

Part 1 – Supporting Document Summary		Page ____ of ____
Name of Building / Unit / Common Area * _____		
Address of Building / Unit / Common Area * _____		
Documents submitted for demonstration of compliance (Please tick where applicable)	No. of sheets	
Lighting Installation (Section 5 of BEC)		
<input type="checkbox"/> Lighting layout(s) and calculation sheet(s) for Lighting Power Density and provision of Automatic Lighting Control (For compliance of BEC Clause 5.4, 5.5 and 5.6)		
<input type="checkbox"/> Calculation sheet(s) for provision of daylight responsive control for daylight and the area of daylight control zone. (For compliance of BEC Clause 5.6.2 and 5.6.3)		
Air Conditioning Installation (Section 6 of BEC)		
<input type="checkbox"/> Schematic or layout drawings with highlighted the air conditioning system serving processing zone(s) and comfort only zone(s) (if any) (For compliance of BEC Clause 6.5) It is deemed to no AC system(s) to be shared with any processing zone if this item not be selected.		
<input type="checkbox"/> T&C document(s) for the air leakage limit of a ductwork system(s) (For compliance of BEC Clause 6.6)		
<input type="checkbox"/> Equipment Schedules and / or Calculation Sheet for system fan power (For compliance of BEC Clause 6.7)		
<input type="checkbox"/> Schematic and / or control drawings showing the low-speed operation of CAV and / or VAV systems (For compliance of BEC Clause 6.7.4.1 and 6.7.4.2)		
<input type="checkbox"/> Schematic and / or control drawings showing the water side pumping arrangement and the design arrangement under part load condition (For compliance of BEC Clause 6.8)		
<input type="checkbox"/> Calculation Sheet for frictional loss of water pipping system (For compliance of BEC Clause 6.9)		
<input type="checkbox"/> Schematic and / or control drawings and / or BMS captures showing the control logic of temperature / humidity / provision of auto damper / demand control of ventilation / DDC provision / Chilled water temperature reset (For compliance of BEC Clause 6.10, 6.14 and 6.15)		
<input type="checkbox"/> Schedule showing the thermal insulation thickness and thermal properties for installed AHU casing, ductwork & pipework (For compliance of BEC Clause 6.11)		
<input type="checkbox"/> Equipment Schedules and Manufacturer-issued technical documents to indicate the capacity rating and COP of Air-conditioning equipment(s) (For compliance of BEC Clause 6.12)		
<input type="checkbox"/> Equipment Schedules and Manufacturer-issued technical documents of cooling tower performance (For compliance of BEC Clause 6.12.4 & 6.12.5)		
<input type="checkbox"/> LMCP schematic(s) and / or control drawing(s) showing the energy meter provision of air-conditioning equipment(s) and AHU(s) (For compliance of BEC Clause 6.13)		
Electrical Installation (Section 7 of BEC)		
<input type="checkbox"/> Electrical schematic(s) highlighted the provision of metering device(s); power factor correction device(s) or connection point(s) for correction device(s) and / or harmonic correction device(s) or		

Part 1 – Supporting Document Summary		Page ____ of ____
connection point(s) for correction device(s) and calculation sheet(s) (For compliance of BEC Clause 7.4, 7.6 and 7.7)		
<input type="checkbox"/> Equipment schedules and Manufacturer-issued technical documents to indicate the motor rating and its rated efficiency (For compliance of BEC Clause 7.5)		
Lift and Escalator Installation (BEC Section 8)		
<input type="checkbox"/> Lift fit-out drawing and calculation sheet for lift decoration load (For compliance of BEC Clause 8.5.2)		
<input type="checkbox"/> Lift Schematic drawing(s) showing the number of lift and / or escalators and control diagram showing the parking mode and lift lighting and ventilation control (For compliance of BEC Clause 8.5.3, 8.5.4 and 8.5.6)		
<input type="checkbox"/> lift drawing or photo record for the lift regenerative brake (For compliance of BEC Clause 8.5.3 and 8.5.5)		
<input type="checkbox"/> Control diagram showing the speed reduction mode of escalator (For compliance of BEC Clause 8.5.7)		
<input type="checkbox"/> Schematic and photo record showing the provision of metering device (For compliance of BEC Clause 8.7)		
<input type="checkbox"/> Others (Please give details) _____		
<p>Remarks:-</p> <ol style="list-style-type: none"> 1) Ref. Nos. of all equipment, systems, zones/spaces etc. in this Form should be consistent with the Ref. Nos. shown in drawings. 2) All documents including this Form are for demonstration of compliance with the BEC, and should cover all the relevant items governed by the BEC. 3) If the specific item(s) are not selected, please insert "N/A" and it will be considered that the relevant system(s) / requirement are not involved in the submitted building. 4) Descriptions and numbering of each installation, system, equipment, building block, floor, room, space etc. in each supporting document(s) should be identical. 5) For supporting document, the REA should submit electronic file of PDF format with proper file name & folder structure and save in a media (e.g. CD-Rom, etc.) to attach in the COCR / FOC submission. 6) REA are also recommended to make the entire COCR / FOC submission through the EMSD online electronic submission platform (https://wbrs.emsd.gov.hk/psps/en/System/login.jsp) 7) The REA should thoroughly examine the involved installations and make every effort to demonstrate compliance with the codes as requested. 8) Any incomplete or incorrect information in this form or the accompanying documents may render it invalid, and the REA may be subject to disciplinary action in accordance with Part 3 of Cap. 610B. 		

Part 2 – Lighting Installation - Luminaires and Lighting Power Worksheet

Page ____ of ____

(For COCR only, please tick where applicable)

1) Use of corresponding lamp types (by approximate percentage of coverage in terms of lighting area)

LED :	<input type="checkbox"/> Used, with approximate % of coverage: _____	<input type="checkbox"/> Not used
T5:	<input type="checkbox"/> Used, with approximate % of coverage: _____	<input type="checkbox"/> Not used
CFL:	<input type="checkbox"/> Used, with approximate % of coverage: _____	<input type="checkbox"/> Not used
Discharge:	<input type="checkbox"/> Used, with approximate % of coverage: _____	<input type="checkbox"/> Not used
Other (please specify):	<input type="checkbox"/> Used, with approximate % of coverage: _____	<input type="checkbox"/> Not used

2) Lighting control and power wattage

Total lighting area _____ m²

Approximate % of area provided with automatic lighting control _____ %

Total lighting power (based on luminaire wattage): _____ kW

Part 2–Lighting Installation - Simplified Trade-off Scheme Worksheet*¹

(Complete this part if LPD Trade-off are applied in this submission under Clause 5.7 for BEC 2024 only)

Page ____ of ____

Name of space / Space Ref. No.* ²	Type of Space* ³	a	b	c	$d \leq 1.25 * c$	$e = a \times b$	$f = a \times c$	$g = f - e$	$h = 0.5 * g$
		Internal floor area (m ²)	Installed LPD (W/m ²)	Maximum allowable LPD in BEC Table 5.4 (W/m ²)* ⁵	Installed LPD \leq 125% x Maximum allowable LPD (W/m ²)	Installed lighting power in lighting space (W)	Baseline lighting power as per BEC Table 5.4 (W)	Achieved reduction in lighting power compared with baseline (W)	50% of Achieved reduction in lighting power for trade-off (W)
(Please insert additional row if necessary)									
Total lighting power in lighting space cannot meet BEC Table 5.4 (W)									
Total lighting power available for trade-off (W)									
Full compliance in BEC Clause 5.7.2									

Remarks (applicable to Part 2) :-

- *¹ The Owner of the building / Responsible Person of the unit should properly maintain this table with layout plan and use for justification on maintaining the LPD of a standard as per the Trade-off Scheme
- *² Under Simplified Trade-off Scheme, the layout plan showing the Space Ref No. / name of the involved space should be highlighted and attached with this table.
- *³ Only specified types of space (indicated with * in Table 5.4, i.e. "Lift Lobby" or "Toilet / Washroom / Shower Room") are applicable to simplified trade-off scheme.
- *⁴ If there are further major retrofitting works (MRW) on lighting installation in any of the lighting spaces under the Simplified Trade-off Scheme, the maximum allowable LPD of corresponding lighting spaces for MRW should be updated with the latest edition of BEC.

Part 3 – Air-conditioning Installation - Equipment Efficiency Worksheet

Page ____ of ____

(Please tick where applicable)

1) Any installation of chiller involved (BEC Clause 6.12)?

☐ Yes, (If yes, please provide information in table below)

☐ No chiller installation involved

Equipment Ref. No.	Technical catalogue Ref. No.	Air-cooled Chiller / Water-cooled Chiller *1	Reciprocating / Scroll / Screw / VSD Screw / Centrifugal / VSD Centrifugal *2	Refrigerant type	Capacity & COP at cooling mode				
					Rated capacity (kW)	COP *4 at:			
				Trade-off for COP *7 <input type="checkbox"/> Yes <input type="checkbox"/> No		FL	75% FL	Min. allowed COP in BEC Table 6.12b	
								FL	75% FL

(Please insert additional row if necessary)

High temperature chiller or chiller at elevated temperature involved (BEC Clause 6.12)

Design Supply temperature: _____ °C Design Return Temperature _____ °C

Equipment Ref. No.	Technical catalogue Ref. No.	Air-cooled Chiller / Water-cooled Chiller *1	Reciprocating / Scroll / Screw / VSD Screw / Centrifugal / VSD Centrifugal*2	Design capacity (kW)	Refrigerant type	Cooling mode at BEC condition * 5:				
						Projected capacity (kW)	COP *4 at:			
					Trade-off for COP *7 <input type="checkbox"/> Yes <input type="checkbox"/> No		FL	75% FL	Min. allowed COP in BEC Table 6.12b	
									FL	75% FL

(Please insert additional row if necessary)

Part 3 – Air-conditioning Installation - Equipment Efficiency Worksheet

Page ____ of ____

(Please tick where applicable)

3) Any unitary air-conditioner installation involved (BEC Clause 6.12)?

☐ Yes (If yes, please provide information in table below)

☐ No unitary air-conditioner installation involved

Equipment Ref. No.	Technical catalogue Ref. No.	Air- cooled / Water- cooled *1	Refrigerant type	Capacity & COP *4 at cooling mode at full load			Capacity & COP *4 at heating mode at full load		
				Rated capacity (kW)	Rated COP *4	Min. allowed COP in BEC Table 6.12a (Part 1) / Clause 6.12.2	Rated capacity (kW)	Rated COP *4	Min. allowed COP in BEC Table 6.12a (Part 1) / Clause 6.12.2
(Please insert additional row if necessary)									

4) Any variable refrigerant flow (VRF) system involved (BEC Clause 6.12)?

☐ Yes, (If yes, please provide information in table below)

☐ No VRF system involved

Equipment Ref. No.	Technical catalogue Ref. No.	Air- cooled(M) / Air- cooled(S))/ Water- cooled *1*6	Refrigerant type	Capacity & COP *4 at cooling mode at full load			Capacity & COP *4 at heating mode at full load		
				Rated capacity (kW)	Rated COP *4	Min. allowed COP in BEC Table 6.12a (Part 2)	Rated capacity (kW)	Rated COP *4	Min. allowed COP in BEC Table 6.12a (Part 2)
(Please insert additional row if necessary)									

Part 3 – Air-conditioning Installation - Equipment Efficiency Worksheet

Page ____ of ____

(Please tick where applicable)

5) Any heat pump system involved (BEC Clause 6.12)?

☐ Yes (If yes, please provide information in table below)

☐ No heat pump system involved

Equipment Ref. No.	Technical catalogue Ref. No.	Air-to- Water / Water- to-Water *3	Refrigerant type	Capacity & COP *4 at full load		
				Rated capacity (kW)	Rated COP *4	Min allowed COP in BEC Table 6.12c
(Please insert additional row if necessary)						

Remarks (applicable to Part 3) :-

^{*1} Please specify the type of cooling, air-cooled or water-cooled.

^{*2} Please specify the type of chiller, Reciprocating, Scroll, Screw, VSD Screw, Centrifugal, or VSD Centrifugal.

^{*3} Please specify the type of heat extraction.

^{*4} COP means Coefficient of Performance.

^{*5} For chiller designed to be operated at high temperature, the projected chiller COP figure should be provided based on the standard rating condition per BEC Table 6.12b.

^{*6} Please specify the type of air-cooled VRF outdoor unit is "(M)" modular unit of top-discharge fan(s) or "(S)" single unit of side-discharge fan(s)

^{*7} If there are spatial constraints on replacement of chillers in existing buildings when adopting refrigerant with global warming potential (GWP) value lower than 750 and the minimum COP in the BEC Table 6.12 cannot be achieved, a maximum 4% trade-off on minimum COP can be applied with justification on the physical dimension of chillers and the limitation of space in existing plant room layout (for BEC 2024 only).

Part 4 - Motor Worksheet (Electrical Installation)

Page ____ of ____

(Please tick where applicable)

Any installation of three-phase single-speed totally enclosed induction motor involved (BEC Clause 7.5.1) ?

- ☐ Yes (if yes, please provide information in table below except those motors(s) under BEC Clause 7.5.3)
☐ No installation of three-phase single-speed totally enclosed induction motor involved

Equipment / Motor Reference No.	Installed motor			Comparison with min. allowed rated motor efficiency (%) at full load in BEC Table 7.5.1 (please tick the applicable condition below*)	Percentage of output power of installed motor to anticipated system load (BEC Clause 7.5.2) (please tick the applicable condition below*)
	Rated output power (kW)	2 or 4 poles	Rated efficiency (%) at full load		
(Please insert additional row if necessary)					
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)
				<input type="checkbox"/> (a) <input type="checkbox"/> (b) <input type="checkbox"/> (c)	<input type="checkbox"/> (d) <input type="checkbox"/> (e) <input type="checkbox"/> (f) <input type="checkbox"/> (g)

* Remarks (applicable to Part 4) :-

- Condition (a) – Motor rated efficiency is not lower than the min. allowed efficiency specified in BEC Table 7.5.1
 Condition (b) – Motor is not governed by BEC Table 7.5.1, given it being integrated into a machine such that it cannot be tested separately (BEC Clause 7.5.1)
 Condition (c) – Motor is not governed by BEC Table 7.5.1, given it being specifically designed to operate at ambient air temperature exceeding 40°C (BEC Clause 7.5.1)
 Condition (d) – Motor output power does not exceed 125% of the anticipated system load (BEC Clause 7.5.2(a))
 Condition (e) – The calculated 125% of system load does not fall in the rating of a standard rated motor and as such a next higher rating standard motor is adopted, resulting in the motor output power exceeding 125% of the anticipated system load (BEC Clause 7.5.2(a))
 Condition (f) – Motor of IEC Design H, NEMA Design C or D, or of a higher standard is adopted to cope with a high starting torque. (Load calculation indicating torque profile should be submitted and attached in this Form, for substantiation as specified in BEC Clause 7.5.2(b))
 Condition (g) – Motor output power not exceeding 5kW (BEC Clause 7.5.2(a))

Technical Form for Building Energy Code (BEC)

Form EE-TECH

(Please refer to Code of Practice for Energy Efficiency of Building Services Installation)

Part 5 – Lift and Escalator Installation - Traction Lift and Hydraulic Lift

Page ____ of ____

(Please tick where applicable)

Any installation of traction/hydraulic lift involved ? (* Please delete, if not applicable)

☐ Yes, installation of traction* / hydraulic* lift involved (If yes, please provide information in table below) ☐ No installation of lift involved

1) Electrical Power (BEC Clause 8.4) (Please provide information in table below)

(All at rated load and at rated speed in the upward direction)

Lift Ref. No.	Lift type		Rated load (kg)	Rated speed (m/s)	Motor Drive	Running active electrical power (kW) (BEC Clause 8.4.1 / 8.4.2)	Max allowed electrical power (kW) (BEC Table 8.4.1a ⁽¹⁾ / 8.4.1b ⁽²⁾ / 8.4.2)	Total Power Factor ⁽³⁾	Total Harmonic Distortion ⁽³⁾ (THD %)	Installed Decoration Load (kg)	Adopted Lift Destination Group Control System ?
	Traction / Hydraulic	Observation lift? (BEC Clause 8.5.4)									
(Please insert additional row if necessary)											
		<input type="checkbox"/> Yes <input type="checkbox"/> No									<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No									<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No									<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No									<input type="checkbox"/> Yes <input type="checkbox"/> No
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		<input type="checkbox"/> Yes <input type="checkbox"/> No									<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No									<input type="checkbox"/> Yes <input type="checkbox"/> No

Remarks applicable to Part 5 (lifts listed in 1)) :-

(1) BEC Table 8.4.1a is applicable to each of the installation in a new building.

(2) BEC Table 8.4.1b is applicable to each of the installation involved in a major retrofitting works of an existing building.

(3) Should be obtained during the T&C on-site measurement.

Part 5 – Lift & Escalator Installation - Escalator/Passenger Conveyor

Page ____ of ____

(Please tick where applicable)

Any installation of escalator (excluding passenger conveyor) involved?

☐ Yes (If yes, please provide information in table below)

☐ No installation of escalator involved

1) Electrical Power (BEC Clause 8.4) (Please provide information in table below)

(All under no-load condition at rated speed)

Escalator Ref. No.	Type (Non-public Service / Public Service / Heavy Duty)	Rise (m)	Nominal width (mm)	Rated speed (m/s)	Running active electrical power (kW) (BEC Clause 8.4.3)	Max allowed electrical power (kW) (BEC Table 8.4.3)	Total Power Factor ⁽¹⁾	Total Harmonic Distortion ⁽¹⁾ (THD %)
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(Please insert additional row if necessary)

Any installation of passenger conveyor involved?

☐ Yes (If yes, please provide information in table below)

☐ No installation of passenger conveyor involved

1) Electrical Power (BEC Clause 8.4) (Please provide information in table below)

(All under no-load condition at rated speed)

Passenger conveyor Ref. No.	Type (Non-public Service / Public Service)	Nominal length (m)	Nominal width (mm)	Rated speed (m/s)	Running active electrical power (kW) (BEC Clause 8.4.4)	Max allowed electrical power (kW) (BEC Table 8.4.4)	Total Power Factor ⁽¹⁾	Total Harmonic Distortion ⁽¹⁾ (THD %)
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(Please insert additional row if necessary)

Remarks (applicable to Part 5 (Escalator and Passenger conveyor listed in 1)) :-

(1) Should be obtained during the T&C on-site measurement

Part 6 – Declaration	
<p>I, Registered Energy Assessor, hereby declare that all the submitted information materials have been thoroughly examined and well prepared to demonstrate the compliance with the Building Energy Code.</p> <p>I understand that any missing information, inconsistency and incorrectness on the submitted materials / information may result in jeopardizing the approval process and having the entire submission been rejected.</p>	
Name of the REA:	Registration No.:
Signature of the REA	Date:
	DD / MM / YYYY