Energy Audit Report

Note:
Please read the "Notes to Complete this Form" and "Personal Data Privacy Statement" attached and complete all the items in English (unless otherwise specified).

1. Particulars of the Energy Audit

1.1 Name of Building

Name of building in English ^[1]

Name of building in Chinese ^[1]

1.2 Type of Building

Indicate the type of building that is principally occupied for

☐ Commercial ☐ Medical and health care ☐ Commercial portion of a composite building

☐ Educational ☐ Government function ☐ Passenger terminal building of an airport

☐ Community ☐ Railway station ☐ Portion of data centre in an industrial building

☐ Municipal ☐ Data Centre

1.3 Dates of Energy Audit

Date of commencement of this energy audit (DD/MM/YYYY)

Date of completion of this energy audit (DD/MM/YYYY)

Date of commencement of last energy audit (DD/MM/YYYY) (if applicable)

1.4 Particulars of Registered Energy Assessor Carried out this Energy Audit

Name of Registered Energy Assessor in English

Registration number of Registered Energy Assessor

☐Mr. ☐Miss ☐Ms.

Name of Registered Energy Assessor in Chinese

Position in company / organization (if applicable)

Company / organization (if applicable)

Contact telephone number

Fax number

Contact email address

Date of submission of this report (DD/MM/YYYY)

Contact Address

1.5 Photos

Photo of the building:
(for portion of data centre in an industrial building, photo of the data centre entrance)

Photo showing the display location of Energy Audit Form:

2. General Information

2.1 Building Address

Floor(s) – applicable for portion of composite / industrial building

Street number

Street Name

District ☐Hong Kong ☐Kowloon ☐New Territories

Lot No.

2.2 Owner of Building / Portion of Building

Name ☐ Person ☐ Company ☐ Organization ☐ Owner's Corporation

Correspondence address:

Room/Flat, Floor, Block, Building

Street number and street name

District ☐ Hong Kong ☐ Kowloon ☐ New Territories

2.3 Owner's Representative

Name ☐ Person ☐ Company ☐ Organization ☐ Owner's Corporation

Correspondence address:

Room/Flat, Floor, Block, Building

Street number and street name

District ☐ Hong Kong ☐ Kowloon ☐ New Territories

Contact information:

Name in English (contact person) ☐ Mr. ☐ Miss ☐ Ms.

Position in company / organization (if applicable)

Telephone number | Fax number | Email address

3. Characteristics of the Building

3.1 Building design and operation

Date of issue of occupation approval ^2	:		(DD/MM/YYYY)
Total gross floor area (GFA) of the building ^3			m^2
		Total GFA	
			m^2
		Commercial portion of composite building (if applicable)	
Number of block of the building entity ^4	:		nos.
Number of floor of the building entity ^5	:		nos.
Total internal floor area of the building entity ^6	:		m^2
Portion of the building entity being common area ^7	:		%
Nominal operating hour per day (Weekday)	:		hours
Nominal operating hour per day (Saturday)	:		hours
Nominal operating hour per day (Sunday/Public Holiday)	:		hours

3.2 Description of building operation^8

Elaborate on the characteristic of building operation, i.e. information that could not be reflected in 3.1.
(Any external factors, such as special configuration of buildings; area of prolonged operation hours or with 24-hour operation in the building; changes on business nature or occupancy conditions compare with previous energy audit report, etc)

4. Characteristics of Major Building Services Installation

4.1 Air-conditioning Installation

☐ N/A

4.1.1 Major type(s) of air-conditioning cooling equipment for the building entity ^9

☐ Chiller (air-cooled)
☐ Chiller (water-cooled)
☐ Chilled water from external (e.g. district cooling system)
☐ Other (please specify):
☐ Variable refrigerant flow system
☐ Unitary air-conditioner
☐ Chilled water export to external

4.1.2 Characteristics of water-side equipment

(a) Chiller /heat pump for air-conditioning use (prime function for cooling)

☐ N/A

Designation number	Type (C: chiller; HRC: heat recovery chiller; HP: heat pump)	Heat rejection#	Refrigerant	Rated cooling capacity (kW)	Rated power input^10 (kW)	Rated COP for cooling (kW/kW)	Cooling output capacity control*	Digital meter for cooling output (Yes/No)	Digital meter for power input (Yes/No)	Year of service ^11
Sub-Total										

List out for individual equipment. For absorption or direct expansion chiller, please describe in supplementary information below.

\# *AC : Air-cooled condenser*
WC-E : Water-cooled condenser, direct or indirect evaporative cooling tower (fresh or sea water)
WC-S : Water-cooled condenser, direct or indirect seawater-cooled
WC-R : Water-cooled condenser, direct or indirect radiator
Other : please describe in supplementary information below
* *CS : Constant speed*
VS : Variable speed

Supplementary information /observations:

(b) Heat pump for air-conditioning use (prime function for heating)

☐ N/A

Designation number	Type[#]	Refrigerant	Rated heating capacity (kW)	Rated power input[^10] (kW)	Rated COP for heating (kW/kW)	Heating output capacity control (CS: constant speed; VS: variable speed)	Digital meter for heating output (Yes/No)	Digital meter for power input (Yes/No)	Year of service [^11]
Sub-Total									

List out for individual equipment. For absorption heat pump, please list out the data in supplementary information below.

 # AS : Air source WW : water-to-water

Supplementary information /observations:

(c) Water Boiler primarily for air-conditioning use

☐ N/A

Designation number	Type (GB: gas boiler; EB: electric boiler)	Rated heating capacity (kW)	Rated power input[^10] (kW)	Equip with economizer (Yes/No)	Rated Efficiency (%)	Digital meter for heating output (Yes/No)	Digital meter for power input (Yes/No)	Year of service [^11]
Sub-Total								

List out for individual equipment

Supplementary information /observations:

(d) Cooling Tower / Radiator for heat rejection of air-conditioning system

☐ N/A

Designation number	Rated heat rejection capacity (kW)	Rated power input^10 (kW)	Fan capacity control (CS: constant speed; SC: step control; VS: variable speed)	Digital meter for power input (Yes/No)	Year of service ^11
Sub-Total					

List out for individual equipment

Supplementary information /observations:

(e) Air-conditioning pump (rated power consumption at 5kW or above)

☐ N/A

Designation number	Type of pump &	Rated flow rate (l/s)	Rated power input^10 (kW)	Motor efficiency	Capacity control (CS: constant speed; VS: variable speed)	Digital meter for pump flow rate (Yes/No)	Digital meter for power input (Yes/No)

Designation number	Type of pump [&]	Rated flow rate (l/s)	Rated power input[^10] (kW)	Motor efficiency	Capacity control (CS: constant speed; VS: variable speed)	Digital meter for pump flow rate (Yes/No)	Digital meter for power input (Yes/No)
Sub-Total							

List out for individual equipment

& *CHWP : Chilled water pump*; *CWP : Condenser water pump*; *SWP : Seawater pump*; *HWP : Heating water pump*; *CP : Circulating pump*

Supplementary information /observations:

(f) Central Air-conditioning Chiller Plant

☐ N/A

Chiller plant efficiency at rated condition

Total rated cooling capacity of chiller plant (exclude standby)	:		kW
Total rated power input of chiller plant (exclude standby)	:		kW
Chiller plant COP [^12] at rated condition	:		kW/kW

Chiller plant efficiency at peak load condition by measurement (optional)

Measured peak cooling output of chiller plant	:		kW
Ratio of measured output to rated capacity (exclude standby)			%
Measured corresponding total power input of chiller plant	:		kW
Chiller plant COP[^12] at peak condition by measurement	:		kW/kW

Chiller plant efficiency at specific load condition by measurement (optional)

Measured cooling output of chiller plant	:		kW
Ratio of measured output to rated capacity (exclude standby)			%
Measured corresponding total power input of chiller plant	:		kW
Chiller plant COP[^12] at specific load condition by measurement	:		kW/kW

Annual averaged chiller plant efficiency by measurement (optional)

Annual averaged chiller plant COP[^13] by measurement	:		kW/kW

Annual averaged chiller plant efficiency by computer simulation (optional)

Annual averaged chiller plant COP[^13] by computer simulation	:		kW/kW

Supplementary information /Observation:

Energy saving control

- Automatic variable flow chilled water supply
  ☐ Yes ☐ No ☐ N/A

- Provision of chiller sequencing control base on highest combined COP
  ☐ Yes, automatic ☐ Yes, manual implementation ☐ No ☐ N/A (DCS or only 1 chiller)

- Provision of chilled water supply temperature reset
  ☐ Yes, automatic ☐ Yes, manual implementation ☐ No ☐ N/A (DCS)

- Provision of condenser water flow rate control
  ☐ Yes, automatic ☐ Yes, manual implementation ☐ No ☐ N/A (DCS or air-cooled)

- Provision of cooling tower control
  ☐ Yes, automatic ☐ Yes, manual implementation ☐ No ☐ N/A (DCS or air-cooled)

- Provision of other energy saving control (please specify)

Supplementary information /Observation:

Description of the central air-conditioning chiller plant:

Simplified schematic diagram of the central air-conditioning chiller plant:

(g) Variable refrigerant flow (VRF) air-conditioning system (prime function for cooling)

☐ N/A

Designation number	Type[#]	Refrigerant	Rated cooling capacity (kW)	Rated power input[^10] (kW)	Rated COP for cooling (kW/kW)	Digital meter for power input (Yes/No)	Year of service [^11]
		Sub-Total					

List out for individual equipment

 # - AC : Air-cooled
WC : Water-cooled

Supplementary information /observations:

(h) Unitary air-conditioner (prime function for cooling)

☐ Room type ☐ Split-type ☐ N/A

Total number of air-conditioner : ☐ nos.

Total rated cooling capacity : ☐ kW

Total rated power for cooling[^10] : ☐ kW

Total COP (Total rated cooling capacity / Total rated power for cooling) : ☐ kW/kW

Variable speed type (by number) : ☐>80% ☐>50% ☐>30% ☐>10% ☐≤10%

Supplementary information /observations:

4.1.3 Characteristics of air-side air conditioning system

(a) Air-handling unit / Ventilation fan (rated power consumption at 5kW or above)

☐ N/A

Designation number	Type#	Air flow rate (l/s)	Rated motor power^10 (kW)	System efficiency (W per L/s)	CO_2 based outdoor air intake control (Yes/No)	Energy recovery (Yes/No)	Digital meter for power input (Yes/No)	Year of service ^11

Designation number	Type[#]	Air flow rate (l/s)	Rated motor power[^10] (kW)	System efficiency (W per L/s)	CO_2 based outdoor air intake control (Yes/No)	Energy recovery (Yes/No)	Digital meter for power input (Yes/No)	Year of service [^11]
	Sub-Total							

List out for individual equipment

*CAV* *: Constant air volume*
CAV-VSD *: Constant air volume*
VAV-IGV *: Variable air volume, inlet guide vane control*
VAV-VSD *: Variable air volume, variable speed drive control*

Supplementary information / observations:

(b) Provision of digital monitoring and control (motor rating at 5kW or above)

☐ N/A

■ Power input of fan(s)	☐ Yes	☐ Partial	☐ No
■ Flow rate of fan(s)	☐ Yes	☐ Partial	☐ No
■ Variable speed drive(s)	☐ Yes	☐ Partial	☐ No
■ Time scheduling control	☐ Yes	☐ Partial	☐ No
■ Static pressure reset control	☐ Yes	☐ Partial	☐ No

Supplementary information / observations:

Lighting Installation

4.2.1 Luminaire

Use of corresponding lamp types (by approximate percentage of coverage in terms of lighting area) ^14

- ■ LED : ☐ Used, approximate coverage: ____ % ☐ Not used
- ■ T5 : ☐ Used, approximate coverage: ____ % ☐ Not used
- ■ T8 : ☐ Used, approximate coverage: ____ % ☐ Not used
- ■ T12 : ☐ Used, approximate coverage: ____ % ☐ Not used
- ■ CFL : ☐ Used, approximate coverage: ____ % ☐ Not used
- ■ Tungsten : ☐ Used, approximate coverage: ____ % ☐ Not used
- ■ Discharge : ☐ Used, approximate coverage: ____ % ☐ Not used
- ■ Other(s)

____ : ☐ Used, approximate coverage: ____ %

____ : ☐ Used, approximate coverage: ____ %

4.2.2 Lighting control system

Use of lighting control system (by approximate percentage of coverage in terms of lighting area) ^14

- ■ Computerized lighting control system : ☐ Used, approximate coverage: ____ %
  ☐ Not used
- ■ Automatic time scheduling control : ☐ Used, approximate coverage: ____ %
  ☐ Not used
- ■ Automatic demand control (e.g. sensor) : ☐ Used, approximate coverage: ____ %
  ☐ Not used
- ■ Other(s)

____ : ☐ Used, approximate coverage: ____ %

____ : ☐ Used, approximate coverage: ____ %

4.2.3 Lighting power wattage

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

4.2.4 Supplementary information / observations:

4.3 Lift, Escalator and Passenger Conveyor Installation

4.3.1 Characteristic of traction lift(s)

☐ N/A

Designation number	Drive system%	Rated Speed (m/s)	Rated load (kg)	Rated motor power (kW)	Lift regenerative braking system (Yes/No)	Air-Conditioned (Yes/No)	Automatic switch off lighting and fan (Yes/No)	Digital meter for power input (Yes/No)	Year of service ^11
			Sub-Total						

List out for individual equipment

% - DC : direct current motor drive (with generator set or solid state controller)
AC2 : alternating current two speed motor drive
ACVV : alternating current motor drive with variable voltage controller
ACVVVF : alternating current motor drive with variable voltage variable frequency controller

Supplementary information / observations:

4.3.2 Characteristic of hydraulic lift(s)

☐ N/A

Designation number	Rated load (kg)	Rated motor power (kW)	Air-Conditioned (Yes/No)	Automatic switch off lighting and fan (Yes/No)	Digital meter for power input (Yes/No)	Year of service ^11
	Sub-Total					

List out for individual equipment

Supplementary information / observations:

4.3.3 Characteristic of escalator(s)

☐ N/A

Designation number	Nominal width (mm)	Rise (m)	Rated Speed (m/s)	Rated motor power (kW)	Service (public / non-public)	Heavy duty (Yes/No)	Automatic Speed Reduction (Yes/No)	Digital meter for power input (Yes/No)	Year of service ^[11]
Sub-Total									

List out for individual equipment

Supplementary information / observations:

4.3.4 Characteristic of passenger conveyor(s)

☐ N/A

Designation number	Nominal width (mm)	Length (m)	Rated Speed (m/s)	Rated motor power (kW)	Service (public / non-public)	Automatic Speed Reduction (Yes/No)	Digital meter for power input (Yes/No)	Year of service ^[11]
			Sub-Total					

List out for individual equipment

Supplementary information / observations:

4.4 Electrical Installation

4.4.1 Incoming power supply

Total circuit rating : ☐ kVA

: ☐ A ☐ single phase ☐ three phase

System description /observations:

4.4.2 Metering and monitoring facilities

(a) Circuit(s) at or above 400A, single-phase or three-phase

☐ N/A

Except for correction of reactive or distortion power purpose:

Number of circuit	: ☐	nos.
Number of circuit with digital meter for power consumption (kWh)	: ☐	nos.
Number of circuit with digital meter for maximum demand (kVA)	: ☐	nos.
Number of circuit with digital meter for total power factor	: ☐	nos.
Number of circuit with digital meter for total harmonic distortion	: ☐	nos.

(b) Circuit(s) exceeding 200A and below 400A, single-phase or three-phase

☐ N/A

Except for correction of reactive or distortion power purpose:

Number of circuit	: ☐	nos.
Number of circuit with digital meter for power consumption (kWh)	: ☐	nos.
Number of circuit with digital meter for maximum demand (kVA)	: ☐	nos.
Number of circuit with digital meter for total power factor	: ☐	nos.
Number of circuit with digital meter for total harmonic distortion	: ☐	nos.

(c) Charging Facilities of Electrical Vehicles

☐ N/A

■ Separate metering : ☐ Yes ☐ Partial ☐ No

4.5 Renewable Energy System

☐ N/A

Provision:

☐ Solar hot water system	installed capacity	:		kW (thermal)
☐ Photovoltaic system	installed capacity	:		kW
	annual generation	:		kWh
☐ Wind turbine	installed capacity	:		kW
☐ Solar powered lighting	installed capacity	:		kW

Supplementary information /observations:

4.6 Other Installation

☐ N/A

Supplementary information /observations:

5. Analysis of Energy Consumption

5.1 Annual Energy Consumption and Energy Utilization Index (EUI)

5.1.1 Data of the Past 1st 12-month

Period of data from _____ to _____

Energy imported

(a) electricity from utility	:				kWh
(b) electricity from other building	:				kWh
(c) gas from utility	:		MJ	converted as	kWh
(d) gas from other building	:		MJ	converted as	kWh
(e) chilled water from other building	:			thermal	kWh
				averaged COP^15	kW/kW
	:		(*)	apportioned electricity	kWh
(f) cooling water from other building	:			apportioned electricity	kWh
(g) total energy imported	:			(a)+(b)+(c)+(d)+(e)(*)+(f)	kWh

Energy exported

(h) electricity to other building	:				kWh
(i) electric vehicle charging	:				kWh
(j) gas to other building	:		MJ	converted as	kWh
(k) chilled water to other building	:			thermal	kWh
				averaged COP^15	kW/kW
	:		(*)	apportioned electricity	kWh
(l) cooling water to other building	:			apportioned electricity	kWh
(m) total energy exported	:			(h)+(i)+(j)+(k)(*)+(l)	kWh

Net energy consumption and EUI

Annual energy consumption	:		(g)-(m)	kWh
% annual energy supplied to non-CBSI	:		approximate	%
EUI of this energy audit (kWh/m^2/annum)	:			
EUI of last energy audit (kWh/m^2/annum)	:		if applicable	
EUI comparison with previous audit	:		if applicable	%

5.1.2 Data of the Past 2nd 12-month (optional)

Period of data from _____ to _____

Net energy consumption	:		evaluation follow 5.1.1	kWh
% annual energy supplied to non-CBSI	:		approximate	%
EUI (kWh/m^2/annum)	:			

5.1.3 Data of the Past 3rd 12-month (optional)

Period of data from _____ to _____

Net energy consumption	:		evaluation follow 5.1.1	kWh
% annual energy supplied to non-CBSI	:		approximate	%
EUI (kWh/m^2/annum)	:			

5.2 Annual Energy Consumption Breakdown for the Past 1st 12 Month

Building services installation	Net annual energy consumption (%)
Total:	100%

The annual energy consumption breakdown is derived by (can select more than one box):

☐ reference to electricity bills ☐ engineering calculations ☐ reference to past energy audit report

☐ reference to meter readings ☐ reference to energy simulation

5.3 Analysis and Observation of Annual Energy Consumption

6. Energy Management Opportunities (EMO)

6.1 EMO Implemented Within the Past 5 years

EMO Category (I/II/III)	EMO description

Supplementary information / observations:

6.2 EMO Proposed in this Energy Audit

Proposed EMO

Category	:		
Title	:		
Description	:		
Estimated annual saving	:	kWh	
		HK$/kWh	
		HK$	
Estimated capital cost	:	HK$	☐ N/A
Simple payback period	:	year(s)	☐ N/A
Detailed description and cost benefit analysis	:		

Proposed EMO

Category	:		
Title	:		
Description	:		
Estimated annual saving	:	kWh	
		HK$/kWh	
		HK$	
Estimated capital cost	:	HK$	☐ N/A
Simple payback period	:	year(s)	☐ N/A
Detailed description and cost benefit analysis	:		

Proposed EMO

Category	:		
Title	:		
Description	:		
Estimated annual saving	:		kWh
			HK$/kWh
			HK$
Estimated capital cost	:		HK$ ☐ N/A
Simple payback period	:		year(s) ☐ N/A
Detailed description and cost benefit analysis	:		

Proposed EMO

Category	:		
Title	:		
Description	:		
Estimated annual saving	:		kWh
			HK$/kWh
			HK$
Estimated capital cost	:		HK$ ☐ N/A
Simple payback period	:		year(s) ☐ N/A
Detailed description and cost benefit analysis	:		

Proposed EMO

Category	:		
Title	:		
Description	:		
Estimated annual saving	:		kWh
			HK$/kWh
			HK$
Estimated capital cost	:		HK$ ☐ N/A
Simple payback period	:		year(s) ☐ N/A
Detailed description and cost benefit analysis	:		

Proposed EMO

Category	:		
Title	:		
Description	:		
Estimated annual saving	:		kWh
			HK$/kWh
			HK$
Estimated capital cost	:		HK$ ☐ N/A
Simple payback period	:		year(s) ☐ N/A
Detailed description and cost benefit analysis	:		

Proposed EMO

Category	:		
Title	:		
Description	:		
Estimated annual saving	:		kWh
			HK$/kWh
			HK$
Estimated capital cost	:		HK$ ☐ N/A
Simple payback period	:		year(s) ☐ N/A
Detailed description and cost benefit analysis	:		

Proposed EMO

Category	:		
Title	:		
Description	:		
Estimated annual saving	:		kWh
			HK$/kWh
			HK$
Estimated capital cost	:		HK$ ☐ N/A
Simple payback period	:		year(s) ☐ N/A
Detailed description and cost benefit analysis	:		

Proposed EMO

Category	:		
Title	:		
Description	:		
Estimated annual saving	:		kWh
			HK$/kWh
			HK$
Estimated capital cost	:		HK$ ☐ N/A
Simple payback period	:		year(s) ☐ N/A
Detailed description and cost benefit analysis	:		

Proposed EMO

Category	:		
Title	:		
Description	:		
Estimated annual saving	:		kWh
			HK$/kWh
			HK$
Estimated capital cost	:		HK$ ☐ N/A
Simple payback period	:		year(s) ☐ N/A
Detailed description and cost benefit analysis	:		

Notes to Complete this Form

1. The energy audit report should be completed using this template (Form EE-EAR) in accordance to the 2024 edition of the Code of Practice for Building Energy Audit.

2. The copy of the Energy Audit Form (Form EE5) should append with the energy audit report in the submission in accordance to the Buildings Energy Efficiency Ordinance.

Remarks

^1 Care should be exercised in naming the building entity in the case of a building complex. The concept of "building entity" is outlined in clause 4.3 of Technical Guidelines on Energy Audit Code (TG-EAC). The name of building here should reflect the "entity". For example, if the entity audited is the podium only of a building complex in the name of "xxx Centre", the name to be inserted may be "xxx Centre (podium)". Likewise if the entity covers both the podium and say Tower 1 of the complex "xxx Centre", the name may be "xxx Centre (podium and Tower 1)".

^2 Occupation approval means an occupation permit; or an approval or a consent issued by a relevant authority to occupy a building for which no occupation permit is required under the Buildings Ordinance (Cap. 123). For a building complex having different occupation approval dates, please insert the earliest occupation approval date of the building portion.

^3 "Total gross floor area (GFA) of the building" means a gross floor area under stipulation of section 23(3) of the Building (Planning) Regulations (Cap 123F). For composite building comprises of residential and commercial or commercial and industrial portions, please indicate the gross floor areas of total and commercial portion separately. For a portion of an industrial building that is occupied principally as a data centre, the gross floor area would covers the data centre portion only.

^4 The concept of "building entity" and "building block" is outlined in clause 4.3 of TG-EAC.

^5 For an entity with two or more towers, insert the no. of floors of the tallest block in the entity. In case of an entity formed by both podium and tower, insert the summation of the no. of floors of the podium and that of the tower.

^6 Please refer to the interpretation in the EAC. "Total Internal floor area" should include all areas irrespective of norm of operation, and should not include roof, gardening area and balcony.

^7 Please indicate the portion as a percentage to the total floor area of the building entity, based on internal floor area. "Common area" refers to the common area interpreted in the Buildings Energy Efficiency Ordinance (BEEO). See also clause 3.1.3 in the TG-EAC. Please insert "0" for building with no common area.

^8 Please confine to building operation with criteria significantly affecting energy consumption of the CBSI, such as reduced / increase operation hours due to operational needs, change in occupancy, etc and give descriptions of the operation.
Examples:
Large cinema or exhibition area (occasionally used contributing to lower energy consumption, or frequently used contributing to higher energy consumption); supermarket with 24-hour operation, data centre (occupying a unit/ units of a building) with heavy energy demand on the CBSI (contributing to higher energy consumption); skating rink demanding additional refrigeration energy, large plant room (for providing chilled water to special tenant units or for energy export to outside the building entity) areas etc.
(Please attach separate sheets if space provided is not sufficient)

^9 May tick more than one item. The provision refers to one that installed in or supply for the building which constitutes not less than 10% of the energy consumption of the central building services installation (CBSI). Please tick "N/A" (not applicable) should there be no such provision or the provision constitutes less than 10% of the CBSI energy consumption.

^10 Input power can be rated motor power (MR) / equipment rated power (ER) / equipment calculated power (C) / equipment measured power (M). Input power shall generally by (MR) or (ER) unless when these are not available or when it is considered that (C) or (M) is more accurate, and such reason shall be indicated in

supplementary information/other observations. If calculation of equipment power consumption is adopted, methodology of calculation shall be included in supplementary information/other observations. If actual measurement of power consumption is adopted, measurement shall be carried out under equipment peak load condition, and conditions under which measurement is taken shall be indicted in supplementary information/other observations. If repeating the peak load condition is found not viable during the period of energy audit, professional judgement should be applied to project such condition with the methodology and assumption being elaborated in the supplementary information/other observations. The same principle is applicable to equipment capacity where the rated capacity should be adopted as the preferable approach while the measured/calculated capacity can be adopted with justification and methodology being elaborated in supplementary information/other observations.

^11 Indicate the number of years after the first operation of the equipment. If the major component of the equipment (i.e. drive system) such as motor /compressor of chiller, motor of pump or lift drive had been replaced /upgraded, indicate the number of years after the replacement /upgrade of the major component of the equipment. If the year of operation cannot be identified, provide estimated figure.

^12 The total chiller plant coefficient of performance (COP) is a metric of the overall energy efficiency of an entire chiller plant system (no matter the chiller plant is also supplying chilled water to other building(s) or not). It is the ratio of the total cooling output (in kW of electricity) provided by the chiller plant to the corresponding total power input (in kW electricity) consumed by all components of the chiller plant when generating the total cooling output. Standby equipment should be excluded in the calculation. The components typically include chiller(s), heat pump(s), pump(s), cooling tower(s) and other accessories whenever applicable.

^13 The annual averaged chiller plant COP, either by measurement or computer simulation, is the averaged value of the total chiller plant COP throughout an annual period at various load conditions. The data sampling in the measurement or computer simulation must meet the following criteria:
(a) Minimum 432 sampling interval throughout a 12-month period;
(b) Minimum 6 working day in each month of the 12-month period must be sampled; and
(c) Minimum 6 data interval for each of the above 6 working day must be sampled.

^14 For lighting area having more than one lighting control system, the sum of approximate percentage of coverage of all lighting control systems with more than 100% is acceptable.

^15 For estimating the electricity power consumption of chilled water energy imported or exported, an averaged COP of 3 and 5.5 can be used for air-cooled and water-cooled chiller plant respectively.

Personal Data Privacy Statement

Purpose of Personal Data Collection

1. The personal data provided by means of this form will be used by the Government for the following purposes:

   (a) activities relating to the processing of the submission in this form;

   (b) activities relating to requirements stipulated in the Buildings Energy Efficiency Ordinance; and

   (c) facilitating communication between Government and yourself.

Classes of Transferees

2. Upon receipt of your information submission, all personal data that are collected in this form and all documents submitted along with this form will be kept at the Electrical and Mechanical Services Department and will be disclosed to the data users of the department.

Access to Personal Data

3. You have a right of access and correction with respect to personal data as provided for in sections 18 and 22, and Principle 6 of Schedule 1 of the Personal Data (Privacy) Ordinance. Your right of access includes the right to obtain a copy of your personal data provided by this form.

Enquiries

4. Enquiries concerning the personal data collected by means of this form, including the making of access and correction, should be submitted in writing and addressed to the Director of Electrical and Mechanical Services by posting to Electrical and Mechanical Services Department, 3 Kai Shing Street, Kowloon, Hong Kong, or via email mbec@emsd.gov.hk.