

B.D. Ref. No.: BD 2/3020/18

**Final Version of OTTV and RTTV for  
Proposed Residential Re-development at  
No. 33 Kennedy Road, Wanchai, Hong Kong**



**S. T. LAM**  
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AUTHORIZED PERSON

**T.K. Tsui & Associates Ltd.**

**9th September, 2024**

Rev. -



住戶康樂設施總熱傳送值的摘要匯表

OTTV of Resident's  
Recreational Facilities  
Summary Sheet

電郵地址  
E-mail Address

作認收電郵之用 (電子呈交適用)  
For acknowledgement email (e-submission)

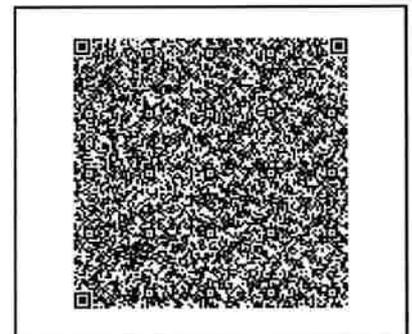
PNAP  
APP-156  
附錄  
Appendix B

地址: Address:		NO. 33-35 KENNEDY ROAD, WANCHAI, HONG KONG		屋宇署編號 BD Ref. No.	BD2/3020/18								
建築物類型/用途: Building Type / Use:		住戶康樂設施 Resident's Recreational Facilities											
總熱傳送值計算者 OTTV calculated by		<input type="checkbox"/> 1. 註冊專業工程師 1. Registered Professional Engineers <input checked="" type="checkbox"/> 2. 建築師 2. Architect <input type="checkbox"/> 3. 其他·請註明: 3. Others, please specify:											
分類 Classification		<input checked="" type="checkbox"/> 平台 Podium / <input type="checkbox"/> 樓塔 Tower											
層數 (住戶康樂設施) No. of Storeys (RRF)		2											
總樓面面積 Gross Floor Area		平方米 m <sup>2</sup>											
實用樓面面積 Usable Floor Area		平方米 m <sup>2</sup>											
外圍總面積 (包括窗戶) Total External Wall Area (including windows)		597.99	平方米 m <sup>2</sup>	窗戶與牆壁的比例 Window to Wall Ratio									
窗戶總面積 Total Window Area		108.3	平方米 m <sup>2</sup>	= 3610:19933									
天窗總面積 Total Skylight Area		0											
**加權平均U值 **Weighted Average U-value	不透光牆 Opaque Wall	2.549	瓦特/平方米 W/m <sup>2</sup>										
	窗戶 Window	4.453	瓦特/平方米 W/m <sup>2</sup>										
	不透光屋頂 Opaque Roof		瓦特/平方米 W/m <sup>2</sup>										
	天窗 Skylight		瓦特/平方米 W/m <sup>2</sup>										
窗戶 Window	玻璃類型 Glass Type	<input type="checkbox"/> 反射性 Reflective	面積 Area=	平方米m <sup>2</sup>	SC=	VLT=	%	ER=	%				
		<input checked="" type="checkbox"/> 透明 (F7) Clear	面積 Area=	93.46	平方米m <sup>2</sup>	SC=	0.91	VLT=	84	%	ER=	7	%
		<input checked="" type="checkbox"/> 透明 (F9) Clear	面積 Area=	14.84	平方米m <sup>2</sup>	SC=	0.95	VLT=	87	%	ER=	8	%
	雙層玻璃 Double Glazing	<input checked="" type="checkbox"/> 有 Yes <input type="checkbox"/> 無 No											
外遮光物 External Shading	外懸伸建物 Overhang		<input type="checkbox"/> 有 Yes <input checked="" type="checkbox"/> 無 No										
	側簷伸建物 Sidefin		<input type="checkbox"/> 有 Yes <input checked="" type="checkbox"/> 無 No										
天窗 Skylight	玻璃類型 Glass Type	<input type="checkbox"/> 反射性 Reflective	面積 Area=	平方米m <sup>2</sup>	SC=	VLT=	%	ER=	%				
		<input type="checkbox"/> 有色 Tinted	面積 Area=	平方米m <sup>2</sup>	SC=	VLT=	%	ER=	%				
		<input type="checkbox"/> 透明 Clear	面積 Area=	平方米m <sup>2</sup>	SC=	VLT=	%	ER=	%				
	雙層玻璃 Double Glazing	<input type="checkbox"/> 有 Yes <input type="checkbox"/> 無 No											
外遮光物 External Shading	外懸伸建物 Overhang		<input type="checkbox"/> 有 Yes <input type="checkbox"/> 無 No										
	側簷伸建物 Sidefin		<input type="checkbox"/> 有 Yes <input type="checkbox"/> 無 No										
**加權平均吸熱率值 **Weighted Average Absorptivity	牆壁 Wall	0											
	屋頂 Roof	0											
**加權平均密度值 **Weighted Average Density	牆壁 Wall	2,233.4											
	屋頂 Roof	公斤/平方米 kg/m <sup>2</sup>											
住戶康樂設施 總熱傳送值 OTTV <sub>RRF</sub>	牆壁 Wall	32.53											
	屋頂 Roof	0											
	總平均數 Overall Average	32.53											

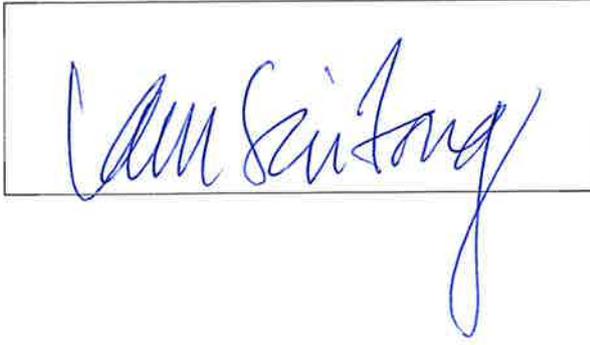
註:  
ER = 外部反射率  
SC = 遮光係數  
VLT = 可見光透光率  
\*\*按面積加權計算  
應以發展項目中使用比例最高的窗戶和天窗的資料為準。

請在適當的方格內填上「√」號。  
Please tick in box as appropriate.

Notes:  
ER = External Reflectance  
SC = Shading Coefficient  
VLT = Visible Light Transmittance  
\*\* Weighted by area  
Window and skylight data should represent the major proportion of its use in the development.



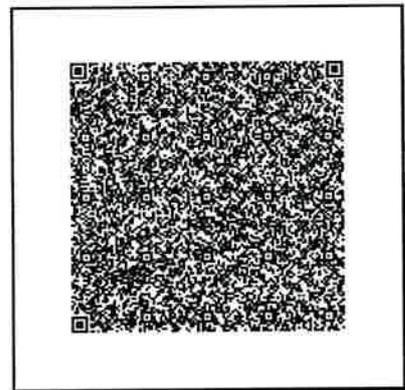
簽署\*  
Signature\*



任何失實核證或聲明可引致法律行動。##  
Any false certification or declaration  
may be subject to legal action.##

日期 Date

0	9	0	9	2	0	2	4
日	dd	月	mm	年	yyyy		



**OTTV CALCULATION FOR  
Resident's Recreational Facilities (RRF)**

**No. 33-35 Kennedy Road, Wanchai, Hong Kong**

**BD Ref. : BD2/3020/18**

**Date : 29 May 2024**

**Building (Energy Efficiency) Regulation**  
**Form OTTV 1**  
**Calculation of 'U' Value of Composite Wall/Roof**  
**and Details of Other Values**

Sheet No. : A \_\_\_\_\_ 1 \_\_\_\_\_.

BD Ref : \_\_\_\_\_ BD2/3020/18

Building address : No. 33-35 Kennedy Road, Wanchai, Hong Kong  
 Physical data of Opaque \*Wall / ~~Roof~~ \_\_\_\_\_  
 Facade Orientation facing: North East Elevation (Podium)  
 Solar factor (SF) is 138

*Wall / <del>Roof</del> Code No.	W1	W2	W3	W4	W5	W8
Location of Wall / <del>Roof</del>	LG1/F-G/F	LG1/F-G/F	LG1/F-G/F	LG1/F-G/F	LG1/F-G/F	LG1/F-G/F
External Finish Material	Coated Glass	Stone	Tiles	Alumium Panel	Plastering	Aluminium
Conductivity W/m2	1.05	1.50	1.50	160.00	0.72	160.00
Density kg/m <sup>3</sup>	2500	2500	2500	2800	1860	2800
Thickness m	0.01	0.025	0.01	0.003	0.005	0.003
Absorptivity (α)	1	0.85	0.85	0.88	0.3	0.4
Intermediate Component	Air Gap	Air Gap	Cement /sand render	Cement /sand render	Cement /sand render	-
Conductivity W/m2	-	-	0.72	0.72	0.72	-
Density kg/m <sup>3</sup>	-	-	1860	1860	1860	-
Thickness m	0.08	0.065	0.01	0.01	0.01	-
Intermediate Component	Concrete	Concrete	Concrete	Concrete	Concrete	-
Conductivity W/m2	2.16	2.16	2.16	2.16	2.16	-
Density kg/m <sup>3</sup>	2400	2400	2400	2400	2400	-
Thickness m	0.15	0.15	0.15	0.15	0.15	-
Intermediate Component	-	-	-	-	-	-
Conductivity W/m2	-	-	-	-	-	-
Density kg/m <sup>3</sup>	-	-	-	-	-	-
Thickness m	-	-	-	-	-	-
Intermediate Component	-	-	-	-	-	-
Conductivity W/m2	-	-	-	-	-	-
Density kg/m <sup>3</sup>	-	-	-	-	-	-
Thickness m	-	-	-	-	-	-
Intermediate Component	-	-	-	-	-	-
Conductivity W/m2	-	-	-	-	-	-
Density kg/m <sup>3</sup>	-	-	-	-	-	-
Thickness m	-	-	-	-	-	-
Internal Finish Material	White semi-gloss paint	-				
Conductivity W/m2	0.38	0.38	0.38	0.38	0.38	-
Density kg/m <sup>3</sup>	1120	1120	1120	1120	1120	-
Thickness m	0.01	0.01	0.01	0.01	0.01	-
Absorptivity (α)	0.3	0.3	0.3	0.3	0.3	-
"U" value of composite * Wall / <del>Roof</del>	1.311	1.759	2.346	2.345	2.346	6.097
Area of * Wall / <del>Roof</del> m <sup>2</sup>	20.21	14.72	0.00	66.54	10.56	37.36
Density of composite * Wall / <del>Roof</del> kg/m <sup>2</sup>	396.2	433.7	414.8	398.2	399.1	8.4
Equivalent temperature difference (TD <sub>EQ</sub> )	2.67	4.00	2.67	2.67	2.67	5.60

\* Delete as appropriate

**Building (Energy Efficiency) Regulation**  
**Form OTTV 1**  
**Calculation of 'U' Value of Composite Wall/Roof**  
**and Details of Other Values**

Sheet No. : A \_\_\_\_\_ 2 \_\_\_\_\_.

BD Ref : \_\_\_\_\_ BD2/3020/18

Building address : \_\_\_\_\_ No. 33-35 Kennedy Road, Wanchai, Hong Kong  
 Physical data of Opaque \*Wall / ~~Roof~~ \_\_\_\_\_  
 Facade Orientation facing: \_\_\_\_\_ South East Elevation (Podium)  
 Solar factor (SF) is \_\_\_\_\_ 197

*Wall / <del>Roof</del> Code No.	W1	W2	W4	W5
Location of Wall / <del>Roof</del>	LG1/F-G/F	LG1/F-G/F	LG1/F-G/F	LG1/F-G/F
External Finish Material	Coated Glass	Stone	Alumium Panel	Plastering
Conductivity W/m2	1.05	1.50	160.00	0.72
Density kg/m <sup>3</sup>	2500	2500	2800	1860
Thickness m	0.01	0.025	0.003	0.005
Absorptivity (α)	1	0.85	0.88	0.3
Intermediate Component	Air Gap	Air Gap	Cement /sand render	Cement /sand render
Conductivity W/m2	-	-	0.72	0.72
Density kg/m <sup>3</sup>	-	-	1860	1860
Thickness m	0.08	0.065	0.01	0.01
Intermediate Component	Concrete	Concrete	Concrete	Concrete
Conductivity W/m2	2.16	2.16	2.16	2.16
Density kg/m <sup>3</sup>	2400	2400	2400	2400
Thickness m	0.15	0.15	0.15	0.15
Intermediate Component	-	-	-	-
Conductivity W/m2	-	-	-	-
Density kg/m <sup>3</sup>	-	-	-	-
Thickness m	-	-	-	-
Intermediate Component	-	-	-	-
Conductivity W/m2	-	-	-	-
Density kg/m <sup>3</sup>	-	-	-	-
Thickness m	-	-	-	-
Intermediate Component	-	-	-	-
Conductivity W/m2	-	-	-	-
Density kg/m <sup>3</sup>	-	-	-	-
Thickness m	-	-	-	-
Internal Finish Material	White semi-gloss paint	White semi-gloss paint	White semi-gloss paint	White semi-gloss paint
Conductivity W/m2	0.38	0.38	0.38	0.38
Density kg/m <sup>3</sup>	1120	1120	1120	1120
Thickness m	0.01	0.01	0.01	0.01
Absorptivity (α)	0.3	0.3	0.3	0.3
"U" value of composite * Wall / <del>Roof</del>	1.311	1.759	2.345	2.346
Area of * Wall / <del>Roof</del> m <sup>2</sup>	2.08	7.28	20.88	27.60
Density of composite * Wall / <del>Roof</del> kg/m <sup>2</sup>	396.2	433.7	398.2	399.1
Equivalent temperature difference (T <sub>EQ</sub> )	2.71	4.00	2.71	2.71

\* Delete as appropriate

**Building (Energy Efficiency) Regulation**  
**Form OTTV 1**  
**Calculation of 'U' Value of Composite Wall/Roof**  
**and Details of Other Values**

Sheet No. : A \_\_\_\_\_ 3 \_\_\_\_\_.

BD Ref : \_\_\_\_\_ BD2/3020/18

Building address : \_\_\_\_\_ No. 33-35 Kennedy Road, Wanchai, Hong Kong  
 Physical data of Opaque \*Wall / ~~Roof~~ \_\_\_\_\_  
 Facade Orientation facing: \_\_\_\_\_ South West Elevation (Podium)  
 Solar factor (SF) is \_\_\_\_\_ 202

*Wall / <del>Roof</del> Code No.	W1	W3	W4	W5
Location of Wall / <del>Roof</del>	LG1/F-G/F	LG1/F-G/F	LG1/F-G/F	LG1/F-G/F
External Finish Material	Coated Glass	Tiles	Alumium Panel	Plastering
Conductivity W/m2	1.05	1.50	160.00	0.72
Density kg/m <sup>3</sup>	2500	2500	2800	1860
Thickness m	0.01	0.01	0.003	0.005
Absorptivity (α)	1	0.85	0.88	0.3
Intermediate Component	Air Gap	Cement /sand render	Cement /sand render	Cement /sand render
Conductivity W/m2	-	0.72	0.72	0.72
Density kg/m <sup>3</sup>	-	1860	1860	1860
Thickness m	0.08	0.01	0.01	0.01
Intermediate Component	Concrete	Concrete	Concrete	Concrete
Conductivity W/m2	2.16	2.16	2.16	2.16
Density kg/m <sup>3</sup>	2400	2400	2400	2400
Thickness m	0.15	0.15	0.15	0.15
Intermediate Component	-	-	-	-
Conductivity W/m2	-	-	-	-
Density kg/m <sup>3</sup>	-	-	-	-
Thickness m	-	-	-	-
Intermediate Component	-	-	-	-
Conductivity W/m2	-	-	-	-
Density kg/m <sup>3</sup>	-	-	-	-
Thickness m	-	-	-	-
Intermediate Component	-	-	-	-
Conductivity W/m2	-	-	-	-
Density kg/m <sup>3</sup>	-	-	-	-
Thickness m	-	-	-	-
Internal Finish Material	White semi-gloss paint	White semi-gloss paint	White semi-gloss paint	White semi-gloss paint
Conductivity W/m2	0.38	0.38	0.38	0.38
Density kg/m <sup>3</sup>	1120	1120	1120	1120
Thickness m	0.01	0.01	0.01	0.01
Absorptivity (α)	0.3	0.3	0.3	0.3
"U" value of composite * Wall / <del>Roof</del>	1.311	2.346	2.345	2.346
Area of * Wall / <del>Roof</del> m <sup>2</sup>	1.21	0.00	18.17	148.37
Density of composite * Wall / <del>Roof</del> kg/m <sup>2</sup>	396.2	414.8	398.2	399.1
Equivalent temperature difference (T <sub>EQ</sub> )	2.59	4.00	2.59	2.59

\* Delete as appropriate

**Building (Energy Efficiency) Regulation**  
**Form OTTV 1**  
**Calculation of 'U' Value of Composite Wall/Roof**  
**and Details of Other Values**

Sheet No. : A \_\_\_\_\_ 4 \_\_\_\_\_.

BD Ref : \_\_\_\_\_ BD2/3020/18

Building address : \_\_\_\_\_ No. 33-35 Kennedy Road, Wanchai, Hong Kong  
 Physical data of Opaque \*Wall / ~~Roof~~ \_\_\_\_\_  
 Facade Orientation facing: \_\_\_\_\_ North West Elevation (Podium)  
 Solar factor (SF) is \_\_\_\_\_ 138

*Wall / <del>Roof</del> Code No.	W1	W3	W4	W5
Location of Wall / <del>Roof</del>	LG1/F-G/F	LG1/F-G/F	LG1/F-G/F	LG1/F-G/F
External Finish Material	Coated Glass	Tiles	Alumium Panel	Plastering
Conductivity W/m2	1.05	1.50	160.00	0.72
Density kg/m <sup>3</sup>	2500	2500	2800	1860
Thickness m	0.01	0.01	0.003	0.005
Absorptivity (α)	1	0.85	0.88	0.3
Intermediate Component	Air Gap	Cement /sand render	Cement /sand render	Cement /sand render
Conductivity W/m2	-	0.72	0.72	0.72
Density kg/m <sup>3</sup>	-	1860	1860	1860
Thickness m	0.08	0.01	0.01	0.01
Intermediate Component	Concrete	Concrete	Concrete	Concrete
Conductivity W/m2	2.16	2.16	2.16	2.16
Density kg/m <sup>3</sup>	2400	2400	2400	2400
Thickness m	0.15	0.15	0.15	0.15
Intermediate Component	-	-	-	-
Conductivity W/m2	-	-	-	-
Density kg/m <sup>3</sup>	-	-	-	-
Thickness m	-	-	-	-
Intermediate Component	-	-	-	-
Conductivity W/m2	-	-	-	-
Density kg/m <sup>3</sup>	-	-	-	-
Thickness m	-	-	-	-
Intermediate Component	-	-	-	-
Conductivity W/m2	-	-	-	-
Density kg/m <sup>3</sup>	-	-	-	-
Thickness m	-	-	-	-
Internal Finish Material	White semi-gloss paint	White semi-gloss paint	White semi-gloss paint	White semi-gloss paint
Conductivity W/m2	0.38	0.38	0.38	0.38
Density kg/m <sup>3</sup>	1120	1120	1120	1120
Thickness m	0.01	0.01	0.01	0.01
Absorptivity (α)	0.3	0.3	0.3	0.3
"U" value of composite * Wall / <del>Roof</del>	1.311	2.346	2.345	2.346
Area of * Wall / <del>Roof</del> m <sup>2</sup>	0.00	23.04	0.00	84.79
Density of composite * Wall / <del>Roof</del> kg/m <sup>2</sup>	396.2	414.8	398.2	399.1
Equivalent temperature difference (T <sub>EQ</sub> )	2.45	2.45	2.45	2.45

\* Delete as appropriate

**Building (Energy Efficiency) Regulation**  
**Form OTTV 1**  
**Calculation of 'U' Value of Composite Wall/Roof**  
**and Details of Other Values**

Sheet No. : A \_\_\_\_\_ 5 \_\_\_\_\_.

BD Ref : \_\_\_\_\_ BD2/3020/18

Building address : \_\_\_\_\_ No. 33-35 Kennedy Road, Wanchai, Hong Kong  
 Physical data of Opaque \*Wall / ~~Roof~~ \_\_\_\_\_  
 Facade Orientation facing: \_\_\_\_\_ North West Elevation (Podium)  
 Solar factor (SF) is \_\_\_\_\_ 168

*Wall / <del>Roof</del> Code No.	W1	W2	W4	W5
Location of Wall / <del>Roof</del>	LG1/F-G/F	LG1/F-G/F	LG1/F-G/F	LG1/F-G/F
External Finish Material	Coated Glass	Stone	Alumium Panel	Plastering
Conductivity W/m2	1.05	1.50	160.00	0.72
Density kg/m <sup>3</sup>	2500	2500	2800	1860
Thickness m	0.01	0.025	0.003	0.005
Absorptivity (α)	1	0.85	0.88	0.3
Intermediate Component	Air Gap	Air Gap	Cement /sand render	Cement /sand render
Conductivity W/m2	-	-	0.72	0.72
Density kg/m <sup>3</sup>	-	-	1860	1860
Thickness m	0.08	0.065	0.01	0.01
Intermediate Component	Concrete	Concrete	Concrete	Concrete
Conductivity W/m2	2.16	2.16	2.16	2.16
Density kg/m <sup>3</sup>	2400	2400	2400	2400
Thickness m	0.15	0.15	0.15	0.15
Intermediate Component	-	-	-	-
Conductivity W/m2	-	-	-	-
Density kg/m <sup>3</sup>	-	-	-	-
Thickness m	-	-	-	-
Intermediate Component	-	-	-	-
Conductivity W/m2	-	-	-	-
Density kg/m <sup>3</sup>	-	-	-	-
Thickness m	-	-	-	-
Intermediate Component	-	-	-	-
Conductivity W/m2	-	-	-	-
Density kg/m <sup>3</sup>	-	-	-	-
Thickness m	-	-	-	-
Internal Finish Material	White semi-gloss paint	White semi-gloss paint	White semi-gloss paint	White semi-gloss paint
Conductivity W/m2	0.38	0.38	0.38	0.38
Density kg/m <sup>3</sup>	1120	1120	1120	1120
Thickness m	0.01	0.01	0.01	0.01
Absorptivity (α)	0.3	0.3	0.3	0.3
"U" value of composite * Wall / <del>Roof</del>	1.311	1.759	2.345	2.346
Area of * Wall / <del>Roof</del> m <sup>2</sup>	0.00	6.18	0.70	0.00
Density of composite * Wall / <del>Roof</del> kg/m <sup>2</sup>	396.2	433.7	398.2	399.1
Equivalent temperature difference (T <sub>EQ</sub> )	3.28	3.28	3.28	3.28

\* Delete as appropriate

# Building (Energy Efficiency) Regulation

## Form OTTV 1

### Calculation of 'U' Value of Composite Wall/Roof and Details of Other Values

Sheet No. : A \_\_\_\_\_ 6 \_\_\_\_\_.

BD Ref : \_\_\_\_\_ BD2/3020/18 \_\_\_\_\_

Building address : \_\_\_\_\_ No. 33-35 Kennedy Road, Wanchai, Hong Kong \_\_\_\_\_

Physical data of Opaque \*Wall/ Roof \_\_\_\_\_

Facade Orientation facing: \_\_\_\_\_ Roof (Podium) \_\_\_\_\_

Solar factor (SF) is \_\_\_\_\_ 264 \_\_\_\_\_

*Wall / Roof Code No.	R1	-	-	-
Location of Wall / Roof	Roof Slab	-	-	-
External Finish Material	Roof tile	-	-	-
Conductivity W/m°C	1.10	-	-	-
Density kg/m <sup>3</sup>	2100	-	-	-
Thickness m	0.015	-	-	-
Absorptivity (α)	0.65	-	-	-
Intermediate Component	Cement/sand screed	-	-	-
Conductivity W/m°C	0.72	-	-	-
Density kg/m <sup>3</sup>	1860	-	-	-
Thickness m	0.02	-	-	-
Intermediate Component	Polystyrene insulation	-	-	-
Conductivity W/m°C	0.03	-	-	-
Density kg/m <sup>3</sup>	25	-	-	-
Thickness m	0.05	-	-	-
Intermediate Component	0.02	-	-	-
Conductivity W/m°C	0.03	-	-	-
Density kg/m <sup>3</sup>	37	-	-	-
Thickness m	0.02	-	-	-
Intermediate Component	Concrete	-	-	-
Conductivity W/m°C	0.07	-	-	-
Density kg/m <sup>3</sup>	360	-	-	-
Thickness m	0.15	-	-	-
Intermediate Component	-	-	-	-
Conductivity W/m°C	-	-	-	-
Density kg/m <sup>3</sup>	-	-	-	-
Thickness m	-	-	-	-
Internal Finish Material	White semi-gloss paint	-	-	-
Conductivity W/m°C	-	-	-	-
Density kg/m <sup>3</sup>	-	-	-	-
Thickness m	-	-	-	-
Absorptivity (α)	0.3	-	-	-
"U" value of composite * Wall / Roof	0.406	-	-	-
Area of * Wall / Roof m <sup>2</sup>	0.00	-	-	-
Density of composite * Wall / Roof Kg/m <sup>2</sup>	467.2	-	-	-
Equivalent temperature difference (TD <sub>EQ</sub> )	9.75	-	-	-

\* Delete as appropriate

Building (Energy Efficiency) Regulation  
Form OTTV 2  
 Window / Rooflight Schedule

Sheet No. : B 1

BD Ref : BD2/3020/18

Building Address : No. 33-35 Kennedy Road, Wanchai, Hong Kong

Physical data on \*window / ~~rooflight~~

Facade Orientation facing : North East Elevation (Podium)

Solar Factor (SF) is 138

Window / <del>Rooflight</del> Code No.	F7	-	-	-
Location of *Window / <del>Rooflight</del>	LG1/F-G/F	-	-	-
Glazing type	Clear	-	-	-
Thickness m	0.03	-	-	-
Shading Coefficient (SC)	0.91	-	-	-
Type of shading device	unshaded	-	-	-
External Shading Multiplier (ESM)	1.00	-	-	-
Area of glazing m <sup>2</sup>	39.83	-	-	-

Building (Energy Efficiency) Regulation  
Form OTTV 2  
 Window / Rooflight Schedule

Sheet No. : B 2

BD Ref : BD2/3020/18

Building Address : No. 33-35 Kennedy Road, Wanchai, Hong Kong

Physical data on \*window / ~~rooflight~~

Facade Orientation facing : South East Elevation (Podium)

Solar Factor (SF) is 197

Window / <del>Rooflight</del> Code No.	F7	F9	-	-
Location of *Window / <del>Rooflight</del>	LG1/F-G/F	LG1/F-G/F	-	-
Glazing type	Clear	Clear	-	-
Thickness m	0.03	0.016	-	-
Shading Coefficient (SC)	0.91	0.95	-	-
Type of shading device	unshaded	unshaded	-	-
External Shading Multiplier (ESM)	1.00	1.00	-	-
Area of glazing m <sup>2</sup>	37.03	6.05	-	-

**Building (Energy Efficiency) Regulation**  
**Form OTTV 2**  
**Window / Rooflight Schedule**

Sheet No. : B 3

BD Ref : BD2/3020/18

Building Address : No. 33-35 Kennedy Road, Wanchai, Hong Kong

Physical data on \*window / ~~rooflight~~

Facade Orientation facing :

South West Elevation (Podium)

Solar Factor (SF) is

202

Window / <del>Rooflight</del> Code No.	F7	F9	-	-
Location of *Window / <del>Rooflight</del>	LG1/F-G/F	LG1/F-G/F	-	-
Glazing type	Clear	Clear	-	-
Thickness m	0.03	0.016	-	-
Shading Coefficient (SC)	0.91	0.95	-	-
Type of shading device	unshaded	unshaded	-	-
External Shading Multiplier (ESM)	1.00	1.00	-	-
Area of glazing m <sup>2</sup>	16.60	8.79	-	-

Building (Energy Efficiency) Regulation  
Form OTTV 2  
 Window / Rooflight Schedule

Sheet No. : B 4

BD Ref : BD2/3020/18

Building Address : No. 33-35 Kennedy Road, Wanchai, Hong Kong

Physical data on \*window / ~~rooflight~~

Facade Orientation facing : North West Elevation (Podium)

Solar Factor (SF) is 138

Window / <del>Rooflight</del> Code No.	F7	-	-	-
Location of *Window / <del>Rooflight</del>	LG1/F-G/F	-	-	-
Glazing type	Clear	-	-	-
Thickness m	0.03	-	-	-
Shading Coefficient (SC)	0.91	-	-	-
Type of shading device	unshaded	-	-	-
External Shading Multiplier (ESM)	1.00	-	-	-
Area of glazing m <sup>2</sup>	0.00	-	-	-

Building (Energy Efficiency) Regulation  
Form OTTV 2  
 Window / Rooflight Schedule

Sheet No. : B 5

BD Ref : BD2/3020/18

Building Address : No. 33-35 Kennedy Road, Wanchai, Hong Kong

Physical data on \*window / ~~rooflight~~

Facade Orientation facing :

North West Elevation (Podium)

Solar Factor (SF) is

168

Window / <del>Rooflight</del> Code No.	F7	-	-	-
Location of *Window / <del>Rooflight</del>	LG1/F-G/F	-	-	-
Glazing type	Clear	-	-	-
Thickness m	0.03	-	-	-
Shading Coefficient (SC)	0.91	-	-	-
Type of shading device	unshaded	-	-	-
External Shading Multiplier (ESM)	1.00	-	-	-
Area of glazing m <sup>2</sup>	0.00	-	-	-

# Building (Energy Efficiency) Regulation

## Form OTTV 2

### Window / Rooflight Schedule

Sheet No. : B 6

BD Ref : BD2/3020/18

Building Address : No. 33-35 Kennedy Road, Wanchai, Hong Kong

Physical data on \*window / ~~rooflight~~

Facade Orientation facing : Roof (Podium)

Solar Factor (SF) is 264

Window / Rooflight Code No.	-	-	-	-
Location of *Window / Rooflight	-	-	-	-
Glazing type	-	-	-	-
Thickness m	-	-	-	-
Shading Coefficient (SC)	-	-	-	-
Type of shading device	--	-	-	-
External Shading Multiplier (ESM)	-	-	-	-
Area of glazing m <sup>2</sup>	-	-	-	-

Window / Rooflight Code No.	-	-	-	-
Location of *Window / Rooflight	-	-	-	-
Glazing type	-	-	-	-
Thickness m	-	-	-	-
Shading Coefficient (SC)	-	-	-	-
Type of shading device	-	-	-	-
External Shading Multiplier (ESM)	-	-	-	-
Area of glazing m <sup>2</sup>	-	-	-	-

\* Delete as appropriate

## Building (Energy Efficiency) Regulation Form OTTV 3

### Calculation of OTTV of Individual Facade in Building Envelope

Sheet No. : C 1 .

BD Ref : BD2/3020/18

Building Address : No. 33-35 Kennedy Road, Wanchai, Hong Kong

Facade Orientation facing : North East Elevation (Podium)

#### Opaque \* Walls / Roofs

Code No.	Description	* Aw / A <sub>f</sub>	U	α	TD <sub>EQ</sub>	Sum
W1	Coated Glass	20.21	1.311	1.00	2.67	70.77
W2	Stone	14.72	1.759	0.85	4.00	88.04
W3	Tiles	0.00	2.346	0.85	2.67	0.00
W4	Aluminium Panel	66.54	2.345	0.88	2.67	366.70
W5	Plastering	10.56	2.346	0.30	2.67	19.84
W8	Aluminium	37.36	6.097	0.40	5.60	510.22
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
Subtotals		<u>149.39</u>	(A)		Heat Gain	<u>1055.57</u> (C)

#### Fenestration

Code No.	Description	* Afw / A <sub>f</sub>	SC	ESM	SF	Sum
F7	Clear	39.83	0.91	1.00	138.00	5001.85
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
Subtotals		<u>39.83</u>	(B)		Heat Gain	<u>5001.85</u> (D)

Gross Heat Gain = (C+D) 6057.42  
 Gross Area = (A+B) 189.22

OTTV (C+D)/(A+B) = 32.01 W/m<sup>2</sup>

## Building (Energy Efficiency) Regulation Form OTTV 3

### Calculation of OTTV of Individual Facade in Building Envelope

Sheet No. : C 2

BD Ref : BD2/3020/18

Building Address : No. 33-35 Kennedy Road, Wanchai, Hong Kong

Facade Orientation facing : South East Elevation (Podium)

#### Opaque \* Walls / Roofs

Code No.	Description	* Aw / A <sub>f</sub>	U	α	TD <sub>EQ</sub>	Sum
W1	Coated Glass	2.08	1.311	1.00	2.71	7.39
W2	Stone	7.28	1.759	0.85	4.00	43.54
W4	Aluminium Panel	20.88	2.345	0.88	2.71	116.79
W5	Plastering	27.60	2.346	0.30	2.71	52.63
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
Subtotals		57.84	(A)		Heat Gain	220.36 (C)

#### Fenestration

Code No.	Description	* A <sub>fw</sub> / A <sub>f</sub>	SC	ESM	SF	Sum
F7	Clear	37.03	0.91	1.00	197.00	6638.37
F9	Clear	6.05	0.95	1.00	197.00	1132.26
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
Subtotals		43.08	(B)		Heat Gain	7770.63 (D)

Gross Heat Gain = (C+D) 7990.99  
 Gross Area = (A+B) 100.92

OTTV (C+D)/(A+B) = 79.18 W/m<sup>2</sup>

\* Delete as appropriate

## Building (Energy Efficiency) Regulation Form OTTV 3

### Calculation of OTTV of Individual Facade in Building Envelope

Sheet No. : C 3

BD Ref : BD2/3020/18

Building Address : No. 33-35 Kennedy Road, Wanchai, Hong Kong

Facade Orientation facing : South West Elevation (Podium)

#### Opaque \* Walls / Roofs

Code No.	Description	* Aw / A <sub>f</sub>	U	α	TD <sub>EQ</sub>	Sum
W1	Coated Glass	1.21	1.311	1.00	2.59	4.11
W3	Tiles	0.00	2.346	0.85	4.00	0.00
W4	Alumium Panel	18.17	2.345	0.88	2.59	97.13
W5	Plastering	148.37	2.346	0.30	2.59	270.41
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
Subtotals		167.75	(A)	Heat Gain		371.65 (C)

#### Fenestration

Code No.	Description	* Afw / A <sub>f</sub>	SC	ESM	SF	Sum
F7	Clear	16.60	0.91	1.00	202.00	3051.41
F9	Clear	8.79	0.95	1.00	202.00	1686.80
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
Subtotals		25.39	(B)	Heat Gain		4738.21 (D)

Gross Heat Gain = (C+D) 5109.86  
 Gross Area = (A+B) 193.14

OTTV (C+D)/(A+B) = 26.46 W/m<sup>2</sup>

\* Delete as appropriate

## Building (Energy Efficiency) Regulation Form OTTV 3

### Calculation of OTTV of Individual Facade in Building Envelope

Sheet No. : C 4

BD Ref : BD2/3020/18

Building Address : No. 33-35 Kennedy Road, Wanchai, Hong Kong

Facade Orientation facing : North West Elevation (Podium)

#### Opaque \* Walls / Roofs

Code No.	Description	* Aw / A <sub>f</sub>	U	α	TD <sub>EQ</sub>	Sum
W1	Coated Glass	0.00	1.311	1.00	2.45	0.00
W3	Tiles	23.04	2.346	0.85	2.45	112.54
W4	Aluminium Panel	0.00	2.345	0.88	2.45	0.00
W5	Plastering	84.79	2.346	0.30	2.45	146.18
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
Subtotals		<u>107.83</u>	(A)		Heat Gain	<u>258.72</u>

#### Fenestration

Code No.	Description	* A <sub>fw</sub> / A <sub>f</sub>	SC	ESM	SF	Sum
F7	Clear	0.00	0.91	1.00	138.00	0.00
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
Subtotals		<u>0.00</u>	(B)		Heat Gain	<u>0.00</u>

Gross Heat Gain = (C+D) 258.72  
 Gross Area = (A+B) 107.83

OTTV (C+D)/(A+B) = 2.40 W/m<sup>2</sup>

\* Delete as appropriate

## Building (Energy Efficiency) Regulation Form OTTV 3

### Calculation of OTTV of Individual Facade in Building Envelope

Sheet No. : C 5

BD Ref : BD2/3020/18

Building Address : No. 33-35 Kennedy Road, Wanchai, Hong Kong

Facade Orientation facing : North West Elevation (Podium)

#### Opaque \* Walls / Roofs

Code No.	Description	* Aw / A <sub>f</sub>	U	α	TD <sub>EQ</sub>	Sum
W1	Coated Glass	0.00	1.311	1.00	3.28	0.00
W2	Stone	6.18	1.759	0.85	3.28	30.31
W4	Aluminium Panel	0.70	2.345	0.88	3.28	4.74
W5	Plastering	0.00	2.346	0.30	3.28	0.00
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
Subtotals		<u>6.88</u>	(A)		Heat Gain	<u>35.05</u> (C)

#### Fenestration

Code No.	Description	* Afw / A <sub>f</sub>	SC	ESM	SF	Sum
F7	Clear	0.00	0.91	1.00	168.00	0.00
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
Subtotals		<u>0.00</u>	(B)		Heat Gain	<u>0.00</u> (D)

Gross Heat Gain = (C+D) 35.05  
 Gross Area = (A+B) 6.88

OTTV (C+D)/(A+B) = 5.09 W/m<sup>2</sup>

\* Delete as appropriate

# Building (Energy Efficiency) Regulation

## Form OTTV 3

### Calculation of OTTV of Individual Facade in Building Envelope

Sheet No. : C 6 .

BD Ref : BD2/3020/18

Building Address :

No. 33-35 Kennedy Road, Wanchai, Hong Kong

Facade Orientation facing :

Roof (Podium)

#### Opaque \* Walls / Roofs

Code No.	Description	* Aw / A <sub>f</sub>	U	α	TD <sub>EQ</sub>	Sum
R1	Roof Slab	0.00	0.406	0.65	9.75	0.00
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
Subtotals		0.00	(A)	Heat Gain		0.00 (C)

#### Fenestration

Code No.	Description	* Afw / A <sub>f</sub>	SC	ESM	SF	Sum
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
Subtotals		0.00	(B)	Heat Gain		0.00 (D)

Gross Heat Gain = (C+D) = 0.00  
 Gross Area = (A+B) = 0.00

OTTV = (C+D)/(A+B) = 0.00 W/m<sup>2</sup>

\* Delete as appropriate

Building (Energy Efficiency) Regulation  
Form OTTV 4  
 Summary of OTTV of Building Envelope

Sheet No. : D 1 .

BD Ref : BD2/3020/18

Building Address : No. 33-35 Kennedy Road, Wanchai, Hong Kong

Total Envelop Heat Gain (\* ~~Tower~~ / Podium )

Facade Orientation		Gross Area from Form OTTV 3	Gross Heat Gain from Form OTTV 3
a	North East	189.22	6057.42
b	South East	100.92	7990.99
c	South West	193.14	5109.86
d	North West	107.83	258.72
e	East	6.88	35.05
f			
g			
h			
Subtotal :		597.99	19452.04

(E) (G)

Roof			
a	Podium roof	0.00	0.00
b			
Subtotal :		0.00	0.00

(F) (H)

~~Tower~~ / Podium Walls OTTV = G / E = **32.53 W/m<sup>2</sup>**

~~Tower~~ / Podium Roofs OTTV = H / F = **0.00 W/m<sup>2</sup>**

~~Tower~~ / Podium OTTV = (G+H) / (E+F) = **32.53 W/m<sup>2</sup>**  
 < **50 W/m<sup>2</sup> ok.**



XINYI GLASS ENGINEERING (DONGGUAN) CO., LTD.  
THERMOTECNICAL & OPTICS PERFORMANCE DATA

PROJECT NAME:

QCT240527002

NO.	Description of sample	Visible Light (%)			Solar Energy (%)		U-Value (W/m <sup>2</sup> .k)				Shading Co.	SHGC
		Tran.	Refl.		Tran.	Refl.	Winter Night		Summer Day			
			Outer	Inner			Air	Ar	Air	Ar		
F7 → 1	(57) 15mm超白+2.28PVB+15mm超白	84	7	7	71	7	4.82	/	4.40	/	0.91	0.79
F9 → 2	(69.610.61) 8mm超白+1.52PVB+8mm超白	87	8	8	78	7	5.28	/	4.79	/	0.95	0.83

The Data is calculated via window 5.2 which is provided by LBNL, based on ASHRAE NFRC2001 standard

Solar spectrum: 300-2500nm, visible light is 380-780nm.

Winter nighttime: Outdoor temperature: -18°C, indoor temperature: 21°C, windspeed: 5.5m/s, no sunlight.

Summer daytime: Outdoor temperature: 32°C, indoor temperature: 24°C, windspeed: 2.8m/s, solar density: 783w/m<sup>2</sup>.

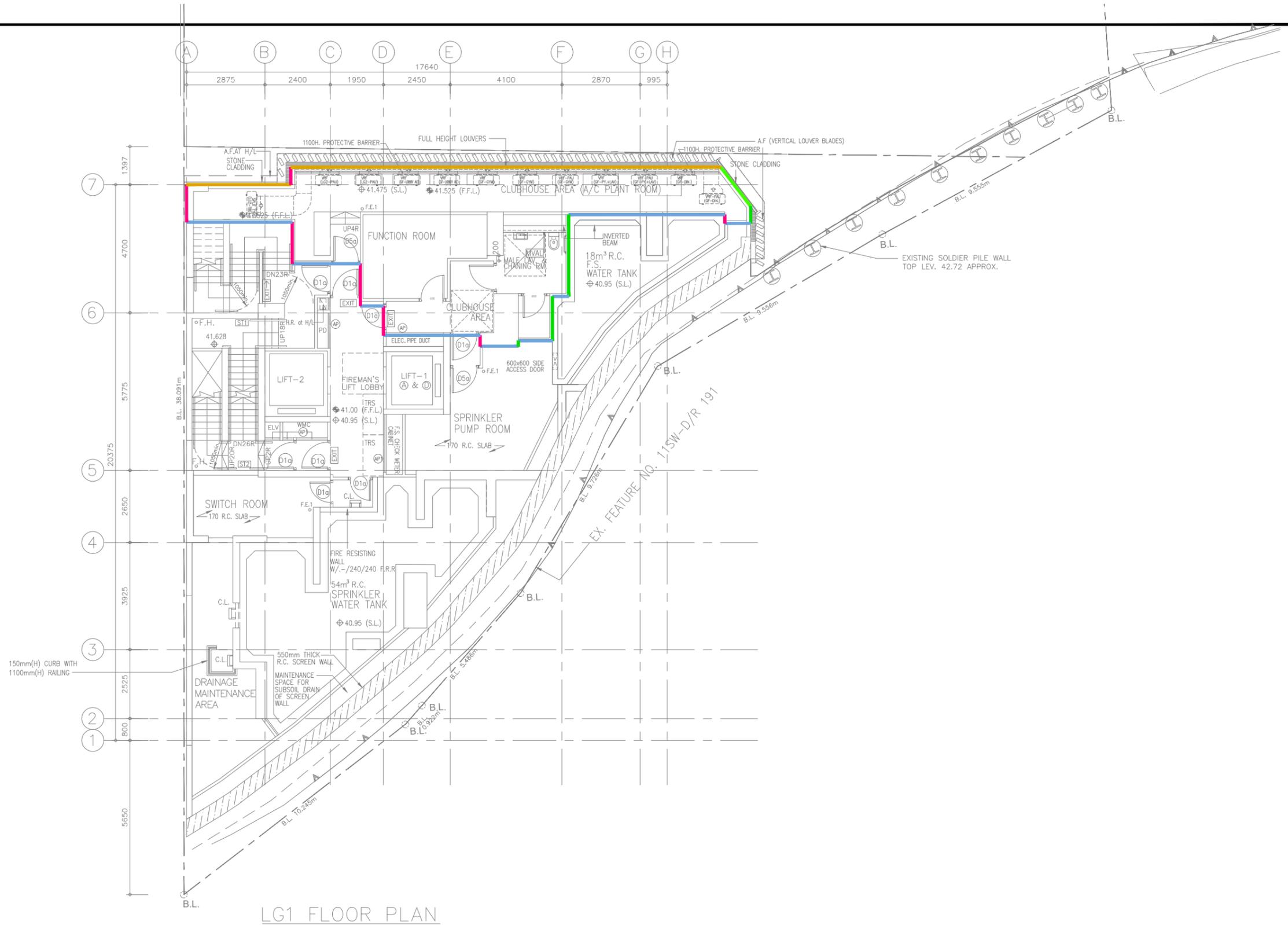
The calculations are base on 1000\*1000 specimen, only for reference.

Above glass datas allow for ±3% difference as a tolerance and U-Value is ±0.2W/m2.k

XINYI GLASS ENGINEERING (DONGGUAN) CO., LTD.



31.18 1.53 52.08



LG1 FLOOR PLAN

EXTERNAL WALLS TO BE INCLUDED IN OTTV RRF CALCULATION

- NORTH EAST ELEVATION
- SOUTH EAST ELEVATION
- SOUTH WEST ELEVATION
- NORTH WEST ELEVATION
- EAST ELEVATION
- ROOF

Revisions	Description	Certified by
A (MAY 2024)	GENERAL REVISION	

**ARCHITECT:**  
  
T.K. TSUI & ASSOCIATES LTD.

**CONSULTANT:**  
  
**CONSOLIDATED CONSULTING ENGINEERS LTD.**  
 ELECTRICAL MECHANICAL & BUILDING SERVICES ENGINEERING  
 集益顧問工程師有限公司

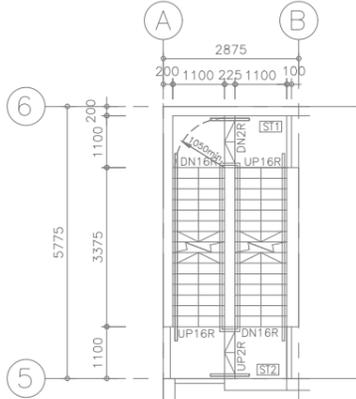
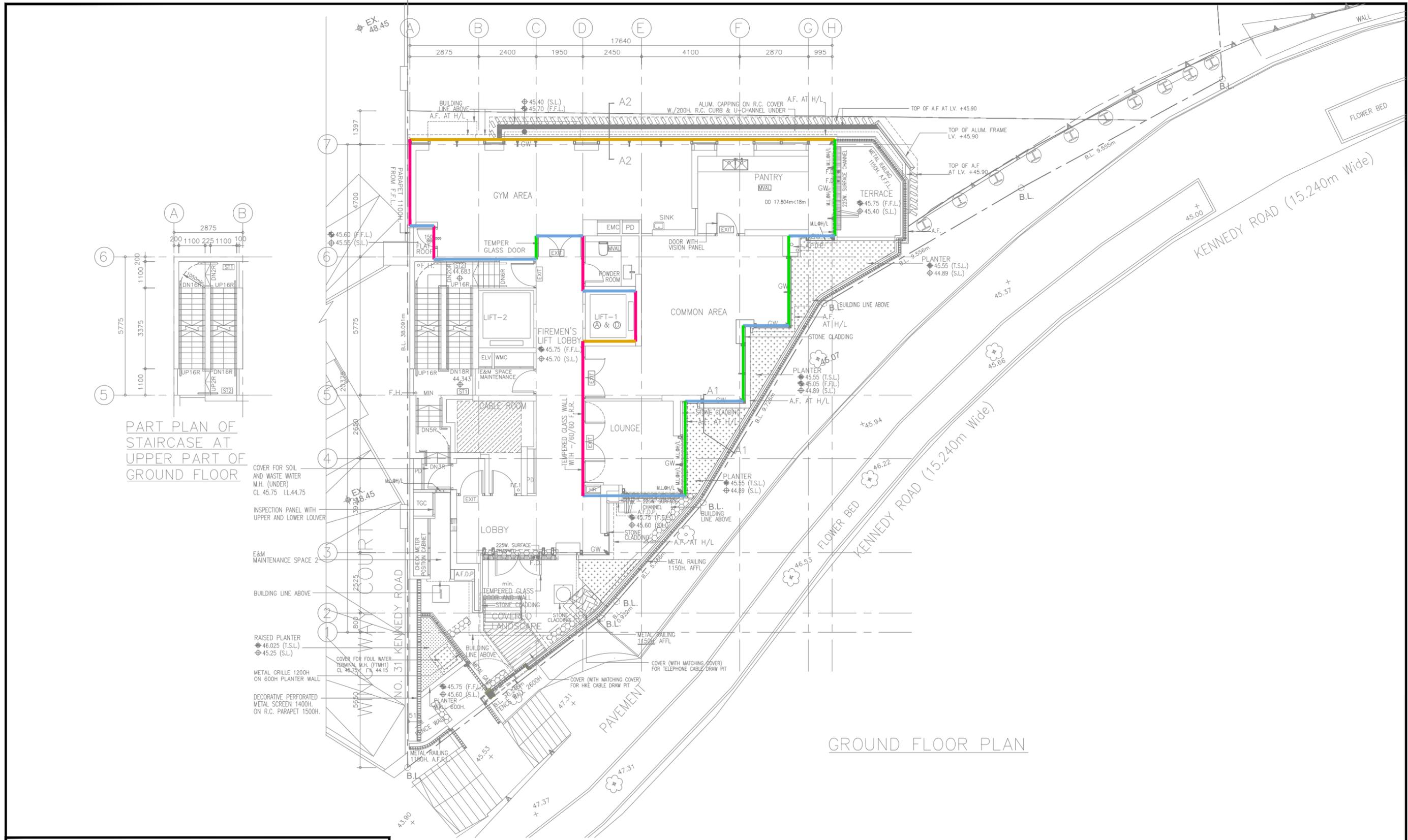
**PROJECT:**  
RESIDENTIAL DEVELOPMENT AT  
NO. 33-35 KENNEDY ROAD,  
WANCHAI, HONG KONG

**DRAWING TITLE:**  
LG1/F PLAN

**NOTES:**  
1. THIS DRAWING SHALL BE READ CONJUNCTION WITH RELEVANT SPECIFICATIONS, CONDITIONS OF CONTRACT AND OTHER RELATED DRAWINGS. ANY DISCREPANCY FOUND THEREIN SHALL BE NOTIFIED TO THE CONSULTING ENGINEERS IMMEDIATELY.  
2. DO NOT SCALE THE DETAILS. USE WRITTEN DIMENSIONS.  
3. MEASUREMENTS TO EXISTING WORKS TO BE VERIFIED ON SITE.  
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OTTV DRAWING FOR REFERENCE

SCALE: 1:150 (A3)	APPROVED BY: TL
DRAWN BY: TFL	DATE: MAY 2023
CHECKED BY: TCL	
DRAWING NO. CCE 777/OTTV-R01	REVISION A



PART PLAN OF STAIRCASE AT UPPER PART OF GROUND FLOOR

GROUND FLOOR PLAN

**EXTERNAL WALLS TO BE INCLUDED IN OTTV RRF CALCULATION**

<span style="color: orange;">—</span>	NORTH EAST ELEVATION
<span style="color: green;">—</span>	SOUTH EAST ELEVATION
<span style="color: blue;">—</span>	SOUTH WEST ELEVATION
<span style="color: magenta;">—</span>	NORTH WEST ELEVATION
<span style="color: red;">—</span>	EAST ELEVATION
<span style="background-color: grey; width: 10px; height: 10px; display: inline-block;"></span>	ROOF

Revisions	Description	Certified by
A (MAY 2024)	GENERAL REVISION	

**ARCHITECT:**  
  
T.K. TSUI & ASSOCIATES LTD.

**CONSULTANT:**  
  
CONSOLIDATED CONSULTING ENGINEERS LTD.  
ELECTRICAL MECHANICAL & BUILDING SERVICES ENGINEERING  
集益顧問工程師有限公司

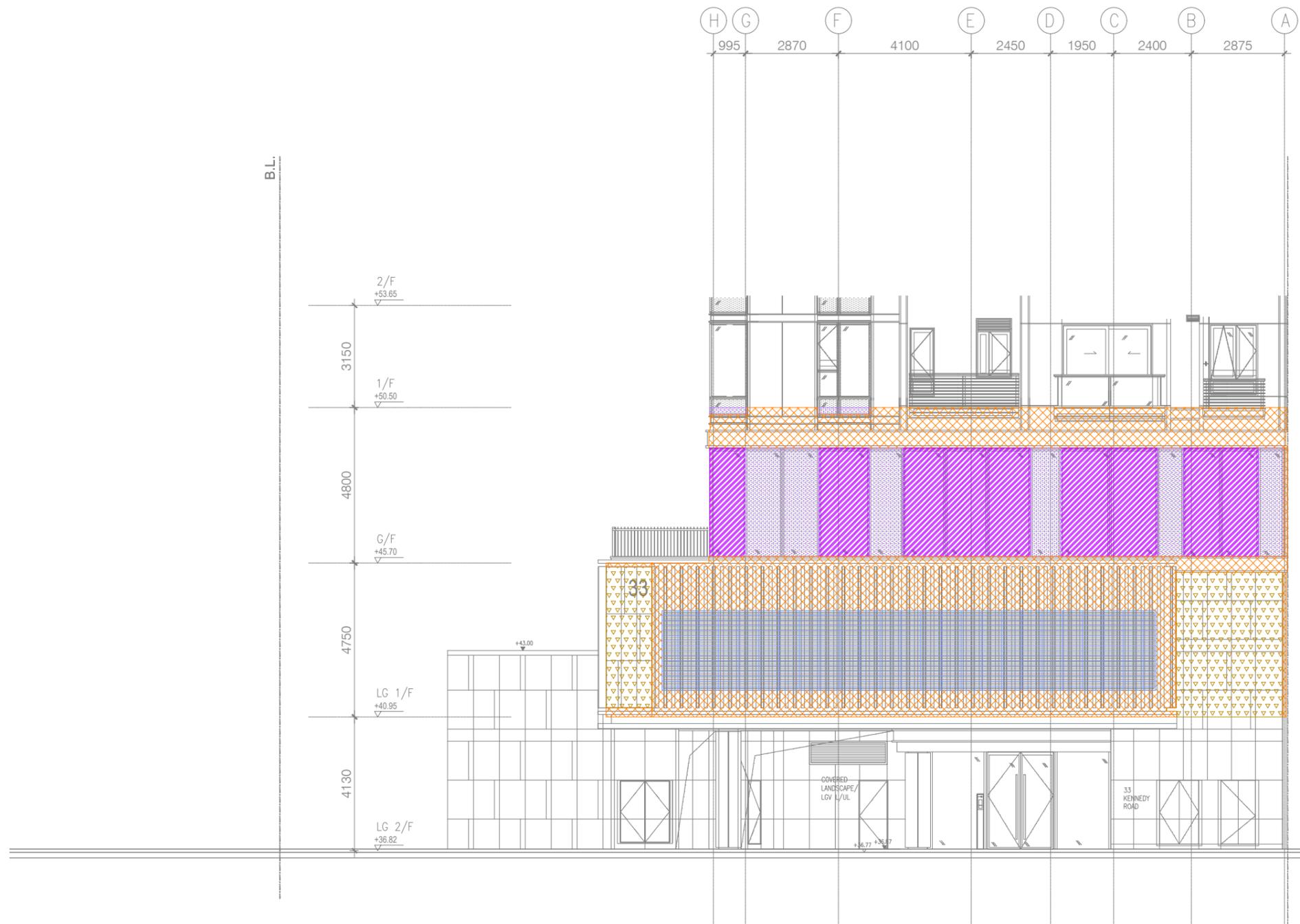
**PROJECT:**  
RESIDENTIAL DEVELOPMENT AT  
NO. 33-35 KENNEDY ROAD,  
WANCHAI, HONG KONG

**DRAWING TITLE:**  
G/F PLAN

**NOTES:**  
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**OTTV DRAWING FOR REFERENCE**

SCALE: 1:150 (A3)	APPROVED BY: TL
DRAWN BY: TFL	DATE: MAY 2023
CHECKED BY: TCL	
DRAWING NO. CCE 777/OTTV-R02	REVISION A



**NORTH EAST ELEVATION**

**LEGEND**

W1 SPANDREL	F7 GLASS F7
W2 STONE	F9 GLASS F9
W3 TILES	F11 GLASS F11
W4 ALUM. PANEL	
W5 PLASTERING	
W8 LOUVRE	

Revisions	Description	Certified by
A (MAY 2024)	GENERAL REVISION	

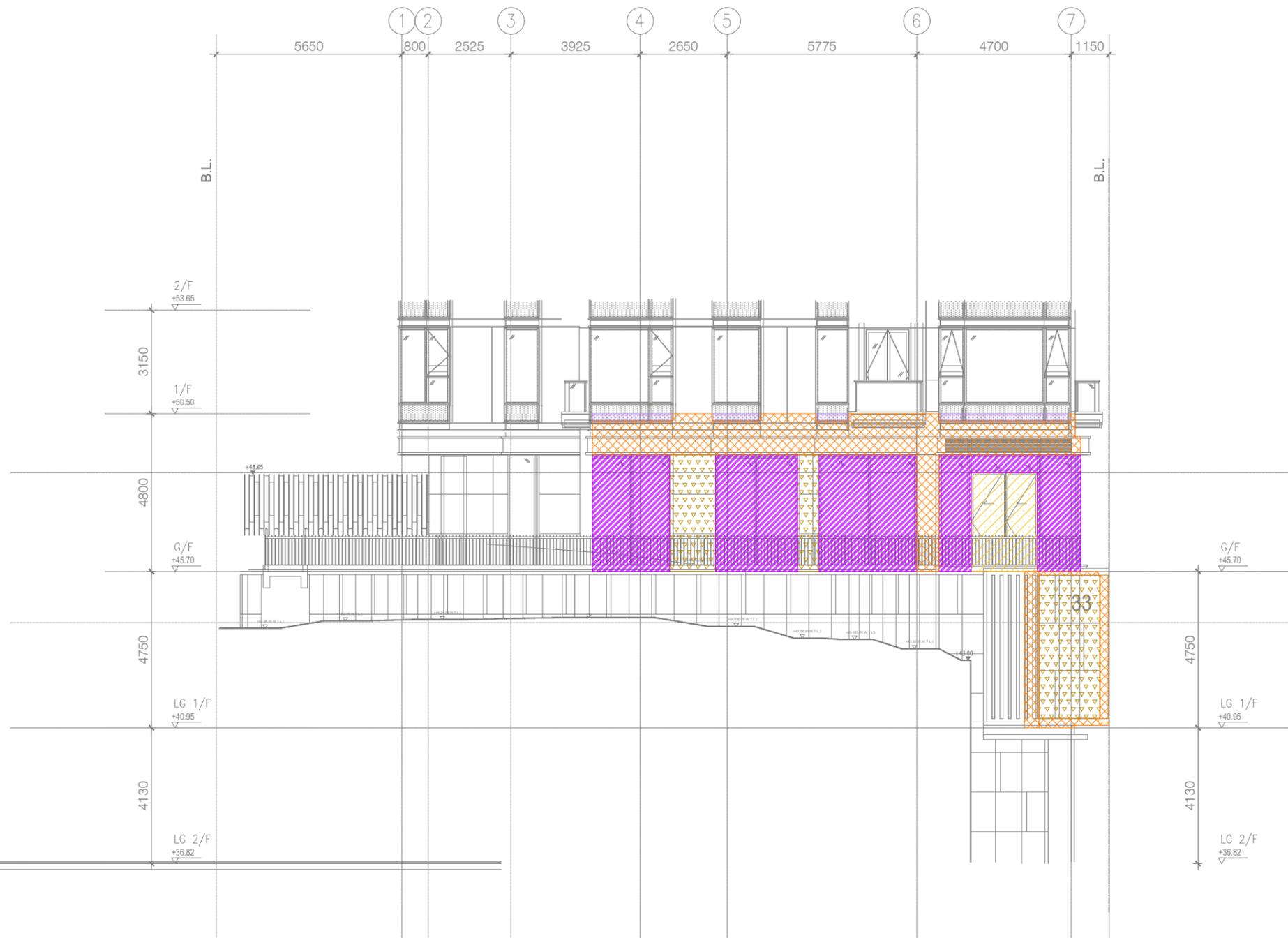
**ARCHITECT:**  
  
T.K. TSUI & ASSOCIATES LTD.

**CONSULTANT:**  
  
CONSOLIDATED CONSULTING ENGINEERS LTD.  
ELECTRICAL MECHANICAL & BUILDING SERVICES ENGINEERING  
集益顧問工程師有限公司

**PROJECT:**  
RESIDENTIAL DEVELOPMENT AT  
NO. 33-35 KENNEDY ROAD,  
WANCHAI, HONG KONG  
  
**DRAWING TITLE:**  
NORTH EAST ELEVATION

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SCALE: 1:150 (A3)	APPROVED BY: TL
DRAWN BY: TFL	DATE: MAY 2023
CHECKED BY: TCL	
DRAWING NO. CCE 777/OTTV-R03	REVISION A



**SOUTH EAST ELEVATION**

**LEGEND**

W1 SPANDREL	F7 GLASS F7
W2 STONE	F9 GLASS F9
W3 TILES	F11 GLASS F11
W4 ALUM. PANEL	
W5 PLASTERING	
W8 LOUVRE	

Revisions	Description	Certified by
A (MAY 2024)	GENERAL REVISION	

**ARCHITECT:**  
  
T.K. TSUI & ASSOCIATES LTD.

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CONSOLIDATED CONSULTING ENGINEERS LTD.  
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集益顧問工程師有限公司

**PROJECT:**  
RESIDENTIAL DEVELOPMENT AT  
NO. 33-35 KENNEDY ROAD,  
WANCHAI, HONG KONG

**DRAWING TITLE:**  
SOUTH EAST ELEVATION

**NOTES:**

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SCALE: 1:150 (A3)	APPROVED BY: TL
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CHECKED BY: TCL	
DRAWING NO. CCE 777/OTTV-R04	REVISION A



**SOUTH WEST ELEVATION**

**LEGEND**

	W1 SPANDREL		F7 GLASS F7
	W2 STONE		F9 GLASS F9
	W3 TILES		F11 GLASS F11
	W4 ALUM. PANEL		
	W5 PLASTERING		
	W8 LOUVRE		

Revisions	Description	Certified by
A (MAY 2024)	GENERAL REVISION	

**ARCHITECT:**  
  
T.K. TSUI & ASSOCIATES LTD.

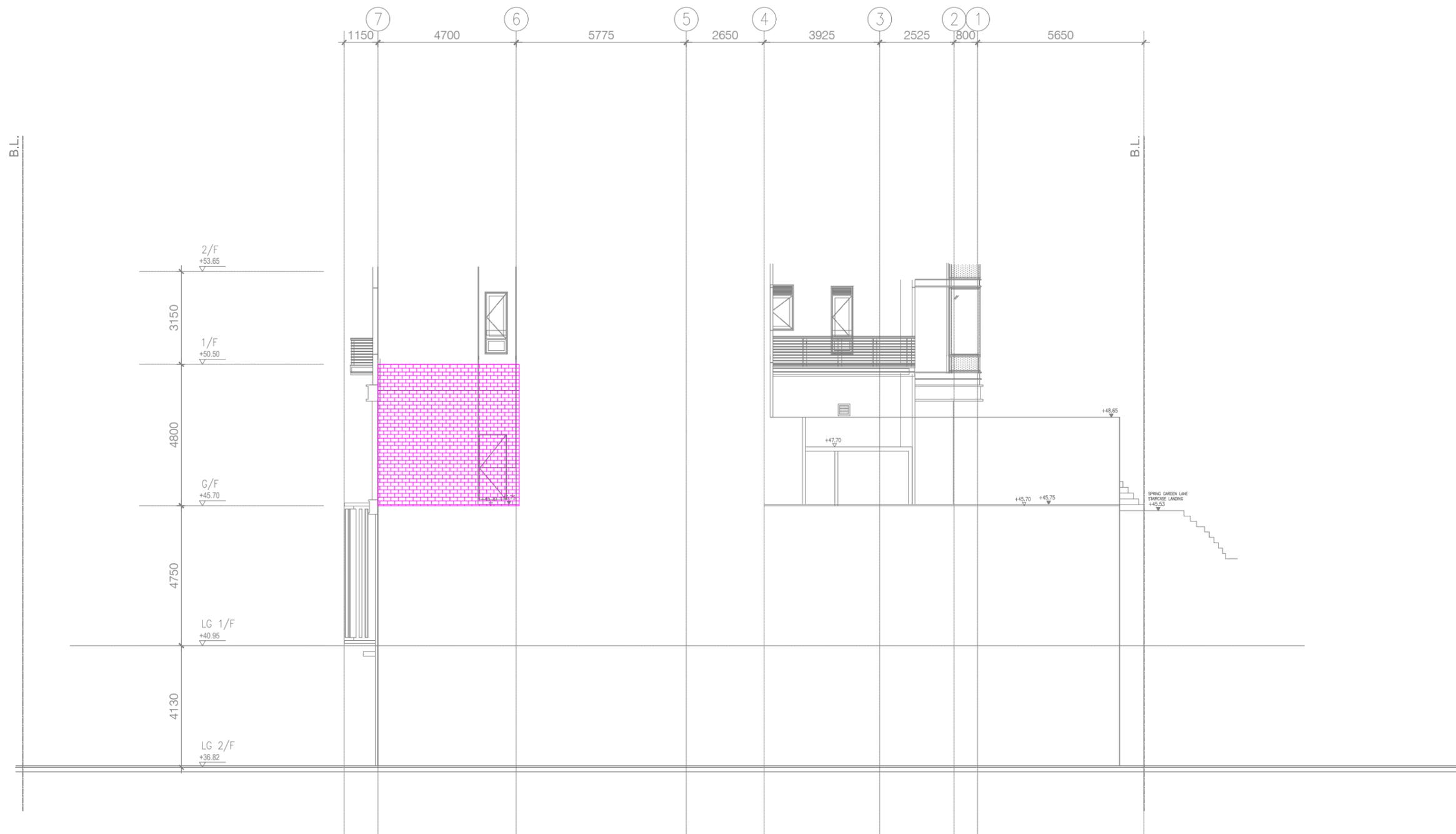
**CONSULTANT :**  
  

**CONSOLIDATED CONSULTING ENGINEERS LTD.**  
 ELECTRICAL MECHANICAL & BUILDING SERVICES ENGINEERING  
 集益顧問工程師有限公司

**PROJECT:**  
RESIDENTIAL DEVELOPMENT AT  
NO. 33-35 KENNEDY ROAD,  
WANCHAI, HONG KONG  
  
**DRAWING TITLE:**  
SOUTH WEST ELEVATION

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OTTV DRAWING FOR REFERENCE			
SCALE: 1:150 (A3)	APPROVED BY: TL	DRAWN BY: TFL	DATE: MAY 2023
CHECKED BY: TCL	DRAWING NO. CCE 777/OTTV-R05	REVISION A	



**NORTH WEST ELEVATION**

**LEGEND**

	W1 SPANDREL		F7 GLASS F7
	W2 STONE		F9 GLASS F9
	W3 TILES		F11 GLASS F11
	W4 ALUM. PANEL		
	W5 PLASTERING		
	W8 LOUVRE		

Revisions	Description	Certified by
A (MAY 2024)	GENERAL REVISION	

**ARCHITECT:**  
  
T.K. TSUI & ASSOCIATES LTD.

**CONSULTANT:**  
  
CONSOLIDATED CONSULTING ENGINEERS LTD.  
ELECTRICAL MECHANICAL & BUILDING SERVICES ENGINEERING  
集益顧問工程師有限公司

**PROJECT:**  
RESIDENTIAL DEVELOPMENT AT  
NO. 33-35 KENNEDY ROAD,  
WANCHAI, HONG KONG  
  
**DRAWING TITLE:**  
NORTH WEST ELEVATION

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<b>OTTV DRAWING FOR REFERENCE</b>	
SCALE: 1:150 (A3)	APPROVED BY: TL
DRAWN BY: TFL	DATE: MAY 2023
CHECKED BY: TCL	
DRAWING NO. CCE 777/OTTV-R06	REVISION A



# 住宅熱傳送值的摘要匯表 RTTV Summary Sheet

請在適當的方格內填上「√」號。  
please tick in box as appropriate.

**Notes:**  
ER = External Reflectance  
SC = Shading Coefficient  
VLT = Visible Light Transmittance  
Window and skylight data should represent the major proportion of its use in the development.

**註:**  
ER = 外部反射率  
SC = 遮光系數  
VLT = 可見光透光率  
應以發展項目中使用比例最高的窗戶和天窗的資料為準。

**PNAP  
APP-156  
附錄 A  
Appendix A**

電郵地址  
E-mail Address

作認收電郵之用 (電子呈交適用)  
 For acknowledgement email (e-submission)

地址  
Address: NO. 33-35 KENNEDY ROAD, WANCHAI, HONG KONG

屋宇署檔號  
BD Ref. No. BD2/3020/18

建築物類型 :  
Building Type: 住宅  
Residential

住宅熱傳送值計算者  
RTTV calculated by

1. 註冊專業工程師  
1. Registered Professional Engineers

2. 建築師  
2. Architect

3. 其他，請註明：  
3. Others, please specify:

層數 (住宅單位)  
No. of Storeys  
(Residential Units) **25**

表 1 Table 1

當作符合牆壁住宅熱傳送值 Deemed to Satisfy RTTV <sub>Wall</sub>									
外牆朝向方位 Facade Orientation Facing									
平均吸收率值 Average Absorptivity									
窗戶與牆壁的平均比例 Average Window to Wall Ratio									
玻璃遮光系數 Shading Coefficient of Glazing									
外牆的平均遮光系數 Average Shading Coefficient of Facade									
可見光透光率 Visible Light Transmittance	%	%	%	%	%	%	%	%	%
外部反射率 External Reflectance	%	%	%	%	%	%	%	%	%

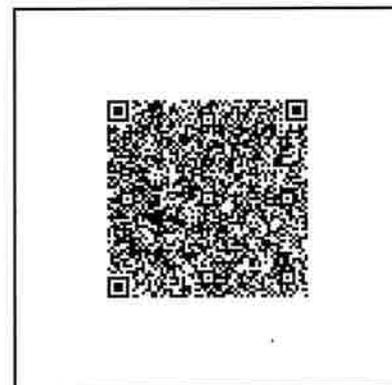


表 2 Table 2

牆壁住宅熱傳送值 RTTV <sub>Wall</sub>																									
外牆朝向方位 Facade Orientation Facing		NORTH EAST						SOUTH EAST						SOUTH WEST						NORTH WEST					
牆壁方位系數 Wall Orientation Factor		0.924						1.051						1.092						0.965					
外牆總面積 (住宅單位) Total External Wall Area (Residential Units)		1,047.99		窗戶與牆壁的比例 Window to Wall Ratio		= 38503:1047		1,656.24		窗戶與牆壁的比例 Window to Wall Ratio		= 71777:1656		1,200.66		窗戶與牆壁的比例 Window to Wall Ratio		= 12012:2001		635.44		窗戶與牆壁的比例 Window to Wall Ratio		= 7947:63544	
窗戶總面積 Total Window Area		385.03 m <sup>2</sup>		= 38503:1047		717.77 m <sup>2</sup>		= 71777:1656		720.72 m <sup>2</sup>		= 12012:2001		79.47 m <sup>2</sup>		= 7947:63544									
熱傳導 Heat Conduction	不透光牆 Opaque Wall	3.34 瓦特/平方米 W/m <sup>2</sup>						3.27 瓦特/平方米 W/m <sup>2</sup>						2.21 瓦特/平方米 W/m <sup>2</sup>						8.27 瓦特/平方米 W/m <sup>2</sup>					
	窗戶 Window	0.36 瓦特/平方米 W/m <sup>2</sup>						0.48 瓦特/平方米 W/m <sup>2</sup>						0.69 瓦特/平方米 W/m <sup>2</sup>						0.19 瓦特/平方米 W/m <sup>2</sup>					
窗戶 Window	玻璃類型 Glass Type	Code No.	Type	Area (m <sup>2</sup> )	SC	VLT	ER	Code No.	Type	Area (m <sup>2</sup> )	SC	VLT	ER	Code No.	Type	Area (m <sup>2</sup> )	SC	VLT	ER	Code No.	Type	Area (m <sup>2</sup> )	SC	VLT	ER
		G1	Tinted	127.4	0.44	52%	18%	G1	Tinted	529.3	0.44	52%	18%	G1	Tinted	490.5	0.44	52%	18%	G1	Tinted	56.04	0.44	52%	18%
		G3	Tinted	217.8	0.45	53%	18%	G3	Tinted	87.55	0.45	53%	18%	G3	Tinted	106.3	0.45	53%	18%	G3	Tinted	2.54	0.45	53%	18%
		G3A	Tinted	15.59	0.44	50%	18%	G3A	Tinted	0	0.44	50%	18%	G3A	Tinted	0	0.44	50%	18%	G3A	Tinted	0.66	0.44	50%	18%
		G14	Clear	1.26	10.1	89%	8%	G14	Clear	0	10.1	89%	8%	G14	Clear	1.54	10.1	89%	8%	G14	Clear	18.5	10.1	89%	8%
		G15	Tinted	23	0.45	52%	18%	G15	Tinted	101	0.45	52%	18%	G15	Tinted	122.4	0.45	52%	18%	G15	Tinted	1.73	0.45	52%	18%
	雙層玻璃 Double Glazing	<input checked="" type="checkbox"/> 有 Yes <input type="checkbox"/> 無 No						<input checked="" type="checkbox"/> 有 Yes <input type="checkbox"/> 無 No						<input checked="" type="checkbox"/> 有 Yes <input type="checkbox"/> 無 No						<input checked="" type="checkbox"/> 有 Yes <input type="checkbox"/> 無 No					
外遮光物 External Shading	外懸伸建物 Overhang	<input checked="" type="checkbox"/> 有 Yes <input type="checkbox"/> 無 No						<input checked="" type="checkbox"/> 有 Yes <input type="checkbox"/> 無 No						<input checked="" type="checkbox"/> 有 Yes <input type="checkbox"/> 無 No						<input checked="" type="checkbox"/> 有 Yes <input type="checkbox"/> 無 No					
	側簷伸建物 Sidefin	<input checked="" type="checkbox"/> 有 Yes <input type="checkbox"/> 無 No						<input type="checkbox"/> 有 Yes <input checked="" type="checkbox"/> 無 No						<input type="checkbox"/> 有 Yes <input checked="" type="checkbox"/> 無 No						<input checked="" type="checkbox"/> 有 Yes <input type="checkbox"/> 無 No					
穿透玻璃的太陽輻射量 Solar Radiation through Glazing		5.68 瓦特/平方米 W/m <sup>2</sup>						8.19 瓦特/平方米 W/m <sup>2</sup>						12.14 瓦特/平方米 W/m <sup>2</sup>						2.61 瓦特/平方米 W/m <sup>2</sup>					
平均吸熱率值 Average Absorptivity		0.57						0.61						0.65						0.81					
各幅外牆的 牆壁住宅熱傳送值 RTTV <sub>Wall</sub> at each facade		9.39 瓦特/平方米 W/m <sup>2</sup>						11.94 瓦特/平方米 W/m <sup>2</sup>						15.05 瓦特/平方米 W/m <sup>2</sup>						11.07 瓦特/平方米 W/m <sup>2</sup>					
總牆壁住宅熱傳送值 Overall RTTV <sub>Wall</sub>		12.05 瓦特/平方米 W/m <sup>2</sup>																							

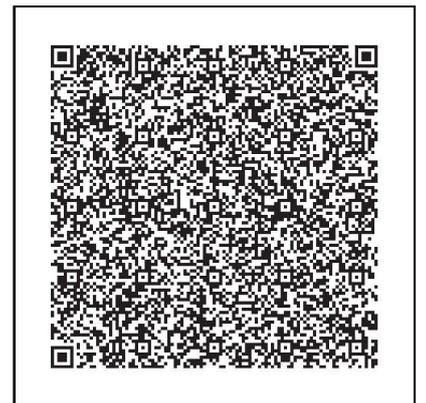


表 3 Table 3

屋頂住宅熱傳送值 RTTV <sub>Roof</sub>		
屋頂方位系數 Roof Orientation Factor	2.16	
屋頂總面積 (住宅單位) Total Roof Area (Residential Units)	95.93 平方米 m <sup>2</sup>	
天窗總面積 Total Skylight Area	0 平方米 m <sup>2</sup>	
熱傳導 Heat Conduction	屋頂 Roof	2.8 瓦特/平方米 W/m <sup>2</sup>
	天窗 Skylight	0 瓦特/平方米 W/m <sup>2</sup>
天窗 Skylight	玻璃類型 Glass Type	<input type="checkbox"/> 反射性 Reflective 面積 = 平方米 Area = m <sup>2</sup> SC = VLT = % ER = %
		<input type="checkbox"/> 有色 Tinted 面積 = 平方米 Area = m <sup>2</sup> SC = VLT = % ER = %
		<input type="checkbox"/> 透明 Clear 面積 = 平方米 Area = m <sup>2</sup> SC = VLT = % ER = %
	雙層玻璃 Double Glazing	<input type="checkbox"/> 有 Yes <input type="checkbox"/> 無 No
	外遮光物 External Shading	<input type="checkbox"/> 有 Yes <input type="checkbox"/> 無 No
穿透玻璃的太陽輻射量 Solar Radiation through Glazing	0 瓦特/平方米 W/m <sup>2</sup>	
平均吸熱率值 (屋頂) Average Absorptivity (roof)	0.7	
總屋頂住宅熱傳送值 Overall RTTV <sub>Roof</sub>	2.8 瓦特/平方米 W/m <sup>2</sup>	

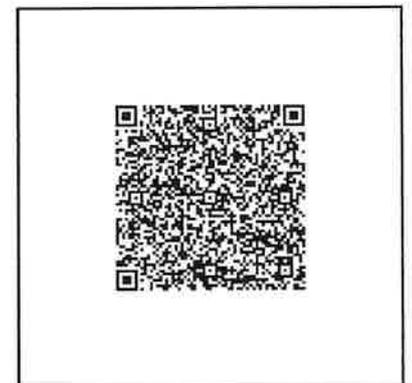
簽署\*  
Signature\*



任何失實核證或聲明可引致法律行動。##  
Any false certification or declaration  
may be subject to legal action.##

日期 Date

9	0	9	2	0	2	4	0
日 dd	月 mm	年 yyyy					



RTTV Calculation

Building Address : Residential Development at No. 33-35 Kennedy Road, Wanchai, Hong Kong

BD REF. No. : 2/3020/18

Date : 17 Sep 2024

Sheet no. 0

**Guidelines on Design and Construction Requirements for Energy Efficiency of Residential Buildings 2014**  
**Form RTTV (Wall) 1 - Calculation of RTTV<sub>wall</sub> of Each Facade**

Sheet No. 1 Residential Development at No. 33-35 Kennedy Road, Wanchai, Hong Kong  
 Building Address 20/20/18

North East  
 Facade Orientation Facing 1047.99  
 Window to Wall Ratio (WWR) 0.37 Gross Wall Area (A<sub>g</sub>) = 1047.99  
 Wall Orientation Factor (W<sub>o</sub>) = 0.924

Part 1 - Calculation of Heat Conduction through Opaque Walls

Components / Details	Units	NE-W1	NE-W2	NE-W3	NE-W4
External Finish Material		Metals/Alloys	Coated Glass	Aluminum Panel	Aluminum
Conductivity	W/mK	1.50	1.05	160.00	160.00
Thickness	m	0.05	0.00	0.00	0.003
Average Absorptivity	(α)	0.57	0.57	0.57	0.57
Intermediate component		Cement/sand render	Aluminum panel	Cement / Sand render	
Conductivity	W/mK	0.72	160.00	0.72	
Thickness	m	0.01	0.00	0.01	
Intermediate component		Concrete wall	Mineral wool felt	Concrete	
Conductivity	W/mK	2.16	0.04	2.16	
Thickness	m	0.15	0.04	0.15	
Intermediate component		Gypsum plaster	Air Gap	White semi-glass paint	
Conductivity	W/mK	0.38	0.00	0.38	
Thickness	m	0.01	0.15	0.01	
Intermediate component		Concrete wall			
Conductivity	W/mK	2.16			
Thickness	m	0.20			
Intermediate component		Gypsum plaster			
Conductivity	W/mK	0.38			
Thickness	m	0.01			
Intermediate component					
Conductivity	W/mK				
Thickness	m				
Intermediate component					
Conductivity	W/mK				
Thickness	m				
U-value of Opaque Area (U <sub>o</sub> )	W/m <sup>2</sup> K	3.81	0.88	2.78	6.19
Opaque Wall Area (A <sub>o</sub> )	m <sup>2</sup>	64.61	33.58	542.78	1.98
Heat Conduction = 3.57 (W/m <sup>2</sup> K) U <sub>o</sub> A <sub>o</sub> U <sub>o</sub> A <sub>o</sub>	W/m <sup>2</sup>	0.55	0.64	2.73	0.02

Heat Conduction through Opaque Walls = 3.57 (W/m<sup>2</sup>K) U<sub>o</sub> A<sub>o</sub> U<sub>o</sub> A<sub>o</sub>  
 = 3.34 W/m<sup>2</sup> Where i = 1, 2, ..., n

Part 2 - Calculation of Heat Conduction through Glazing

Components / Details	Units	NE-G1 (F1)	NE-G2 (F2)	NE-G3 (F3)	NE-G4 (F4)	NE-G5 (F5)
Glazing Type		Tinted	Tinted	Tinted	Tinted	Tinted
Thickness	mm	39	30	30	30	34
Glazing Area (A <sub>g</sub> )	m <sup>2</sup>	127.40	6.90	51.48	15.59	23.00
U-value of Glazing (U <sub>g</sub> )	W/m <sup>2</sup> K	1.84	1.66	1.66	1.66	1.65
Heat Conduction = 0.64 (W/m <sup>2</sup> K) U <sub>g</sub> A <sub>g</sub>	W/m <sup>2</sup>	0.12	0.01	0.05	0.01	0.02

Heat Conduction through Glazing = 0.64 (W/m<sup>2</sup>K) U<sub>g</sub> A<sub>g</sub> U<sub>g</sub> A<sub>g</sub>  
 = 0.36 W/m<sup>2</sup> where i = 1, 2, ..., n

Part 3 - Calculation of Solar Radiation through Glazing

Components / Details	Units	NE-G1 (F1)	NE-G2 (F2)	NE-G3 (F3)	NE-G4 (F4)	NE-G5 (F5)
Glazing Type		Tinted	Tinted	Tinted	Tinted	Tinted
Thickness	mm	39	30	30	30	34
Glazing Area (A <sub>g</sub> )	m <sup>2</sup>	127.40	6.90	51.48	15.59	23.00
Shading Coefficient of Glazing (SC <sub>g</sub> )		0.44	0.45	0.45	0.44	0.45
Visible Light Transmittance (VLT)	%	52	53	53	50	52
External Reflectance (ER)	%	18	18	18	18	18
External Shading Multiplier (ESM)		1.000	1.000	0.800	1.000	1.000
Solar Radiation = 41.75 (W/m <sup>2</sup> K) ESM SC <sub>g</sub> A <sub>g</sub>	W/m <sup>2</sup>	2.06	0.11	0.68	2.05	0.38

Solar Radiation through Glazing = 41.75 (W/m<sup>2</sup>K) ESM SC<sub>g</sub> A<sub>g</sub> ESM SC<sub>g</sub> A<sub>g</sub>  
 = 5.68 W/m<sup>2</sup> where i = 1, 2, ..., n

Solar Radiation through Glazing = 41.75 (W/m<sup>2</sup>K) ESM SC<sub>g</sub> A<sub>g</sub> ESM SC<sub>g</sub> A<sub>g</sub>  
 = 5.68 W/m<sup>2</sup> where i = 1, 2, ..., n

Summary of RTTV of North East  
 = 3.34 + 0.36 = 3.70 W/m<sup>2</sup>  
 = 9.39 W/m<sup>2</sup> + 5.68 = 15.07 W/m<sup>2</sup>

# Guidelines on Design and Construction Requirements for Energy Efficiency of Residential Buildings 2014

## Form RTTV (Wall) 1 - Calculation of RTTV<sub>wall</sub> of Each Facade

Sheet No. 2 Residential Development at No. 33-35, Kennedy Road, Wan Chai, Hong Kong BD Ref No. 2/302018

Building Address South East Gross Wall Area (A<sub>g</sub>) = 1656.24

Facade Orientation Facing 0.43 Wall Orientation Factor (G<sub>w</sub>) = 1.051

Window to Wall Ratio (WWR) 0.43

Part 1 - Calculation of Heat Conduction through Opaque Walls

Components / Details		Units	SE-W1	SE-W2	SE-W3	SE-W4
External Finish Material	Mosaic tiles	W/mK	1.50	Coated Glass	Aluminum Panel	Aluminum
Conductivity			1.50	1.05	160.00	160.00
Thickness		m	0.005	0.010	0.010	0.030
Average Absorptivity	(α)		0.61	0.61		0.61
Intermediate component	Cement/sand render	W/mK	0.72	Aluminum panel	Cement / Sand render	
Conductivity			0.72	160.00	0.72	
Thickness		m	0.01	0.00	0.01	
Intermediate component	Concrete wall	W/mK	2.16	Mineral wool fill	Concrete	
Conductivity			2.16	0.04	2.16	
Thickness		m	0.15	0.04	0.15	
Intermediate component	Gypsum plaster	W/mK	0.38	Air Gap	White semi-glass paint	
Conductivity			0.38	0.00	0.38	
Thickness		m	0.01	0.15	0.01	
Intermediate component	Concrete wall	W/mK	2.16	Concrete wall		
Conductivity			2.16	2.16		
Thickness		m	0.20	0.20		
Intermediate component	Gypsum plaster	W/mK	0.38	Gypsum plaster		
Conductivity			0.38	0.38		
Thickness		m	0.01	0.01		
Internal Finish Material		W/mK				
Conductivity						
Thickness		m				
U-value of Opaque Area (U <sub>op</sub> )		W/m <sup>2</sup> K	3.61	0.68	2.78	6.09
Opaque Wall Area (A <sub>op</sub> )		m <sup>2</sup>	78.15	152.61	707.71	0.00
Heat Conduction = 3.57(A <sub>w</sub> /A <sub>g</sub> ) U <sub>w</sub> A <sub>w</sub> G <sub>w</sub>		W/m <sup>2</sup>	0.39	0.14	2.74	0.00

Heat Conduction through Opaque Walls =  $3.57(A_w/A_g) U_w A_w G_w$  where i = 1, 2, ..., n

= 3.27 W/m<sup>2</sup>

Part 2 - Calculation of Heat Conduction through Glazing

Components / Details		Units	SE-G1(F1)	SE-G2(F2)	SE-G3(F3)	SE-G4(F4)	SE-G5(F5)
Glazing Type			Tinted	Tinted	Tinted	Tinted	Tinted
Thickness		mm	39	30	30	30	34
Glazing Area (A <sub>gl</sub> )		m <sup>2</sup>	529.27	11.29	72.38	3.88	100.95
U-value of Glazing (U <sub>gl</sub> )		W/m <sup>2</sup> K	1.64	1.66	1.66	1.66	1.65
Heat Conduction = 0.64(A <sub>w</sub> /A <sub>g</sub> ) U <sub>w</sub> G <sub>w</sub>		W/m <sup>2</sup>	0.35	0.01	0.05	0.00	0.07

Heat Conduction through Glazing =  $0.64(A_w/A_g) U_w G_w$  where i = 1, 2, ..., n

= 0.48 W/m<sup>2</sup>

Part 3 - Calculation of Solar Radiation through Glazing

Components / Details		Units	SE-G1(F1)	SE-G2(F2)	SE-G3(F3)	SE-G4(F4)	SE-G5(F5)
Glazing Type			Tinted	Tinted	Tinted	Tinted	Tinted
Thickness		mm	39	30	30	30	34
Glazing Area (A <sub>gl</sub> )		m <sup>2</sup>	529.27	11.29	72.38	3.88	100.95
Shading Coefficient of Glazing (SC <sub>g</sub> )		%	0.44	0.45	0.45	0.45	0.45
Visible Light Transmittance (VLT)		%	52	53	53	53	52
External Reflectance (ER)		%	18	18	18	18	18
External Shading Multiplier (ES <sub>c</sub> )			1.000	1.000	0.747	0.747	1.000
Solar Radiation = 41.75(A <sub>w</sub> /A <sub>g</sub> )(SC <sub>g</sub> )(ES <sub>c</sub> )G <sub>w</sub>		W/m <sup>2</sup>	6.17	0.13	0.64	0.03	1.20

Solar Radiation through Glazing =  $41.75(A_w/A_g)(SC_g)(ES_c)G_w$  where i = 1, 2, ..., n

= 8.19 W/m<sup>2</sup>

Summary of RTTV at South East

= 3.27 + 0.48 + 8.19

= 11.94 W/m<sup>2</sup>

**Guidelines on Design and Construction Requirements for Energy Efficiency of Residential Buildings 2014**  
**Form RTTV (Wall) 1 - Calculation of RTTV<sub>wall</sub> of Each Facade**

Sheet No. 3 BD Ref No. 2002018  
 Residential Development at No. 33-35 Kennedy Road, Wanchai, Hong Kong

Facade Orientation Facing South West Gross Wall Area (A<sub>g</sub>) = 1200.85  
 Window to Wall Ratio (WWR) 0.00 Wall Orientation Factor (G<sub>w</sub>) = 1.092

**Part 1 - Calculation of Heat Conduction through Opaque Walls**

Components / Details		Units	SW-W1	SW-W2	SW-W3	SW-W4	Code No.
Description	External Finish Material		Mosaic tiles	Coated Glass	Aluminum Panel	Aluminum	
Conductivity		W/mK	1.50	1.05	160.00	160.00	
Thickness		m	0.005	0.010	0.010	0.030	
Average Absorptivity		(α)	0.65	0.65	0.65	0.65	
Intermediate component			Concrete/sand render	Aluminum panel	Concrete/Sand render		
Conductivity		W/mK	0.72	160.00	0.72		
Thickness		m	0.01	0.00	0.01		
Intermediate component			Concrete wall	Mineral wool felt	Concrete		
Conductivity		W/mK	2.16	0.04	2.16		
Thickness		m	0.15	0.04	0.15		
Intermediate component			Gypsum plaster	Air Gap	White semi-gloss paint		
Conductivity		W/mK	0.36	0.00	0.36		
Thickness		m	0.01	0.15	0.01		
Intermediate component			Concrete wall	Concrete wall			
Conductivity		W/mK	2.16	2.16			
Thickness		m	0.20	0.20			
Intermediate component			Gypsum plaster	Gypsum plaster			
Conductivity		W/mK	0.36	0.36			
Thickness		m	0.01	0.01			
Internal Finish Material							
Conductivity		W/mK					
Thickness		m					
U-value of Opaque Area (U <sub>op</sub> )		W/m <sup>2</sup> K	3.61	0.68	2.78	6.09	
Opaque Wall Area (A <sub>op</sub> )		m <sup>2</sup>	6.80	138.22	334.51	0.41	
Heat Conduction = 3.57(A <sub>op</sub> /A <sub>g</sub> ) U <sub>op</sub> G <sub>w</sub>		W/m <sup>2</sup>	0.05	0.20	1.96	0.01	

Heat Conduction through Opaque Walls = 3.57(A<sub>op</sub>/A<sub>g</sub>) U<sub>op</sub> G<sub>w</sub> where i = 1, 2, ..., n  
 = 2.21 W/m<sup>2</sup>

**Part 2 - Calculation of Heat Conduction through Glazing**

Components / Details		Units	SW-G1(F1)	SW-G3(F3)	SW-G3-2(F3)	SW-G14(F14)	SW-G15(F15)	Code No.
Description	Glazing Type		Tinted	Tinted	Tinted	Clear	Tinted	
Thickness		mm	39	30	30	12	34	
Glazing Area (A <sub>g</sub> )		m <sup>2</sup>	490.47	22.36	80.08	3.88	122.39	
U-value of Glazing (U <sub>g</sub> )		W/m <sup>2</sup> K	1.64	1.66	1.66	5.06	1.65	
Heat Conduction = 0.64 (A <sub>g</sub> /A <sub>g</sub> ) U <sub>g</sub> G <sub>w</sub>		W/m <sup>2</sup>	0.47	0.02	0.09	0.00	0.12	

Heat Conduction through Glazing = 0.64 (A<sub>g</sub>/A<sub>g</sub>) U<sub>g</sub> G<sub>w</sub> where i = 1, 2, ..., n  
 = 0.69 W/m<sup>2</sup>

**Part 3 - Calculation of Solar Radiation through Glazing**

Components / Details		Units	SW-G1(F1)	SW-G3(F3)	SW-G3-2(F3)	SW-G14(F14)	SW-G15(F15)	Code No.
Description	Glazing Type		Tinted	Tinted	Tinted	Clear	Tinted	
Thickness		mm	39	30	30	12	34	
Glazing Area (A <sub>g</sub> )		m <sup>2</sup>	490.47	22.36	80.08	3.88	122.39	
Shading Coefficient of Glazing (SC <sub>g</sub> )			0.44	0.45	0.45	1.01	0.45	
Visible Light Transmittance (VLT)		%	52	53	53	88	52	
External Reflectance (ER)		%	18	18	18	8	18	
External Shading Multiplier (ESC)			1.000	1.000	1.000	0.722	1.000	
Solar Radiation = 41.75 (A <sub>g</sub> /A <sub>g</sub> ) (SC <sub>g</sub> ) (ESC <sub>g</sub> ) G <sub>w</sub>		W/m <sup>2</sup>	8.19	0.36	1.37	0.06	2.08	

Solar Radiation through Glazing = 41.75 (A<sub>g</sub>/A<sub>g</sub>) (SC<sub>g</sub>) (ESC<sub>g</sub>) G<sub>w</sub> where i = 1, 2, ..., n  
 = 12.14 W/m<sup>2</sup>

Summary of RTTV at South West  
 = 2.21 + 0.69 + 12.14  
 = 15.05 W/m<sup>2</sup>

**Guidelines on Design and Construction Requirements for Energy Efficiency of Residential Buildings 2014**  
**Form RTTV (Wall) 1 - Calculation of RTTV<sub>wall</sub> of Each Facade**

Sheet No. 4 BD Ref No. 2/020/18  
 Building Address Residential Development at No. 33-35 Kennedy Road, Wanchai, Hong Kong  
 Facade Orientation Facing North West Gross Wall Area (A<sub>g</sub>) = 635.44  
 Window to Wall Ratio (WWR) 0.13 Wall Orientation Factor (C<sub>w</sub>) = 0.955

**Part 1 - Calculation of Heat Conduction through Opaque Walls**

Components / Details		Units	NW-W1	NW-W2	NW-W3	NW-W4
Description	Mosaic tiles			Coated Glass	Aluminum Panel	Aluminum
External Finish Material		W/mK	1.50	1.05	150.00	150.00
Thickness		m	0.005	0.010	0.010	0.030
Average Absorptivity (α)			0.81	0.81	0.81	0.81
Intermediate component	Cement/ sand render	W/mK		Aluminum panel	Cement/ Sand render	
Conductivity		m	0.72	150.00	0.72	
Thickness		m	0.01	0.00	0.01	
Intermediate component	Concrete wall	W/mK		Mineral wool felt	Concrete	
Conductivity		m	2.16	0.04	2.16	
Thickness		m	0.15	0.04	0.15	
Intermediate component	Gypsum plaster	W/mK		Air Gap	White semi-gloss paint	
Conductivity		m	0.38	0.00	0.38	
Thickness		m	0.01	0.15	0.01	
Intermediate component	Concrete wall	W/mK		Concrete wall		
Conductivity		m	2.16	2.16		
Thickness		m	0.20	0.20		
Intermediate component	Gypsum plaster	W/mK		Gypsum plaster		
Conductivity		m	0.38	0.38		
Thickness		m	0.01	0.01		
Internal Finish Material		W/mK				
Conductivity		m				
Thickness		m				
U-value of Opaque Area (U <sub>op</sub> )		W/m <sup>2</sup> K	3.51	0.68	2.78	6.09
Opaque Wall Area (A <sub>op</sub> )		m <sup>2</sup>	420.67	12.41	118.04	4.85
Heat Conduction = 3.57(A <sub>op</sub> /A <sub>g</sub> ) U <sub>op</sub> (W)		W/m <sup>2</sup>	5.67	0.04	1.44	0.13

Heat Conduction through Opaque Walls = 3.57(A<sub>op</sub>/A<sub>g</sub>) U<sub>op</sub> (W) (W/m<sup>2</sup>)  
 = 8.27 W/m<sup>2</sup> where i = 1, 2, ..., n

**Part 2 - Calculation of Heat Conduction through Glazing**

Components / Details		Units	NW-G1(F1)	NW-G2(F3)	NW-G3(F3)	NW-G4(F14)	NW-G5(F15)
Description			Tinted	Tinted	Tinted	Clear	Tinted
Glazing Type		mm	39	30	30	12	12
Thickness		m <sup>2</sup>	56.04	1.27	0.66	17.60	0.90
Glazing Area (A <sub>g</sub> )		W/m <sup>2</sup> K	1.64	1.66	1.66	4.88	1.65
U-value of Glazing (U <sub>g</sub> )			0.09	0.00	0.00	0.08	0.00
Heat Conduction = 0.64(A <sub>g</sub> /A <sub>g</sub> ) U <sub>g</sub> (W)							

Heat Conduction through Glazing = 0.64(A<sub>g</sub>/A<sub>g</sub>) U<sub>g</sub> (W) (W/m<sup>2</sup>)  
 = 0.19 W/m<sup>2</sup> where i = 1, 2, ..., n

**Part 3 - Calculation of Solar Radiation through Glazing**

Components / Details		Units	NW-G1(F1)	NW-G2(F3)	NW-G3(F3)	NW-G4(F14)	NW-G5(F15)
Description		mm	39	30	30	12	12
Glazing Type		m <sup>2</sup>	56.04	1.27	0.66	17.60	0.90
Thickness		%	0.44	0.45	0.45	1.01	0.45
Shading Coefficient of Glazing (SC <sub>g</sub> )		%	52	53	53	89	52
Visible Light Transmittance (VLT)		%	18	18	18	8	18
External Reflectance (ER)			1.000	1.000	0.789	1.000	0.785
External Shading Multiplier (ESC)			1.56	0.04	0.03	0.87	0.05
Solar Radiation = 41.75(A <sub>g</sub> /A <sub>g</sub> ) (ESC) <sub>g</sub> (W)							

Solar Radiation through Glazing = 41.75(A<sub>g</sub>/A<sub>g</sub>) (ESC)<sub>g</sub> (W) (W/m<sup>2</sup>)  
 = 2.61 W/m<sup>2</sup> where i = 1, 2, ..., n

Summary of RTTV at North West  
 = 8.27 + 0.19 = 8.46 W/m<sup>2</sup>  
 = 11.07 W/m<sup>2</sup> \* 2.61



# Guidelines on Design and Construction Requirements for Energy Efficiency of Residential Buildings 2014

## Form RTTV (Roof) 1 - Calculation of RTTV<sub>roof</sub>

Sheet No. 6 BD Ref No. 2/3020/18  
 Residential Development at No. 33-35 Kennedy Road, Wanchai, Hong Kong

Roof Orientation Facing Flat Gross Roof Area (A<sub>ro</sub>) = 85.93  
 Skylight to Roof Ratio (SRR) = 0 Roof Orientation Factor (G<sub>s</sub>) = 2.16

Part 1 - Calculation of Heat Conduction through Opaque Roof		Code No.
Description	Units	
External Finish Material	R1	
Conductivity	25mm concrete tiles	
Thickness	1.10	
Average Absorptivity	0.025	
Intermediate component	0.7	
Conductivity	50mm cement/sand screed	
Thickness	0.72	
Intermediate component	0.050	
Conductivity	50mm expanded polystyrene	
Thickness	0.034	
Intermediate component	0.05	
Conductivity	150mm concrete slab	
Thickness	2.16	
Intermediate component	0.15	
Conductivity		
Thickness		
Internal Finish Material	10mm gypsum plaster	
Conductivity	0.38	
Thickness	0.01	
U-value of the Roof (U <sub>ri</sub> )	0.53	
Opaque Roof Area (A <sub>ri</sub> )	95.93	
Heat Conduction = 3.47(A <sub>ri</sub> /A <sub>ro</sub> ) U <sub>ri</sub> or G <sub>s</sub>	2.80	

Heat Conduction through Opaque Roof = 3.47(A<sub>ri</sub>/A<sub>ro</sub>) U<sub>ri</sub> or G<sub>s</sub> where i= 1, 2, ..., n  
 = 2.80 W/m<sup>2</sup>

Part 2 - Calculation of Heat Conduction through Skylight			Code No.
Description	Units		
Skylight Glazing Type			
Thickness	mm		
Skylight Area (A <sub>si</sub> )	m <sup>2</sup>		
U-value of Skylight Glazing (U <sub>si</sub> )	W/m <sup>2</sup> K		
Heat Conduction = 0.64 (A <sub>si</sub> /A <sub>ro</sub> ) U <sub>si</sub> G <sub>s</sub>			

Heat Conduction through Skylight = 0.64 (A<sub>si</sub>/A<sub>ro</sub>) U<sub>si</sub> G<sub>s</sub> where i= 1, 2, ..., n  
 = 0.00 W/m<sup>2</sup>

Part 3 - Calculation of Solar Radiation through Skylight			Code No.
Description	Units		
Skylight Glazing Type			
Thickness	mm		
Skylight Area (A <sub>si</sub> )	m <sup>2</sup>		
Shading Coefficient of Skylight Glazing (SC <sub>r</sub> )			
Visible Light Transmittance (VLT)	%		
External Reflectance (ER)	%		
Solar Radiation = 41.10 (A <sub>si</sub> /A <sub>ro</sub> ) (SC <sub>r</sub> ) G <sub>s</sub>			

Solar Radiation through Skylight = 41.10 (A<sub>si</sub>/A<sub>ro</sub>) (SC<sub>r</sub>) G<sub>s</sub> where i= 1, 2, ..., n  
 = 0.00 W/m<sup>2</sup>

Summary of RTTV at Roof  
 = 2.80 + 0.00 + 0.00  
 = 2.80 W/m<sup>2</sup>





XINYI GLASS ENGINEERING (DONGGUAN) CO., LTD.  
THERMOTECNICAL & OPTICS PERFORMANCE DATA

PROJECT NAME:

QCT240424009

NO.	Description of sample	Visible Light (%)			Solar Energy (%)		U-Value (W/m <sup>2</sup> .k)						Shading Co.	SHGC
		Tran.	Refl.		Tran.	Refl.	Winter Night		Summer Day					
			Outer	Inner			Air	Ar	Air	Ar				
G1	12mm Low-iron (XE30288-00-D)#2+12A黑+15mm Low-iron	52	18	11	33	28	1.65	/	1.64	/	0.44	0.39		
G1A	15mm Low-iron (XE30288-00-D)#2+12A黑+19mm Low-iron	51	18	11	31	27	1.67	/	1.66	/	0.44	0.38		
G3	8mm Low-iron (XE30288-00-D)#2+12A黑+10mm Low-iron	53	18	12	34	30	1.68	/	1.66	/	0.45	0.39		
G3A	8mm Low-iron (XE30288-00-D)#2+12A黑+10mm Low-iron (XYG04)#3	50	18	12	30	30	1.68	/	1.66	/	0.44	0.38		
G4/G14	12mm Low-iron	89	8	8	86	8	5.62	/	5.08	/	1.01	0.88		
G5	12mm Clear (JN镀膜01)#2	58	15	15	10	14	5.44	/	4.88	/	0.69	0.60		
G6	12mm Low-iron +2.28SGP+12mm Low-iron	84	8	8	72	7	4.94	/	4.50	/	0.91	0.79		
G12	19mm Low-iron +2.28SGP+19mm Low-iron	81	7	7	61	6	4.64	/	4.24	/	0.83	0.72		
<del>G13</del>	<del>6mm Low-iron+0.76PVB+0.38乳白(216506)+PVB+0.38乳白(216500)+PVB+8mm Low-iron</del>	<del>37</del>	<del>5</del>	<del>5</del>	<del>42</del>	<del>5</del>	<del>5.33</del>	<del>/</del>	<del>4.84</del>	<del>/</del>	<del>0.68</del>	<del>0.58</del>		

G1/F1

G3/F3

G3A / F3A

G14 / F14

G15/  
F15

G15	12mm Low-iron(XE30288-00-D)#2+12A黑+10mm Low-iron	52	18	12	34	28	1.67	/	1.65	/	0.45	0.39
G16	15mmLow-iron (XE30288-00-D)#2+12A黑+12mm Low-iron	52	18	12	33	27	1.65	/	1.64	/	0.44	0.38

The Data is calculated via window 5.2 which is provided by LBNL, based on ASHRAE NFRC2001 standard

Solar spectrum: 300-2500nm, visible light is 380-780nm.

Winter nighttime: Outdoor temperature: -18°C, indoor temperature: 21°C, windspeed: 5.5m/s, no sunlight.

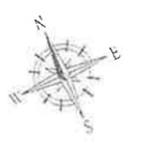
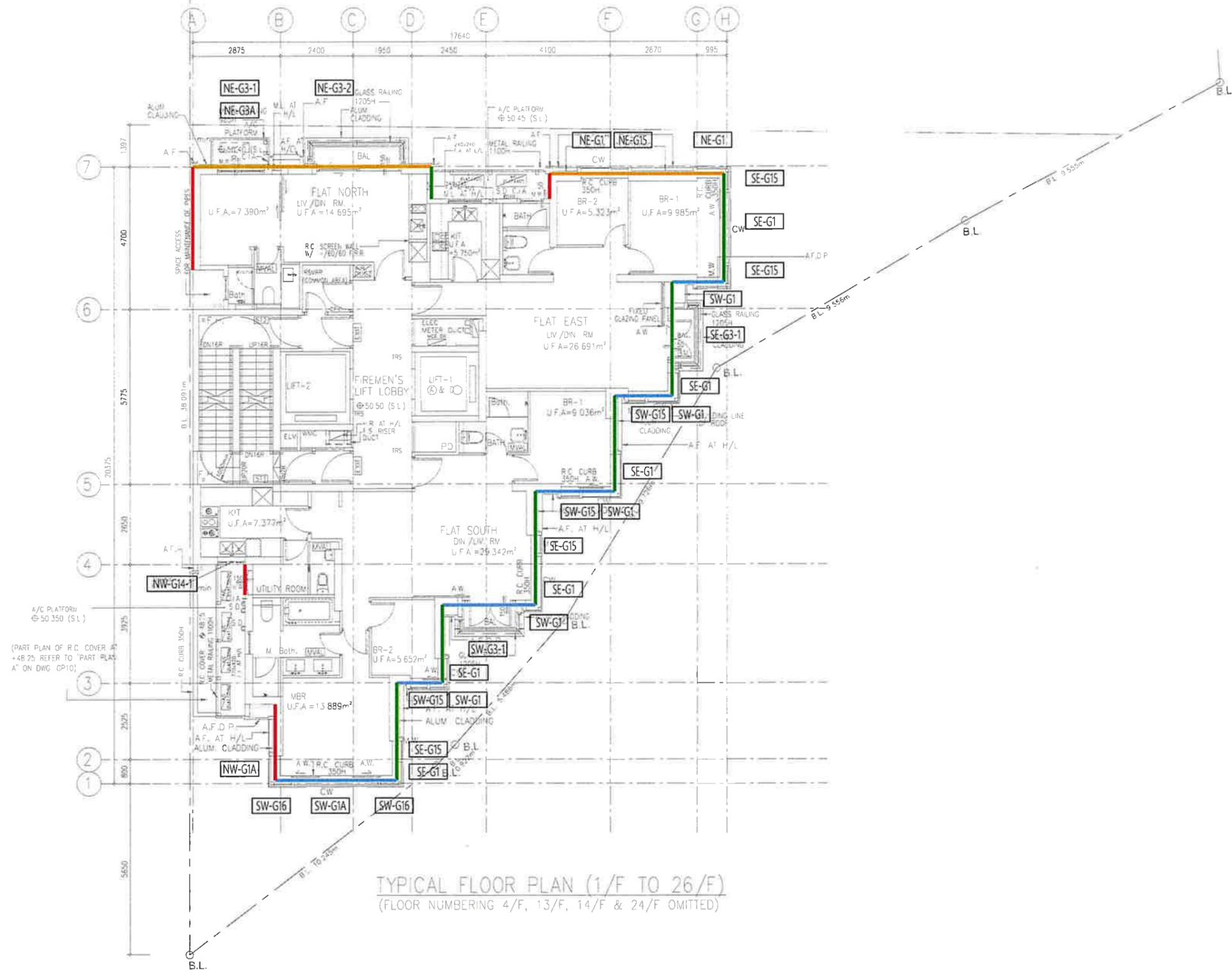
Summer daytime : Outdoor temperature: 32°C, indoor temperature: 24°C, windspeed: 2.8m/s, solar density: 783w/m².

The calculations are base on 1000\*1000 specimen, only for reference.

Above glass datas allow for ±3% difference as a tolerance and U-Value is ±0.2W/m2.k



INYI GLASS ENGINEERING (DUNGUO) CO., LTD



TYPICAL FLOOR PLAN (1/F TO 26/F)  
(FLOOR NUMBERING 4/F, 13/F, 14/F & 24/F OMITTED)

EXTERNAL WALLS TO BE INCLUDED IN RTTV CALCULATION

- NORTH EAST ELEVATION
- SOUTH EAST ELEVATION
- SOUTH WEST ELEVATION
- NORTH WEST ELEVATION
- ROOF

RTTV DRAWING FOR REFERENCE

Revisions	Description	Certified by

**ARCHITECT:**  
  
T.K. TSUI & ASSOCIATES LTD.

**CONSULTANT:**  
  

**CONSOLIDATED CONSULTING ENGINEERS LTD.**  
 ELECTRICAL MECHANICAL & BUILDING SERVICES ENGINEERING  
 集益顧問工程師有限公司

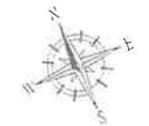
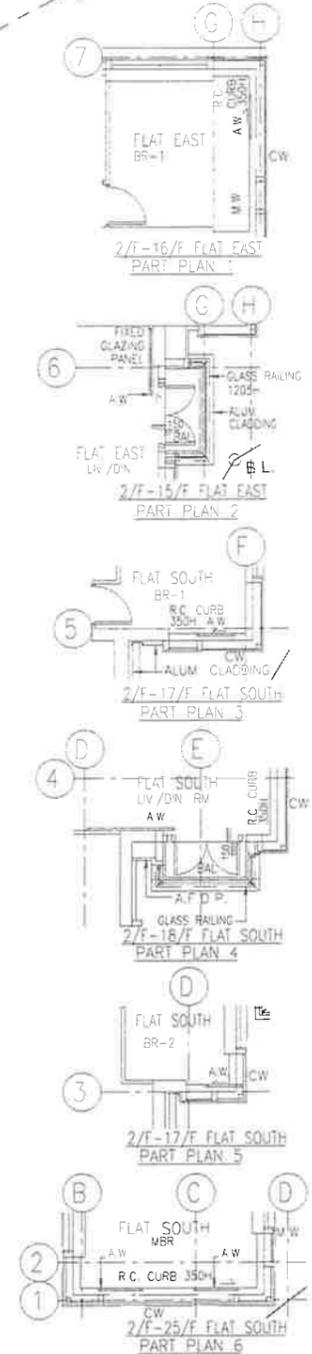
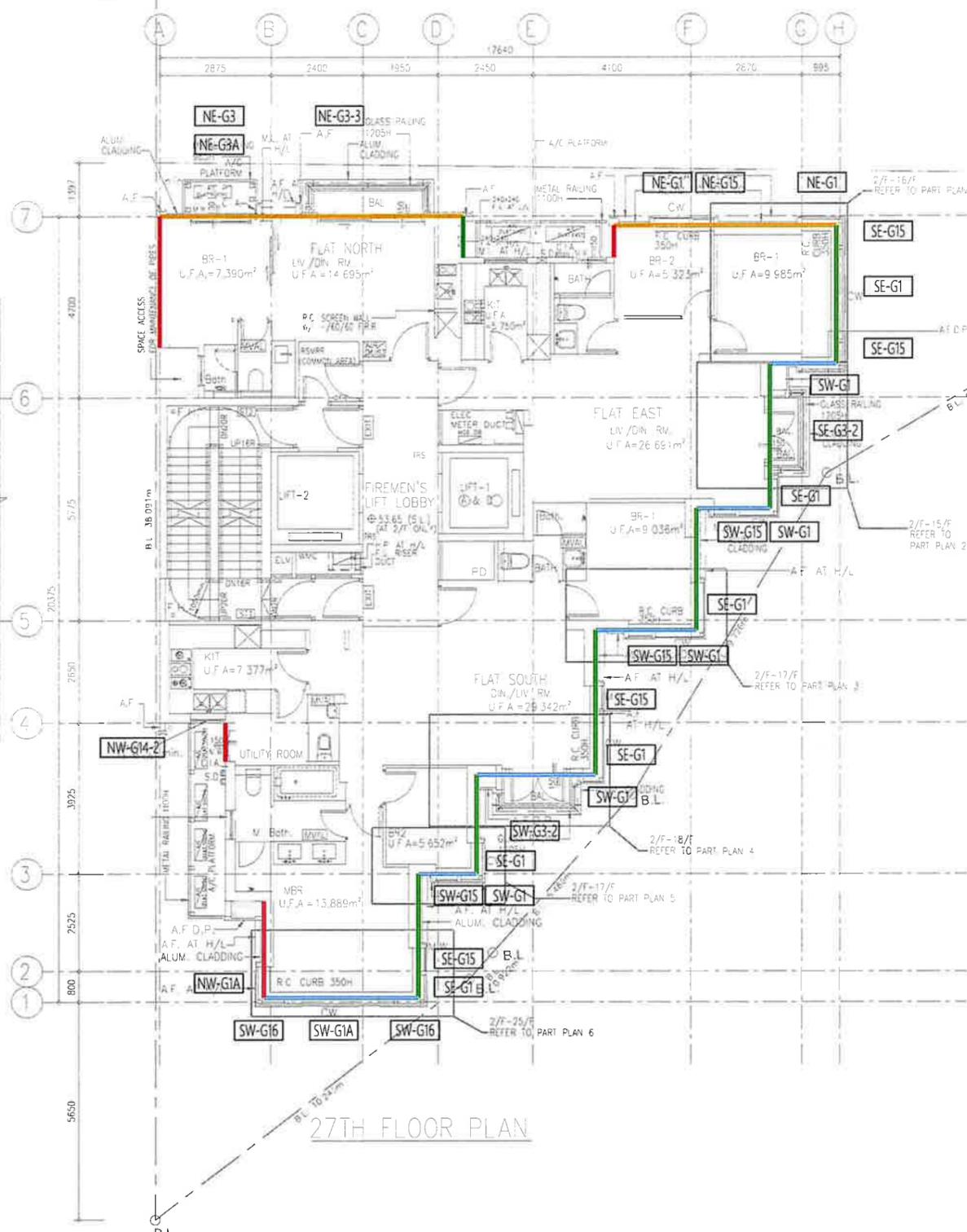
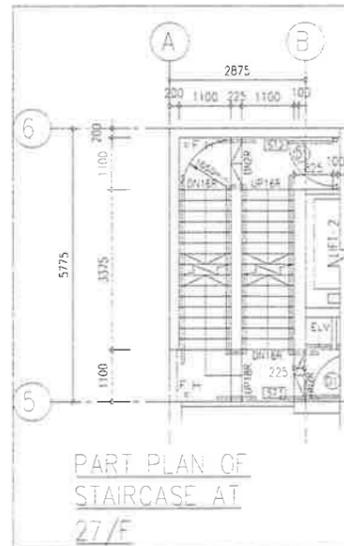
**PROJECT**  
RESIDENTIAL DEVELOPMENT AT  
NO. 33-35 KENNEDY ROAD,  
WANCHAI, HONG KONG

**DRAWING TITLE**  
1/F-26/F PLAN  
(4/F, 13/F, 14/F & 24/F OMITTED)

**NOTES**

- THIS DRAWING SHALL BE READ CONJUNCTION WITH RELEVANT SPECIFICATIONS, CONDITIONS OF CONTRACT AND OTHER RELATED DRAWINGS. ANY DISCREPANCY FOUND THEREIN SHALL BE NOTIFIED TO THE CONSULTING ENGINEERS IMMEDIATELY.
- DO NOT SCALE THE DETAILS. USE WRITTEN DIMENSIONS.
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SCALE: 1:150 (A3)	APPROVED BY: TL
DRAWN BY: TFL	DATE: MAY 2024
CHECKED BY: TCL	
DRAWING NO. CCE 777/RTTV-01	REVISION -



EXTERNAL WALLS TO BE INCLUDED IN RTTV CALCULATION	
	NORTH EAST ELEVATION
	SOUTH EAST ELEVATION
	SOUTH WEST ELEVATION
	NORTH WEST ELEVATION
	ROOF

Revisions	Description	Certified by

**ARCHITECT:**  
T.K. TSUI & ASSOCIATES LTD.

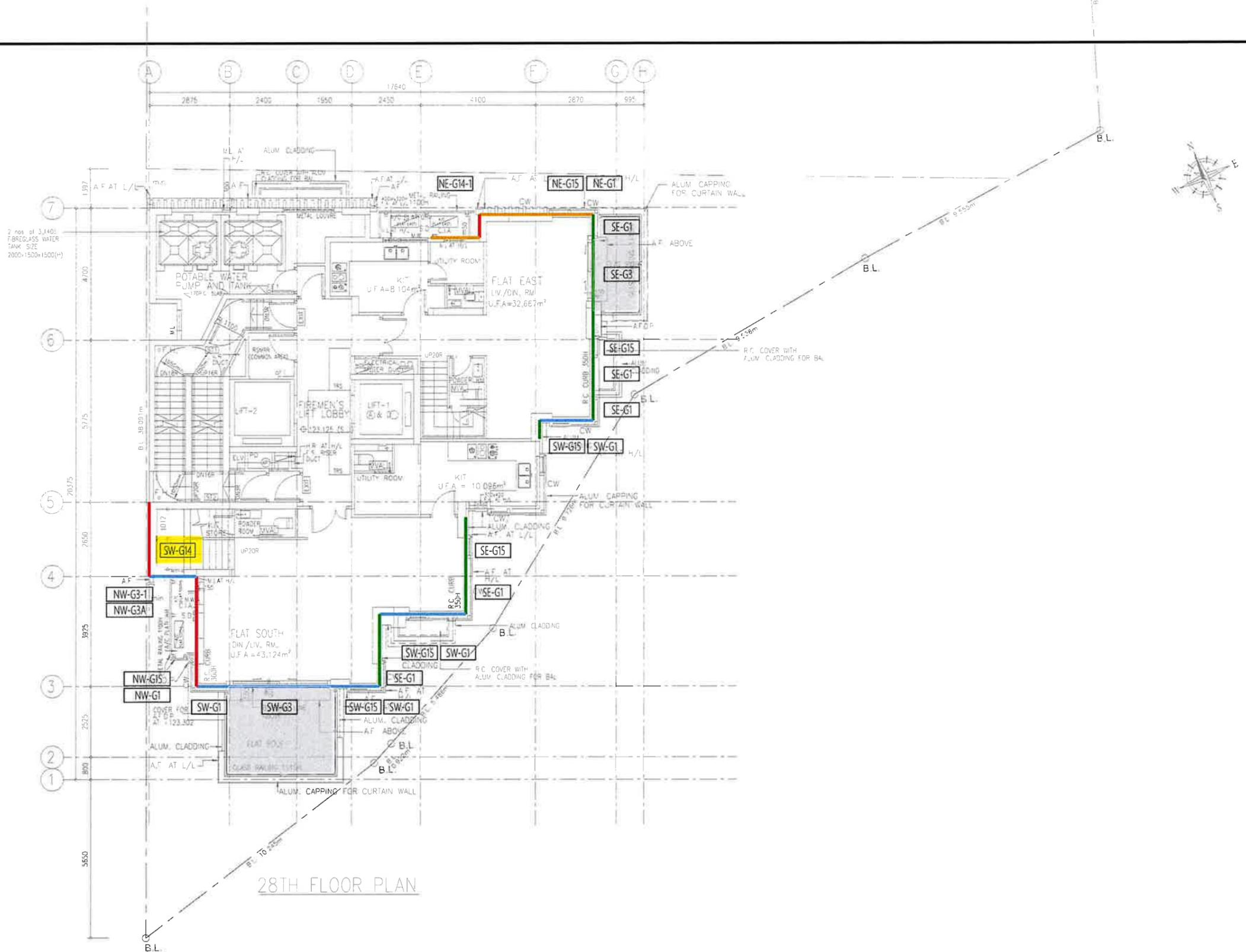
**CONSULTANT:**  
 CONSOLIDATED CONSULTING ENGINEERS LTD.  
ELECTRICAL, MECHANICAL & BUILDING SERVICES ENGINEERING  
集益顧問工程師有限公司  
2/F-27/F PLAN

**PROJECT:**  
RESIDENTIAL DEVELOPMENT AT  
NO. 33-35 KENNEDY ROAD,  
WAN CHAI, HONG KONG

**DRAWING TITLE:**  
27/F PLAN

**NOTES:**  
1. THIS DRAWING SHALL BE READ CONJUNCTION WITH RELEVANT SPECIFICATIONS, CONDITIONS OF CONTRACT AND OTHER RELATED DRAWINGS. ANY DISCREPANCY FOUND THEREIN SHALL BE NOTIFIED TO THE CONSULTING ENGINEERS IMMEDIATELY.  
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RTTV DRAWING FOR REFERENCE	
SCALE: 1:150 (A3)	APPROVED BY: TL
DRAWN BY: TFL	DATE: MAY 2024
CHECKED BY: TCL	
DRAWING NO. CCE 777/RTTV-02	REVISION: -



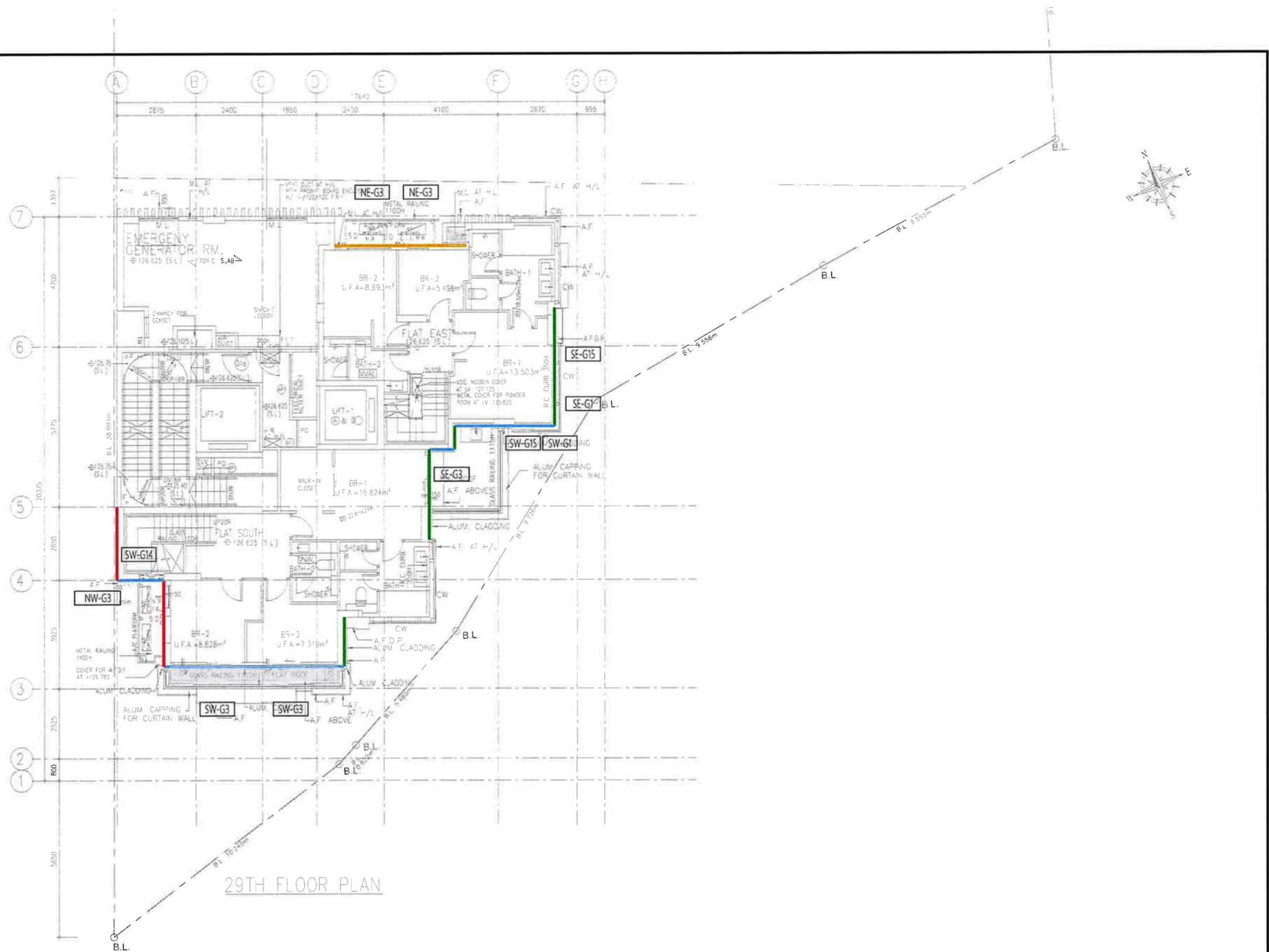
28TH FLOOR PLAN

**EXTERNAL WALLS TO BE INCLUDED IN RTTV CALCULATION**

- NORTH EAST ELEVATION
- SOUTH EAST ELEVATION
- SOUTH WEST ELEVATION
- NORTH WEST ELEVATION
- ROOF

**RTTV DRAWING FOR REFERENCE**

<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Revisions</th> <th style="width: 40%;">Description</th> <th style="width: 10%;">Certified by</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Revisions	Description	Certified by				<p><b>ARCHITECT:</b></p> <p>T.K. TSUI &amp; ASSOCIATES LTD.</p>	<p><b>CONSULTANT :</b></p> <p> CONSOLIDATED CONSULTING ENGINEERS LTD. ELECTRICAL MECHANICAL &amp; BUILDING SERVICES ENGINEERING 集益顧問工程師有限公司</p>	<p><b>PROJECT</b></p> <p>RESIDENTIAL DEVELOPMENT AT NO. 33-35 KENNEDY ROAD, WANCHAI, HONG KONG</p> <p><b>DRAWING TITLE</b></p> <p>28/F PLAN</p>	<p><b>NOTES</b></p> <p>1. THIS DRAWING SHALL BE READ CONJUNCTION WITH RELEVANT SPECIFICATIONS, CONDITIONS OF CONTRACT AND OTHER RELATED DRAWINGS. ANY DISCREPANCY FOUND THEREIN SHALL BE NOTIFIED TO THE CONSULTING ENGINEERS IMMEDIATELY.</p> <p>2. DO NOT SCALE THE DETAILS. USE WRITTEN DIMENSIONS.</p> <p>3. MEASUREMENTS TO EXISTING WORKS TO BE VERIFIED ON SITE.</p> <p>4. THE DESIGN AND DETAILS ON THIS DRAWING ARE COPYRIGHT OF THE CONSULTING ENGINEERS. NO PORTION MAY BE REPRODUCED WITHOUT THEIR WRITTEN PERMISSION.</p> <p>5. THIS DRAWING IS NOT VALID FOR CONSTRUCTION OR OTHER PURPOSES UNLESS SIGNED BY THE CONSULTING ENGINEERS OF THIS OFFICE.</p>	<p><b>SCALE:</b></p> <p>1:150 (A3)</p> <p><b>DRAWN BY:</b></p> <p>TFL</p> <p><b>CHECKED BY:</b></p> <p>TCL</p> <p><b>DRAWING NO.:</b></p> <p>CCE 777/RTTV-03</p> <p><b>APPROVED BY:</b></p> <p>TL</p> <p><b>DATE:</b></p> <p>MAY 2024</p> <p><b>REVISION</b></p> <p>-</p>
Revisions	Description	Certified by									



29TH FLOOR PLAN

**EXTERNAL WALLS TO BE INCLUDED IN RTTV CALCULATION**

- NORTH EAST ELEVATION
- SOUTH EAST ELEVATION
- SOUTH WEST ELEVATION
- NORTH WEST ELEVATION
- ROOF

Revisions	Description	Certified by

**ARCHITECT:**  
  
T.K. TSUI & ASSOCIATES LTD.

**CONSULTANT:**  
  
**CONSOLIDATED CONSULTING ENGINEERS LTD.**  
 ELECTRICAL MECHANICAL & BUILDING SERVICES ENGINEERING  
 集益顧問工程師有限公司

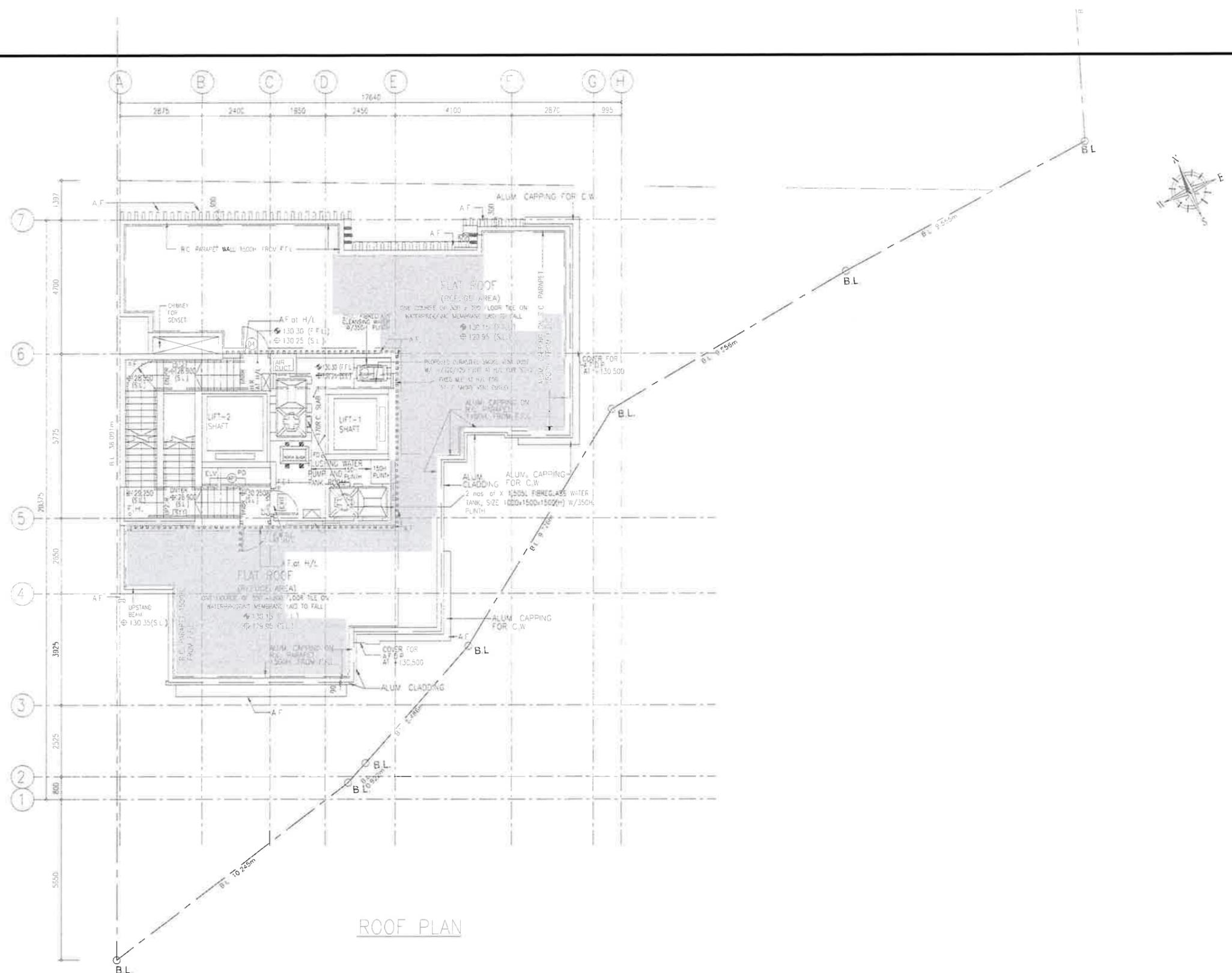
**PROJECT**  
RESIDENTIAL DEVELOPMENT AT  
NO. 33-35 KENNEDY ROAD,  
WAN CHAI, HONG KONG

**DRAWING TITLE**  
29/F PLAN

**NOTES**

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RTTV DRAWING FOR REFERENCE	
<b>SCALE:</b> 1:150 (A3)	<b>APPROVED BY:</b> TL
<b>DRAWN BY:</b> TFL	<b>DATE:</b> MAY 2024
<b>CHECKED BY:</b> TCL	
<b>DRAWING NO.:</b> CCE 777/RTTV-04	<b>REVISION:</b> -



ROOF PLAN

EXTERNAL WALLS TO BE INCLUDED IN RTTV CALCULATION

- NORTH EAST ELEVATION
- SOUTH EAST ELEVATION
- SOUTH WEST ELEVATION
- NORTH WEST ELEVATION
- ROOF

Revisions	Description	Certified by

**ARCHITECT:**  
  
T.K. TSUI & ASSOCIATES LTD.

**CONSULTANT:**  
  

**CONSOLIDATED CONSULTING ENGINEERS LTD.**  
 ELECTRICAL MECHANICAL & BUILDING SERVICES ENGINEERING  
 集益顧問工程師有限公司

**PROJECT**  
RESIDENTIAL DEVELOPMENT AT  
NO. 33-35 KENNEDY ROAD,  
WANCHAI, HONG KONG

**DRAWING TITLE**  
R/F PLAN

**NOTES**

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RTTV DRAWING FOR REFERENCE

SCALE: 1:150 (A3)	APPROVED BY: TL
DRAWN BY: TFL	DATE: MAY 2024
CHECKED BY: TCL	
DRAWING NO. CCE 777/RTTV-05	REVISION -

**LEGEND**

G1	GLASS F1	
G3	GLASS F3	
G3A	GLASS F3A	
G14	GLASS F14	
G15	GLASS F15	
W1	TILES	
W2	SPANDREL	
W3	ALUM. PANEL	
W4	LOUVRE	

3000	TR/F	+135.95
3000	JR/F	+132.95
3325	R/F	+128.95
3500	29/F	+125.625
3500	28/F	+23.125
3325	27/F	+115.80
3150	26/F	+116.95
3150	25/F	+113.50

(1/F TO 25/F SAME AS 26/F)  
(4/F, 13/F, 14/F & 24/F OMITTED)



**NORTH EAST ELEVATION**

Revisions	Description	Certified by

**ARCHITECT:**  
  
T.K. TSUI & ASSOCIATES LTD.

**CONSULTANT:**  
  

**CONSOLIDATED CONSULTING ENGINEERS LTD.**  
 ELECTRICAL MECHANICAL & BUILDING SERVICES ENGINEERING  
 集益顧問工程師有限公司

**PROJECT**  
RESIDENTIAL DEVELOPMENT AT  
NO. 33-35 KENNEDY ROAD,  
WANCHAI, HONG KONG

**DRAWING TITLE**  
NORTH EAST ELEVATION

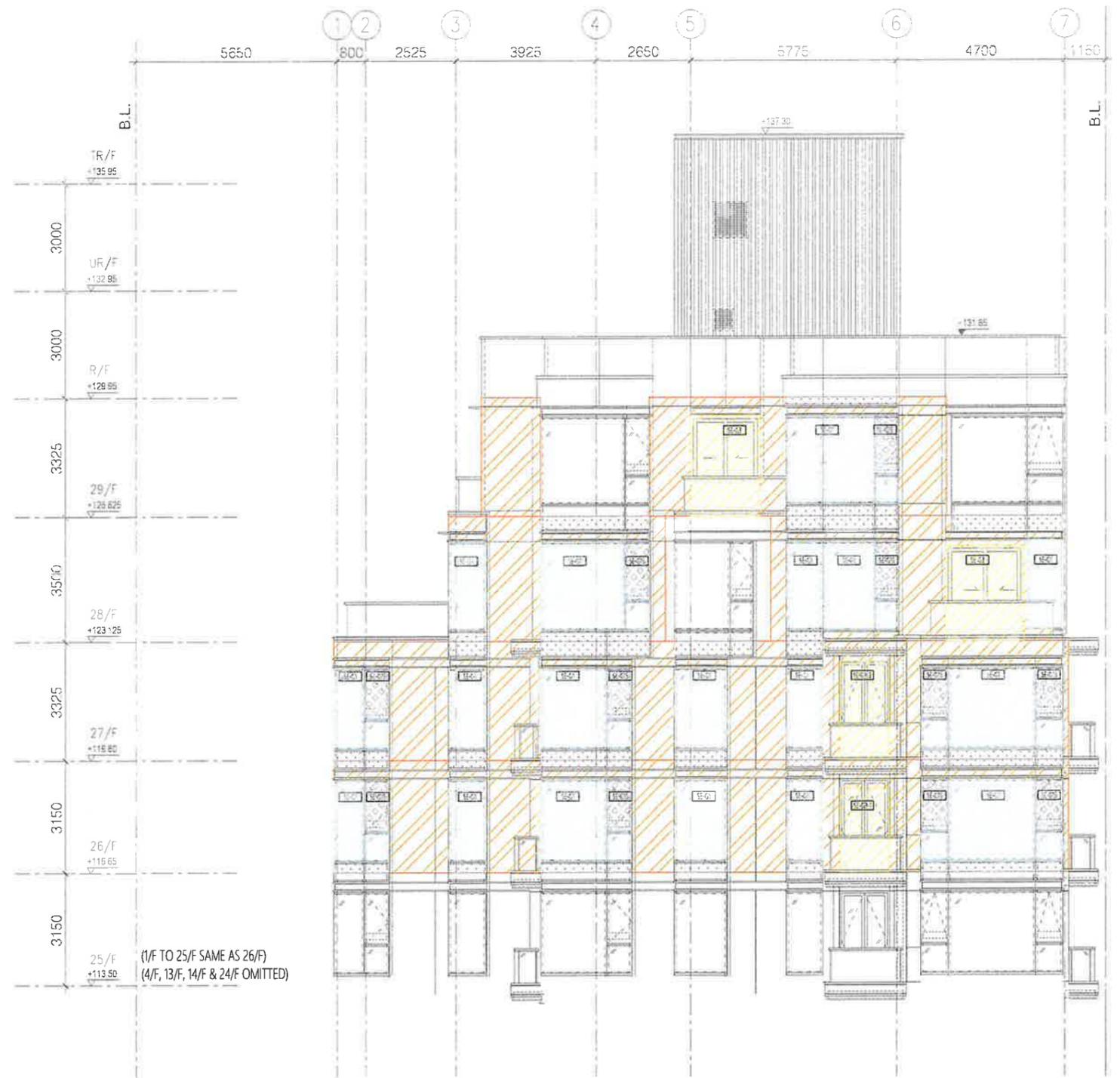
**NOTES**

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<b>RTTV DRAWING FOR REFERENCE</b>	
SCALE: 1:150 (A3)	APPROVED BY: TL
DRAWN BY: TFL	DATE: MAY 2024
CHECKED BY: TCL	
DRAWING NO. CCE 777/RTTV-06	REVISION -

**LEGEND**

G1	GLASS F1	
G3	GLASS F3	
G3A	GLASS F3A	
G14	GLASS F14	
G15	GLASS F15	
W1	TILES	
W2	SPANDREL	
W3	ALUM. PANEL	
W4	LOUVRE	

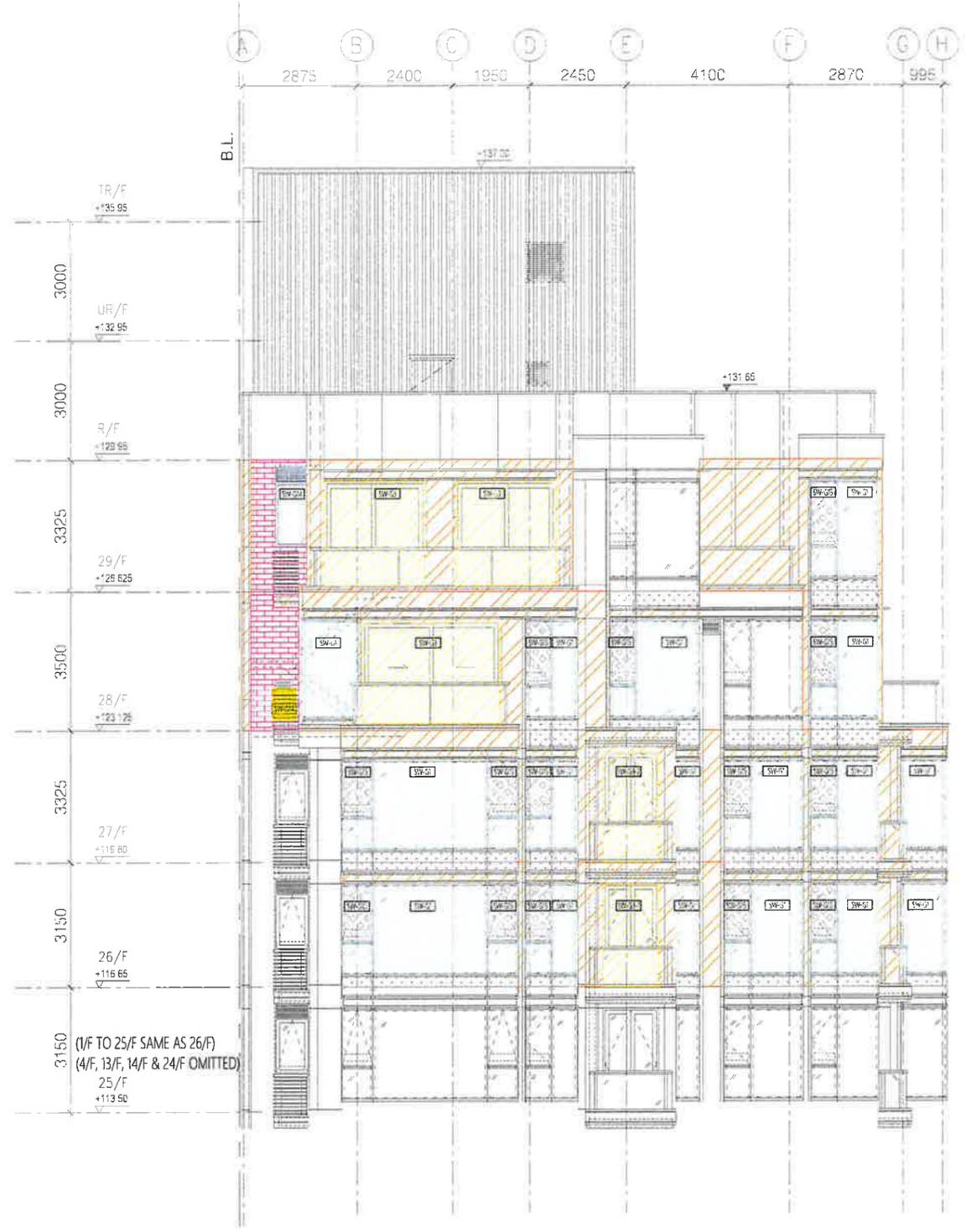


**SOUTH EAST ELEVATION**

<table border="1"> <thead> <tr> <th>Revisions</th> <th>Description</th> <th>Certified by</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>			Revisions	Description	Certified by				<b>ARCHITECT:</b>  T.K. TSUI & ASSOCIATES LTD.	<b>CONSULTANT:</b>  <b>CONSOLIDATED CONSULTING ENGINEERS LTD.</b> ELECTRICAL MECHANICAL & BUILDING SERVICES ENGINEERING 集益顧問工程師有限公司	<b>PROJECT:</b> RESIDENTIAL DEVELOPMENT AT NO. 33-35 KENNEDY ROAD, WANCHAI, HONG KONG  <b>DRAWING TITLE:</b> SOUTH EAST ELEVATION	<b>NOTES:</b> 1. THIS DRAWING SHALL BE READ CONJUNCTION WITH RELEVANT SPECIFICATIONS, CONDITIONS OF CONTRACT AND OTHER RELATED DOCUMENTS. ANY DISCREPANCY FOUND THEREIN SHALL BE NOTIFIED TO THE CONSULTING ENGINEERS IMMEDIATELY. 2. DO NOT SCALE THE DETAILS. USE WRITTEN DIMENSIONS. 3. MEASUREMENTS TO EXISTING WORKS TO BE VERIFIED ON SITE. 4. THE DESIGN AND DETAILS ON THIS DRAWING ARE COPYRIGHT OF THE CONSULTING ENGINEERS. NO PORTION MAY BE REPRODUCED WITHOUT THEIR WRITTEN PERMISSION. 5. THIS DRAWING IS NOT VALID FOR CONSTRUCTION OR OTHER PURPOSES UNLESS SIGNED BY THE CONSULTING ENGINEERS OF THIS OFFICE.	<b>RTTV DRAWING FOR REFERENCE</b>  <b>SCALE:</b> 1:150 (A3) <b>APPROVED BY:</b> TL <b>DRAWN BY:</b> TFL <b>DATE:</b> MAY 2024 <b>CHECKED BY:</b> TCL <b>DRAWING NO.:</b> CCE 777/RTTV-07 <b>REVISION:</b> -
Revisions	Description	Certified by											

**LEGEND**

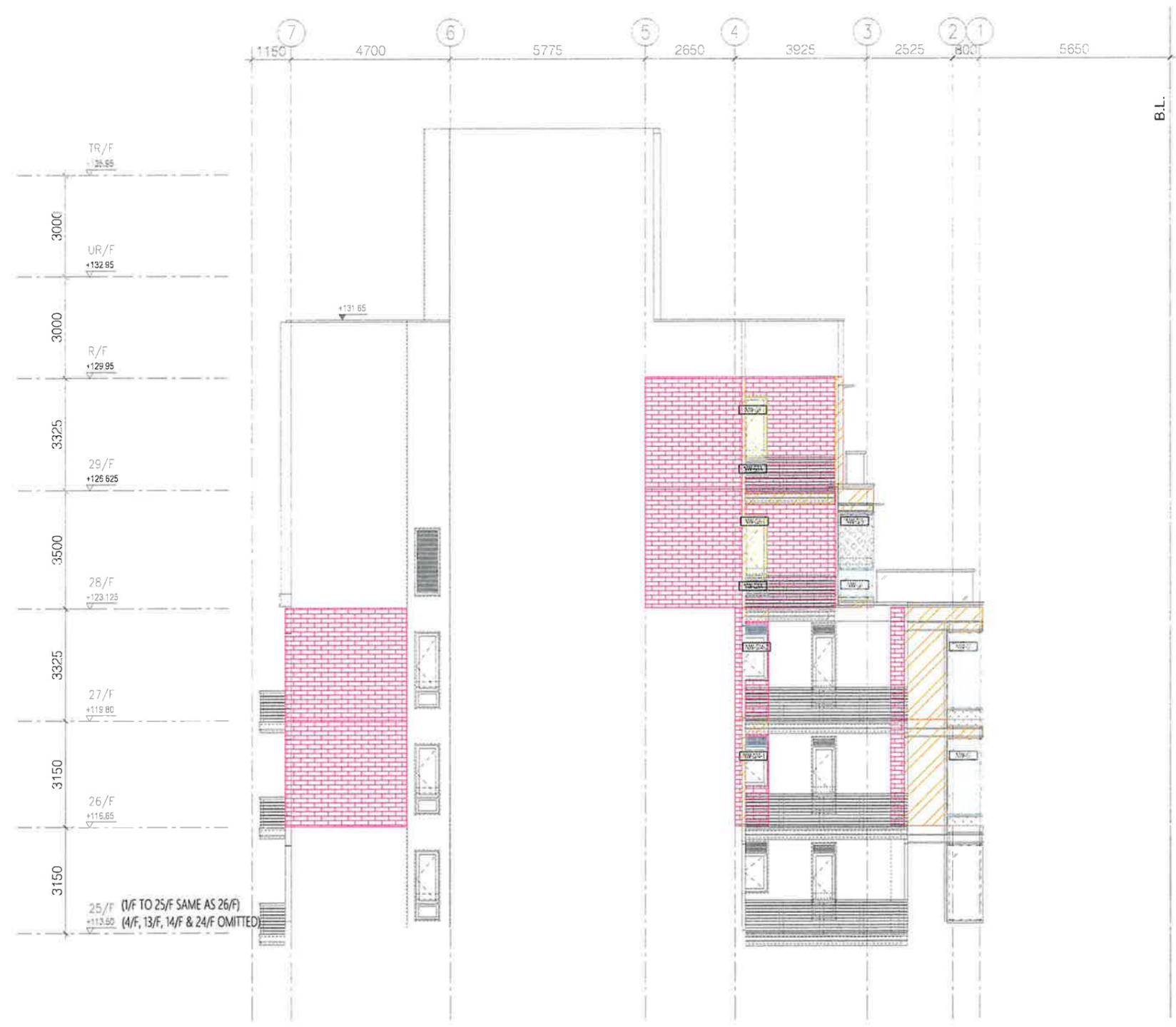
G1	GLASS F1	
G3	GLASS F3	
G3A	GLASS F3A	
G14	GLASS F14	
G15	GLASS F15	
W1	TILES	
W2	SPANDREL	
W3	ALUM. PANEL	
W4	LOUVRE	



**SOUTH WEST ELEVATION**

<table border="1"> <thead> <tr> <th>Revisions</th> <th>Description</th> <th>Certified by</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>			Revisions	Description	Certified by				<b>ARCHITECT:</b>  T.K. TSUI & ASSOCIATES LTD.	<b>CONSULTANT :</b>  <b>CONSOLIDATED CONSULTING ENGINEERS LTD.</b> ELECTRICAL MECHANICAL & BUILDING SERVICES ENGINEERING 集益顧問工程師有限公司	<b>PROJECT</b> RESIDENTIAL DEVELOPMENT AT NO. 33-35 KENNEDY ROAD, WANCHAI, HONG KONG  <b>DRAWING TITLE</b> SOUTH WEST ELEVATION	<b>NOTES</b> 1. THIS DRAWING SHALL BE READ CONJUNCTION WITH RELEVANT SPECIFICATIONS, CONDITIONS OF CONTRACT AND OTHER RELATED DRAWINGS. ANY DISCREPANCY FOUND THEREIN SHALL BE NOTIFIED TO THE CONSULTING ENGINEERS IMMEDIATELY. 2. DO NOT SCALE THE DETAILS. USE WRITTEN DIMENSIONS. 3. MEASUREMENTS TO EXISTING WORKS TO BE VERIFIED ON SITE. 4. THE DESIGN AND DETAILS ON THIS DRAWING ARE COPYRIGHT OF THE CONSULTING ENGINEERS. NO PORTION MAY BE REPRODUCED WITHOUT THEIR WRITTEN PERMISSION. 5. THIS DRAWING IS NOT VALID FOR CONSTRUCTION OR OTHER PURPOSES UNLESS SIGNED BY THE CONSULTING ENGINEERS OF THIS OFFICE.	<b>RTTV DRAWING FOR REFERENCE</b>  <b>SCALE:</b> 1:150 (A3) <b>APPROVED BY:</b> TL <b>DATE:</b> MAY 2024 <b>DRAWN BY:</b> TFL <b>CHECKED BY:</b> TCL <b>DRAWING NO.:</b> CCE 777/RTTV-08 <b>REVISION:</b> -
Revisions	Description	Certified by											

LEGEND	
G1	GLASS F1
G3	GLASS F3
G3A	GLASS F3A
G14	GLASS F14
G15	GLASS F15
W1	TILES
W2	SPANDREL
W3	ALUM. PANEL
W4	LOUVRE



**NORTH WEST ELEVATION**

Revisions			ARCHITECT:		CONSULTANT :		PROJECT		NOTES		SCALE:		APPROVED BY:	
			T.K. TSUI & ASSOCIATES LTD.		CONSOLIDATED CONSULTING ENGINEERS LTD. ELECTRICAL MECHANICAL & BUILDING SERVICES ENGINEERING 集益顧問工程師有限公司		RESIDENTIAL DEVELOPMENT AT NO. 33-35 KENNEDY ROAD, WANCHAI, HONG KONG		1. THIS DRAWING SHALL BE READ CONJUNCTION WITH RELEVANT SPECIFICATIONS, CONDITIONS OF CONTRACT AND OTHER RELATED DOCUMENTS. ANY DISCREPANCY FOUND THEREIN SHALL BE NOTIFIED TO THE CONSULTING ENGINEERS IMMEDIATELY. 2. DO NOT SCALE THE DETAILS. USE WRITTEN DIMENSIONS. 3. MEASUREMENTS TO EXISTING WORKS TO BE VERIFIED ON SITE. 4. THE DESIGN AND DETAILS ON THIS DRAWING ARE COPYRIGHT OF THE CONSULTING ENGINEERS. NO PORTION MAY BE REPRODUCED WITHOUT THEIR WRITTEN PERMISSION. 5. THIS DRAWING IS NOT VALID FOR CONSTRUCTION OR OTHER PURPOSES UNLESS SIGNED BY THE CONSULTING ENGINEERS OF THIS OFFICE.		1:150 (A3)		TL	
							DRAWING TITLE		DRAWN BY:		DATE:			
							NORTH WEST ELEVATION		TFL		MAY 2024			
									CHECKED BY:		DRAWING NO.		REVISION	
									TCL		CCE 777/RTTV-09		-	