



SUBMISSION FORM

ASEAN Energy Efficiency and Conservation (EE&C)

Best Practice Competition in Buildings

ASEAN Energy Awards – 2016

**Category: TropicalBuilding**

(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 :

|  |  |  |
| --- | --- | --- |
| **I t e m** | **D a t a** | **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 2 pages |  |
| - Passive Design | Max 4 pages |  |
| - Maintenance and Management | Max 1 page |  |
| - Environmental Impacts | Max 1 page |  |
| - Building Information | Max 2 pages |  |
| - Drawings | Max 4 pages |  |
| **Pre-Qualification** | **Data** |  |
| - Energy Efficiency Index: (150 kWh/m2/yr based on GFA) | \_\_\_ kWh/m2/yr |  |
| * Air-conditioning up to 50 percent of total gross floor area (GFA) | \_\_\_ % |  |
| - Temperature and Other Settings: Not less than 21o C but not more than 26o C |  |  |
| - Lighting load (Office – max 12 W/m2 of GFA;Others – max 20 W/m2 of GFA) | \_\_\_ W/m2 (GFA) |  |
| - Operating hours/yr.: To be based on 2,000 hours/year |  |  |
| - At least 1 full-year of operation prior to nomination in national competition | \_\_\_ years |  |

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

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

p age 3

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

General discussion to focus on the following: Use of vegetation, landscape and hardscape (effective application of ground covering plant and large plant, modification of landscape and topography, use of hardscape materials); use of water body (effective application of water body: location, quantity, etc.); use of wind (effective application of wind: natural ventilation, stack ventilation, etc.); and other use of on-site natural environment (the use of night sky radiation, others). (**This introductory note must be deleted in the submission.)**

p age 4

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

General discussion to focus on the following: use of vegetation, landscape and hardscape (effective application of ground covering plant and large plant, modification of landscape and topography, use of hardscape materials); use of water body (effective application of water body: location, quantity, etc.); use of wind (effective application of wind: natural ventilation, stack ventilation, etc.); and other use of on-site natural environment (the use of night sky radiation, others). (**This introductory note must be deleted in the submission.)**

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Active Design (GEneral Discussion max 2 pages)

General discussion of features to focus on the following areas: air-conditioning system (selection, layout and plant system design): \_\_ kW/ton \_\_ W/m2 ; Lighting systems: \_ W/m2; Other systems (transportation, etc.) \_\_W/m2 ; Indoor air quality (thermal comfort, ventilation, \_ m3/hour/person, etc.); overall energy consumption per sq.m. of normal air-conditioned areas: \_\_ W/m2; other active design concepts (specify). (**This introductory note must be deleted in the submission).**

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Active Design (general Discussion max 2 pages)

General discussion to focus on the following areas: air-conditioning system (selection, layout and plant system design): \_\_ kW/ton \_\_ W/m2 ; Lighting systems: \_ W/m2; Other systems (transportation, etc.) \_\_W/m2 ; Indoor air quality (thermal comfort, ventilation, \_ m3/hour/person, etc.); overall energy consumption per sq.m. of normal air-conditioned areas: \_\_ W/m2; other active design concepts (specify). (**This introductory note must be deleted in the submission).**

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Passive Design (Discussion of 4 Features max 4 pages)

Discussion of 4 features to focus on the following areas: 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.); 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.); Overall heat transfer through building envelope: wall \_ W/m2; Roof \_ W/m2; daylighting (the use of diffuse radiation in building: hall, atrium, corridor, parking, toilet, etc., zoning for integrated lighting and daylighting, contrast ratio of brightness); natural ventilation; other passive design concepts. **(This introductory note must be deleted in the submission).**

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Passive Design (Discussion of 4 Features max 4 pages)

Discussion of 4 features to focus on the following areas: 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.); 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.); Overall heat transfer through building envelope: wall \_ W/m2; Roof \_ W/m2; daylighting (the use of diffuse radiation in building: hall, atrium, corridor, parking, toilet, etc., zoning for integrated lighting and daylighting, contrast ratio of brightness); natural ventilation; other passive design concepts. **(This introductory note must be deleted in the submission).**

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Passive Design (Discussion of 4 Features max 4 pages)

Discussion of 4 features to focus on the following areas: 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.); 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.); Overall heat transfer through building envelope: wall \_ W/m2; Roof \_ W/m2; daylighting (the use of diffuse radiation in building: hall, atrium, corridor, parking, toilet, etc., zoning for integrated lighting and daylighting, contrast ratio of brightness); natural ventilation; other passive design concepts. **(This introductory note must be deleted in the submission).**

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Passive Design (Discussion of 4 Features max 4 pages)

Discussion of 4 features to focus on the following areas: 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.); 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.); Overall heat transfer through building envelope: wall \_ W/m2; Roof \_ W/m2; daylighting (the use of diffuse radiation in building: hall, atrium, corridor, parking, toilet, etc., zoning for integrated lighting and daylighting, contrast ratio of brightness); natural ventilation; other passive design concepts. **(This introductory note must be deleted in the submission).**

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Maintenance and Management   
(GeNERAL Discussion max 1 page)

General discussion to focus on the following areas: energy management systems (building Energy Management System (BAS), energy consumption monitoring system, etc.); maintenance and management measures (manpower: \_\_ man-hour/year, maintenance contractor, availability of energy management engineer, training of maintenance workers: \_\_\_cumulative no. of hours); training programmes (with description, etc.); others (specify). **(This introductory note must be deleted in thesubmission).**

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Environmental Impacts  
(General Discussion max 1 page)

General discussion to focus on the following areas: waste management; pollution management (air, noise, visual, exhaust, etc.); green/non-toxic materials; others (specify). **(This introductory note must be deleted in the submission).**

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Building Information (Fill up details max 2 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)

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.)

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Building Information (Fill up details max 2 pages)

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.
  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

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

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

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

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