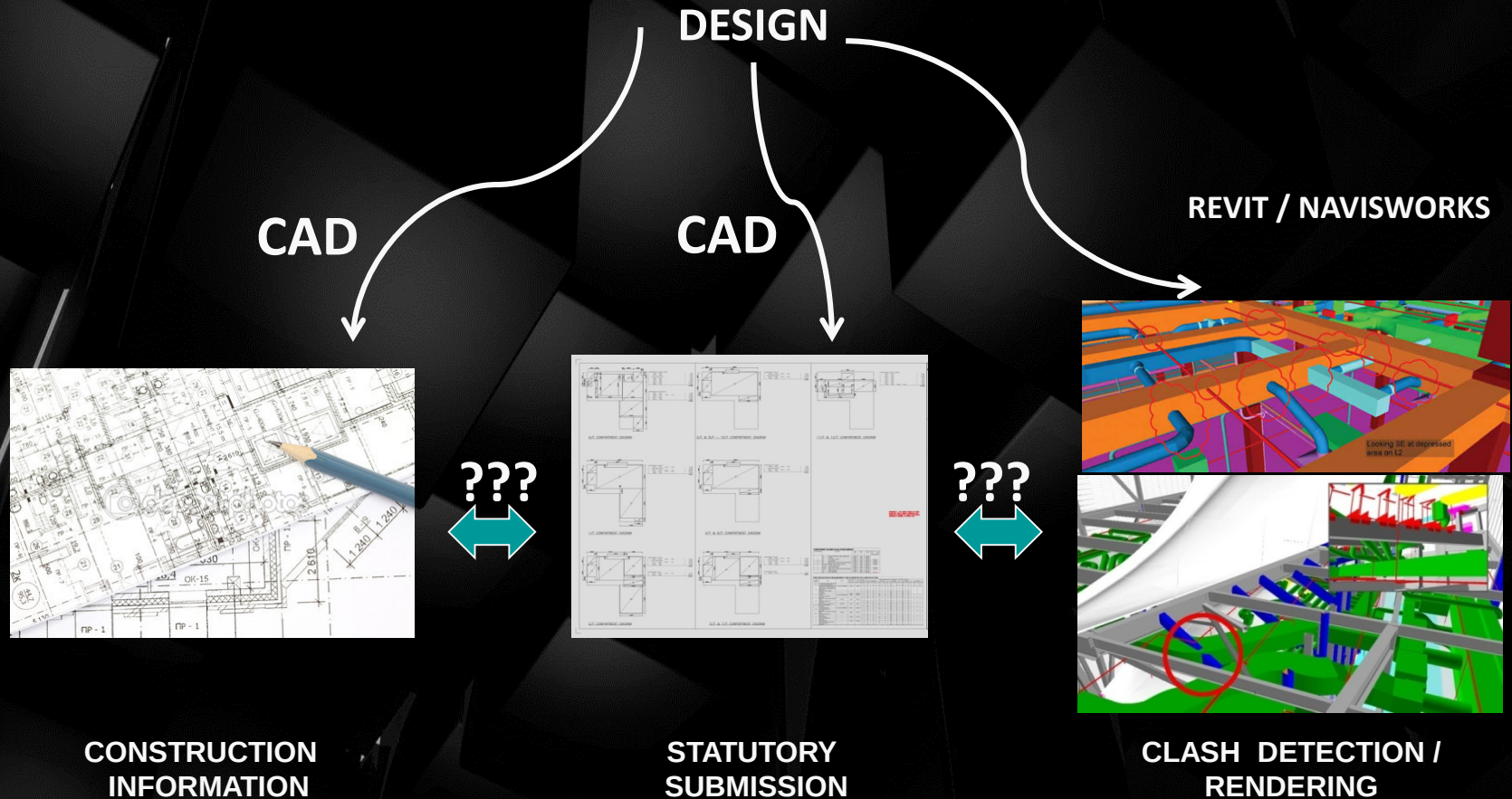


HALF-BIM

I <> M

3D MODEL >> QTO , CLASH ANALYSIS

HALF BIM



REAL BIM

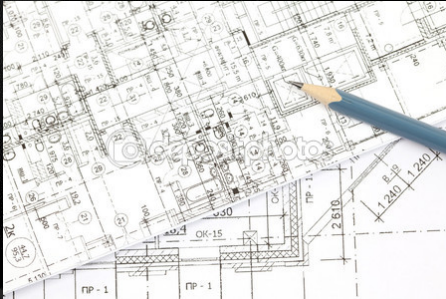
I = M

I > M

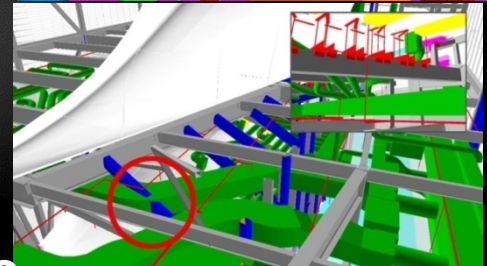
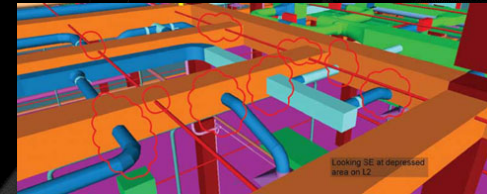
INFORMATION FROM MODEL,
INFORMATION MORE IMPORTANT

REAL BIM

NCIO



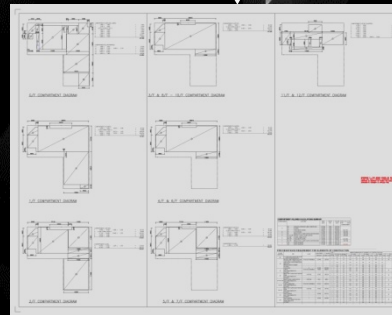
CONSTRUCTION
INFORMATION



CLASH
DETECTION

DESIGN
in
BIM

Single Source Database

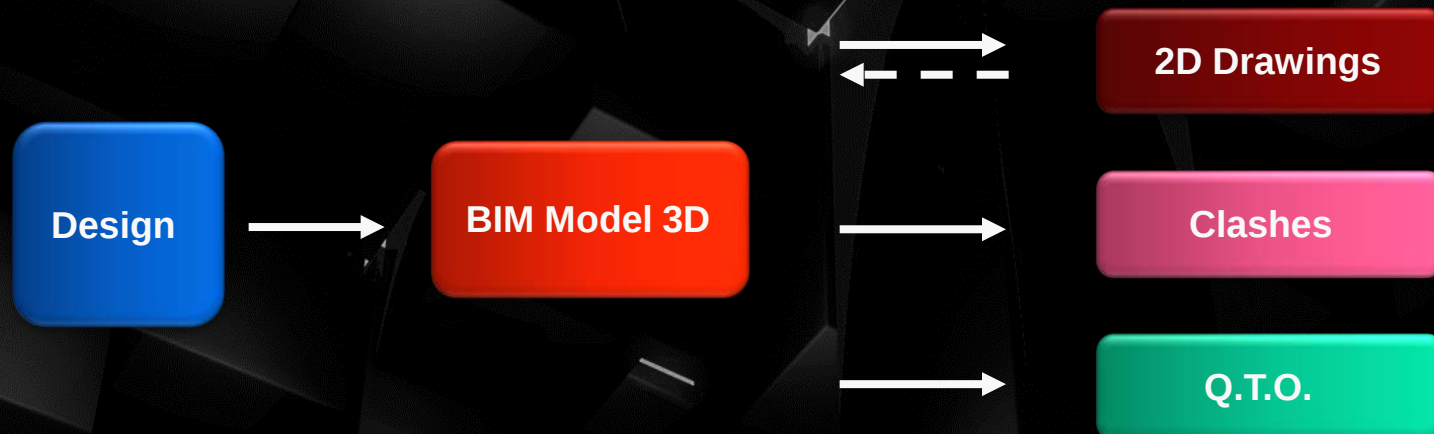


STATUTORY
SUBMISSION

Perceived BIM Workflow



True BIM Workflow :



BIM

NCIO

A movie poster for 'Men in Black' featuring the title 'MIB' in large, glowing blue letters with two agents standing in front of the 'I'. Below it, the text 'MEN IN BLACK' is written in a smaller, white, sans-serif font. The background is a dark, starry space with a nebula.

MIB
MEN IN BLACK

Modelling

Information

Business

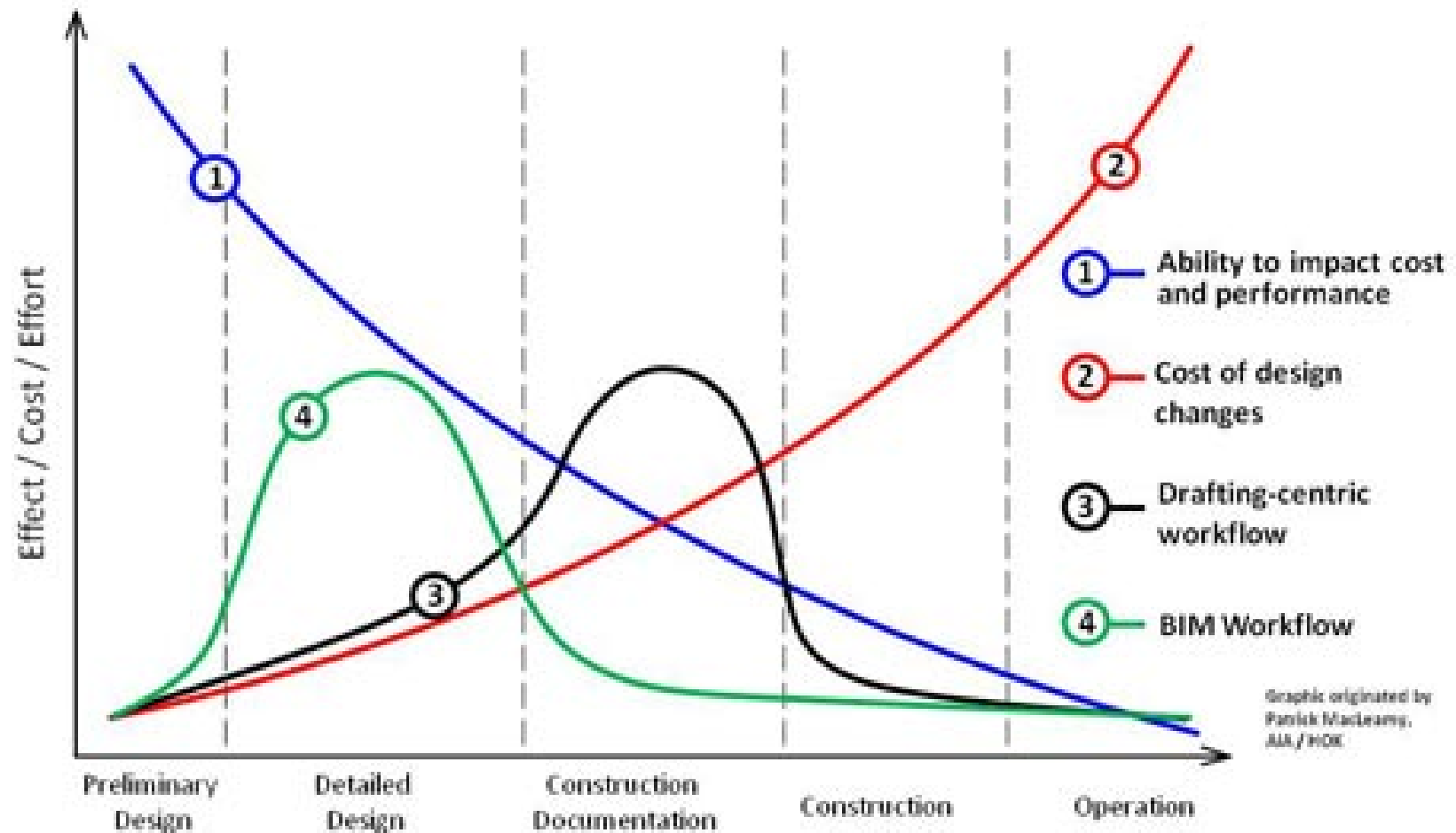
REAL BIM

NCIO

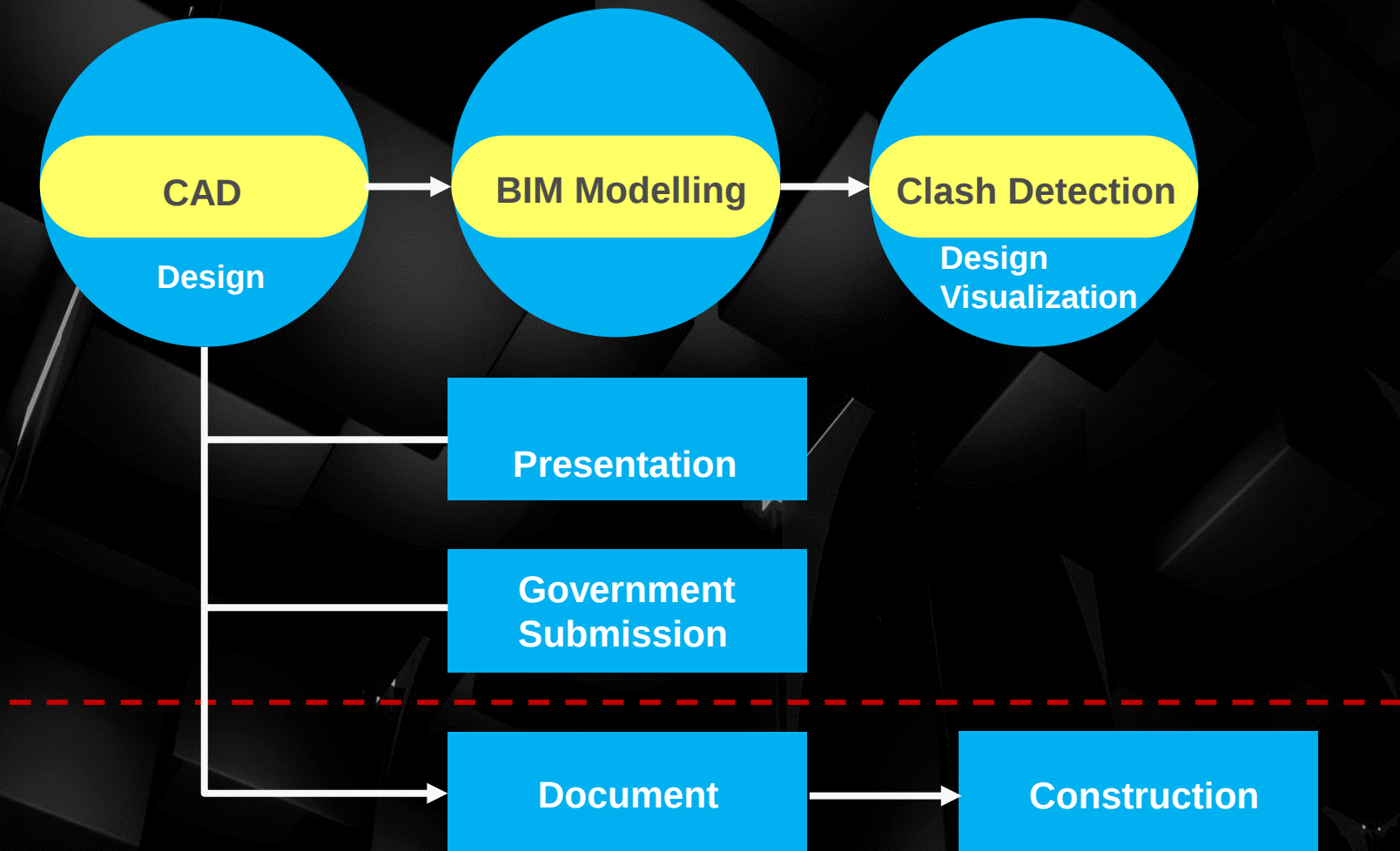


BIM is a process, Business is the objective

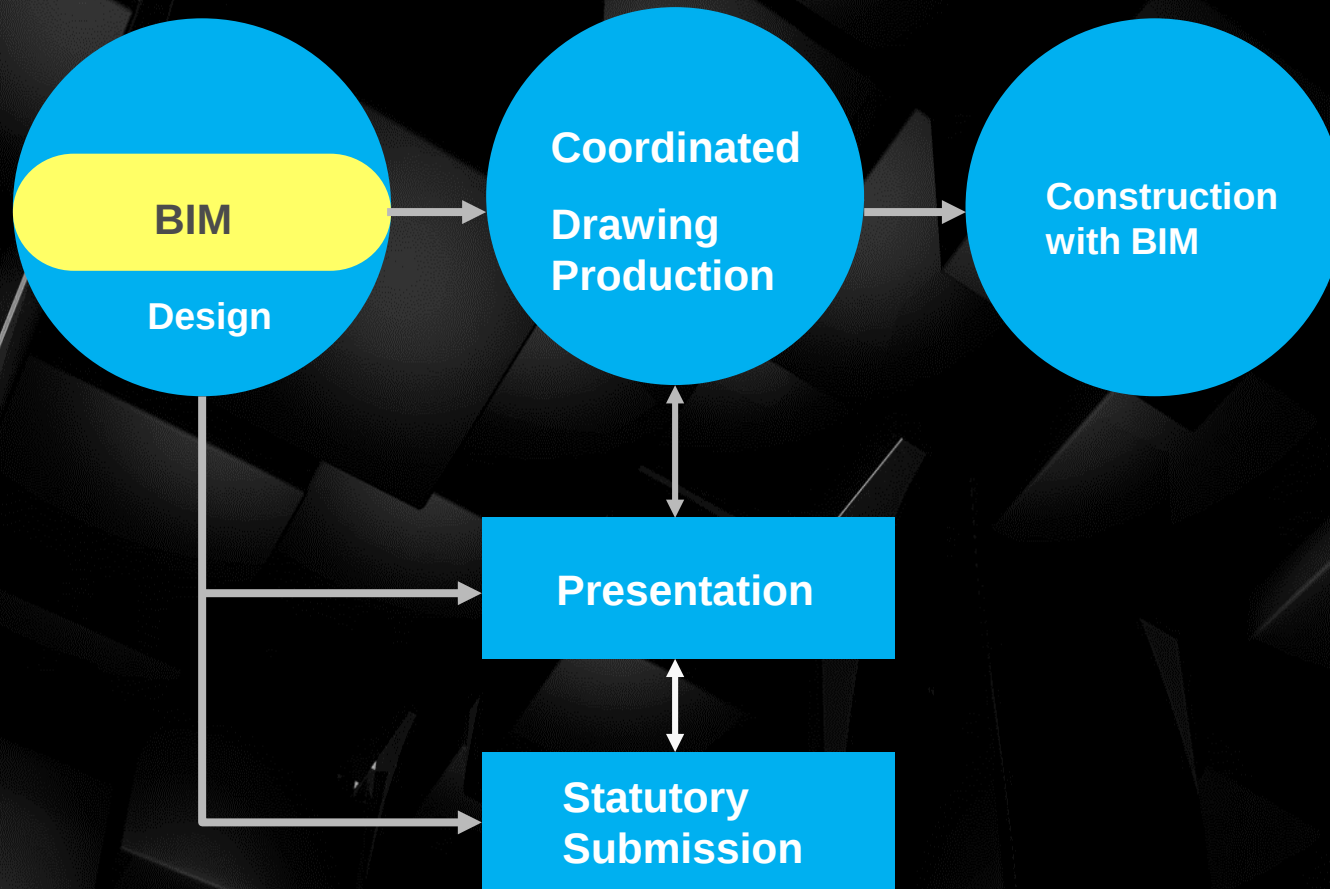
Hurdle in Design Phase



Misunderstood BIM work flow



BIM Design work flow



What happen to BIM in:

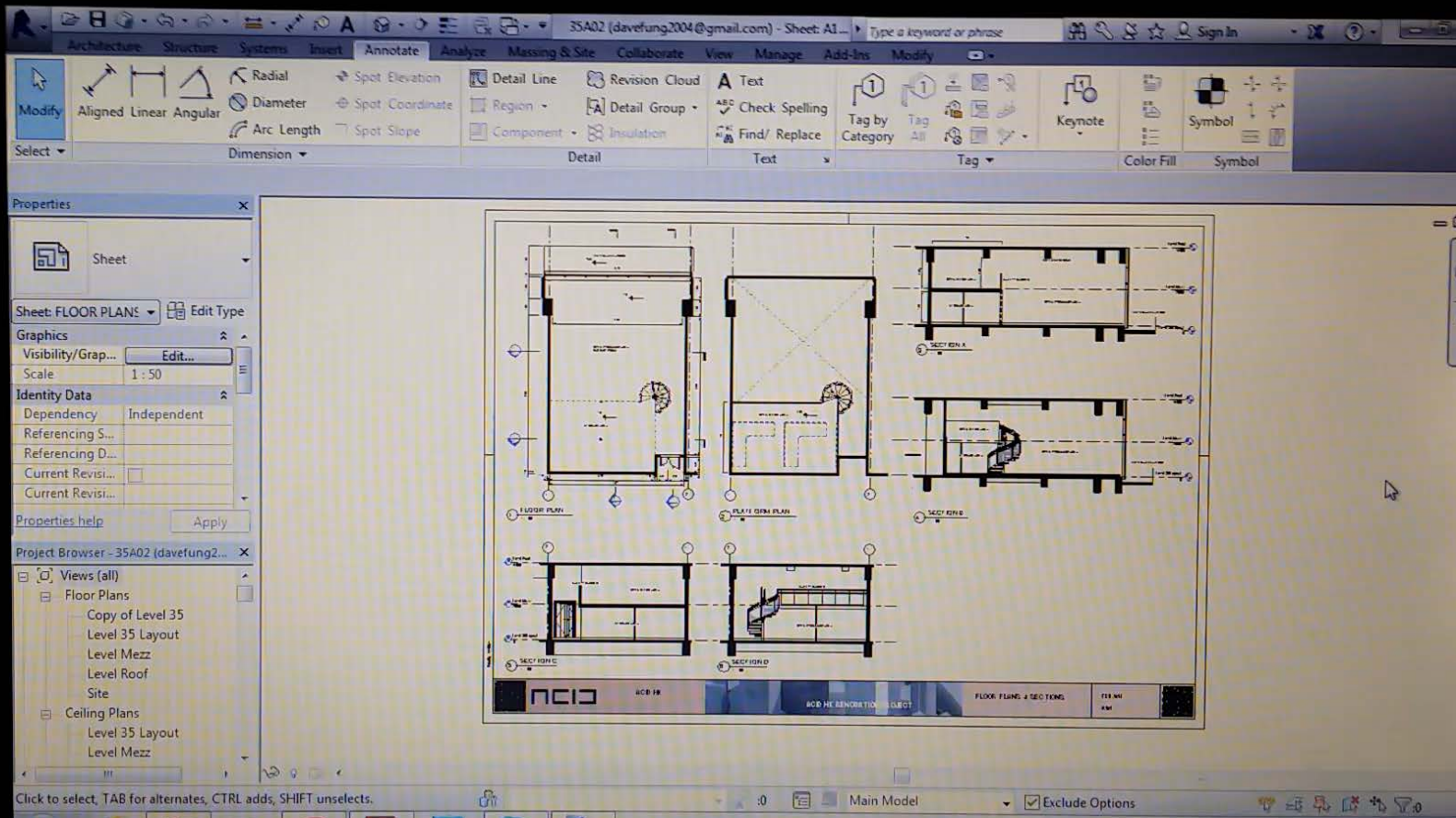


- Design Adoption
- **Construction Connectivity**
- Authority Support
- BIM Practice and Standard
- BIM Consultancy
- BIM Procurement



Connections?



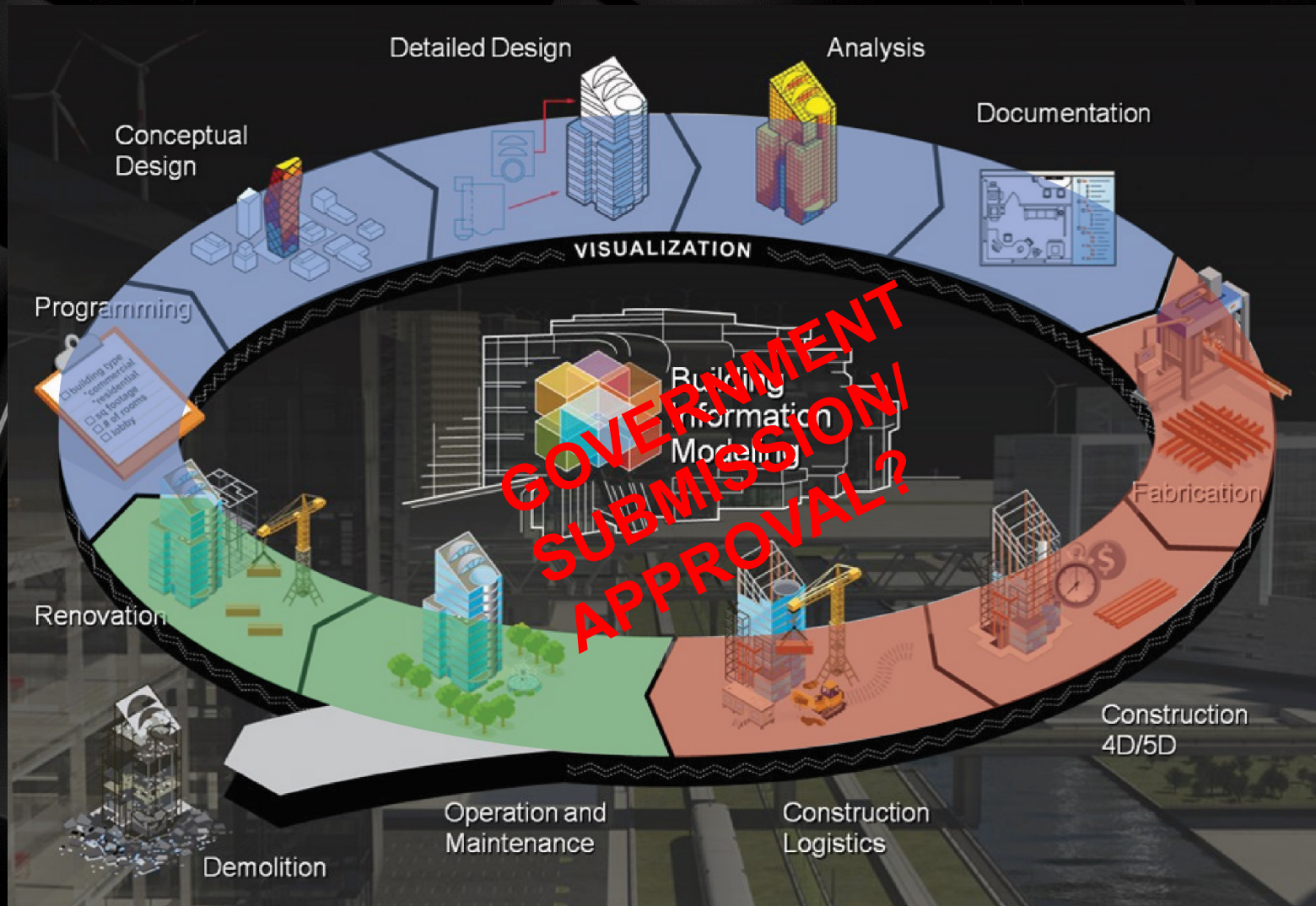




What happen to BIM in:

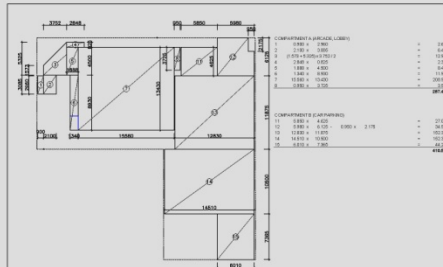


- Design Adoption
- Construction Connectivity
- **Authority Support**
- BIM Practice and Standard
- BIM Consultancy
- BIM Procurement

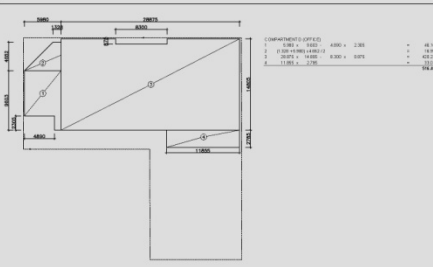


COMMON WAY: PROJECT EXAMPLE

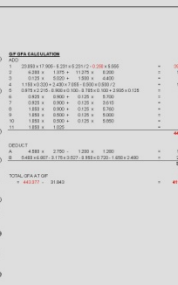
NCI



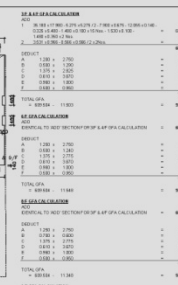
G/F COMPARTMENT DIAGRAM



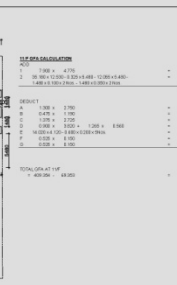
NCIO



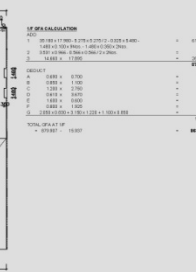
G/F GFA DIAGRAM



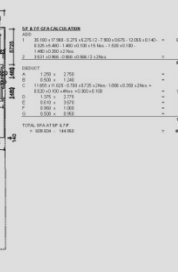
3/F, 4/F, 6/F, 8/F & 9/F GFA DIAGRAM



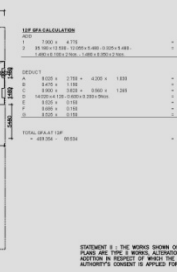
11/F GFA DIAGRAM



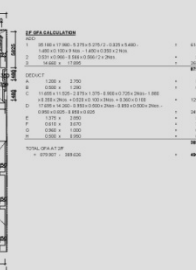
1/F GFA DIAGRAM



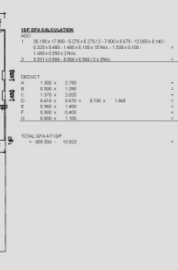
5/F & 7/F GFA DIAGRAM



12/F GFA DIAGRAM



2/F GFA DIAGRAM



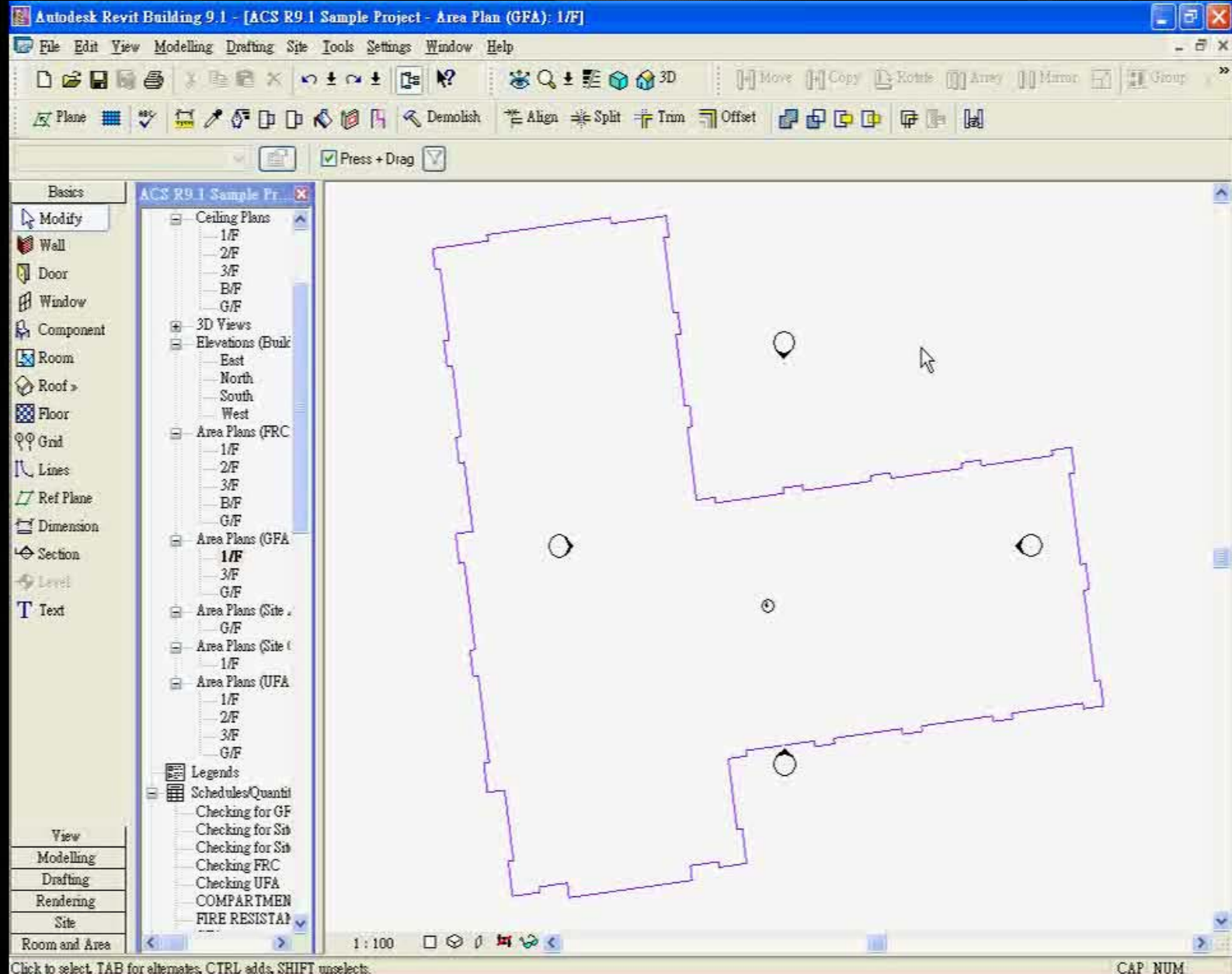
10/F GFA DIAGRAM



UPPER PART OF 12/F GFA DIAGRAM

STATEMENT B : THE WORKS SHOWN ON THESE PLANS ARE TYPE B WORKS, ALTERATION AND ADDITION IN RESPECT OF WHICH THE BUILDING AUTHORITY'S CONSENT IS APPLIED FOR.

BIM method: GFA CALCULATION



BIM method: GFA CALCULATION



Autodesk Revit Building 9.1 - [ACS R9.1 Sample Project - Area Plan (Site Area): G/F]

File Edit View Modelling Drafting Site Tools Settings Window Help

Plane Grids Section Lines Ref Plane Dimension Section Level Text

Press + Drag

Basics

- Modify
- Wall
- Door
- Window
- Component
- Room
- Roof
- Floor
- Grid
- Lines
- Ref Plane
- Dimension
- Section
- Level
- Text

View

- Modelling
- Drafting
- Rendering
- Site
- Room and Area

ACS R9.1 Sample Pr

- Ceiling Plans
 - 1/F
 - 2/F
 - 3/F
 - B/F
 - G/F
- 3D Views
- Elevations (Bulk)
 - East
 - North
 - South
 - West
- Area Plans (FRC)
 - 1/F
 - 2/F
 - 3/F
 - B/F
 - G/F
- Area Plans (GFA)
 - 1/F
 - 3/F
 - G/F
- Area Plans (Site)
 - G/F**
- Area Plans (Site)
 - 1/F
- Area Plans (UFA)
 - 1/F
 - 2/F
 - 3/F
 - G/F
- Legends
- Schedules/Quantit
 - Checking for GF
 - Checking for Stb
 - Checking for Stb
 - Checking FRC
 - Checking UFA
 - COMPARTMEN
 - FIRE RESISTAN

CLASS OF SITE: A

SITE AREA (SQ.M): 1990.642

BUILDING HEIGHT (M): 19

PERMITTED NON-DOMESTIC SC (%): 95

PERMITTED NON-DOMESTIC PR: 6.7

ACTUAL SITE COVERAGE (SQ.M): 788.919

ACTUAL SITE COVERAGE IN %: 39.631<95

ACTUAL NON-DOMESTIC GFA (SQ.M): 2237.736

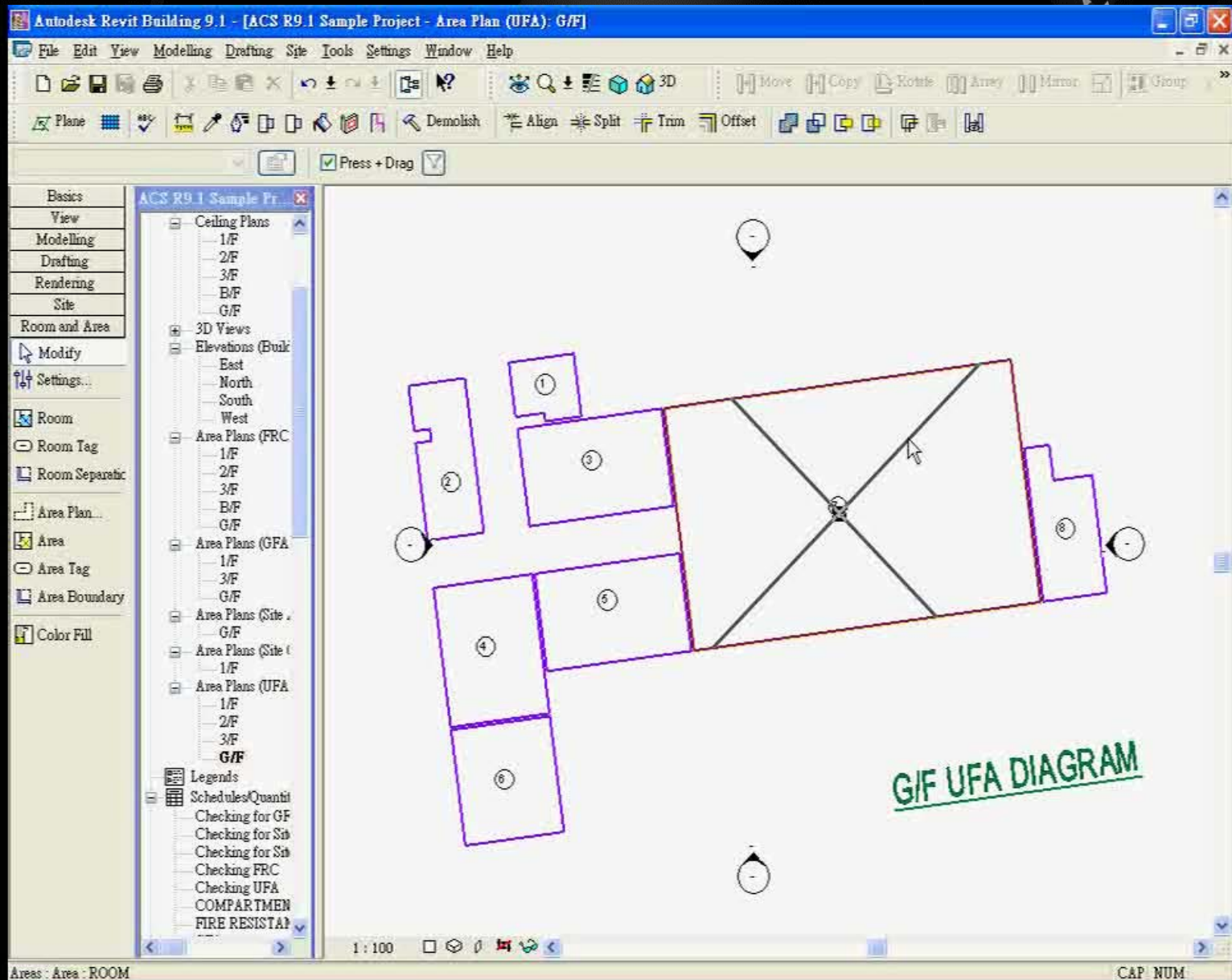
ACTUAL NON-DOMESTIC PR: 1.124<6.7

1 : 50

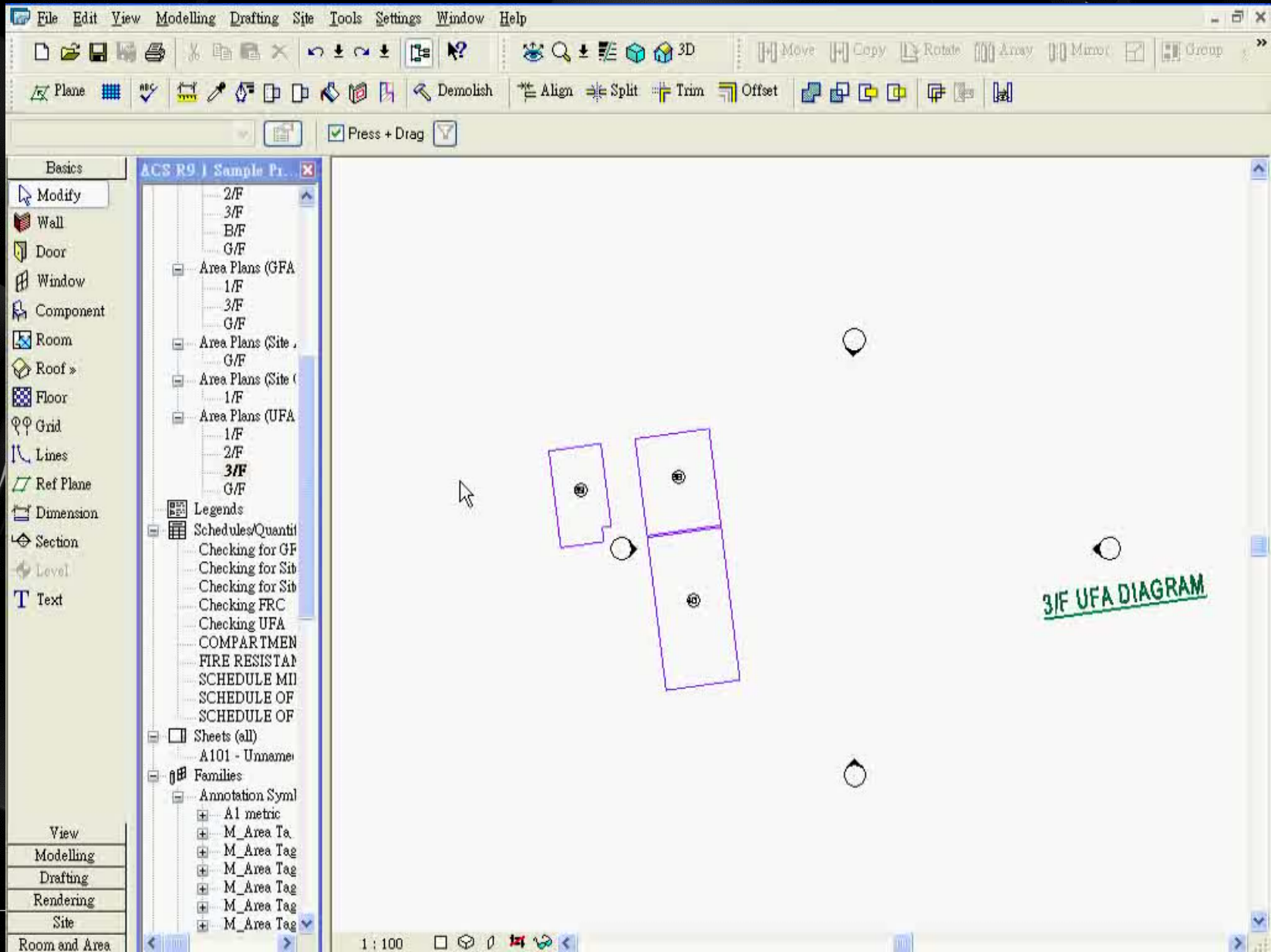
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.

CAP NUM

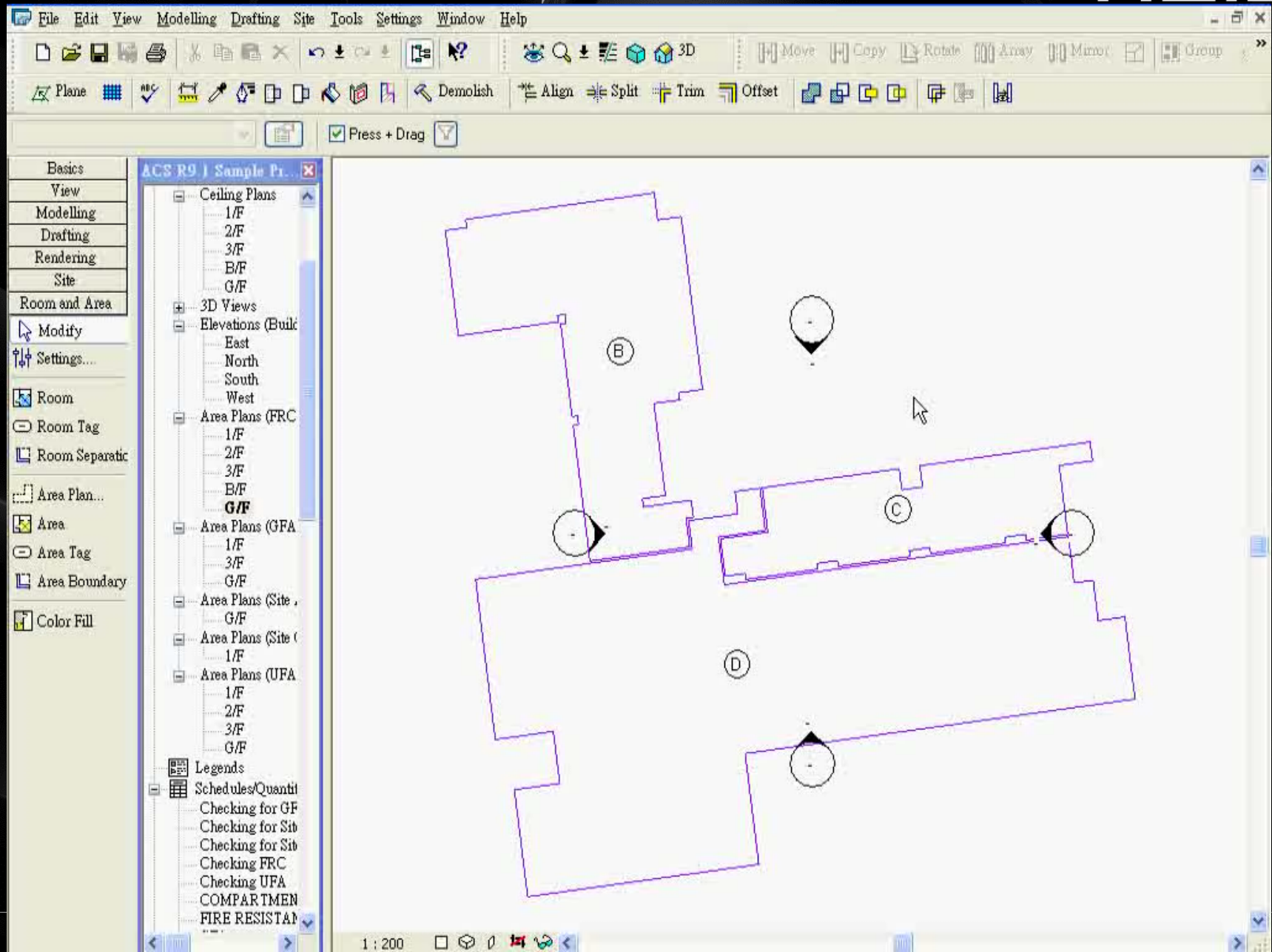
MEANS OF ESCAPE & SANITARY FITMENT PROVISION



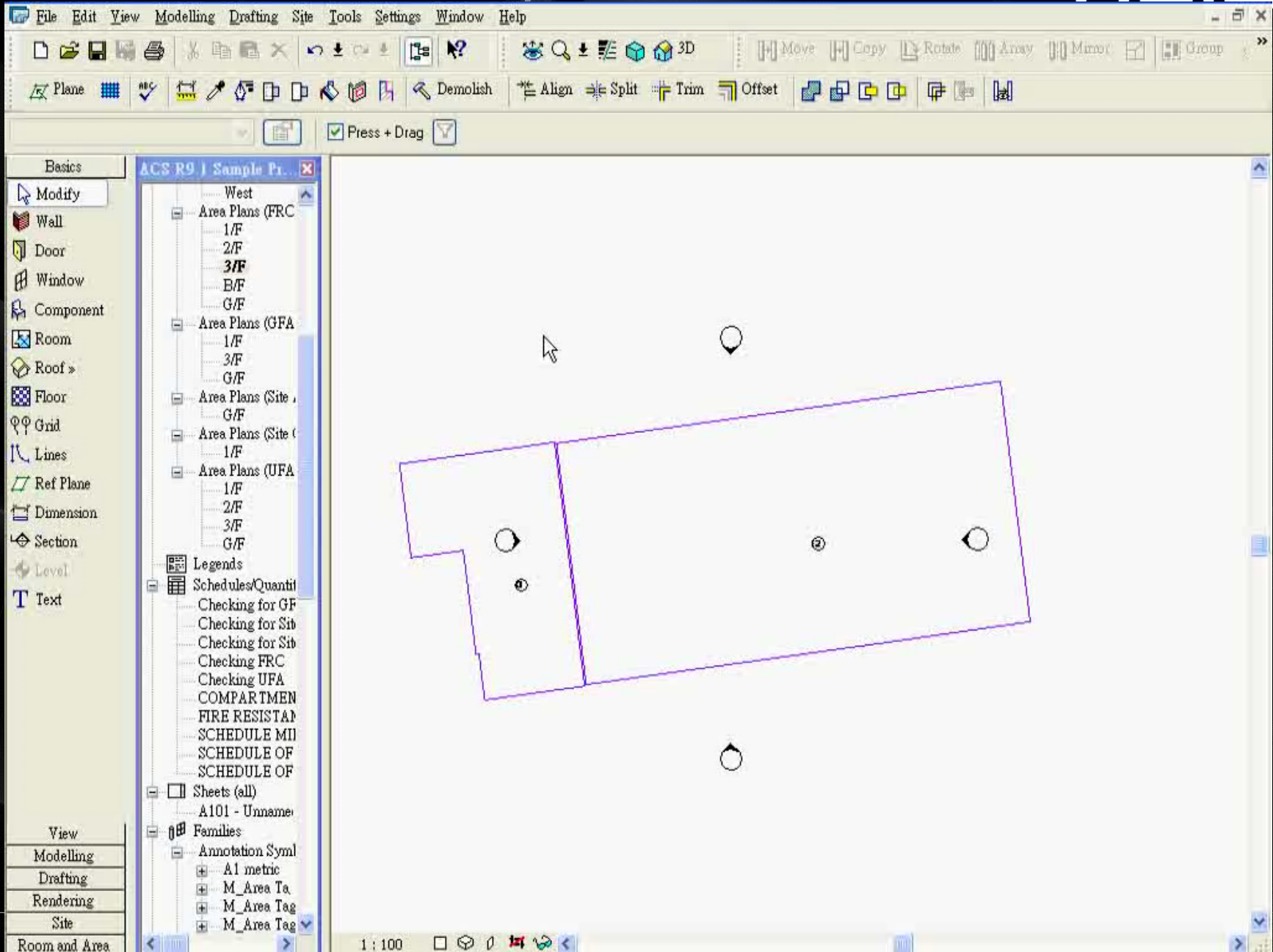
MEANS OF ESCAPE & SANITARY FITMENT PROVISION



FIRE RESISTING CONSTRUCTION



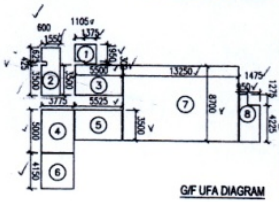
FIRE RESISTING CONSTRUCTION



UFA AND CAPACITY CALCULATIONS

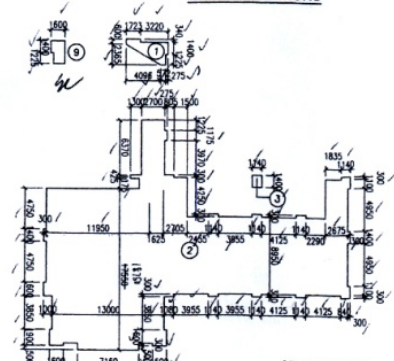
GFA CALCULATIONS

FRC CALCULATIONS



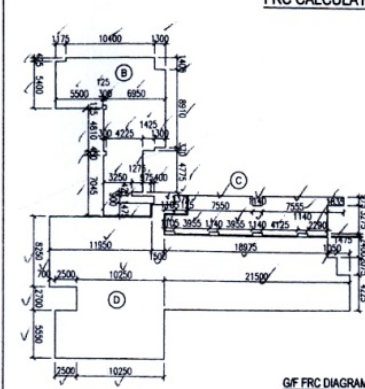
USE	USABLE FLOOR AREA	M/E PERMITTED DENSITY	CAPACITY
1 STORE	5,248.5	30	1
2 MOTHER'S ROOM	11,412.5	09	3
3 CHURCH OFFICE	19,250.0	09	3
4 CHURCH OFFICE	18,875.0	09	3
5 CHURCH OFFICE	19,337.5	09	3
6 CHURCH OFFICE	15,866.3	09	2
7 BIBLE STUDY	115,275.0	02	58
8 STORE	11,456.8	30	1
TOTAL	244,364.1		73

G/F UFA DIAGRAM



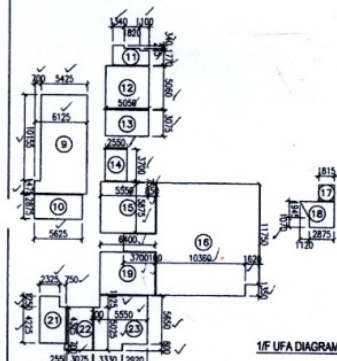
1	5,248.5
2	11,412.5
3	19,250.0
4	18,875.0
5	19,337.5
6	15,866.3
7	115,275.0
8	11,456.8
TOTAL	244,364.1

G/F GFA DIAGRAM



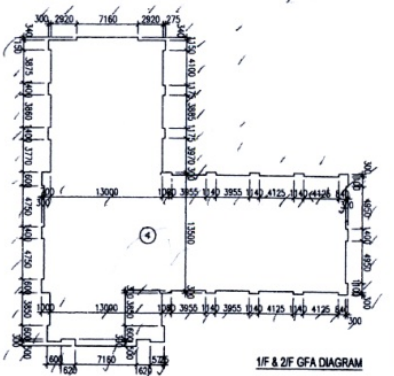
COMPARTMENT	AREA (SQ.M)	HEIGHT (M)	VOLUME (CU.M)
B	143,495.4	4.3	617,029.2
C	78,954.4	4.3	338,502.2
D	393,832.2	4.3	1,693,478.3

G/F FRC DIAGRAM



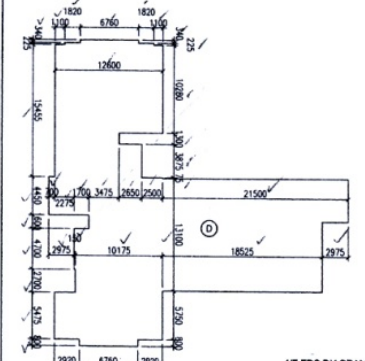
USE	USABLE FLOOR AREA	M/E PERMITTED DENSITY	CAPACITY
9 CHURCH OFFICE	64,125.3	09	8
10 BIBLE STUDY	18,171.8	02	9
11 STORE	8,706.8	30	1
12 BIBLE STUDY	25,553.0	02	13
13 BIBLE STUDY	15,528.8	02	8
14 MOTHER'S ROOM	9,435.0	09	2
15 STORE	38,016.3	30	2
16 CHAPEL	163,546.0	0.50	328
17 STORE	5,375.9	30	1
18 STORE	9,757.3	30	1
19 STORE	31,840.0	30	2
21 BIBLE STUDY	15,898.1	02	8
22 BIBLE STUDY	15,630.4	02	8
23 STORE	36,979.0	30	2
TOTAL	453,543.8		391

1/F UFA DIAGRAM



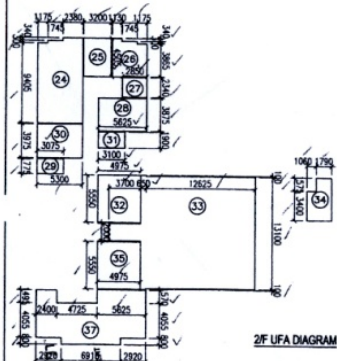
9	64,125.3
10	18,171.8
11	8,706.8
12	25,553.0
13	15,528.8
14	9,435.0
15	38,016.3
16	163,546.0
17	5,375.9
18	9,757.3
19	31,840.0
21	15,898.1
22	15,630.4
23	36,979.0
TOTAL	453,543.8

1/F & 2/F GFA DIAGRAM



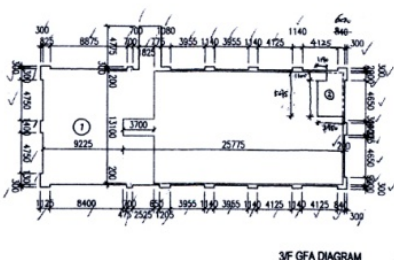
COMPARTMENT	AREA (SQ.M)	HEIGHT (M)	VOLUME (CU.M)
D	663,845.2	6.5	4,314,933.3

1/F FRC DIAGRAM



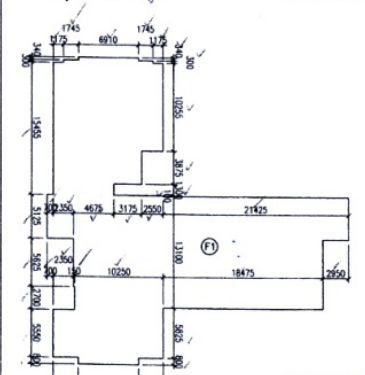
USE	USABLE FLOOR AREA	M/E PERMITTED DENSITY	CAPACITY
24 BIBLE STUDY	51,893.2	02	26
25 BIBLE STUDY	14,418.0	02	8
26 BIBLE STUDY	18,900.0	02	9
27 STORE	8,689.0	30	1
28 BIBLE STUDY	21,798.8	02	11
29 STORE	5,458.1	30	1
30 BIBLE STUDY	21,067.5	02	11
31 STORE	5,890.0	30	1
32 STORE	27,811.3	30	1
33 CHAPEL	181,432.9	0.50	363
34 STORE	12,509.3	30	1
35 STORE	27,811.3	30	1
37 BIBLE STUDY	89,648.5	02	35
TOTAL	442,123.8		469

2/F UFA DIAGRAM



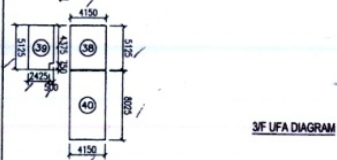
38	21,288.8
39	14,615.6
40	33,303.8
TOTAL	69,208.2

3/F GFA DIAGRAM



COMPARTMENT	AREA (SQ.M)	HEIGHT (M)	VOLUME (CU.M)
F1	673,292.2	2.9	1,952,547.3

2/F FRC DIAGRAM



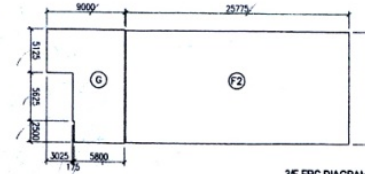
USE	USABLE FLOOR AREA	M/E PERMITTED DENSITY	CAPACITY
38 BIBLE STUDY	21,288.8	02	11
39 STORE	14,615.6	30	1
40 BIBLE STUDY	33,303.8	02	17
TOTAL	69,208.2		29

3/F UFA DIAGRAM



COMPARTMENT	AREA (SQ.M)	HEIGHT (M)	VOLUME (CU.M)
A	68,177.7	3	204,533.1

B/F FRC DIAGRAM



COMPARTMENT	AREA (SQ.M)	HEIGHT (M)	VOLUME (CU.M)
F2	337,652.2	4.6	1,553,198.3
G	94,234.4	4.6	433,478.3

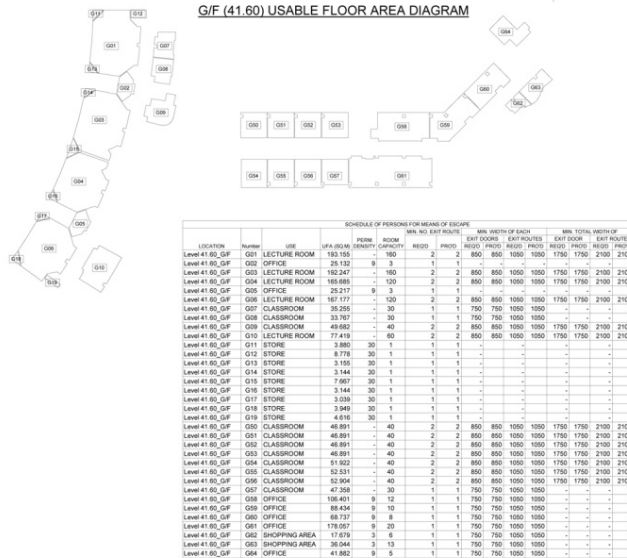
3/F FRC DIAGRAM

TOTAL UFA TOTAL CAPACITY	124,442
	962

Plan Approved

 Philip M. S. Wong
 Chief Building Surveyor
 for BUILDING AUTHORITY
 - 1 NOV 2005

G/F (41.60) USABLE FLOOR AREA DIAGRAM



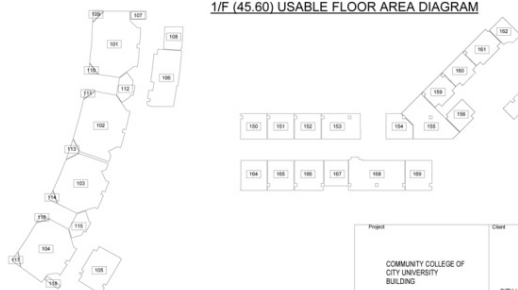
L2/G2/F (34.00) USABLE FLOOR AREA DIAGRAM

SCHEDULE OF PERSONS FOR MEANS OF ESCAPE												
LOCATION	Number	USE	UFA (SQM)	PERM. ROOM	MIN. NO. EXIT ROUTE	MIN. WIDTH OF EACH	MIN. TOTAL WIDTH OF	EXIT ROUTES	EXIT ROUTES	EXIT ROUTES	EXIT ROUTES	EXIT ROUTES
Level 34.00_L2/G2/F	B11	STORE	187.600	30	7	1	750	750	1050	1050	-	-

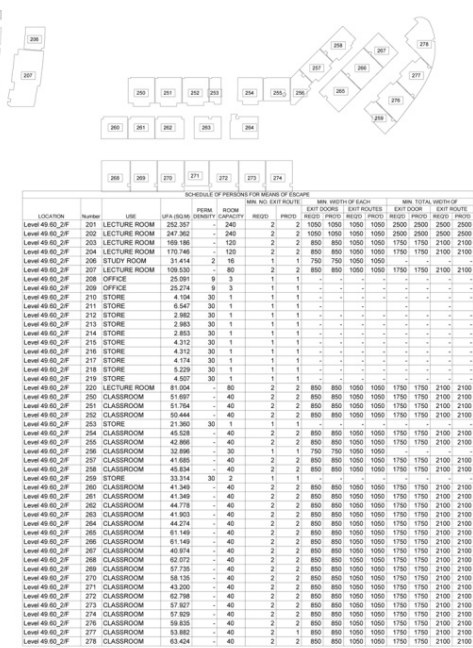
L3/G1/F (37.80) USABLE FLOOR AREA DIAGRAM

SCHEDULE OF PERSONS FOR MEANS OF ESCAPE												
LOCATION	Number	USE	UFA (SQM)	PERM. ROOM	MIN. NO. EXIT ROUTE	MIN. WIDTH OF EACH	MIN. TOTAL WIDTH OF	EXIT ROUTES	EXIT ROUTES	EXIT ROUTES	EXIT ROUTES	EXIT ROUTES
Level 37.80_L3/G1/F	B11	OFFICE	293.119	9	33	2	2	850	850	1050	1050	1750

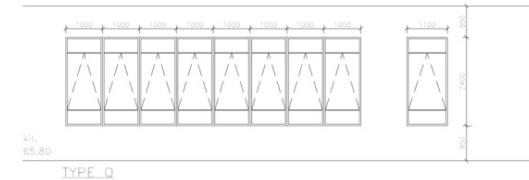
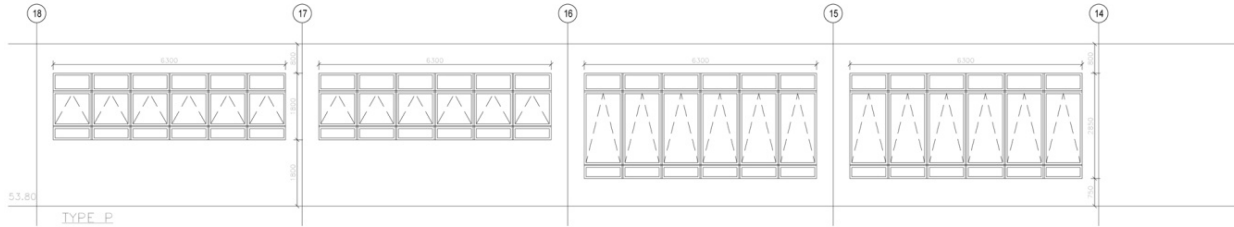
1/F (45.80) USABLE FLOOR AREA DIAGRAM



2/F (49.60) USABLE FLOOR AREA DIAGRAM



EXAMPLE OF GOVERNMENT SUBMISSION ADOPTING BIM



Discharge Value Calculation

Staircase No.	No. of storeys served	Width of Staircase (mm)	Discharge Value (Person)	Factor
ST-01	6	2400	1480	
ST-02	6	1800	1060	
ST-03	4	1800	739	*0.8
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 CCCUB 8788

Therefore, Permitted Discharge Value (Person) > Actual Capacity (Person)

LOCATION		CAPACITY		SCHEDULE OF SANITARY FITMENTS PROVISIONS												URINAL		
		TOTAL	M	F	WC						BATH							
					REGD	PROD	REGD	F	REGD	M	REGD	F	PROD	REGD	F			PROD
3/F	RESTAURANT	1485	730	750	6	6	18	12	6	8	9	9	15	15				
3/F	WORKPLACE	196	83	83	3	4	4	5	3	4	3	3	2	2				
6/F	OFFICE	225	180	75	5	8	4	10	5	8	3	4	3	8				
6/F	PLACE OF PUBLIC	385	175	175	2	2	4	4	2	2	2	2	2	4				
6/F	RESTAURANT	175	88	87	1	2	2	4	1	2	2	2	3	2				
6/F	WORKPLACE	41	21	20	1	2	2	2	1	3	2	1	2	1	2			
6/F	SHOP/DEPARTMENT STORE	40	20	20	1	1	2	2	1	3	1	1	1	1	1			
6/F	OFFICE	385	258	126	5	8	2	10	5	8	3	4	3	8				
6/F	SCHOOL	8000	3000	3000	100	121	150	184	100	113	150	150	300	300				

Education Ordinance Reg. 43 (Latrines & urinals in school premises other than boarding school premises)

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



Structural Engineer's & W
Hydr Consulting
Lewitt & Soley
Landscape Consultant
Kenneth Ng & Associates Ltd
Landscape and Environmental Consultants

Rev	Issue Date	Initial	Description
1			
2			
3			

Design By
Drawn By
Checked By
DAV
Project Name
5955803

Project Number
05595
Drawing Title
Windows Calculation
Drawing Number
5955803
Scale
1:100
Date
18/08/2018
Project Location
100 King's Road
Quarry Bay
Hong Kong
Aedas
T: +852 2801 1000
F: +852 2202 9470
E: aedas@aedas.com.hk
aedas.com

KITCHEN		GLAZED WINDOW AREA				OPENABLE WINDOW AREA			
TYPE	LOCATION	UFA (sq.m)	TOTAL WIDTH	HEIGHT	PROVIDED (85% EFFECTIVE)	REQUIRED (1/16 of UFA)	TOTAL WIDTH	HEIGHT	PROVIDED (85% EFFECTIVE)
P	LEVEL +53.80 Grdline 14-18/C-D	472.540	12.600	2.850	30.524	29.3119	12.600	2.030	21.741
			12.600	1.800	19.278		12.600	0.980	10.496
			sub-total		49.802		sub-total		32.237
Q	LEVEL +65.80 Grdline 2-11/H-I-J	182.511	9.100	2.400	18.564	18.251	9.100	1.570	12.144

OFFICE		GLAZED WINDOW AREA				OPENABLE WINDOW AREA			
LOCATION		UFA (sq.m)	TOTAL LENGTH (m)	HEIGHT (m)	PROVIDED (85% EFFECTIVE)	REQUIRED (1/16 of UFA)	TOTAL LENGTH (m)	HEIGHT (m)	PROVIDED (85% EFFECTIVE)
LEVEL +37.80 Grdline 12-13/A-C		293.119	13.360	3.800	43.217	29.3119	Application for modification		
LEVEL +41.80 Grdline 18-21/A-B		176.057	21.950	2.330	43.472	17.8057	21.950	1.520	28.359
LEVEL +82.00 Grdline 13-29/F-J		2615.380	43.900	2.440	91.049				
			10.500	2.700	24.098				
			46.300	2.250	88.549				
			(curtain wall)	43.000	3.800	138.890			
			sub-total		342.585	261.538	Application for modification		
LEVEL +65.80 Grdline 13-16/F-H, 19-29/F-J		2022.023	43.900	2.440	91.049				
			10.500	2.700	24.098				
			30.450	2.250	58.236				
			(curtain wall)	43.000	3.800	138.890			
			sub-total		312.272	202.202	Application for modification		

OFFICE (CURTAIN WALL)		OPENABLE WINDOW AREA			
LOCATION		UFA (sq.m)	TOTAL LENGTH (m)	HEIGHT (m)	PROVIDED (85% EFFECTIVE)
LEVEL +37.80 Grdline 12-13/A-C		293.119	1.115	0.900	12
LEVEL +42.00 Grdline 14-20/E-J		2915.38	1.240	1.800	15
LEVEL +65.80 Grdline 14-20/E-J		2022.023	1.240	1.800	15

SCHEDULE OF A/C PLANT ROOM AREA		TOTAL G.F.A. OF FLOOR WHERE THE PLANT ROOM IS SITUATED		TOTAL PLANT ROOM AREA		PERCENTAGE OF AREA OF PLANT ROOM AT EACH FLOOR	
LOCATION	LOCATION OF THE PLANT ROOM						
	GRID 18-HH			24.369			
	GRID 20CC-CD			24.475			
Q/F (+41.80)	GRID 22A-A	4511.267	31.111	87.164	1.93%	-4%	
	GRID 18-HH			24.369			
	GRID 20CC-CD			24.475			
1/F (+45.80)	GRID 22A-A	4532.375	35.871	84.721	1.87%	-4%	
	GRID 27H			18.049			
	GRID 20CC-CD			24.526			
	GRID 18-HH			33.360			
2/F (+49.80)	GRID 22A-A	5235.757	38.851	112.816	2.15%	-4%	
	GRID 23F-E			12.554			
	GRID 10CC-CD			25.178			
	GRID 27H-H			29.857			
3/F (+53.80)	GRID 3A-J	5387.228	44.131	111.718	2.07%	-4%	
	GRID 23F-E			18.303			
	GRID 3A-J			25.384			
	GRID 2A-A-BB			29.716			
4/F (+58.20)	GRID 27H	5616.292	30.089	100.492	1.79%	-4%	
	GRID 3A-J			21.294			
	GRID 2A-A-BB			25.368			
	GRID 27H			25.728			
5/F (+62.00)	GRID 22A-A	5548.517	29.845	102.232	1.84%	-4%	
	GRID 3A-J/KK			17.823			
	GRID 22A-A			23.378			
	GRID 2A-A-BB			25.488			
6/F (+65.80)	GRID 27H-H	5416.730	30.373	97.063	1.79%	-4%	

CAD



Printed Drawing



Checking

BIM



Printed Drawing



Checking

BIM



CAD



Printed Drawing
(Conversion
discrepancy)



???

BIM



Printed Drawing



Checking



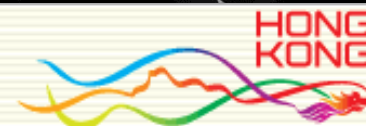
Information Model



Software Checking

**Buildings Department**

The Government of the Hong Kong Special Administrative Region



GovHK 香港政府一站通

繁體版 简体版

Font Size: [A](#) [A](#) [A](#) | SEARCH | [SITEMAP](#) | [Email](#)

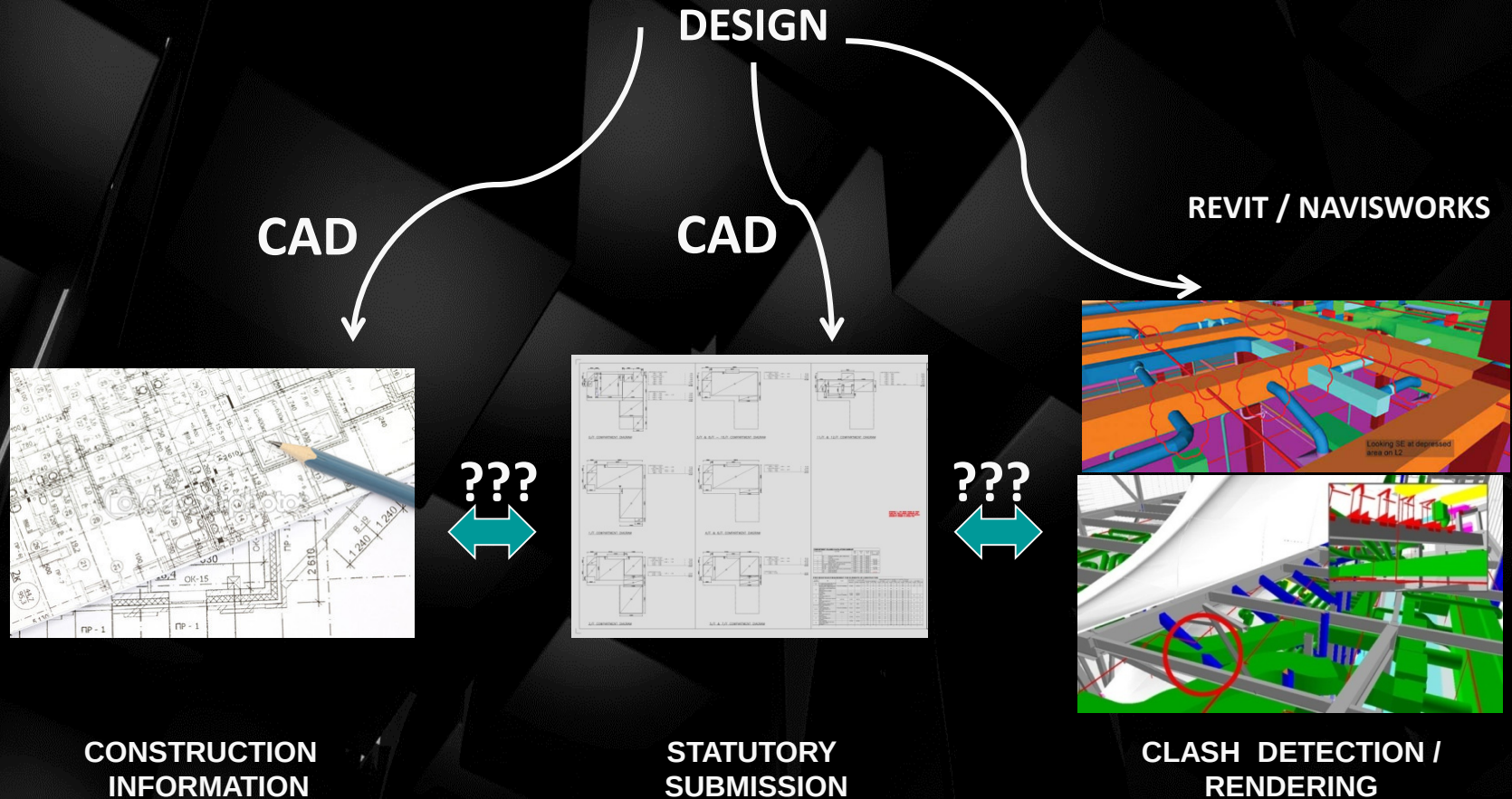
Buildings Department**Practice Note for Authorized Persons,
Registered Structural Engineers and
Registered Geotechnical Engineers****ADM-19**

Re-engineering the Building Approval Process**Use of Computer for Mathematical Calculations**

18. AP adopting the use of computer for calculating floor areas of buildings in the preparation of general building plans are required to provide BD with an electronic copy of the plan submission with the calculations in an accepted format capable of being verified by **AutoCAD, MicroStation** or other software accepted by BD. In this regard, AP should follow the guidelines at Appendix F.

HALF BIM

NCIO

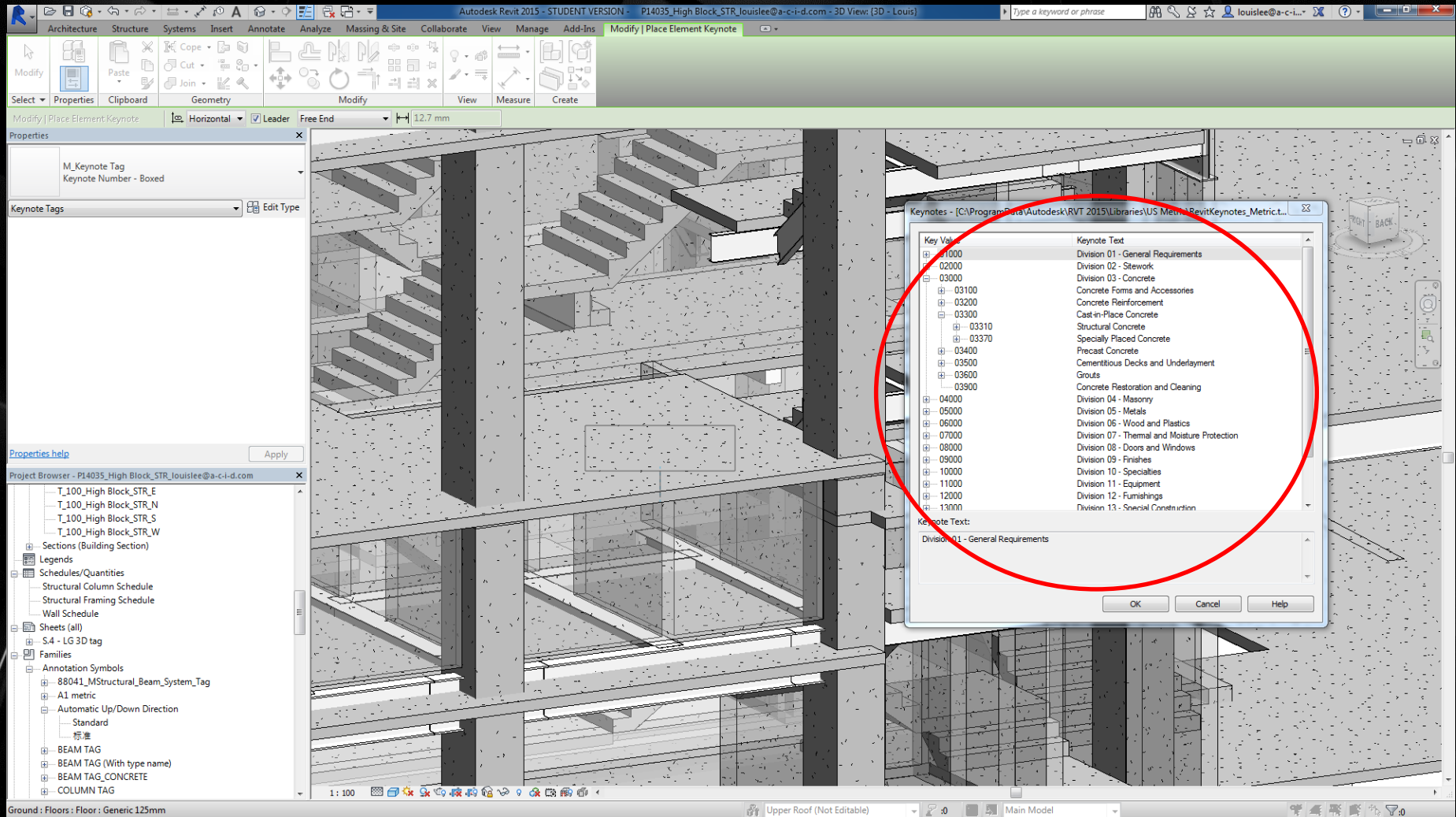


Only CAD Accepted!!!

What happen to BIM in:



- Design Adoption
- Construction Connectivity
- Authority Support
- **BIM Practice and Standard**
- BIM Consultancy
- BIM Procurement



【V1.20】

【2014 年 10 月 7 日修订】

UDC



中华人民共和国国家标准

P

GB/T50XXX—20XX

建筑工程设计信息模型分类和编码标准

Standard for classification and coding of building constructions

design information model

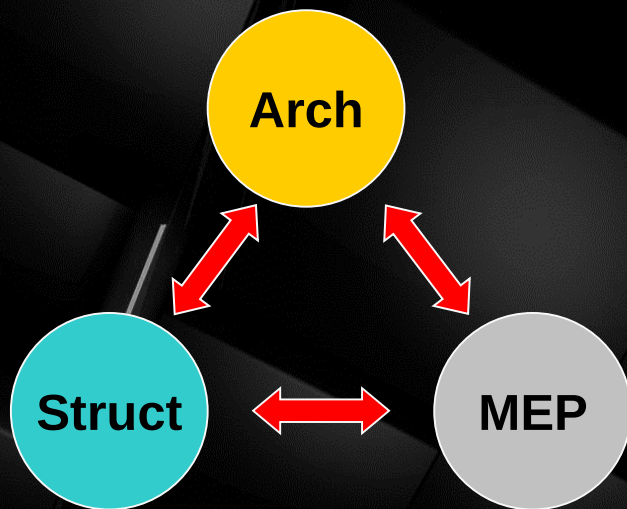
10-20.30.00	骨灰寄存楼	Columbarium
10-20.40.00	公墓	Cemetery
10-21.00.00	交通建筑	traffic construction
10-21.10.00	客运站	Passager station
10-21.10.10	公路客运站	Driveway bus station
10-21.10.20	铁路客运站	Railway Transport Terminal
10-21.10.30	港口客运站	Port terminal
10-21.20.00	机场	Airport
10-21.20.10	航站楼	Terminal
10-21.20.20	机坪	Airport apron
10-21.20.30	跑道	Runway
10-21.30.00	城市轨道交通	City rail transit
10-21.40.00	交通枢纽	Transport hub
10-21.50.00	停车场库	Parking garage

What happen to BIM in:



- Design Adoption
- Construction Connectivity
- Authority Support
- BIM Practice and Standard
- **BIM Consultancy**
- BIM Procurement

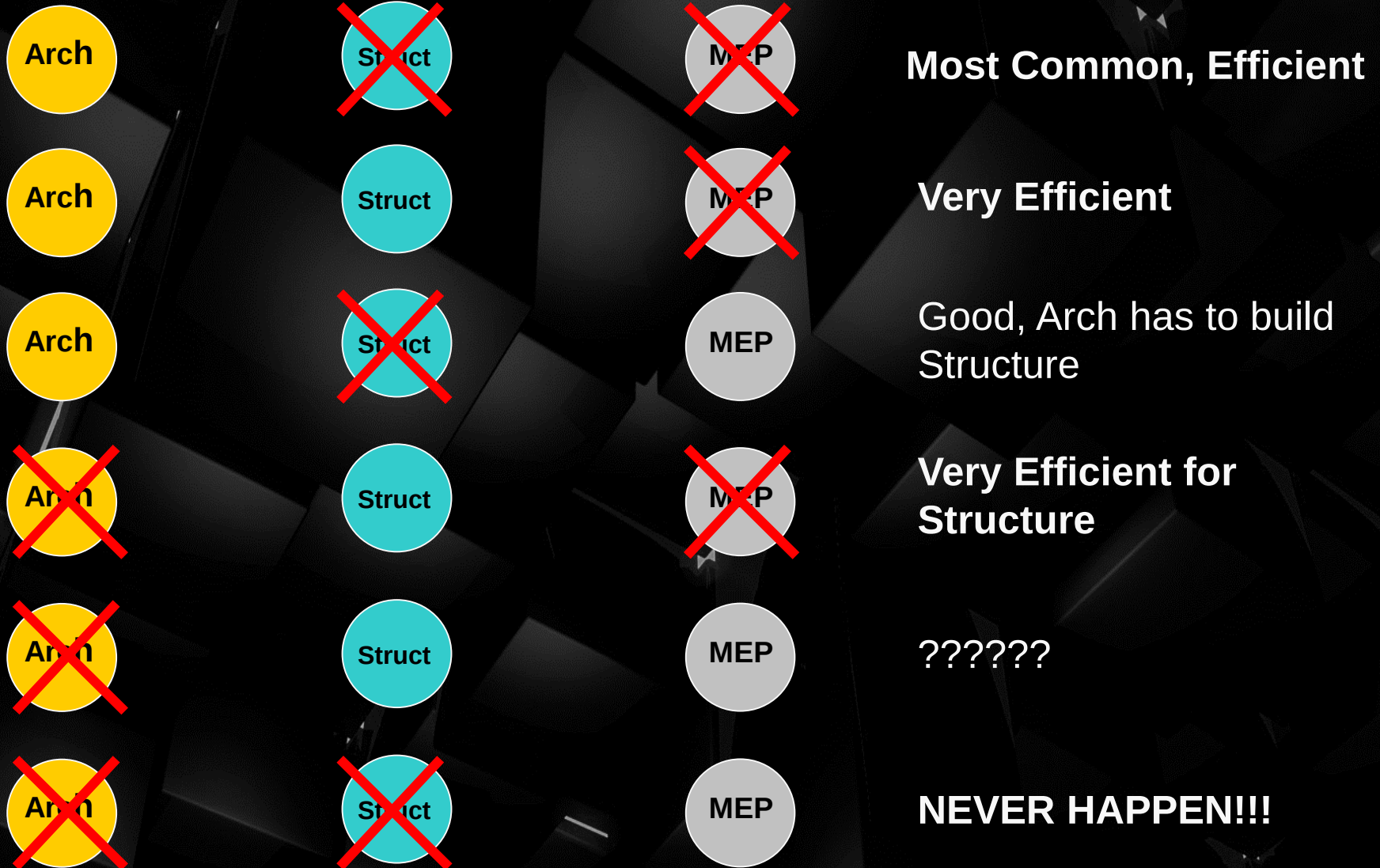
Full BIM Project Team Structure



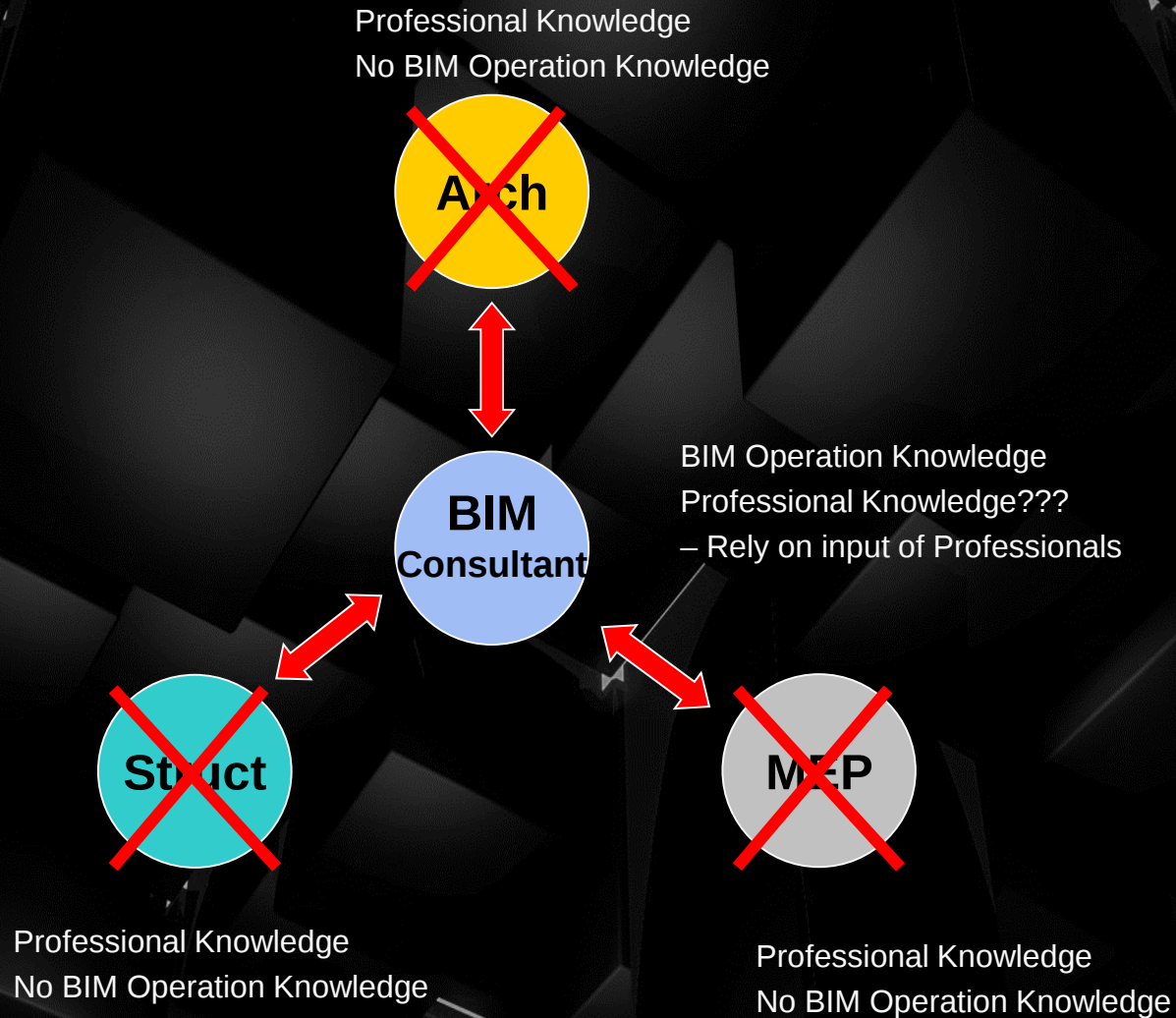
Best Practice: Office with All Disciplines

Second Best: Efficient Communication

Partial BIM Project Team Structure

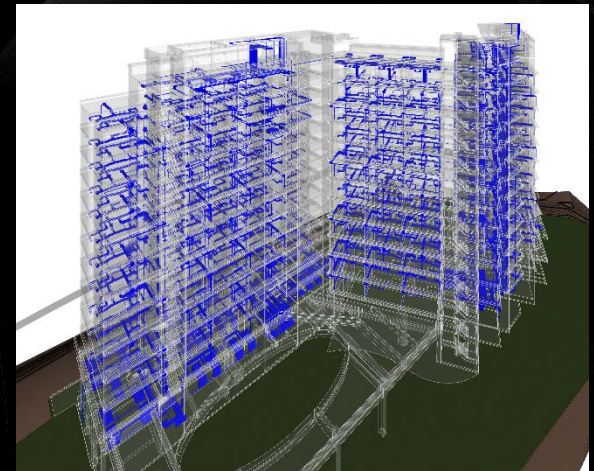
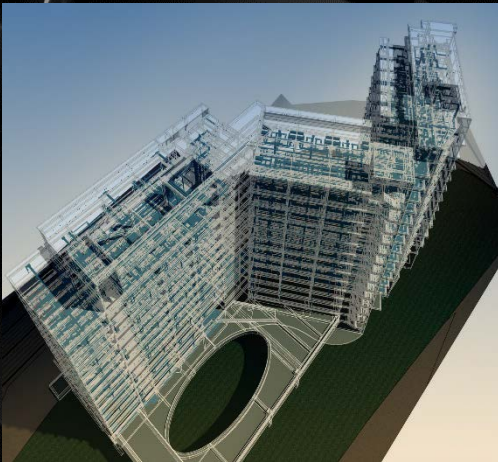


BIM Consultant Team Structure



BIM Consultants? Who are they?

- Roles
- Professional Liability?
- Responsibility
- Training
- Knowledge Transfer

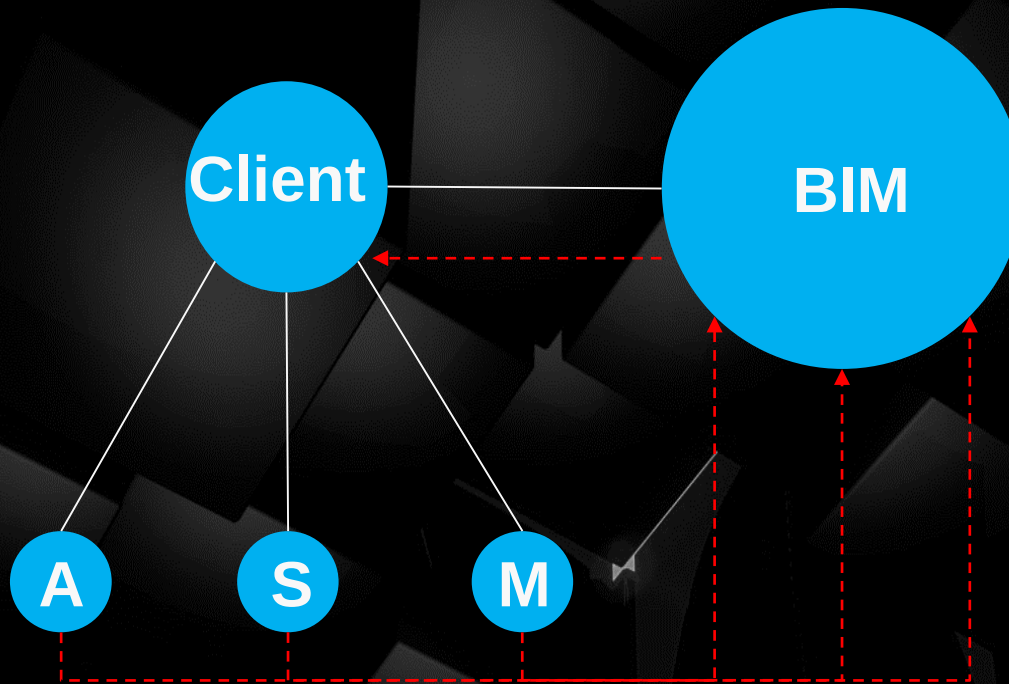


What happen to BIM in:



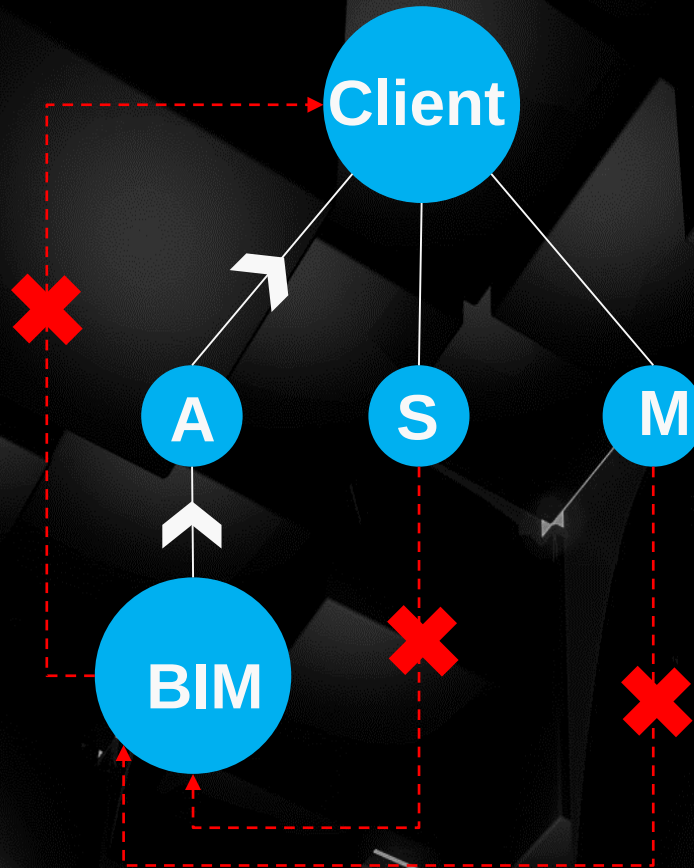
- Design Adoption
- Construction Connectivity
- Authority Support
- BIM Practice and Standard
- BIM Consultancy
- **BIM Procurement**

BIM Procurement



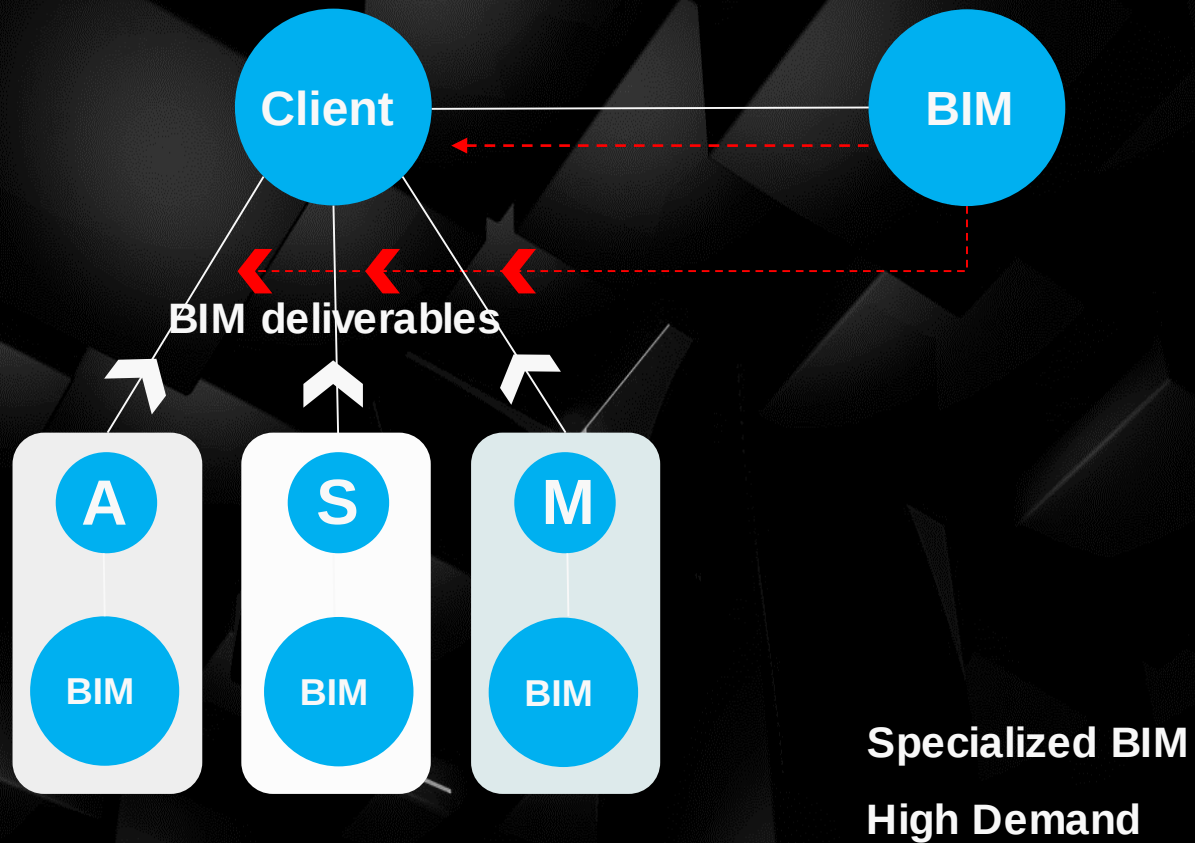
Low Level BIM
Super BIM !

BIM Procurement



Dishonest reporting
Hard to chase information

Suggested BIM Procurement



- Design Adoption
- Construction Connectivity
- Authority Support
- BIM Practice and Standard
- BIM Consultancy
- BIM Procurement

Failure



Success !

Thank You