

SUBMISSION FORM

ASEAN Energy Efficiency and Conservation (EE&C)

Best Practice Competition in Buildings

ASEAN Energy Awards – 2016

**Category: New and Existing Building**

(Deadline for submission of Electronic Entries to ACE: 14 April 2016)

page 1

Certification and Covering Note from Consultant

Sample:

The (*name of building*) occupies a site area of about \_\_\_\_\_\_ square meters and was completed in \_\_\_\_\_\_. (Following is a brief description of the building, say). The building has 2 basements and 9-storeys (5 storey H-shaped ward tower block above the 4-storey podium block) with a total gross floor area of \_\_\_\_\_ square meters.

The details of client and project consultants (as appropriate) are:

Client : *(Name of Building)*

Architect :

M&E Engineers :

C&S Engineers :

Project Managers :

|  |  |  |
| --- | --- | --- |
| **Item** | **Data** | **Compliance****(Put check)** |
| **Submission Requirement** |  |  |
| - Certification and Note from Consultants | 1 page |  |
| - Cover of Report | 1 page |  |
| - Overall on-site design | Max 2 pages |  |
| - Active Design | Max 4 pages |  |
| - Passive Design | Max 4 pages |  |
| - Maintenance and Management | Max 4 pages |  |
| - Environmental Impacts | 1 page |  |
| - Building Information | Max4 pages |  |
| - Drawings | Max 4 pages |  |
| **Pre-Qualification** | **Data** |  |
| * Energy Efficiency Index of Occupied Air-conditioned Area: Office: 160 kWh/m2/yr; Library: 160 kWh/ m2/yr; Retail/Shopping Malls: 192 kWh/ m2/yr; Hotels: 216 kWh/ m2/yr; Hospital: 288 kWh/m2/yr
 | \_\_\_ kWh/m2/yr |  |
| * Temperature and Other Settings: Not less than 21ºC but not more than 26ºC; RH: max 70% (applies to air-conditioning. Not pre-requisite - Higher score for having RH control system (below 65%).
 |  |  |
| * Lighting Load: Office - Max 12 watts/m2; Others - Max 20 watts/m2
 | \_\_\_ watts/m2 (GFA)  |  |
| * Operating hours/yr: 2,000 hours/year
 |  |  |
| * At least 1 full-year of operation prior to nomination in national competition
 | \_\_\_ years |  |
| **Type of Font: Times Roman 12** |  |  |

The (name of building) hereby agreed to allow the ACE Board of Judges and the Japanese experts to visit the building and verify the authenticity of the data. However, two weeks advance notice is required to allow for necessary arrangements.

The undersigned certified that the information given is true and accurate and prepared with the consent of the party/ies involved.

|  |  |  |
| --- | --- | --- |
| **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Name of the Client**Office, PositionTel, fax, e-mail |  |  |
| **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Name of Consultant**Office, PositionTel, fax, e-mail | **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Name of Consultant**Office, PositionTel, fax, e-mail | **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Name of Consultant**Office, PositionTel, fax, e-mail |
| **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Endorsed by Focal Point**Name, Office (*country*) & Position Tel, Fax, e-mail |  |  |

page 2

Cover of Report (Name of Building, photo, etc.)

page 3

Overall On-site Design (2 pageS Write-up)

* 1. Use of vegetation, landscape and hardscape
	+ Effective application of ground covering plant and large plant
	+ The modification of landscape and topography
	+ The use of hardscape materials
	1. The use of water body
	+ Effective application of water body: location, quantity, etc.
	1. The use of wind

Effective application of wind: natural ventilation, stack ventilation, etc.

* 1. Other use of on-site natural environment
		+ - The use of night sky radiation
			- Others (specify)

 Note: **This introductory note must be deleted in the submission.**

page 4

Overall On-site Design (2 pageS Write-up)

page 5

Active Design (Discussion of 4 Features in max 4 pages)

* 1. Air-conditioning system (selection, layout and plant system design): \_\_\_\_\_\_\_\_ kW/ton \_\_\_\_\_\_\_\_ W/m2

|  |  |
| --- | --- |
| Chiller Plant | Efficiency(kW/ton) |
| Chiller (A) |  |
| Chilled water pump (B) |  |
| Condenser water pump (C) |  |
| Cooling tower (D) |  |
| **System efficiency****(A + B + C + D)** |  |

* 1. Lighting systems: \_\_\_\_\_\_\_\_ W/m2
	2. Other systems (transportation, etc.) \_\_\_\_\_\_\_\_W/m2
	3. Indoor air quality (thermal comfort, ventilation, \_\_\_\_\_\_\_\_ m3/hour/person, etc.)
	4. Overall energy consumption per sq.m. of normal air-conditioned areas: \_\_\_\_\_\_\_\_ W/m2
	5. Other active design concepts (specify)

 (**This introductory note must be deleted in the submission).**

page 6

Active Design (Discussion of 4 Features in max 4 pages)

page 7

Active Design (Discussion of 4 Features in max 4 pages)

page 8

Active Design (Discussion of 4 Features in max 4 pages)

page 9

Passive Design (Discussion of 4 Features max 4 pages)

* 1. Orientation and building design

The orientation of building

The shape of building (surface area to gross floor area ratio)

The location of service core

The position of entrances

The hardscape around building

Spatial organisation for various functions

etc.

* 1. Envelope design (material, shading, fenestration, etc.)

### Material

Heat transfer protection

Humidity protection

MRT effect

Color of envelope

Infiltration protection and control

Etc.

### Shading

Efficiency of shading devices

The use of natural shading devices

The use of shading from adjacent buildings

Etc.

### Fenestration

Fenestration design: location, nature and size of opening

Light to solar heat gain ratio (LT/SC)

Etc.

* 1. Overall heat transfer through building envelope:
	Wall \_\_\_\_\_\_\_\_ W/m2; Roof \_\_\_\_\_\_\_\_ W/m2
	2. Daylighting

The use of diffuse radiation in building: hall, atrium, corridor, parking, toilet, etc.

Zoning for integrated lighting and daylighting

Contrast ratio of brightness

* 1. Natural Ventilation
	2. Other passive design concepts (specify)

**(This introductory note must be deleted in the submission).**

page 10

Passive Design (Discussion of 4 Features max 4 pages)

page 11

Passive Design (Discussion of 4 Features max 4 pages)

page 12

Passive Design (Discussion of 4 Features max 4 pages)

page 13

Maintenance and Management
(Discussion of 4 Features max 4 pages)

* 1. Energy management systems

Building Energy Management System (BAS)

Energy consumption monitoring system

Etc.

* 1. Maintenance and management measures
		+ Manpower: \_\_\_\_\_\_\_\_\_\_\_ man-hour/year
		+ Maintenance contractor
		+ Availability of energy management engineer
		+ Training of maintenance workers: \_\_\_\_\_\_\_\_cumulative no. of hours
	2. Others (specify)

**(This introductory note must be deleted in the submission).**

page 14

Maintenance and Management

(Discussion of 4 Features max 4 pages)

page 15

Maintenance and Management

(Discussion of 4 Features max 4 pages)

page 16

Maintenance and Management

(Discussion of 4 Features max 4 pages)

page 17

Environmental IMPACTS
(General Discussion max 1 page)

* 1. Waste management
	2. Pollution management (air, noise, visual, exhaust, etc.)
	3. Green/non-toxic materials
	4. Others (specify)

**(This introductory note must be deleted in the submission).**

page 18

Building Information (Fill up details max 4 pages)

## General Information

* + - 1. Name of the building
			2. Name of owner and management company
			3. Address
			4. Tel. No./Fax No./E-mail address

**B. Building Physical Information**

* + - 1. Physical building background

- Brief history

- Single function usage or mix function usage (specify)

* + - 1. Age of building
			2. Any retrofit done? When? What?
			3. Total number of storeys
			4. Total number of basement floor
			5. Number of car park storeys
			6. Total gross floor area
			7. Surface area of the envelope including the roof to gross floor area ratio
			8. Car park area
			9. Gross lettable area
			10. Air-conditioned area
			11. Non-air conditioned area
			12. Plot ratio (total GFA / ground area)
1. **Building Design and Practice Information**
	* + 1. Plants and landscape design/ wind and natural ventilation/ water features/ daylighting/ etc.
			2. Facade and shading design

 - Type of facade

 - Color of facade

 - Use of shading devices

* + - 1. Location of service core
			2. Shape of building
			3. Overall heat transfer through building envelope:

 Wall \_\_\_\_\_\_\_ W/m2; Roof \_\_\_\_\_\_\_\_ W/m2

* + - 1. Lighting fixtures
			2. \*Lighting load \_\_\_\_\_\_\_\_ W/m2 (gross floor area)
			3. Building air-conditioner system and equipment
			 - Fresh air exchange rate: \_\_\_\_\_\_\_ m3/hour/person
			 \_\_\_\_\_\_\_\_ m3/hour/m2
			 \_\_\_\_\_\_\_\_ m3/hour
			 - Energy efficiency of aircon chiller: \_\_\_\_\_\_\_\_ kW/ton
			4. Cooling Load \_\_\_\_\_\_ W/m2 (air-conditioned area)

page 19

Building Information (Fill up details max 4 pages)

1. **Operation Information**
	* + 1. Occupancy rate (year 2001): Minimum \_\_\_\_\_ % of total area
			2. Total number of occupants
			3. Ownership of building (occupied by owner(s), renter(s), etc.)

30. Building operating schedule

* weekdays from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Saturday from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Sunday from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Operating hours/ yr \_\_\_\_\_\_\_\_

31. Building indoor environment: Indoor air quality setting: temperature and RH
**E. Energy Consumption Information**

1. Peak demand (monthly)
2. Energy used (monthly)
3. Typical Load curve (weekdays, weekends)
4. \* Energy efficiency index: air-conditioned area \_\_\_\_\_\_ kWh/m2/yr

 (based on 2,000 operational hours/yr)

36. Energy consumption: Electricity \_\_\_\_\_\_\_\_ kWh/m2/yr

 (based on 2,000 operational hours/yr)
 - Fuel \_\_\_\_\_\_\_\_ Liters/yr (not for electricity generation)

**F. Energy Management Information**

37. Building energy management system Connected physical points \_\_\_\_\_\_\_ (no )

38. Energy saving: Schedule programme \_\_\_\_\_\_ kWh/yr
 Duty cycle programme \_\_\_\_\_\_ kWh/yr
 Optimum start / stop programme \_\_\_\_\_\_ kWh/yr
 Power demand programme \_\_\_\_\_\_ kW (mean)

* 1. **Maintenance Information**
1. Maintenance programme
* Manpower: \_\_\_\_\_\_\_\_ man-hr/yr
* Maintenance contractor
* Availability of energy management engineer
* Training of maintenance workers: \_\_\_\_\_\_ cumulative hours/yr.

page 20

Building Information (Fill up details max 4 pages)

* 1. **Environmental Impacts**
1. Impacts of waste
2. Impacts of pollution (air, noise, visual, exhaust, etc.)

	1. **Additional Information for Retrofitted Buildings**
3. \*Energy savings in air-conditioned area \_\_\_\_\_\_\_ kWh/m2/yr (based on 2,000 operational hours/year
4. \*Energy savings in lighting systems \_\_\_\_\_\_\_\_\_ kWh/m2/yr (based on 2,000 operational hours/year)
5. \*Retrofitted area: \_\_\_\_\_\_\_\_\_ % of total area

page 21

Building Information (Fill up details max 4 pages)

page 22

Drawings (A4/A3 size: typical floor plan, site layout, roof plan, and vertical cross section - max 4 pages)

page 23

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page 24

Drawings (A4/A3 size: typical floor plan, site layout, roof plan, and vertical cross section - max 4 pages)

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