



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 B

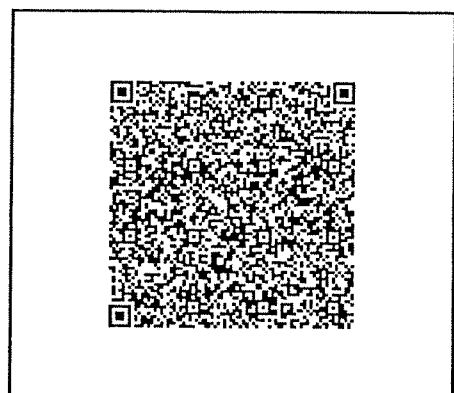
地址: 45 PAU CHUNG STREET, KOWLOON 屋宇署檔號 BD Ref. No. 4073/14

Main data entry form with multiple sections: Building Type/Use, OTTV calculated by, Classification, No. of Storeys, Floor Area, Window Area, Skylight Area, U-values, Window properties, Skylight properties, Absorptivity, and Density.

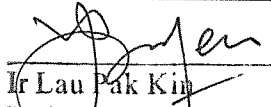
註: ER = 外部反射率 SC = 遮光系數 VLT = 可見光透光率 **按面積加權計算 應以發展項目中使用比例最高的窗戶和天窗的資料為準。

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*

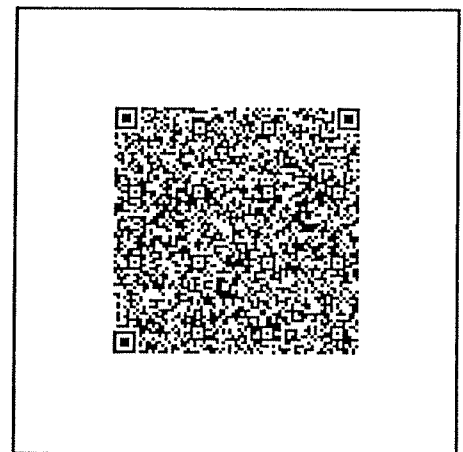

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Registration No. RP 0203025

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

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日 dd 月 mm 年 yyyy



Building (Energy Efficiency) Regulation
Form OTTV 4

Summary of OTTV of Building Envelope

Sheet No. D _____ P-1 _____

BD Ref 2/ 4073 / 14

Building address Proposed Re-Development IN K.I.L. 1687 S.A.S.S.2 at
45 Pau Chung Street, Kowloon

Total Envelope Heat Gain

Facade Orientation	Gross Area From Form OTTV 3	Gross Heat Gain from Form OTTV3
a. SW Elevation	26	164.07
b. SE Elevation	65	2618.78
c. Internal partition wall	82.5	370.96
Subtotal	173.5 (E)	3153.81 (G)
Ceiling SLab		
a. Ceiling Slab	51.359	391.76
b. -		
Subtotal	51.359(F)	391.76 (H)

$$*Walls OTTV = \frac{G}{E} = \frac{3153.81}{173.5} \text{ W/m}^2 = 18.17 \text{ W/m}^2$$

$$*Ceiling Slab OTTV = \frac{H}{F} = \frac{391.76}{51.359} \text{ W/m}^2 = 7.62 \text{ W/m}^2$$

$$*OTTV = \frac{G+H}{E+F} = \frac{3545.57}{224.859} \text{ W/m}^2 = 15.76 \text{ W/m}^2$$

*Delete as appropriate

Building (Energy Efficiency) Regulation
Form OTTV 3

Calculation of OTTV of Individual Façade in Building Envelope

Sheet No. C _____ P-1 _____ BD Ref 2/ 4073 / 14
 Building address Proposed Re-Development IN K.I.L. 1687 S.A.S.S.2 at
45 Pau Chung Street, Kowloon
 Façade Orientation facing SW (Adjoining Building Wall)

Opaque *Walls / Roofs

Code No.	Description	* A_w/A_f	U	α	T_{EQ}^{TD}	Sum
	200mm concrete-2/F	21	4.76	0.57	2.72	154.97
	900mm concrete-2/F	5	1.88	0.57	1.7	9.1
Subtotals		26	(A)	Heat Gain		164.07 (C)

Fenestration

Code No.	Description	* A_{f_w}/A_f	SC	ESM	SF	Sum
	2/F	NIL	-	-	-	-
Subtotals		NIL	(B)	Heat Gain		- (D)

Gross Heat Gain (C+D) 164.07 W

Gross Area (A+B) 26 m²

$$OTTV = \frac{C+D}{A+B} = \frac{164.07}{26} = \underline{6.3} \text{ W/m}^2$$

*Delete as appropriate

Building (Energy Efficiency) Regulation
Form OTTV 3

Calculation of OTTV of Individual Façade in Building Envelope

Sheet No. C P-2 BD Ref 2/ 4073 / 14
 Building address Proposed Re-Development IN K.I.L. 1687 S.A.S.S.2 at
45 Pau Chung Street, Kowloon
 Façade Orientation facing SE

Opaque *Walls / Roofs

Code No.	Description	* A_w/A_r	U	α	TD _{EQ}	Sum
	2/F	45	2.31	0.57	4.3	254.78
Subtotals		45	(A)		Heat Gain	254.78 (C)

Fenestration

Code No.	Description	* A_{f_w}/A_r	SC	ESM	SF	Sum
	2/F	20	0.6	-	197	2364
Subtotals		30	(B)		Heat Gain	2364 (D)

Gross Heat Gain (C+D) 2618.78 W

Gross Area (A+B) 65 m²

OTTV = $\frac{C+D}{A+B}$ = 40.28 W/m²

*Delete as appropriate

Building (Energy Efficiency) Regulation
Form OTTV 3

Calculation of OTTV of Individual Façade in Building Envelope

Sheet No. C P-3 BD Ref 2/4073/14
 Building address Proposed Re-Development IN K.I.L. 1687 S.A.S.S.2 at
45 Pau Chung Street, Kowloon
 Façade Orientation facing Internal Partition Wall

Opaque *Walls / Roofs

Code No.	Description	* A_w/A_r	U	α	TD _{EQ}	Sum
	100mm-2/F	60	3.4	0.57	2.72	316.28
	500mm-2/F	22.5	2.08	0.57	2.05	54.68
	Subtotals	82.5	(A)		Heat Gain	370.96 (C)

Fenestration

Code No.	Description	* A_f/A_r	SC	ESM	SF	Sum
	2/F	NIL	-	-	-	-
	Subtotals	NIL	(B)		Heat Gain	- (D)

Gross Heat Gain (C+D) 370.96 / W

Gross Area (A+B) 82.5 m²

OTTV = $\frac{C+D}{A+B}$ = 4.49 W/m²

*Delete as appropriate

Building (Energy Efficiency) Regulation
Form OTTV 3

Calculation of OTTV of Individual Façade in Building Envelope

Sheet No. C _____ P-4 _____

BD Ref 2/4073/14

Building address Proposed Re-Development IN K.I.L. 1687 S.A.S.S.2 at
45 Pau Chung Street, Kowloon

Façade Orientation facing _____ - _____

Ceiling Slab

Code No.	Description	* A_w/A_r	U	α	TD _{EQ}	Sum
	Ceiling Slab-2/F	51.359	4.92	0.57	2.72	391.76
Subtotals		51.359	(A)	Heat Gain		391.76 (C)

Fenestration

Code No.	Description	* A_f/A_r	SC	ESM	SF	Sum
	2/F	NIL	-	-	-	-
Subtotals		NIL	(B)	Heat Gain		- (D)

Gross Heat Gain (C+D) _____ 391.76 _____ W

Gross Area (A+B) _____ 51.359 _____ m²

OTTV = $\frac{C+D}{A+B}$ = 7.62 W/m²

*Delete as appropriate

Building (Energy Efficiency) Regulation
Form OTTV 2

Window / Rooflight Schedule

Sheet No. B P-1

BD Ref 2/ 4073 / 14

Building address Proposed Re-Development IN K.I.L. 1687 S.A.S.S.2 at
45 Pau Chung Street, Kowloon

Physical data on ~~*window/rooflight~~

Façade Orientation facing SE

Solar Factor (SF) is 197

Window/Rooflight Code No.	*F ₁ /R _{L,T}
Location of *Window/Rooflight	2/F
Glazing type	Double glazing (type 3)
Thickness m	10mm+1.52PVB+10mm
Shading Coefficient (SC)	0.6 /
Type of shading device	-
External shading	
Multiplier (ESM)	-
Area of glazing m ²	30

*Delete as appropriate

Building (Energy Efficiency) Regulation
Form OTTV 2

—Window / Rooflight Schedule

Sheet No. B P-2

BD Ref 2/ 4073 / 14

Building address Proposed Re-Development IN K.I.L. 1687 S.A.S.S.2 at
45 Pau Chung Street, Kowloon

Physical data on ~~*window~~/rooflight

Façade Orientation facing Roof

Solar Factor (SF) is 264

Window/Rooflight Code No.	*F ₁ /RL ₁	*F ₂ /RL ₂	*F ₃ /RL ₃	*F ₄ /RL ₄
Location of *Window / Rooflight	2/F			
Glazing type	NIL			
Thickness m	-			
Shading Coefficient (SC)	-			
Type of shading device	-			
External shading Multiplier (ESM)	-			
Area of glazing m ²	-			

*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 P-1 BD Ref 2/ 4073 / 14
 Building address Proposed Re-Development IN K.I.L. 1687 S.A.S.S.2 at
45 Pau Chung Street, Kowloon
 Physical data of Opaque *wall (Adjoining Building Wall)
 Façade Orientation facing SW Solar Factor (SF) is 202

*Wall/Roof Code No.	*W ₁ /R ₂	*W ₂ /R ₃
Location of Wall/Roof	2/F	2/F
External Finish Material		
Conductivity W/m°C		
Density kg/m ³		
Thickness m		
Absorptivity (α)		
Intermediate component		
Conductivity W/ m°C	2.16	2.16
Density kg/m ³	2400	2400
Thickness m	0.20	0.9
Intermediate component		
Conductivity W/m°C		
Density kg/m ³		
Thickness m		
Intermediate component		
Conductivity W/m°C		
Density kg/m ³		
Thickness m		
Intermediate component		
Conductivity W/m°C		
Density kg/m ³		
Thickness m		
Internal Finish Material		
Conductivity W/m°C		
Density kg/m ³		
Thickness m		
Absorptivity (α)	Ri=0.12	Ri=0.12
"U" value of composite *Wall/Roof	4.76	1.88
Area of *Wall/Roof m ²	4.2 x 5 = 21	1 x 5 = 5
Density of composite *Wall/Roof kg/m ²	360	2160
Equivalent temperature difference (TD _{EQ})	2.72	1.7

*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 P-2 BD Ref 2/ 4073 / 14
 Building address Proposed Re-Development IN K.I.L. 1687 S.A.S.2 at
45 Pau Chung Street, Kowloon
 Physical data of Opaque *wall
 Façade Orientation facing SE Solar Factor (SF) is 197

*Wall/Roof Code No.	*W ₁ /R ₁
Location of Wall/Roof	2/F
External Finish Material	
Conductivity W/m°C	0.72
Density kg/m ³	18.6
Thickness m	0.01
Absorptivity (α)	0.57
Intermediate component	Concrete
Conductivity W/ m°C	2.16
Density kg/m ³	2400
Thickness m	0.15
Intermediate component	
Conductivity W/m°C	
Density kg/m ³	
Thickness m	
Intermediate component	
Conductivity W/m°C	
Density kg/m ³	
Thickness m	
Intermediate component	
Conductivity W/m°C	
Density kg/m ³	
Thickness m	
Internal Finish Material	
Conductivity W/m°C	
Density kg/m ³	
Thickness m	
Absorptivity (α)	Ro=0.044 Ri=0.12
"U" value of composite *Wall/Roof	2.31
Area of *Wall/Roof m ²	(15 x 5) + (10 x 3) = 45
Density of composite *Wall/Roof kg/m ²	378.6
Equivalent temperature difference (TD _{EQ})	4.30

*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 P-3

BD Ref 2/ 4073 / 14

Building address Proposed Re-Development IN K.I.L. 1687 S.A.S.S.2 at
45 Pau Chung Street, Kowloon

Physical data of Opaque *Ceiling slab.

Façade Orientation facing - Solar Factor (SF) is -

* Wall/Roof Code No.	*S ₁
Location of Wall/Roof	2/F
External Finish Material	Cement Sand
Conductivity W/m°C	0.72
Density kg/m ³	18.6
Thickness m	0.01
Absorptivity (α)	0.57
Intermediate component	Concrete
Conductivity W/ m°C	2.16
Density kg/m ³	2400
Thickness m	0.15
Intermediate component	
Conductivity W/m°C	
Density kg/m ³	
Thickness m	
Intermediate component	
Conductivity W/m°C	
Density kg/m ³	
Thickness m	
Intermediate component	
Conductivity W/m°C	
Density kg/m ³	
Thickness m	
Internal Finish Material	
Conductivity W/m°C	
Density kg/m ³	
Thickness m	
Absorptivity (α)	-
"U" value of composite	4.92
*Slab	
Area of *Slab m ²	51.359
Density of composite	378.6
*Slab kg/m ²	
Equivalent temperature difference (T _{EQ} ^{TD})	2.72

*Delete as appropriate

“U” Value Calculation

1) Facing SW – 200mm adjoining building wall

Composition	Resistance (m ² °C/w)	Weight (kg/m ²)
200mm concrete	$\frac{0.2}{2.16} = 0.09$	0.2 x 2400 =480
Internal Surface film	Ri = 0.12	-
total	0.21	480

$$v = \frac{1}{0.21} = \underline{4.76w/m^2°C}$$

2) Facing SW – 900mm adjoining building wall

Composition	Resistance (m ² °C/w)	Weight (kg/m ²)
900mm concrete	$\frac{0.9}{2.16} = 0.41$	0.9 x 2400 =2160
Internal Surface film	Ri = 0.12	-
total	0.53	2160

$$v = \frac{1}{0.53} = \underline{1.88w/m^2°C}$$

3) Facing SE-150mm concrete wall

Composition	Resistance (m ² °C/w)	Weight (kg/m ²)
External surface film	Ro = 0.044	-
10mm Cement Sand	$\frac{0.15}{0.72} = 0.208$	0.01 x 1860 =18.6
150mm concrete	$\frac{0.15}{2.16} = 0.06$	0.15 x 2400 =360
Internal Surface film	Ri = 0.162	-
total	0.432	378.6

$$v = \frac{1}{0.432} = \underline{2.31w/m^2°C}$$

4) 100mm concrete internal partition wall

Composition	Resistance (m ² °C/w)	Weight (kg/m ²)
Outer surface film	R _o = 0.12	-
10mm Cement Sand tile	$\frac{0.01}{0.72} = 0.014$	0.01 x 1860 =18.6
100mm concrete	$\frac{0.1}{2.16} = 0.04$	0.1 x 2400 =240
Inter Surface film	R _i = 0.12	-
total	0.294	258.6

$$v = \frac{1}{0.294} = \underline{3.40w/m^2°C}$$

5) 200mm concrete internal partition wall

Composition	Resistance (m ² °C/w)	Weight (kg/m ²)
Outer surface film	R _o = 0.12	-
10mm Cement Sand tile	$\frac{0.01}{0.72} = 0.014$	0.01 x 1860 =18.6
500mm concrete	$\frac{0.5}{2.16} = 0.23$	0.5 x 2400 =1200
Inter Surface film	R _i = 0.12	-
total	0.48	1218.6

$$v = \frac{1}{0.48} = \underline{2.08w/m^2°C}$$

6) 150mm concrete ceiling slab

Composition	Resistance (m ² °C/w)	Weight (kg/m ²)
100mm screeding	$\frac{0.01}{0.72} = 0.014$	0.01 x 1860 =18.6
150mm concrete	$\frac{0.15}{2.16} = 0.069$	0.15 x 2400 =360
Surface film	R _i = 0.12	-
total	0.203	378.6

$$v = \frac{1}{0.203} = \underline{4.92w/m^2°C}$$