



RTTV Summary Sheet

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.

PNAP
APP-156
 Appendix **A**

Address: No.147 Waterloo Road, Kowloon Tong, Kowloon

BD Ref. No. 2/4061/17

Building Type: Residential

RTTV calculated by:
 1. Registered Professional Engineers
 2. Architect
 3. Others, please specify:

No. of Storeys (Residential Units): 2 storeys (1 Residential Unit)

Table 1

Deemed to Satisfy RTTV_{Wall}

Facade Orientation Facing									
Average Absorptivity									
Average Window to Wall Ratio									
Shading Coefficient of Glazing									
Average Shading Coefficient of Facade									
Visible Light Transmittance		%	%	%	%	%	%	%	%
External Reflectance		%	%	%	%	%	%	%	%

Table 2

RTTV_{Wall}

Facade Orientation Facing	North			East			South			West							
Wall Orientation Factor	0.79			1.072			0.975			1.131							
Total External Wall Area (Residential Units)	108.59 m ²	Window to Wall Ratio = 0.55		143.63 m ²	Window to Wall Ratio = 0.42		105.23 m ²	Window to Wall Ratio = 0.24		130.88 m ²	Window to Wall Ratio = 0.36						
Total Window Factor	60.06 m ²			59.84 m ²			25.75 m ²			47.72 m ²							
Heat Conduction	Opaque Wall	1.72 W/m ²			3.05 W/m ²			3.60 W/m ²			3.51 W/m ²						
	Window	0.97 W/m ²			0.60 W/m ²			0.34 W/m ²			0.62 W/m ²						
Window	Glass Type	<input checked="" type="checkbox"/> Reflective	Area= 60.06 m ²	SC= 0.63 -0.69	VLT= 63-71% ER= 7-19%	<input checked="" type="checkbox"/> Reflective	Area= 59.84 m ²	SC= 0.65	VLT= 63-69% ER= 9-19%	<input checked="" type="checkbox"/> Reflective	Area= 25.75 m ²	SC= 0.63 -0.69	VLT= 63-71% ER= 7-19%	<input checked="" type="checkbox"/> Reflective	Area= 47.72 m ²	SC= 0.63 -0.69	VLT= 63-71% ER= 7-19%
		<input type="checkbox"/> Tinted	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Tinted	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Tinted	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Tinted	Area= m ²	SC=	VLT= % ER= %
		<input type="checkbox"/> Clear	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Clear	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Clear	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Clear	Area= m ²	SC=	VLT= % ER= %
Double Glazing		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
External Shading	Overhang	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	Sidefin	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Solar Radiation through Glazing		11.84 W/m ²		12.09 W/m ²		5.08 W/m ²		10.33 W/m ²									
Average Absorptivity		0.60		0.60		0.60		0.60									
RTTV _{Wall} at each facade		14.53 W/m ²		15.74 W/m ²		9.01 W/m ²		14.46 W/m ²									
Overall RTTV _{Wall}		13.68 W/m ²			< 14 W/m ²												

Table 3

RTTV_{Roof}

fally w/ the plans

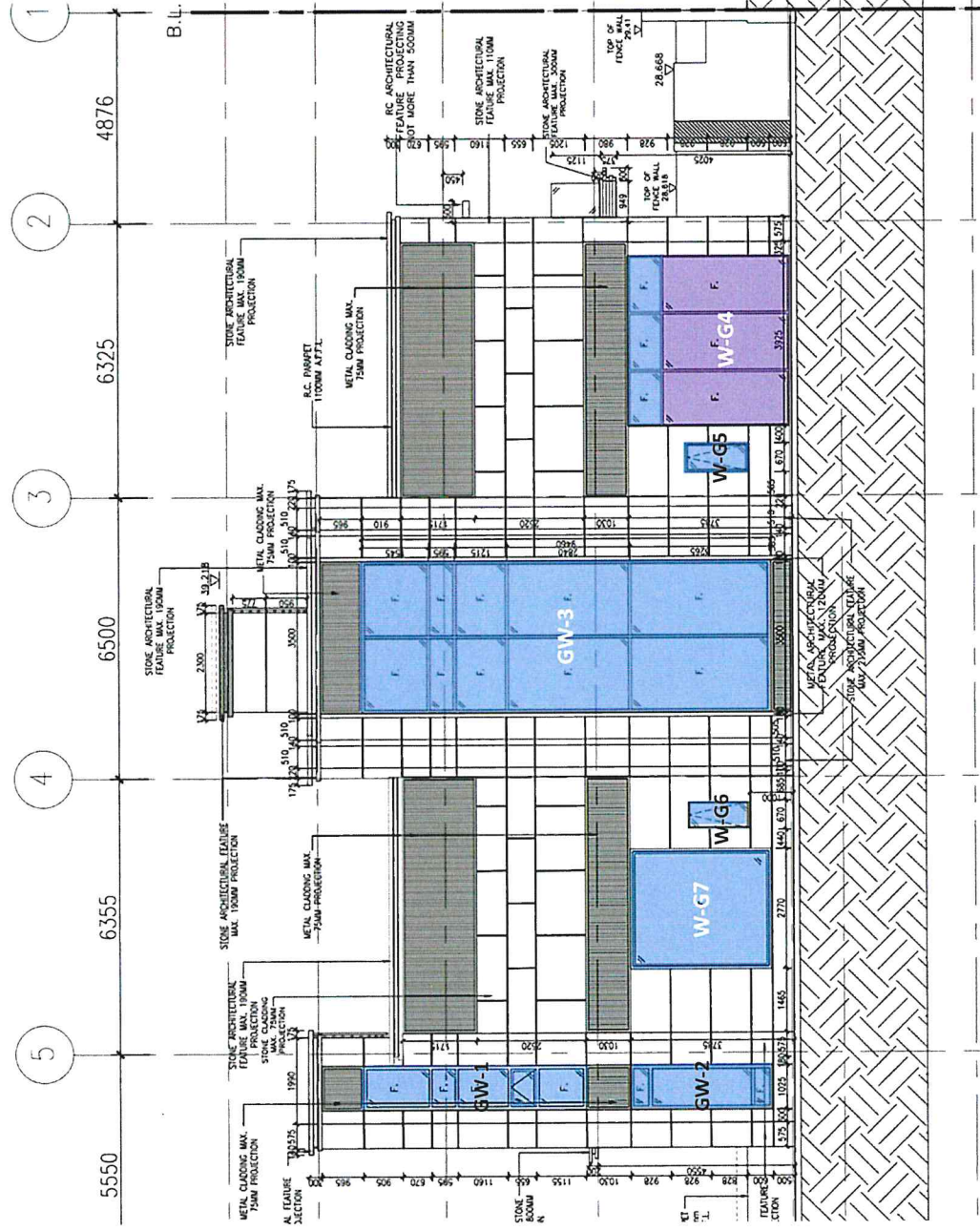
Roof Orientation Factor	2.16					
Total Roof Area (Residential Units)	219.26 m ²					
Total Skylight Area	3.30 m ²					
Heat Conduction	Roof	2.27 W/m ²				
	Skylight	0.02 W/m ²				
Skylight	Glass Type	<input checked="" type="checkbox"/> Reflective	Area= 3.30 m ²	SC= 0.46	VLT= 0.53	ER= 0.9
		<input type="checkbox"/> Tinted	Area= m ²	SC=	VLT= %	ER= %
		<input type="checkbox"/> Clear	Area= m ²	SC=	VLT= %	ER= %
Double Glazing		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
External Shading		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Solar Radiation through Glazing		0.61 W/m ²				
Average Absorptivity (roof)		0.50				
Overall RTTV _{Roof}		2.90 W/m ²		< 4 W/m ²		

fally w/ the plans.

Glass type	Location	Type	LT (%)	ER (%)	SC	U-value
1	Balcony door on 1/F north elevation	10mm clear AGC Sunergy clear A low-e #2	69	9	0.65	3.70
2	Windows on elevations	6mm clear AGC Sunergy clear A low-e #2	71	9	0.69	3.70
3	Windows and glass walls on elevations	6mm low iron + 1.52mm SGP + 6mm low iron + 12mmAS + 10mm low iron SSNO-70T #5	63	19	0.65	1.75
4	Windows on elevations	8mm clear + 1.52mm PVB + 8mm clear AGC Sunergy clear A#4	67	7	0.63	3.78
5	skylights	10mm clear + 2.28mm SGP + 8mm clear + 1.52mm SGP + 8mm clear SSN-70T #6 + 12mm A.S + 8mm Clear + 1.52mm SGP + 8mm Clear	53	9	0.46	1.63

EAST ELEVATION

WINDOW MARK	WIDTH (mm)	LENGTH (mm)	AREA (m ²)	GLASS TYPE
W-G4	3955	925	3.66	3
W-G5	3955	2775	10.98	1
W-G6	700	1500	1.05	3
W-G7	700	1500	1.05	3
GW-1	2800	3300	9.24	3
GW-2	1055	5225	5.51	3
GW-3	1055	3315	3.50	3
GW-4	3420	9490	32.46	3



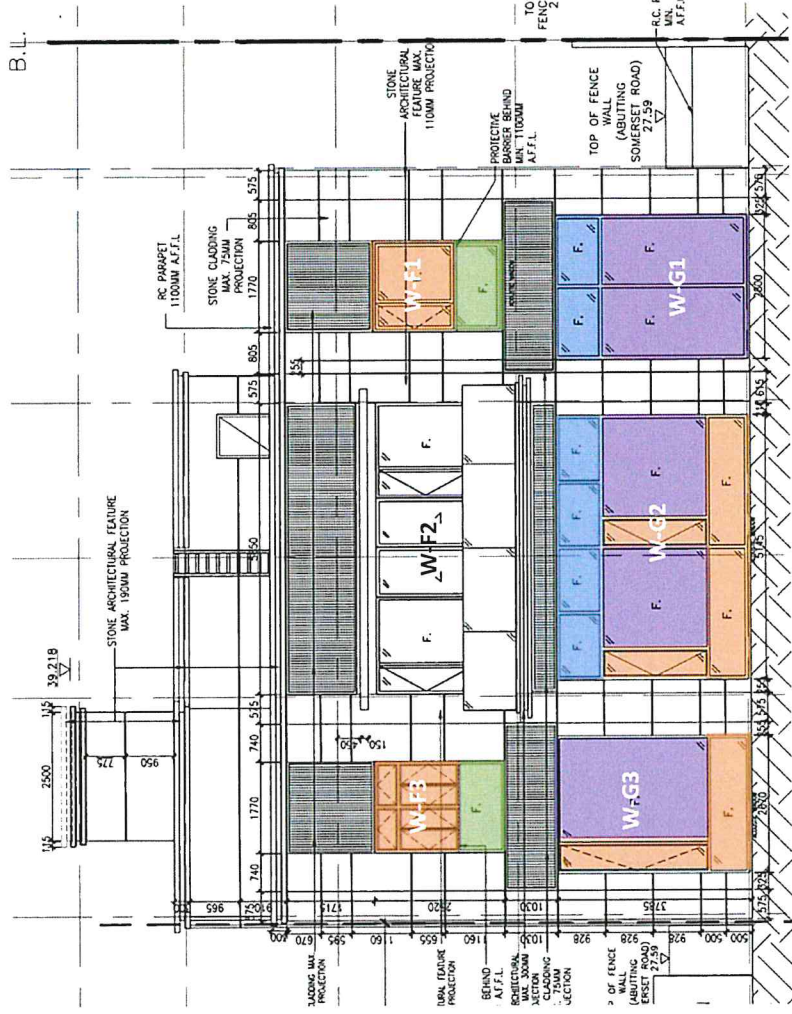
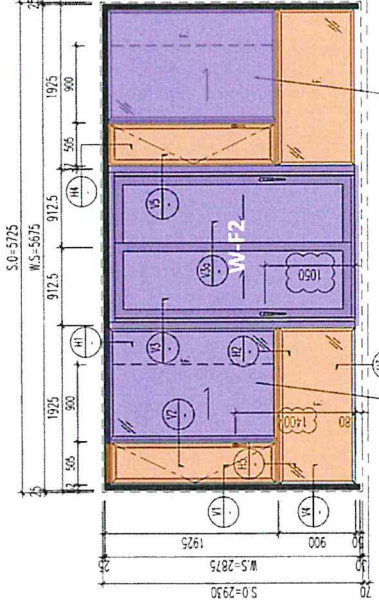
WEST ELEVATION

WINDOW MARK	WIDTH (mm)	LENGTH (mm)	AREA (m ²)	GLASS TYPE
W-G10	3055	2800	8.55	3
W-G11	3200	2800	8.96	3
W-G12	5025	925	4.65	3
	5025	2775	13.94	2
W-F8	650	2550	1.66	3
	650	2550	1.66	3
	1755	2550	4.48	4
W-F9	700	2550	1.79	3
	700	2550	1.79	3
	1680	1690	2.84	2
	1680	860	1.44	4
W-F10	2000	1605	3.21	3
GW-4	1055	5225	5.51	3
GW-5	1055	3315	3.50	3



NORTH ELEVATION

WINDOW MARK	WIDTH (mm)	LENGTH (mm)	AREA (m ²)	GLASS TYPE
W-G1	2830	925	2.62	3
	2830	2775	7.85	1
W-G2	5175	925	4.79	3
	5175	950	4.92	2
	1825	505	0.92	2
	1825	505	0.92	2
	1825	4091	7.47	1
W-G3	950	2700	2.57	2
	2750	567	1.56	2
	2750	2133	5.87	1
W-F1	1800	1650	2.97	2
	1800	900	1.62	4
W-F2	1925	1383	2.66	1
	1925	1383	2.66	1
	2875	1825	5.25	1
	1925	1010	1.94	2
	900	3850	3.47	2
W-F3	1800	1640	2.95	2
	1800	910	1.64	4



R/F & UR/F

WINDOW MARK	WIDTH (mm)	LENGTH (mm)	AREA (m2)	GLASS TYPE
SL-1	710	5435	3.86	5
SL-2	460	1414	0.65	5
SL-3	460	1414	0.65	5
SL-4	610	3280	2.00	5

