



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: Residential Development at 3 Lung Kui Road, Beacon Hill, Kowloon, N.K.I.L. No. 6533		BD Ref. No. 4057/16
Building Type:	Residential	
RTTV calculated by	<input checked="" type="checkbox"/> 1. Registered Professional Engineers <input type="checkbox"/> 2. Architect <input type="checkbox"/> 3. Others, please specify:	
No. of Storeys (Residential Units)	2 Storeys (Mansion A)	

Table 1

Deemed to Satisfy RTTV_{Wall} (Mansion A)

Facade Orientation Facing	NE	SW	NW	SE				
Average Absorptivity	0.5	0.5	0.5	0.5	← Table 16			
Average Window to Wall Ratio	0.229	0.178	0.452	0.557	← by calculation			
Shading Coefficient of Glazing	0.46	0.46	0.46	0.46				
Average Shading Coefficient of Facade	0.99	0.80 /	0.50	0.36	← Table 16			
Visible Light Transmittance	56 %	56 %	56 %	56 %	%	%	%	%
External Reflectance	16 %	16 %	16 %	16 %	%	%	%	%

Table 2

RTTV_{Wall} (Mansion A)

Facade Orientation Facing	NE				SW				NW				SE				
Wall Orientation Factor	0.924				1.092				0.965				1.051				
Total External Wall Area (Residential Units)	160.10 m ²	Window to Wall Ratio = 0.229			165.00 m ²	Window to Wall Ratio = 0.178			184.50 m ²	Window to Wall Ratio = 0.452			260.50 m ²	Window to Wall Ratio = 0.557			
Total Window Factor	36.66 m ²				29.37 m ²				83.39 m ²				145.10 m ²				
Heat Conduction	Opaque Wall	2.84 W/m ²				3.58 W/m ²				2.38 W/m ²				1.87 W/m ²			
	Window	0.30 W/m ²				0.25 W/m ²				0.97 W/m ²				1.03 W/m ²			
Window	Glass Type	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %
		<input checked="" type="checkbox"/> Tinted	Area= 36.66 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 29.37 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 83.39 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 145.10 m ²	SC= 0.46	VLT= 56 % ER= 16 %
		<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			
External Shading	Overhang	<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 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			
Solar Radiation through Glazing	4.67 W/m ²				4.01 W/m ²				13.07 W/m ²				12.29 W/m ²				
Average Absorptivity	0.5				0.5				0.5				0.5				
RTTV _{Wall} at each facade	7.81 W/m ²				7.85 W/m ²				16.42 W/m ²				15.19 W/m ²				
Overall RTTV _{Wall}					12.16 W/m ²								< 14				

Table 3 Sheet D1

RTTV_{Roof} (Mansion A)

Roof Orientation Factor	2.16 (3)				
Total Roof Area (Residential Units)	496.70 m ²				
Total Skylight Area	15.81 m ²				
Heat Conduction	Roof	2.06 W/m ² (1)			
	Skylight	0.13 W/m ² (2)			
Skylight	Glass Type	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %
		<input checked="" type="checkbox"/> Tinted	Area= 15.81 m ²	SC= 0.56	VLT= 53 % ER= 16 %
		<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	1.58 W/m ² (1)				
Average Absorptivity (roof)	0.6				
Overall RTTV _{Roof}	3.76 W/m ² (1)				



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 Appendix **A**

Address: Residential Development at 3 Lung Kui Road, Beacon Hill, Kowloon, N.K.I.L. No. 6533		BD Ref. No. 4057/16
Building Type:	Residential	
RTTV calculated by	<input checked="" type="checkbox"/> 1. Registered Professional Engineers <input type="checkbox"/> 2. Architect <input type="checkbox"/> 3. Others, please specify:	
No. of Storeys (Residential Units)	2 Storeys (Mansion B)	

Table 1

Deemed to Satisfy RTTV _{Wall} (Mansion B)								
Facade Orientation Facing	NE	SW	NW	SE				
Average Absorptivity	0.5	0.5	0.5	0.5				
Average Window to Wall Ratio	0.357	0.335	0.425	0.611				
Shading Coefficient of Glazing	0.46	0.46	0.46	0.46				
Average Shading Coefficient of Facade	0.63	0.50	0.52	0.34				
Visible Light Transmittance	56 %	56 %	56 %	56 %	%	%	%	%
External Reflectance	16 %	16 %	16 %	16 %	%	%	%	%

Table 2

RTTV _{Wall} (Mansion B)																	
Facade Orientation Facing		NE				SW				NW				SE			
Wall Orientation Factor		0.924				1.092				0.965				1.051			
Total External Wall Area (Residential Units)		224.00 m ²		Window to Wall Ratio = 0.357		213.10 m ²		Window to Wall Ratio = 0.335		189.30 m ²		Window to Wall Ratio = 0.425		189.00 m ²		Window to Wall Ratio = 0.611	
Total Window Factor		79.97 m ²				71.39 m ²				80.45 m ²				115.48 m ²			
Heat Conduction	Opaque Wall	2.37 W/m ²				2.90 W/m ²				2.48 W/m ²				1.64 W/m ²			
	Window	0.55 W/m ²				0.66 W/m ²				0.96 W/m ²				0.72 W/m ²			
Window	Glass Type	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %
		<input checked="" type="checkbox"/> Tinted	Area= 79.97 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 71.39 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 80.45 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 115.48 m ²	SC= 0.46	VLT= 56 % ER= 16 %
		<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 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		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	Sidefin	<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		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Solar Radiation through Glazing		8.08 W/m ²				9.49 W/m ²				11.73 W/m ²				12.33 W/m ²			
Average Absorptivity		0.5				0.5				0.5				0.5			
RTTV _{Wall} at each facade		10.99 W/m ²				13.05 W/m ²				15.18 W/m ²				14.69 W/m ²			
Overall RTTV _{Wall}		13.36 W/m ²															

Table 3

RTTV _{Roof} (Mansion B)										
Roof Orientation Factor		2.16								
Total Roof Area (Residential Units)		535.7 m ²								
Total Skylight Area		0 m ²								
Heat Conduction	Roof	2.10 W/m ²								
	Skylight	0 W/m ²								
Skylight	Glass Type	<input type="checkbox"/> Reflective	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= %				
	Double Glazing	<input type="checkbox"/> Yes <input type="checkbox"/> No								
External Shading	<input type="checkbox"/> Yes <input type="checkbox"/> No									
Solar Radiation through Glazing		0 W/m ²								
Average Absorptivity (roof)		0.6								
Overall RTTV _{Roof}		2.10 W/m ²								

Address: Residential Development at 3 Lung Kui Road, Beacon Hill, Kowloon, N.K.I.L. No. 6533		BD Ref. No. 4057/16
Building Type:	Residential	
RTTV calculated by	<input checked="" type="checkbox"/> 1. Registered Professional Engineers <input type="checkbox"/> 2. Architect <input type="checkbox"/> 3. Others, please specify:	
No. of Storeys (Residential Units)	2 Storeys (Mansion C)	

Table 1

Deemed to Satisfy RTTV_{Wall} (Mansion C)

Facade Orientation Facing	NE	SW	NW	SE				
Average Absorptivity	0.5	0.5	0.5	0.5				
Average Window to Wall Ratio	0.190	0.280	0.360	0.596				
Shading Coefficient of Glazing	0.46	0.46	0.46	0.46				
Average Shading Coefficient of Facade	0.99	0.59	0.59	0.34				
Visible Light Transmittance	56 %	56 %	56 %	56 %	%	%	%	%
External Reflectance	16 %	16 %	16 %	16 %	%	%	%	%

Table 2

RTTV_{Wall} (Mansion C)

Facade Orientation Facing		NE				SW				NW				SE			
Wall Orientation Factor		0.924				1.092				0.965				1.051			
Total External Wall Area (Residential Units)		154.70 m ²		Window to Wall Ratio = 0.190		171.80 m ²		Window to Wall Ratio = 0.280		206.80 m ²		Window to Wall Ratio = 0.360		202.50 m ²		Window to Wall Ratio = 0.596	
Total Window Factor		29.39 m ²				48.10 m ²				74.45 m ²				120.69 m ²			
Heat Conduction	Opaque Wall	2.99 W/m ²				3.14 W/m ²				2.71 W/m ²				1.70 W/m ²			
	Window	0.33 W/m ²				0.49 W/m ²				0.69 W/m ²				1.05 W/m ²			
Window	Glass Type	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %
		<input checked="" type="checkbox"/> Tinted	Area= 29.39 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 48.10 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 74.45 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 120.69 m ²	SC= 0.46	VLT= 56 % ER= 16 %
		<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			
	External Shading	Overhang	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
		Siddefin	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Siddefin	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Siddefin	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Siddefin	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Siddefin	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Solar Radiation through Glazing		4.70 W/m ²				7.29 W/m ²				8.37 W/m ²				12.55 W/m ²			
Average Absorptivity		0.5				0.5				0.5				0.5			
RTTV _{Wall} at each facade		8.03 W/m ²				10.92 W/m ²				11.77 W/m ²				15.30 W/m ²			
Overall RTTV _{Wall}		11.76 W/m ²															

Table 3

RTTV_{Roof} (Mansion C)

Roof Orientation Factor		2.16	
Total Roof Area (Residential Units)		579.10 m ²	
Total Skylight Area		0 m ²	
Heat Conduction	Roof	2.41 W/m ²	
	Skylight	0 W/m ²	
Skylight	Glass Type	<input type="checkbox"/> Reflective	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= %
	Double Glazing	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	External Shading	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Solar Radiation through Glazing		0 W/m ²	
Average Absorptivity (roof)		0.6	
Overall RTTV _{Roof}		2.41 W/m ²	

Address: Residential Development at 3 Lung Kui Road, Beacon Hill, Kowloon, N.K.I.L. No. 6533		BD Ref. No. 4057/16
Building Type:	Residential	
RTTV calculated by	<input checked="" type="checkbox"/> 1. Registered Professional Engineers <input type="checkbox"/> 2. Architect <input type="checkbox"/> 3. Others, please specify:	
No. of Storeys (Residential Units)	7 Storeys (Tower 1)	

Table 1

Deemed to Satisfy RTTV _{Wall} (T1)								
Facade Orientation Facing	NE	SW	NW	SE				
Average Absorptivity	0.5	0.5	0.5	0.5				
Average Window to Wall Ratio	0.147	0.158	0.475	0.572				
Shading Coefficient of Glazing	0.46	0.46	0.46	0.46				
Average Shading Coefficient of Facade	0.99	0.80	0.46	0.35				
Visible Light Transmittance	56 %	56 %	56 %	56 %	%	%	%	%
External Reflectance	16 %	16 %	16 %	16 %	%	%	%	%

Table 2

RTTV _{Wall} (T1)																	
Facade Orientation Facing		NE				SW				NW				SE			
Wall Orientation Factor		0.924				1.092				0.965				1.051			
Total External Wall Area (Residential Units)		301.50 m ²		Window to Wall Ratio = 0.147		208.5 m ²		Window to Wall Ratio = 0.158		702.8 m ²		Window to Wall Ratio = 0.475		842.7 m ²		Window to Wall Ratio = 0.572	
Total Window Area		44.32 m ²		32.94 m ²		333.83 m ²		482.02 m ²									
Heat Conduction	Opaque Wall	2.76 W/m ²				3.32 W/m ²				1.60 W/m ²				1.38 W/m ²			
	Window	0.15 W/m ²				0.19 W/m ²				0.51 W/m ²				0.67 W/m ²			
Window	Glass Type	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %
		<input checked="" type="checkbox"/> Tinted	Area= 44.32 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 32.94 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 333.83 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 482.02 m ²	SC= 0.46	VLT= 56 % ER= 16 %
		<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			
External Shading		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
		Sdefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Sdefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Sdefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Sdefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Solar Radiation through Glazing		2.57 W/m ²				3.29 W/m ²				8.71 W/m ²				11.42 W/m ²			
Average Absorptivity		0.5				0.5				0.5				0.5			
RTTV _{Wall} at each facade		5.48 W/m ²				6.80 W/m ²				10.82 W/m ²				13.47 W/m ²			
Overall RTTV _{Wall}		10.71 W/m ²															

Table 3

RTTV _{Roof} (T1)						
Roof Orientation Factor		2.16				
Total Roof Area (Residential Units)		541 m ²				
Total Skylight Area		0 m ²				
Heat Conduction	Roof	1.99 W/m ²				
	Skylight	0 W/m ²				
Skylight	Glass Type	<input type="checkbox"/> Reflective	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= %
Double Glazing		<input type="checkbox"/> Yes <input type="checkbox"/> No				
External Shading		<input type="checkbox"/> Yes <input type="checkbox"/> No				
Solar Radiation through Glazing		0 W/m ²				
Average Absorptivity (roof)		0.6				
Overall RTTV _{Roof}		1.99 W/m ²				



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 Window and skylight data should represent the major proportion of its use in the development.

PNAP
APP-156
 Appendix **A**

Address: Residential Development at 3 Lung Kui Road, Beacon Hill, Kowloon, N.K.I.L. No. 6533		BD Ref. No. 4057/16
Building Type:	Residential	
RTTV calculated by	<input checked="" type="checkbox"/> 1. Registered Professional Engineers <input type="checkbox"/> 2. Architect <input type="checkbox"/> 3. Others, please specify:	
No. of Storeys (Residential Units)	7 Storeys (Tower 2)	

Table 1

Deemed to Satisfy RTTV _{Wall} (T2)								
Facade Orientation Facing	NE	SW	NW	SE				
Average Absorptivity	0.5	0.5	0.5	0.5				
Average Window to Wall Ratio	0.218	0.099	0.413	0.596				
Shading Coefficient of Glazing	0.46	0.46	0.46	0.46				
Average Shading Coefficient of Facade	0.99	0.80	0.52	0.34				
Visible Light Transmittance	56 %	56 %	56 %	56 %	%	%	%	%
External Reflectance	16 %	16 %	16 %	16 %	%	%	%	%

Table 2

RTTV _{Wall} (T2)																	
Facade Orientation Facing		NE				SW				NW				SE			
Wall Orientation Factor		0.924				1.092				0.965				1.051			
Total External Wall Area (Residential Units)		264.60 m ²		Window to Wall Ratio = 0.218		420.50 m ²		Window to Wall Ratio = 0.099		771.80 m ²		Window to Wall Ratio = 0.413		911.70 m ²		Window to Wall Ratio = 0.596	
Total Window Factor		57.68 m ²				41.63 m ²				318.75 m ²				543.37 m ²			
Heat Conduction	Opaque Wall	2.56 W/m ²				3.69 W/m ²				1.86 W/m ²				1.43 W/m ²			
	Window	0.22 W/m ²				0.12 W/m ²				0.44 W/m ²				0.69 W/m ²			
Window	Glass Type	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %
		<input checked="" type="checkbox"/> Tinted	Area= 57.68 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 41.63 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 318.75 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 543.37 m ²	SC= 0.46	VLT= 56 % ER= 16 %
		<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			
External Shading		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
		Sdefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Sdefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Sdefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Sdefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Solar Radiation through Glazing		3.87 W/m ²				2.07 W/m ²				7.58 W/m ²				11.92 W/m ²			
Average Absorptivity		0.5				0.5				0.5				0.5			
RTTV _{Wall} at each facade		6.65 W/m ²				5.88 W/m ²				9.88 W/m ²				14.04 W/m ²			
Overall RTTV _{Wall}		10.41 W/m ²															

Table 3

RTTV _{Roof} (T2)										
Roof Orientation Factor		2.16								
Total Roof Area (Residential Units)		541 m ²								
Total Skylight Area		0 m ²								
Heat Conduction	Roof	2.07 W/m ²								
	Skylight	0 W/m ²								
Skylight	Glass Type	<input type="checkbox"/> Reflective	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= %					
Double Glazing		<input type="checkbox"/> Yes <input type="checkbox"/> No								
External Shading		<input type="checkbox"/> Yes <input type="checkbox"/> No								
Solar Radiation through Glazing		0 W/m ²								
Average Absorptivity (roof)		0.6								
Overall RTTV _{Roof}		2.07 W/m ²								

Address: Residential Development at 3 Lung Kui Road, Beacon Hill, Kowloon, N.K.I.L. No. 6533		BD Ref. No. 4057/16
Building Type:	Residential	
RTTV calculated by	<input checked="" type="checkbox"/> 1. Registered Professional Engineers <input type="checkbox"/> 2. Architect <input type="checkbox"/> 3. Others, please specify:	
No. of Storeys (Residential Units)	7 Storeys (Tower 3)	

Table 1

Deemed to Satisfy RTTV _{Wall} (T3)								
Facade Orientation Facing	NE	SW	NW	SE				
Average Absorptivity	0.5	0.5	0.5	0.5				
Average Window to Wall Ratio	0.101	0.139	0.417	0.598				
Shading Coefficient of Glazing	0.46	0.46	0.46	0.46				
Average Shading Coefficient of Facade	0.99	0.80	0.52	0.34				
Visible Light Transmittance	56 %	56 %	56 %	56 %	%	%	%	%
External Reflectance	16 %	16 %	16 %	16 %	%	%	%	%

Table 2

RTTV _{Wall} (T3)																					
Facade Orientation Facing		NE				SW				NW				SE							
Wall Orientation Factor		0.924				1.092				0.965				1.051							
Total External Wall Area (Residential Units)		428.9 m ²		Window to Wall Ratio = 0.101		413.90 m ²		Window to Wall Ratio = 0.139		771.50 m ²		Window to Wall Ratio = 0.417		908.70 m ²		Window to Wall Ratio = 0.598					
Total Window Area		43.32 m ²		57.53 m ²		321.72 m ²		543.40 m ²													
Heat Conduction	Opaque Wall	3.12 W/m ²				3.55 W/m ²				1.85 W/m ²				1.42 W/m ²							
	Window	0.10 W/m ²				0.17 W/m ²				0.45 W/m ²				0.70 W/m ²							
Window	Glass Type	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= %	ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= %	ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= %	ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= %	ER= %
		<input checked="" type="checkbox"/> Tinted	Area= 43.32 m ²	SC= 0.46	VLT= 56 %	ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 57.53 m ²	SC= 0.46	VLT= 56 %	ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 321.72 m ²	SC= 0.46	VLT= 56 %	ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 543.40 m ²	SC= 0.46	VLT= 56 %	ER= 16 %
		<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							
External Shading		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
		Sidefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Sidefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Sidefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Sidefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
Solar Radiation through Glazing		1.80 W/m ²				2.92 W/m ²				7.66 W/m ²				11.96 W/m ²							
Average Absorptivity		0.5				0.5				0.5				0.5							
RTTV _{Wall} at each facade		5.02 W/m ²				6.64 W/m ²				9.96 W/m ²				14.07 W/m ²							
Overall RTTV _{Wall}						10.06 W/m ²															

Table 3

RTTV _{Roof} (T3)											
Roof Orientation Factor		2.16									
Total Roof Area (Residential Units)		541 m ²									
Total Skylight Area		0 m ²									
Heat Conduction	Roof	2.09 W/m ²									
	Skylight	0 W/m ²									
Skylight	Glass Type	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= %	ER= %	<input type="checkbox"/> Reflective	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= %
Double Glazing		<input type="checkbox"/> Yes <input type="checkbox"/> No									
External Shading		<input type="checkbox"/> Yes <input type="checkbox"/> No									
Solar Radiation through Glazing		0 W/m ²									
Average Absorptivity (roof)		0.6									
Overall RTTV _{Roof}		2.09 W/m ²									



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: Residential Development at 3 Lung Kui Road, Beacon Hill, Kowloon, N.K.I.L. No. 6533		BD Ref. No. 4057/16
Building Type:	Residential	
RTTV calculated by	<input checked="" type="checkbox"/> 1. Registered Professional Engineers <input type="checkbox"/> 2. Architect <input type="checkbox"/> 3. Others, please specify:	
No. of Storeys (Residential Units)	7 Storeys (Tower 5)	

Table 1

Deemed to Satisfy RTTV _{Wall} (T5)									
Facade Orientation Facing	N	S	W	E					
Average Absorptivity	0.5	0.5	0.5	0.5					
Average Window to Wall Ratio	0.143	0.181	0.408	0.599					
Shading Coefficient of Glazing	0.46	0.46	0.46	0.46					
Average Shading Coefficient of Facade	0.99	0.99	0.41	0.33					
Visible Light Transmittance	56 %	56 %	56 %	56 %	%	%	%	%	%
External Reflectance	16 %	16 %	16 %	16 %	%	%	%	%	%

Table 2

RTTV _{Wall} (T5)																	
Facade Orientation Facing		N				S				W				E			
Wall Orientation Factor		0.79				0.975				1.131				1.072			
Total External Wall Area (Residential Units)		418.50 m ²		Window to Wall Ratio = 0.143		240.00 m ²		Window to Wall Ratio = 0.181		749.20 m ²		Window to Wall Ratio = 0.408		909.8 m ²		Window to Wall Ratio = 0.599	
Total Window Factor		59.85 m ²				43.44 m ²				305.67 m ²				544.97 m ²			
Heat Conduction	Opaque Wall	2.54 W/m ²				3.05 W/m ²				2.22 W/m ²				1.45 W/m ²			
	Window	0.13 W/m ²				0.20 W/m ²				0.51 W/m ²				0.71 W/m ²			
Window	Glass Type	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= % ER= %
		<input checked="" type="checkbox"/> Tinted	Area= 59.85 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 43.44 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 305.67 m ²	SC= 0.46	VLT= 56 % ER= 16 %	<input checked="" type="checkbox"/> Tinted	Area= 544.97 m ²	SC= 0.46	VLT= 56 % ER= 16 %
		<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			
External Shading		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
		Sidefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Sidefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Sidefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Sidefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Solar Radiation through Glazing		2.16 W/m ²				3.39 W/m ²				8.78 W/m ²				12.20 W/m ²			
Average Absorptivity		0.5				0.5				0.5				0.5			
RTTV _{Wall} at each facade		4.83 W/m ²				6.64 W/m ²				11.52 W/m ²				14.36 W/m ²			
Overall RTTV _{Wall}		10.92 W/m ²															

Table 3

RTTV _{Roof} (T5)									
Roof Orientation Factor		2.16							
Total Roof Area (Residential Units)		541 m ²							
Total Skylight Area		0 m ²							
Heat Conduction	Roof	2.02 W/m ²							
	Skylight	0 W/m ²							
Skylight	Glass Type	<input type="checkbox"/> Reflective	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= %
	Double Glazing	<input type="checkbox"/> Yes <input type="checkbox"/> No							
External Shading		<input type="checkbox"/> Yes <input type="checkbox"/> No							
Solar Radiation through Glazing		0 W/m ²							
Average Absorptivity (roof)		0.6							
Overall RTTV _{Roof}		2.02 W/m ²							

Address: Residential Development at 3 Lung Kui Road, Beacon Hill, Kowloon, N.K.I.L. No. 6533		BD Ref. No. 4057/16
Building Type:	Residential	
RTTV calculated by	<input checked="" type="checkbox"/> 1. Registered Professional Engineers <input type="checkbox"/> 2. Architect <input type="checkbox"/> 3. Others, please specify:	
No. of Storeys (Residential Units)	7 Storeys (Tower 6)	

Table 1

Deemed to Satisfy RTTV _{Wall} (T6)									
Facade Orientation Facing	N	S	W	E					
Average Absorptivity	0.5	0.5	0.5	0.5					
Average Window to Wall Ratio	0.215	0.601	0.295	0.571					
Shading Coefficient of Glazing	0.46	0.46	0.52	0.46					
Average Shading Coefficient of Facade	0.99	0.38	0.41	0.34					
Visible Light Transmittance	56 %	56 %	56 %	56 %	%	%	%	%	%
External Reflectance	16 %	16 %	16 %	16 %	%	%	%	%	%

Table 2

RTTV _{Wall} (T6)																					
Facade Orientation Facing		N				S				W				E							
Wall Orientation Factor		0.79				0.975				1.131				1.072							
Total External Wall Area (Residential Units)		572.1 m ²		Window to Wall Ratio = 0.215		670.6 m ²		Window to Wall Ratio = 0.601		474.30 m ²		Window to Wall Ratio = 0.295		693.50 m ²		Window to Wall Ratio = 0.571					
Total Window Area		123.00 m ²		403.03 m ²		139.92 m ²		395.99 m ²													
Heat Conduction	Opaque Wall	2.22 W/m ²				1.05 W/m ²				2.41 W/m ²				1.29 W/m ²							
	Window	0.19 W/m ²				0.65 W/m ²				0.37 W/m ²				0.68 W/m ²							
Window	Glass Type	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= %	ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= %	ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= %	ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= %	ER= %
		<input checked="" type="checkbox"/> Tinted	123.00 m ²	0.46	56 %	16 %	<input checked="" type="checkbox"/> Tinted	403.03 m ²	0.46	56 %	16 %	<input checked="" type="checkbox"/> Tinted	139.92 m ²	0.46	56 %	16 %	<input checked="" type="checkbox"/> Tinted	395.99 m ²	0.46	56 %	16 %
		<input type="checkbox"/> Clear	m ²				<input type="checkbox"/> Clear	m ²				<input type="checkbox"/> Clear	m ²				<input type="checkbox"/> Clear	m ²			
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							
External Shading		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Overhang		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
		Sidefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Sidefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Sidefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Sidefin		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
Solar Radiation through Glazing		3.26 W/m ²				11.12 W/m ²				6.35 W/m ²				11.60 W/m ²							
Average Absorptivity		0.5				0.5				0.5				0.5							
RTTV _{Wall} at each facade		5.67 W/m ²				12.82 W/m ²				9.13 W/m ²				13.56 W/m ²							
Overall RTTV _{Wall}		10.61 W/m ²																			

Table 3

RTTV _{Roof} (T6)											
Roof Orientation Factor		2.16									
Total Roof Area (Residential Units)		541 m ²									
Total Skylight Area		0 m ²									
Heat Conduction	Roof	1.65 W/m ²									
	Skylight	0 W/m ²									
Skylight	Glass Type	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= %	ER= %	<input type="checkbox"/> Reflective	Area= m ²	SC=	VLT= %	ER= %
		<input type="checkbox"/> Tinted	m ²				<input type="checkbox"/> Tinted	m ²			
		<input type="checkbox"/> Clear	m ²				<input type="checkbox"/> Clear	m ²			
Double Glazing		<input type="checkbox"/> Yes <input type="checkbox"/> No									
External Shading		<input type="checkbox"/> Yes <input type="checkbox"/> No									
Solar Radiation through Glazing		0 W/m ²									
Average Absorptivity (roof)		0.6									
Overall RTTV _{Roof}		1.65 W/m ²									