Appendix B
(PNAP APP-156)

OTTV of Resident's Recreational Facilities Summary Sheet (Clubhouse)

Address: No. 101 King's Road, North Point, Hong Kong						BD Ref. No. 2/3061/11
Building Type / Use :		Resident's Recreational Facilities				
OTTV calculated by		☑ 1. Registered Professional Engineers				
		☐ 2. Architect				
		☐ 3. Others, please specify :				
Classification		☑ Podium / ☐ Tower				
No. of Storeys (RRF)		1				
Gross Floor Area		442.503 m²				
Usable Floor Area		250.519 m²				
Total External Wall Area (including windows)		502.2 m²		Window to Wall Ratio		
Total Window Area		174.6 m²		0.35 = 1		
Total Skylight Area		0 m²				
**Weighted Average U-value	Opaque Wall	1.66 W/m²				
	Window	4.9 W/m²				
	Opaque Roof	0.39 W/m²				
	Skylight	0 W/m²				
Window	Glass Type	☐ Reflective	Area= m²	SC=	VLT= %	ER= %
		☑ Tinted	Area= 174.6 m²	SC=0.54	VLT=43.6 %	ER= 5.41 %
		☐ Clear	Area= m²	SC=	VLT= %	ER= %
	Double Glazing	☑ Yes ☐ No				
	External Shading	Overhang ☐ Yes ☑ No				
		Sidefin ☐ Yes ☑ No				
Skylight	Glass Type	☐ Reflective	Area= m²	SC=	VLT= %	ER= %
		☐ Tinted	Area= m²	SC=	VLT= %	ER= %
		☐ Clear	Area= m²	SC=	VLT= %	ER= %
	Double Glazing	☐ Yes ☐ No				
	External Shading	☐ Yes ☐ No				
		☐ Yes ☐ No				
**Weighted Average Absorptivity	Wall	0.82				
	Roof	0.3				
**Weighted Average Density	Wall	477.4 kg/m²				
	Roof	2400 kg/m²				
$OTTV_{RRF}$	Wall	32.83 W/m²				
	Roof	2.47 W/m²				
	Overall Average	29.73 W/m²				

ER = External Reflectance; SC = Shading coefficient & VLT = Visible Light Transmittance

** Weighted by area

Notes :
1. Please tick in the box as appropriate
2. Window and skylight data should represent the major proportion of its use in the development.

Building (Energy Efficiency) Regulation Form OTTV1
Calculation of 'U' Value of Composite Wall
and Details of Other Values

Sheet No.A 1 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Physical Data of Opaque Wall
Facade Orientation Facing N Solar Factor (SF) is 104

Wall Code No.		AL201			
Location of Wall		Dark Brown Aluminium			
External Finish Material		Dark Brown Aluminium			
Conductivity	W/m°C	160			
Density	kg/m3	2800			
Thickness	m	0.030			
Absorptivity	a	0.88			
Intermediate Component		30mm cement/sand render			
Conductivity	W/m°C	0.72			
Density	kg/m3	1860			
Thickness	m	0.03			
Intermediate Component		125mm concrete wall			
Conductivity	W/m°C	2.16			
Density	kg/m3	2400			
Thickness	m	0.125			
Intermediate Component					
Conductivity	W/m°C				
Density	kg/m3				
Thickness	m				
Internal Finish Material		15mm gypsum plaster			
Conductivity	W/m°C	0.3			
Density	kg/m3	1860			
Thickness	m	0.015			
Absorptivity	a	0.3			
'U' Value of Composite Wall	W/m2°C	2.03			
Area of Wall	m2	19.14			
Density of Composite Wall	kg/m2	467.70			
Equivalent Temperature	TDEQ	2.05			
Difference for wall					

Building (Energy Efficiency) Regulation Form OTTV2
Window / Rooflight Schedule

Sheet No.B 2 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Physical Data on window/rooflight
Facade Orientation Facing N Solar Factor (SF) is 104

Window Code No.		GL201	GL201a	GL205	
Location of Window		Laminated Glass	Laminated Glass	Laminated Glass	
Glazing Type		Laminated Glass	Laminated Glass	Laminated Glass	
Thickness	m	0.024	0.025	0.032	
Shading Coefficient (SC)		0.56	0.56	0.39	
Type of Shading Device		None	None	None	
External Shading Multiplier (ESM)		1.000	1.000	1.000	
Area of Glazing	m2	11.807	5.738	3.744	

Physical Data on window/rooflight
Facade Orientation Facing Solar Factor (SF) is

Window Code No.					
Location of Window					
Glazing Type					
Thickness	m				
Shading Coefficient (SC)					
Type of Shading Device					
External Shading Multiplier (ESM)					
Area of Glazing	m2				

Building (Energy Efficiency) Regulation Form OTTV3
Calculation of OTTV of Individual Facade in Building Envelope

Sheet No.C 3 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Facade Orientation Facing N

Opaque Wall

Code No.	Description		Aw	U	a	TDEQ	Sum
AL201	Dark Brown Aluminium		19.14	2.03	0.88	2.05	70.06
		Subtotals	19.136			Heat Gain	70.06

Fenestration

Code No.	Description		Afw	SC	ESM	SF	Sum
GL201	Laminated Glass		11.81	0.56	1.000	104.00	687.64
GL201a	Laminated Glass		5.74	0.56	1.000	104.00	334.18
GL205	Laminated Glass		3.74	0.39	1.000	104.00	151.86
		Subtotals	21.29			Heat Gain	1,173.68

Thus, OTTV of NNE Facade in Building Envelope is :

Gross Heat Gain = 1,243.74 W
Gross Area = 40.43 m2
OTTV = **30.77 W/m2**

Building (Energy Efficiency) Regulation Form OTTV1
Calculation of 'U' Value of Composite Wall
and Details of Other Values

Sheet No.A 4 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Physical Data of Opaque Wall
Facade Orientation Facing E Solar Factor (SF) is 168

Wall Code No.		AL201			
Location of Wall		Dark Brown Aluminium			
External Finish Material		Dark Brown Aluminium			
Conductivity	W/m°C	160			
Density	kg/m3	2800			
Thickness	m	0.030			
Absorptivity	a	0.88			
Intermediate Component		30mm cement/sand render			
Conductivity	W/m°C	0.72			
Density	kg/m3	1860			
Thickness	m	0.03			
Intermediate Component		125mm concrete wall			
Conductivity	W/m°C	2.16			
Density	kg/m3	2400			
Thickness	m	0.125			
Intermediate Component					
Conductivity	W/m°C				
Density	kg/m3				
Thickness	m				
Internal Finish Material		15mm gypsum plaster			
Conductivity	W/m°C	0.3			
Density	kg/m3	1860			
Thickness	m	0.015			
Absorptivity	a	0.3			
'U' Value of Composite Wall	W/m2°C	2.03			
Area of Wall	m2	44.32			
Density of Composite Wall	kg/m2	467.70			
Equivalent Temperature	TDEQ	3.28			
Difference for wall					

Building (Energy Efficiency) Regulation Form OTTV2
Window / Rooflight Schedule

Sheet No.B 5 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Physical Data on window/rooflight
Facade Orientation Facing E Solar Factor (SF) is 168

Window Code No.		GL201	GL201a		
Location of Window		Laminated Glass	Laminated Glass		
Glazing Type		Laminated Glass	Laminated Glass		
Thickness	m	0.024	0.025		
Shading Coefficient (SC)		0.56	0.56		
Type of Shading Device		None	None		
External Shading Multiplier (ESM)		1.000	1.000		
Area of Glazing	m2	49.473	5.497		

Physical Data on window/rooflight
Facade Orientation Facing _____ Solar Factor (SF) is _____

Window Code No.					
Location of Window					
Glazing Type					
Thickness	m				
Shading Coefficient (SC)					
Type of Shading Device					
External Shading Multiplier (ESM)					
Area of Glazing	m2				

Building (Energy Efficiency) Regulation Form OTTV3
Calculation of OTTV of Individual Facade in Building Envelope

Sheet No.C 6 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Facade Orientation Facing E

Opaque Wall

Code No.	Description		Aw	U	a	TDEQ	Sum
AL201	Dark Brown Aluminium		44.32	2.03	0.88	3.28	259.60
		Subtotals	44.315			Heat Gain	259.60

Fenestration

Code No.	Description		Afw	SC	ESM	SF	Sum
GL201	Laminated Glass		49.47	0.56	1.000	168.00	4,654.42
GL201a	Laminated Glass		5.50	0.56	1.000	168.00	517.16
		Subtotals	54.97			Heat Gain	5,171.58

Thus, OTTV of NNE Facade in Building Envelope is :

Gross Heat Gain = 5,431.18 W
Gross Area = 99.29 m2
OTTV = **54.70 W/m2**

Building (Energy Efficiency) Regulation Form OTTV1
Calculation of 'U' Value of Composite Wall
and Details of Other Values

Sheet No.A 7 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Physical Data of Opaque Wall
Facade Orientation Facing S Solar Factor (SF) is 191

Wall Code No.		AL201			
Location of Wall		Dark Brown Aluminium			
External Finish Material		Dark Brown Aluminium			
Conductivity	W/m°C	160			
Density	kg/m3	2800			
Thickness	m	0.030			
Absorptivity	a	0.88			
Intermediate Component		30mm cement/sand render			
Conductivity	W/m°C	0.72			
Density	kg/m3	1860			
Thickness	m	0.03			
Intermediate Component		125mm concrete wall			
Conductivity	W/m°C	2.16			
Density	kg/m3	2400			
Thickness	m	0.125			
Intermediate Component					
Conductivity	W/m°C				
Density	kg/m3				
Thickness	m				
Internal Finish Material		15mm gypsum plaster			
Conductivity	W/m°C	0.3			
Density	kg/m3	1860			
Thickness	m	0.015			
Absorptivity	a	0.3			
'U' Value of Composite Wall	W/m2°C	1.53			
Area of Wall	m2	37.11			
Density of Composite Wall	kg/m2	467.70			
Equivalent Temperature	TDEQ	2.15			
Difference for wall					

Building (Energy Efficiency) Regulation Form OTTV2
Window / Rooflight Schedule

Sheet No.B 8 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Physical Data on window/rooflight
Facade Orientation Facing S Solar Factor (SF) is 191

Window Code No.		GL201	GL201a	GL203	
Location of Window		Laminated Glass	Laminated Glass	Laminated Glass	
Glazing Type		Laminated Glass	Laminated Glass	Laminated Glass	
Thickness	m	0.024	0.025	0.024	
Shading Coefficient (SC)		0.56	0.56	0.56	
Type of Shading Device		None	None	None	
External Shading Multiplier (ESM)		1.000	1.000	1.000	
Area of Glazing	m2	26.445	16.491	7.166	

Physical Data on window/rooflight
Facade Orientation Facing Solar Factor (SF) is

Window Code No.					
Location of Window					
Glazing Type					
Thickness	m				
Shading Coefficient (SC)					
Type of Shading Device					
External Shading Multiplier (ESM)					
Area of Glazing	m2				

Building (Energy Efficiency) Regulation Form OTTV3
Calculation of OTTV of Individual Facade in Building Envelope

Sheet No.C 9 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Facade Orientation Facing S

Opaque Wall

Code No.	Description		Aw	U	a	TDEQ	Sum
AL201	Dark Borwn Aluminium		37.11	1.53	0.88	2.15	107.56
		Subtotals	37.106			Heat Gain	107.56

Fenestration

Code No.	Description		Afw	SC	ESM	SF	Sum
GL201	Laminated Glass		26.45	0.56	1.000	191.00	2,828.56
GL201a	Laminated Glass		16.49	0.56	1.000	191.00	1,763.88
GL203	Laminated Glass		7.17	0.56	1.000	191.00	766.48
		Subtotals	50.10			Heat Gain	5,358.91

Thus, OTTV of NNE Facade in Building Envelope is :

Gross Heat Gain = 5,466.47 W
Gross Area = 87.21 m2
OTTV = **62.68 W/m2**

Building (Energy Efficiency) Regulation Form OTTV1
Calculation of 'U' Value of Composite Wall
and Details of Other Values

Sheet No.A 10 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Physical Data of Opaque Wall
Facade Orientation Facing W Solar Factor (SF) is 175

Wall Code No.		AL201			
Location of Wall		Dark Brown Aluminium			
External Finish Material		Dark Brown Aluminium			
Conductivity	W/m°C	160			
Density	kg/m3	2800			
Thickness	m	0.030			
Absorptivity	a	0.9			
Intermediate Component		30mm cement/sand render			
Conductivity	W/m°C	0.72			
Density	kg/m3	1860			
Thickness	m	0.03			
Intermediate Component		125mm concrete wall			
Conductivity	W/m°C	2.16			
Density	kg/m3	2400			
Thickness	m	0.125			
Intermediate Component					
Conductivity	W/m°C				
Density	kg/m3				
Thickness	m				
Internal Finish Material		15mm gypsum plaster			
Conductivity	W/m°C	0.3			
Density	kg/m3	1860			
Thickness	m	0.015			
Absorptivity	a	0.3			
'U' Value of Composite Wall	W/m2°C	2.03			
Area of Wall	m2	18.53			
Density of Composite Wall	kg/m2	467.70			
Equivalent Temperature	TDEQ	2.86			
Difference for wall					

Building (Energy Efficiency) Regulation Form OTTV2
Window / Rooflight Schedule

Sheet No.B 11 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Physical Data on window/rooflight
Facade Orientation Facing W Solar Factor (SF) is 175

Window Code No.		GL201	GL201a	GL203	
Location of Window		Laminated Glass	Laminated Glass	Laminated Glass	
Glazing Type		Laminated Glass	Laminated Glass	Laminated Glass	
Thickness	m	0.024	0.025	0.024	
Shading Coefficient (SC)		0.56	0.56	0.56	
Type of Shading Device		None	None	None	
External Shading Multiplier (ESM)		1.000	1.000	1.000	
Area of Glazing	m2	5.349	5.443	5.841	

Physical Data on window/rooflight
Facade Orientation Facing Wolar Factor (WF) iW

Window Code No.					
Location of Window					
Glazing Type					
Thickness	m				
Shading Coefficient (SC)					
Type of Shading Device					
External Shading Multiplier (ESM)					
Area of Glazing	m2				

Building (Energy Efficiency) Regulation Form OTTV3
Calculation of OTTV of Individual Facade in Building Envelope

Sheet No.C 12 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Facade Orientation Facing W

Opaque Wall

Code No.	Description		Aw	U	a	TDEQ	Sum
AL201	Dark Brown Aluminium		18.53	2.03	0.90	2.86	96.77
		Subtotals	18.525			Heat Gain	96.77

Fenestration

Code No.	Description		Afw	SC	ESM	SF	Sum
GL201	Laminated Glass		5.35	0.56	1.000	175.00	524.20
GL201a	Laminated Glass		5.44	0.56	1.000	175.00	533.41
GL203	Laminated Glass		5.84	0.56	1.000	175.00	572.42
		Subtotals	16.63			Heat Gain	1,630.03

Thus, OTTV of NNE Facade in Building Envelope is :

Gross Heat Gain = 1,726.81 W
Gross Area = 35.16 m2
OTTV = **49.12 W/m2**

Building (Energy Efficiency) Regulation Form OTTV1
Calculation of 'U' Value of Composite Wall
and Details of Other Values

Sheet No.A 13 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Physical Data of Opaque Wall
Facade Orientation Facing NE Solar Factor (SF) is 138

Wall Code No.		AL201			
Location of Wall		Dark Brown Aluminium			
External Finish Material		Dark Brown Aluminium			
Conductivity	W/m°C	160			
Density	kg/m3	2800			
Thickness	m	0.030			
Absorptivity	a	0.88			
Intermediate Component		30mm cement/sand render			
Conductivity	W/m°C	0.72			
Density	kg/m3	1860			
Thickness	m	0.03			
Intermediate Component		125mm concrete wall			
Conductivity	W/m°C	2.16			
Density	kg/m3	2400			
Thickness	m	0.125			
Intermediate Component					
Conductivity	W/m°C				
Density	kg/m3				
Thickness	m				
Internal Finish Material		15mm gypsum plaster			
Conductivity	W/m°C	0.3			
Density	kg/m3	1860			
Thickness	m	0.015			
Absorptivity	a	0.3			
'U' Value of Composite Wall	W/m2°C	1.53			
Area of Wall	m2	68.40			
Density of Composite Wall	kg/m2	467.70			
Equivalent Temperature	TDEQ	2.67			
Difference for wall					

Building (Energy Efficiency) Regulation Form OTTV2
Window / Rooflight Schedule

Sheet No.B 14 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Physical Data on window/rooflight
Facade Orientation Facing NE Solar Factor (SF) is 138

Window Code No.		GL201	GL205	GL205a	
Location of Window		Laminated Glass	Laminated Glass	Laminated Glass	
Glazing Type		Laminated Glass	Laminated Glass	Laminated Glass	
Thickness	m	0.024	0.031	0.036	
Shading Coefficient (SC)		0.56	0.39	0.44	
Type of Shading Device		None	None	None	
External Shading Multiplier (ESM)		1.000	1.000	1.000	
Area of Glazing	m2	6.869	9.948	14.84	

Physical Data on window/rooflight
Facade Orientation Facing _____ Solar Factor (SF) is _____

Window Code No.					
Location of Window					
Glazing Type					
Thickness	m				
Shading Coefficient (SC)					
Type of Shading Device					
External Shading Multiplier (ESM)					
Area of Glazing	m2				

Building (Energy Efficiency) Regulation Form OTTV3
Calculation of OTTV of Individual Facade in Building Envelope

Sheet No.C 15 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Facade Orientation Facing NE

Opaque Wall

Code No.	Description		Aw	U	a	TDEQ	Sum
AL201	Dark Brown Aluminium		68.40	1.53	0.88	2.67	246.21
		Subtotals	68.399			Heat Gain	246.21

FNEstration

Code No.	Description		Afw	SC	ESM	SF	Sum
GL201	Laminated Glass		6.87	0.56	1.000	138.00	530.84
GL205	Laminated Glass		9.95	0.39	1.000	138.00	535.40
GL205a	Laminated Glass		14.84	0.44	1.000	138.00	901.33
		Subtotals	31.66			Heat Gain	1,967.57

Thus, OTTV of NE Facade in Building Envelope is :

Gross Heat Gain = 2,213.78 W
Gross Area = 100.06 m2
OTTV = **22.12 W/m2**

Building (Energy Efficiency) Regulation Form OTTV1
Calculation of 'U' Value of Composite Wall
and Details of Other Values

Sheet No.A 16 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Physical Data of Opaque Wall
Facade Orientation Facing SW Solar Factor (SF) is 202

Wall Code No.		AL201			
Location of Wall		Dark Brown Aluminium			
External Finish Material		Dark Brown Aluminium			
Conductivity	W/m°C	160			
Density	kg/m3	2800			
Thickness	m	0.030			
Absorptivity	a	0.88			
Intermediate Component		30mm cement/sand render			
Conductivity	W/m°C	0.72			
Density	kg/m3	1860			
Thickness	m	0.03			
Intermediate Component		125mm concrete wall			
Conductivity	W/m°C	2.16			
Density	kg/m3	2400			
Thickness	m	0.125			
Intermediate Component					
Conductivity	W/m°C				
Density	kg/m3				
Thickness	m				
Internal Finish Material		15mm gypsum plaster			
Conductivity	W/m°C	0.3			
Density	kg/m3	1860			
Thickness	m	0.015			
Absorptivity	a	0.3			
'U' Value of Composite Wall	W/m2°C	1.53			
Area of Wall	m2	61.04			
Density of Composite Wall	kg/m2	467.70			
Equivalent Temperature	TDEQ	2.59			
Difference for wall					

Building (Energy Efficiency) Regulation Form OTTV2
Window / Rooflight Schedule

Sheet No.B 17 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Physical Data on window/rooflight
Facade Orientation Facing SW Solar Factor (SF) is 202

Window Code No.				
Location of Window				
Glazing Type				
Thickness m				
Shading Coefficient (SC)				
Type of Shading Device				
External Shading Multiplier (ESM)				
Area of Glazing m2				

Physical Data on window/rooflight
Facade Orientation Facing _____ Solar Factor (SF) is _____

Window Code No.				
Location of Window				
Glazing Type				
Thickness m				
Shading Coefficient (SC)				
Type of Shading Device				
External Shading Multiplier (ESM)				
Area of Glazing m2				

Building (Energy Efficiency) Regulation Form OTTV3
Calculation of OTTV of Individual Facade in Building Envelope

Sheet No.C 18 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Facade Orientation Facing SW

Opaque Wall

Code No.	Description		Aw	U	a	TDEQ	Sum
AL201	Dark Brown Aluminium		61.04	1.53	0.88	2.59	213.13
		Subtotals	61.037			Heat Gain	213.13

FSWstration

Code No.	Description		Afw	SC	ESM	SF	Sum
		Subtotals	0.00			Heat Gain	0.00

Thus, OTTV of SW Facade in Building Envelope is :

Gross Heat Gain = 213.13 W
Gross Area = 61.04 m2
OTTV = **3.49 W/m2**

Building (Energy Efficiency) Regulation Form OTTV1
Calculation of 'U' Value of Composite Wall
and Details of Other Values

Sheet No.A 19 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Physical Data of Opaque Wall
Facade Orientation Facing NW Solar Factor (SF) is 138

Wall Code No.		NW1			
Location of Wall		Concrete			
External Finish Material		Reinforced Concrete			
Conductivity	W/m°C	2.16			
Density	kg/m3	2400			
Thickness	m	0.200			
Absorptivity	a	0.65			
Intermediate Component					
Conductivity	W/m°C				
Density	kg/m3				
Thickness	m				
Intermediate Component					
Conductivity	W/m°C				
Density	kg/m3				
Thickness	m				
Intermediate Component					
Conductivity	W/m°C				
Density	kg/m3				
Thickness	m				
Internal Finish Material		15mm gypsum plaster			
Conductivity	W/m°C	0.3			
Density	kg/m3	1860			
Thickness	m	0.015			
Absorptivity	a	0.3			
'U' Value of Composite Wall	W/m2°C	1.55			
Area of Wall	m2	79.02			
Density of Composite Wall	kg/m2	507.90			
Equivalent Temperature	TDEQ	2.45			
Difference for wall					

Building (Energy Efficiency) Regulation Form OTTV2
Window / Rooflight Schedule

Sheet No.B 20 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Physical Data on window/rooflight
Facade Orientation Facing NW Solar Factor (SF) is 138

Window Code No.					
Location of Window					
Glazing Type					
Thickness	m				
Shading Coefficient (SC)					
Type of Shading Device					
External Shading Multiplier (ESM)					
Area of Glazing	m2				

Physical Data on window/rooflight
Facade Orientation Facing _____ Solar Factor (SF) is _____

Window Code No.					
Location of Window					
Glazing Type					
Thickness	m				
Shading Coefficient (SC)					
Type of Shading Device					
External Shading Multiplier (ESM)					
Area of Glazing	m2				

Building (Energy Efficiency) Regulation Form OTTV3
Calculation of OTTV of Individual Facade in Building Envelope

Sheet No.C 21 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Facade Orientation Facing NW

Opaque Wall

Code No.	Description		Aw	U	a	TDEQ	Sum
NW1	Concrete		79.02	1.55	0.65	2.45	194.92
		Subtotals	79.020			Heat Gain	194.92

FNWstration

Code No.	Description		Afw	SC	ESM	SF	Sum
		Subtotals	0.00			Heat Gain	0.00

Thus, OTTV of NW Facade in Building Envelope is :

Gross Heat Gain = 194.92 W
Gross Area = 79.02 m2
OTTV = **2.47 W/m2**

Building (Energy Efficiency) Regulation Form OTTV1
Calculation of 'U' Value of Composite Wall
and Details of Other Values

Sheet No.A 19 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Physical Data of Opaque Wall
Facade Orientation Facing ROOF Solar Factor (SF) is 264

Wall Code No.		R1			
Location		Podium Roof			
External Finish Material		Tile			
Conductivity	W/m°C	1.5			
Density	kg/m3	2500			
Thickness	m	0.005			
Absorptivity	a	0.3			
Intermediate Component		Cement Sand			
Conductivity	W/m°C	0.72			
Density	kg/m3	1860			
Thickness	m	0.037			
Intermediate Component		Thermal insulation board			
Conductivity	W/m°C	0.026			
Density	kg/m3	30			
Thickness	m	0.05			
Intermediate Component		Cement Sand			
Conductivity	W/m°C	0.72			
Density	kg/m3	1860			
Thickness	m	0.015			
Internal Finish Material		R.C. Wall			
Conductivity	W/m°C	2.16			
Density	kg/m3	2400			
Thickness	m	0.15			
Absorptivity	a	0.3			
U' Value of Composite	W/m2°C	0.39			
Area of Wall	m2	57.11			
Density of Composite Wall	kg/m2	470.72			
Equivalent Temperature	TDEQ	2.45			
Difference for wall					

Building (Energy Efficiency) Regulation Form OTTV2
Window / Rooflight Schedule

Sheet No.B 20 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Physical Data on window/rooflight
Facade Orientation Facing ROOF Solar Factor (SF) is 264

Window Code No.					
Location of Window					
Glazing Type					
Thickness	m				
Shading Coefficient (SC)					
Type of Shading Device					
External Shading Multiplier (ESM)					
Area of Glazing	m2				

Physical Data on window/rooflight
Facade Orientation Facing _____ Solar Factor (SF) is _____

Window Code No.					
Location of Window					
Glazing Type					
Thickness	m				
Shading Coefficient (SC)					
Type of Shading Device					
External Shading Multiplier (ESM)					
Area of Glazing	m2				

Building (Energy Efficiency) Regulation Form OTTV3
Calculation of OTTV of Individual Facade in Building Envelope

Sheet No.C 21 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Facade Orientation Facing ROOF

Opaque Wall

Code No.	Description		Aw	U	a	TDEQ	Sum
NW1	Concrete		57.11	1.55	0.65	2.45	140.86
		Subtotals	57.106			Heat Gain	140.86

FNWstration

Code No.	Description		Afw	SC	ESM	SF	Sum
		Subtotals	0.00			Heat Gain	0.00

Thus, OTTV of NW Facade in Building Envelope is :

Gross Heat Gain = 140.86 W
Gross Area = 57.11 m2
OTTV = **2.47 W/m2**

Building (Energy Efficiency) Regulation Form OTTV4
Summary of OTTV of Building Envelope

Sheet No.D 22 BD Ref No. 2/3061/11
Building Address No. 101 King's Road, North Point, Hong Kong

Total Envelope Heat Gain

Facade Orientation	Gross Area from Form OTTV 3	Gross Heat Gain from Form OTTV 3
N	40.43 m2	1,243.74 W
NE	100.06 m2	2,213.78 W
E	99.29 m2	5,431.18 W
S	87.21 m2	5,466.47 W
SW	61.04 m2	213.13 W
W	35.16 m2	1,726.81 W
NW	79.02 m2	194.92 W
Subtotal	502.19 m2	16,490.02 W
Roof	Gross Area from	Gross Heat Gain from
	57.106 m2	140.86 W
Subtotal	57.106 m2	140.86 W

Walls OTTV = **32.84** **W/m2**

Roofs OTTV = **2.47** **W/m2**

Building OTTV = **29.74** **W/m2** (Requirement for building podium: <50 W/m2, so **Complied**)