Guideline on
National Energy Award 2023 (NEA 2023)

for

Green & Energy Efficient Buildings

Organiser

KEMENTERIAN SUMBER ASLI, ALAM SEKITAR DAN PERUBAHAN IKLIM

Supported by

MGTC

seda MALAYSIA

Suruhanjaya Tenaga Energy Commission

AKAUN AMANAH INDUSTRI BEKALAN ELEKTRIK (AAIBE)

1.0 Objectives of Competition

1.1 To promote awareness of Energy Efficiency and Conservation (EE&C) in buildings and to promote greater public and private sectors participation in EE&C best practices.

1.2 To increase the public's level of awareness of green and energy-efficient buildings.

1.3 To contribute to the reduction of CO_2 emissions and promote measures to address climate change resiliency.

1.4 To enhance the eco-friendly supply chain and create a market for green building technologies, materials and products.

1.5 To adopt, develop and apply green building principles in the design of the built environment.

2.0 Competition Categories

2.1 Green Building (Small & Medium Sub-category, Large Sub-category and Residential)

- Building gross floor area (GFA):
  i. Small & Medium category: building with a gross floor area of 300m^2 to 5,000m^2 (excluding car park area)
  ii. Large Category: building with a gross floor area of more than 5,000m^2 (excluding the car park area)
  iii. Residential Category, Individual Landed House: a dwelling that is not attached to any other dwelling or structure (except its own garage or shed) and has no dwellings either above it or below it. This includes a detached or semi-detached house.

2.2 EE Designed Building

- The age of the building must not be more than 5 years old

2.3 Retrofitted Building

- Building where major changes and improvements have already been introduced to improve energy efficiency
- The age of the building must be at least 5 years old

2.4 Tropical Building

- Air-conditioned area of less than 50% of total GFA
- Give high emphasis on effective use of passive design
- GFA of more than 500m^2 (excluding car park area)
- Excludes religious building

2.5 Zero Energy Building

- Gross Floor Area (GFA) of 2,000 square meters or above
- The project shall present both step-by-step approach/efforts and results achieved.
- Energy Efficiency Index based on Gross Floor Area: Not exceeding 55 kWh/m^2/yr
- Lighting Load: Max 20 Watts/m^2

3.0 Pre-Qualification Requirements

No.	Green Building	EE Designed Building	Retrofitted Building	Tropical Building	Zero Energy Building (ZEB)
1	<u>Building's Area:</u> • Small & Medium Category - GFA of 300m^2 to 5,000m^2 (excluding car park area) • Large Category - GFA more than 5,000m2 (excluding car park area) <u>Residential:</u> • Overall maximum permissible energy efficiency index: 55 kWh/m2/year, calculated based on Gross Floor Area instead of air-conditioned area (air-conditioned area should not be used as it would be small); and • Maximum lighting load: 20 W/m2 (gross floor area)	<u>Building's Age:</u> • The age of the building must be not more than 5 years old	<u>Building's Age:</u> • The age of the building must be at least 5 years old <u>Total Energy Saving:</u> • 20% of the total energy consumption for active retrofits eg A/C retrofits	<u>Building's Area:</u> • Air-conditioning area less than 50% of total GFA • GFA more than 500m^2 (excluding car park area)	<u>Building's Area:</u> • Must involve an effort to achieve at least one of the ZEB criteria: ✓ ZEB Oriented: More than 30% energy saving (Renewable Energy excluded) ✓ ZEB Ready: More than 40% energy saving (Renewable Energy excluded) ✓ Nearly ZEB: More than 60% energy saving, including Renewable Energy ✓ Net ZEB: 100% or more energy saving, including Renewable Energy • The project shall present both step-by-step approach/efforts and results achieved.
2	At least 1 full-year of operation prior to nomination in national competition		At least 1 full year of operation after retrofitting prior to nomination in national competition	At least 1 full year of operation prior to nomination in national competition	At least 1-year operational data to be eligible for nomination in national competition

3	Maximum Energy Efficiency Index of Occupied Air-conditioned Area (Normalised to 2,000 operation hours): • Office – 128 kWh/m^2/year • Library – 160 kWh/m^2/year • Retails/Shopping malls - 154 kWh/m^2/year • Hotel - 173 kWh/m^2/year • Hospital - 230 kWh/m^2/year • School – 128 kWh/m^2/year • Apartments – 100 kWh/m^2/year • Others (such as airports,laboratories, community buildings, factory buildings, etc) – 180 kWh/m^2/year	Maximum Energy Efficiency Index: 150 kWh/m^2/year based on GFA (Normalised to 2,000 operation hours)	Energy Efficiency Index based on Gross Floor Area: 55 kWh/m^2/yr
4	Temperature and Other Setting • Not less than 21ºC but not more than 26ºC • RH: Maximum 70% (applies to air-conditioning) • Higher score for having RH control system below 65%	Temperature and Other Setting • Not less than 21ºC but not more than 26ºC	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%).
5	Lighting Load (Gross Floor Area) • Office - Maximum 8 watts/m^2 (gross floor area) • Other - Maximum 15 watts/m^2		Lighting Load: Max 20 watts/m^2
6	Minimum Operating hours/year: 2,000 hours/year		

*EEI, Gross Floor Area (GFA) = (TBEC ÷ GFA) x (NH ÷ OH)

4.0 Criteria and Distribution of Scores by Categories

4.1 Green Building Category

No.	Criteria	Marks Allocation	
		Green Building	Green Residential
1a	Active Design	15%	15%
1b	Passive Design	15%	20%
2	Renewable Energy	10%	10%
3	Water Efficiency	10%	10%
4	Environmental Sustainability (Sustainable & Environmentally Friendly Materials, Landscaping Greenery, Sustainable Site, waste management, etc.)	20%	20%
5	Indoor Environmental Quality and Well-Being* (Occupant's comfort, adequate natural ventilation & lightings in wet areas, minimise contaminants, etc)	20%	15%
6	Operation and maintenance & Other Green features, Innovation, and Occupant's awareness**	8%	8%
7	Overall Presentation (adherence to the guidelines, maximum of page numbers, etc.)	2%	2%
	Total	**100%**	**100%**

4.2 EE Designed, Retrofitted and Tropical Building Categories

Criteria and Mark Structures				
No.	Criteria Group	Marks Allocation		
		EE Designed Building	Retrofitted Building	Tropical Building
1	Overall Site Design	15%	-	20%
2	Energy Saving Achieved	-	25%	-
3	Passive Design	25%	15%	40%
4	Active Design	25%	25%	15%
5	Maintenance & Management	235%	235%	135%
6	Environmental impacts	10%	10%	10%
7	Overall presentation (adherence to the guidelines, maximum of page numbers, etc.)	2%	2%	2%
	Total	**100%**	**100%**	**100%**

4.3 Zero Energy Building

Criteria and Mark Structures		
No.	**Criteria Group**	**Marks Allocation**
		Zero Energy Building
1	Overall Site Design	35%
2	Renewable Energy	10%
3	Water Efficiency	10%
4	Environmental Sustainability	20%
5	Indoor Environmental Quality and Well-Being	15%
6	Operation and maintenance & other green features, innovation, and occupant's awareness	8%
7	Overall presentation (adherence to the guidelines, maximum of page numbers, etc.)	2%
	Total	**100%**

5.0 Format of Submission

Please refer attachments below for format of submission for each category.

Attachment 1 – Submission Format for Green Building category

Attachment 2 – Submission Format for Green Residential category

Attachment 3 – Submission Format for EE Designed Building category

Attachment 4 – Submission Format for Retrofitted Building category

Attachment 5 – Submission Format for Tropical Building category

Attachment 6 – Submission Format for Zero Energy Building category

Note: Applicants are required to submit 6 original hardcopies and 1 softcopy.

ATTACHMENT 1

SUBMISSION FORMAT

NATIONAL ENERGY AWARDS 2023

CATEGORY: GREEN BUILDING

i. Small and Medium Sub-category
ii. Large Sub-category

CERTIFICATION AND COVERING NOTE

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 covering note from consultants	1 page	
- Cover of Report	1 page	
- Energy Efficiency (active and passive designs)	Max 4 pages	
- Renewable Energy	Max 2 pages	
- Water Efficiency	1 page	
- Environmental Sustainability (Materials, Greenery, Sustainable Site, etc)	Max 2 pages	
- Indoor Environmental Quality	Max 3 pages	
- Operation and Maintenance & Other Green features, and Innovation	Max 3 pages	
- Building Information	Max 4 pages	
- Drawings (in A4 / A3 size): Typical floor plan, site layout, roof plan and vertical cross section, etc	Max 4 pages	
Pre-Qualification	**Data**	
- Maximum Energy Efficiency Index of Occupied Air-conditioned Area: Office: 128 kWh/m^2/yr; Library: 160 kWh/ m^2/yr; Retail/Shopping Malls: 154 kWh/ m^2/yr; Hotels: 173 kWh/ m^2/yr; Hospital: 230 kWh/m^2/yr (Normalised to 2,000 hours)	___ kWh/m^2/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 8 watts/m^2; Others - Max 15 watts/m^2	___ watts/m^2 (GFA)	
- Minimum 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 NEA Board of Judges and other experts that are designated by the NEA committee to visit the building and verify the authenticity of the data. However, two weeks advance notice is required to allow for necessary arrangements. We also hereby agree that NEA organizing party can publish the whole submission in the NEA, Ministry of Energy and Natural Resources and Energy Commission publication and website, without any prior consent of the owner of the company.

We, 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

COVER OF REPORT (1 PAGE)

- Name of building, photo, etc.

ENERGY EFFICIENCY - ACTIVE & PASSIVE DESIGN (MAX 4 PAGES) – [30%]

1.0 Passive Design Concepts

1.1 Orientation of building, Artist Impression, OTTV, RTTV and façade design

1.2 Window to Wall Ratio _____%

i. U value of opaque wall element

ii. U value and SC value of fenestration, including shading elements of east and west facade

1.3 Overall heat transfer through building envelope

(1. - OTTV: _____ W/m^2; 2. Roof U_v/ RTTV: _____ W/m^2

1.4 Daylighting (the use of diffuse radiation in building: hall, atrium, corridor, parking, toilet, etc.)

1.5 Zoning for integrated lighting and daylighting

1.6 Natural Ventilation

1.7 Air-conditioned area over Gross Floor Area

1.8 Other passive design concepts, roof gardening.

2.0 Active Design Concepts

2.1 Air-conditioning system (selection, layout and plant system design): _____ kW/ton _____ W/m^2

Summary table:

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

OR

Other Types	Efficiency (kW/ton)
VRF / Package unit / Split Unit (A)	
Condenser water pump (B)	
Cooling tower (C)	
System efficiency (A + B + C)	

2.2 System efficiency of aircond plant including air side equipment: Include chillers, chilled water pumps, condenser water pumps, AHU, FCU,cooling tower, VRF,Package Unit and Split Unit

Selection, layout and plant system design

2.3 Cooling load (W_r/m^2) based on air-conditioned area

2.4 Heat Recovery (e.g. heat pump for hot water)

2.5 Lighting systems: _____ W/m^2

2.6 Vertical transportation (e.g. energy efficient lift, escalators with motion sensor control, etc.)

2.7 Other active design concepts, please specify

RENEWABLE ENERGY (MAX 2 PAGES) – [10%]

1. Total renewable energy installed capacity and total energy generated (kWh) yearly
2. % replacement of total building energy consumption by renewable energy
3. Total investment and pay-back period
4. How much of total electricity can be saved (kWh) in a year?

WATER EFFICIENCY (MAX 1 PAGES) – [10%]

1. Use of water-efficient fittings (e.g. flow rate of taps L/min, dual flush WCs, L/flush etc.)
2. Provision of water sub-metering and leak detection system
3. Use of non-potable water for irrigation
4. Use of water-efficient irrigation system (e.g. drip irrigation with rain sensors)
5. Use of non-potable water for cooling towers and other purposes
6. Rainwater harvesting & percentage in reduction of potable water consumption
7. Water treatment/recycling capacity
8. Others, please specify

ENVIRONMENTAL SUSTAINABILITY (MAX 2 PAGES) – [20%]

1. Sustainable construction
   a) Conservation of existing structures & material reuse
   b) Use of materials/products with recycled content
   c) Environmentally friendly products with green label certification
   d) Good Environmental Management system during construction
2. Greenery
   a) Restoration and Conservation of existing trees
   b) Vertical greenery
   c) Roof gardens
   d) % landscape areas over the total site area
3. Provision of recycling facilities
   a) Storage, collection and disposal
4. Public transport accessibility

a) Distance from nearest bus stop/train station

5. Materials (Percentage of Using Local Materials
6. Sustainable Site (external environment)
7. Barrier free and public access
8. Others, please specify

INDOOR ENVIRONMENTAL QUALITY (MAX 3 PAGES) – [20%]

1. Thermal comfort – design indoor temp and relative humidity – include at least one-week of data profiling on each typical area
2. Number of Ventilation air per person (CFM/person)
3. Use of low volatile organic compound (VOC) paints and coatings
4. Use of VOC and low formaldehyde emission products (e.g. carpets)
5. Use of high frequency ballast to avoid low frequency flickering
6. Pollution (noise, vibration, EM wave, Dust, Bacterial count and CO_2 concentration sensoring)
7. Environmental tobacco smoke (ETS) and smoke control
8. Lighting illumination
9. Well-being
10. Others, please specify.

OPERATION AND MAINTENANCE & OTHER GREEN FEATURES AND INNOVATION (MAX 3 PAGES) – [8%]

1. Any other feature with positive environmental impact
2. Bio-climatic architecture and design
3. Sustainable operation and maintenance
4. Management Policy
5. Buildings Standard of Operation (SOP)
6. As Build Drawing
7. Records, Logs & other documentation that able to show the improvement of Green Building Design
8. Performance Achievement
9. Cogeneration
10. Occupant's awareness
11. Future improvement plans
12. Others, please specify

OVERALL PRESENTATION – [2%]

1. Adherence to the guidelines
2. In the limit of maximum page number
3. Infographic

BUILDING INFORMATION (FILL UP DETAILS MAX 4 PAGES)

A. 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)
2. Age of building
3. Any retrofit done? When? What?
4. Total number of storeys
5. Total number of basement floor
6. Number of car park storeys
7. Total gross floor area
8. Surface area of the envelope including the roof to gross floor area ratio
9. Car park area
10. Gross lettable area
11. Air-conditioned area
12. Non-air conditioned area
13. Plot ratio (total GFA / ground area)

C. 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 façade
   - Colour of façade
   - Use of shading device
3. Location of service core
4. Shape of building
5. Overall heat transfer through building envelope:
   Wall _____ W/m^2; Roof _____ W/m^2
6. Lighting fixtures

7. *Lighting load _____ W/m^2 (gross floor area)
8. Building air-conditioner system and equipment
   - Fresh air exchange rate: _____ m^3/hour/person
     _____ m^3/hour/m^2
     _____ m^3/hour
   - Energy efficiency of aircon chiller: _____ kW/ton
9. Cooling Load _____ W/m^2 (air-conditioned area)

D. Operation Information

1. Occupancy rate Minimum _____ % of total area
2. Total number of occupants
3. Ownership of building (occupied by owner(s), renter(s), etc.)
4. Building operating schedule
   - weekdays from _____ to _____
   - Saturday from _____ to _____
   - Sunday from _____ to _____
   - Operating hours/ yr _____
5. Building indoor environment: Indoor air quality setting: temperature and RH

E. Energy Consumption Information

1. Peak demand (monthly)
2. Energy used (Annual)
3. Typical Load curve (weekdays, weekends)
4. *Energy efficiency index: air-conditioned area _____ kWh/m^2/yr (based on 2,000 operational hours/yr) – add BEI
5. Energy consumption:
   - Electricity _____ kWh/m^2/yr (based on 2,000 operational hours/yr)
   - Fuel _____ Liters/yr (not for electricity generation)

F. Energy Management Information

1. Building energy management system Connected physical points _____ (nos)
2. Energy saving:
   - Schedule programme _____ kWh/yr
   - Duty cycle programme _____ kWh/yr
   - Optimum start / stop programme _____ kWh/yr
   - Power demand programme _____ kW (mean)

G. Maintenance Information

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

H. Environmental Impacts

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

I. Additional Information for Retrofitted Buildings

1. *Energy savings in air-conditioned area _____ kWh/m^2/yr (based on 2,000 operational hours/year
2. *Energy savings in lighting systems _____ kWh/m^2/yr (based on 2,000 operational hours/year)
3. *Retrofitted area: _____ % of total area

DRAWINGS (A4/A3 SIZE: TYPICAL FLOOR PLAN, SITE LAYOUT, ROOF PLAN, AND VERTICAL CROSS SECTION - MAX 4 PAGES)

ATTACHMENT 2

SUBMISSION FORMAT

NATIONAL ENERGY AWARDS 2023

CATEGORY: GREEN RESIDENTIAL

CERTIFICATION AND COVERING NOTE

Sample:

The (*name of dwelling*) occupies a site area of about _____ square meters and was completed in _____. (Following is a brief description of the dwelling, say). The dwelling has 3 storeys (3 storey with garage/shed and is a detached/ semi-detached house) with a total gross floor area of _____ square meters.

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

Client : ..... *(Name of Dwelling)*
Architect : .....
M&E Engineers : .....
C&S Engineers : .....
Project Managers : .....

ITEM	DATA	COMPLIANCE (PUT CHECK)
Submission Requirement		
- Certification and covering note from consultants	1 page	
- Cover of Report	1 page	
- Energy Efficiency (active and passive designs)	Max 4 pages	
- Renewable Energy	Max 2 pages	
- Water efficiency	1 page	
- Environmental Sustainability (Materials, Greenery, Sustainable Site, etc)	Max 2 pages	
- Indoor Environmental Quality and Well-Being	Max 3 pages	
- Operation and maintenance & Other Green features, Innovation, and Occupant's awareness	Max 3 pages	
- Building Information	Max 4 pages	
- Drawings (in A4 / A3 size): Typical floor plan, site layout, roof plan and vertical cross section, etc	Max 4 pages	
Pre-Qualification		
- Energy Efficiency Index based on Gross Floor Area: 55 kWh/m^2/yr	___ kWh/m^2/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: Max 20 watts/m^2	___ watts/m^2 (GFA)	
- Operating hours/yr: 2,000 hours/year		
- At least 1 full-year of operation prior to nomination in national competition	___ years	

The **(name of dwelling)** hereby agreed to allow the NEA Board of Judges and other experts that are designated by the NEA committee to visit the building and verify the authenticity of the data. However, two weeks advance notice is required to allow for necessary arrangements. We also hereby agree that NEA organizing party can publish the whole submission in the NEA, Ministry of Energy and Natural Resources and Energy Commission publication and website, without any prior consent of the owner of the company.

We, 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

COVER OF REPORT (1 PAGE)

- Name of building, photo, etc.

ENERGY EFFICIENCY - ACTIVE & PASSIVE DESIGN (MAX 4 PAGES) – [35%]

1.0 Passive Design Concepts

1.1 Orientation of building, Artist Impression, OTTV, RTTV and façade design

1.2 Window to Wall Ratio _____%

1.3 i. U value and SC value of fenestration, including shading elements of east and west facade
ii. U value of opaque wall element

1.4 Overall heat transfer through building envelope
(1. Wall: _____ W/m^2; 2. Roof: _____ W/m^2)

1.5 Daylighting (the use of diffuse radiation in building: hall, atrium, corridor, parking, toilet, etc.)

1.6 Zoning for integrated lighting and daylighting

1.7 Natural Ventilation

1.8 Air-conditioned area over Gross Floor Area

1.9 Other passive design concepts, roof gardening.

2.0 Active Design Concepts

2.1 Air-conditioning system (selection, layout and plant system design): _____ kW/ton _____ W/m^2

Summary table:

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

2.2 System efficiency of aircond plant including air side equipment: Include chillers, chilled water pumps, condenser water pumps, AHU, FCU and cooling tower.
Selection, layout and plant system design

2.3 Cooling load (W/m^2) based on air-conditioned area

2.4 Heat Recovery (e.g. heat pump for hot water)

2.5 Lighting systems: _____ W/m^2

2.6 Vertical transportation (e.g. energy efficient lift, escalators with motion sensor control, etc.)

2.7 Other active design concepts, please specify

RENEWABLE ENERGY (MAX 2 PAGES) – [10%]

1. Total renewable energy installed capacity and total energy generated (kWh) yearly
2. % replacement of total building energy consumption by renewable energy
3. Total investment and pay-back period
4. How much of total electricity can be saved (kWh) in a year?

WATER EFFICIENCY (MAX 1 PAGES) – [10%]

1. Use of water efficient fittings (e.g. flow rate of taps L/min, dual flush WCs, L/flush etc.)
2. Provision of water sub-metering and leak detection system
3. Use of non-potable water for irrigation
4. Use of water efficient irrigation system (e.g. drip irrigation with rain sensors)
5. Use of non-potable water for cooling tower and other purposes
6. Rainwater harvesting & percentage in reduction of potable water consumption
7. Water treatment / recycling capacity
8. Others, please specify

ENVIRONMENTAL SUSTAINABILITY (MAX 2 PAGES) – [20%]

1. Sustainable construction
   a) Conservation of existing structures & material reuse
   b) Use of materials / products with recycled content
   c) Environmentally friendly products with green label certification
   d) Good Environmental Management system during construction
2. Greenery
   a) Restoration and Conservation of existing trees
   b) Vertical greenery
   c) Roof gardens
   d) % landscape areas over total site area
3. Provision of recycling facilities
   a) Storage, collection and disposal
4. Public transport accessibility
   a) Distance from nearest bus stop/train station
5. Materials (Percentage of Using Local Materials
6. Sustainable Site (external environment)
7. Barrier free and public access
8. Others, please specify

INDOOR ENVIRONMENTAL QUALITY (MAX 3 PAGES) – [15%]

1. Thermal comfort – design indoor temp and relative humidity
2. Number of Ventilation air per person (CFM/person)
3. Use of low volatile organic compound (VOC) paints and coatings
4. Use of VOC and low formaldehyde emission products (e.g. carpets)
5. Use of high frequency ballast to avoid low frequency flickering
6. Pollution (noise, vibration, EM wave, Dust, Bacterial count and CO_2 concentration sensoring)
7. Environmental tobacco smoke (ETS) and smoke control
8. Lighting illumination
9. Well-being criterion may include nature in common areas, such as greenery, water features, natural landscape, and ecosystem of the house.
10. Others, please specify.

OPERATION AND MAINTENANCE & OTHER GREEN FEATURES AND INNOVATION (MAX 3 PAGES) – [8%]

1. Any other feature with positive environmental impact
2. Bio-climatic architecture and design
3. Sustainable operation and maintenance
4. Management Policy
5. Buildings Standard of Operation (SOP)
6. As Build Drawing
7. Records, Logs & other documentation that able to show the improvement of Green Building Design
8. Performance Achievement
9. Cogeneration
10. The Occupant's awareness criterion expects entries to demonstrate the efforts in ensuring that the occupants are well informed and aware on the energy conservation measures, proper use of the technologies emplaced in the buildings, and to integrate a sustainable lifestyle.
11. Others, please specify

OVERALL PRESENTATION – [2%]

1. Adherence to the guidelines
2. In the limit of maximum page number
3. Infographic

BUILDING INFORMATION (FILL UP DETAILS MAX 4 PAGES)

A. 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)
2. Age of building
3. Any retrofit done? When? What?
4. Total number of storeys
5. Total number of basement floor
6. Number of car park storeys
7. Total gross floor area
8. Surface area of the envelope including the roof to gross floor area ratio
9. Car park area
10. Gross lettable area
11. Air-conditioned area
12. Non-air conditioned area
13. Plot ratio (total GFA / ground area)

C. 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
3. Location of service core
4. Shape of building
5. Overall heat transfer through building envelope:
   Wall _____ W/m^2; Roof _____ W/m^2
   Lighting fixtures
6. *Lighting load _____ W/m^2 (gross floor area)
7. Building air-conditioner system and equipment
   - Fresh air exchange rate: _____ m^3/hour/person
     _____ m^3/hour/m^2
     _____ m^3/hour
   - Energy efficiency of aircon chiller: _____ kW/ton
8. Cooling Load _____ W/m2 (air-conditioned area)

D. 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.)
4. Building operating schedule

- weekdays from _____ to _____
- Saturday from _____ to _____
- Sunday from _____ to _____
- Operating hours/ yr _____

5. 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: gross floor area _____ kWh/m^2/yr
   (based on 2,000 operational hours/yr)
5. Energy consumption: Electricity _____ kWh/m^2/yr
   (based on 2,000 operational hours/yr)
   - Fuel _____ Liters/yr (not for electricity generation)

F. Energy Management Information

1. Building energy management system Connected physical points _____ (no)
2. Energy saving: Schedule programme _____ kWh/yr
   Duty cycle programme _____ kWh/yr
   Optimum start / stop programme _____ kWh/yr
   Power demand programme _____ kW (mean)

H. Maintenance Information

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

I. Environmental Impacts

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

J. Additional Information for Retrofitted Buildings

1. *Energy savings in air-conditioned area _____ kWh/m^2/yr (based on 2,000 operational hours/year
2. *Energy savings in lighting systems _____ kWh/m^2/yr (based on 2,000 operational hours/year)
3. *Retrofitted area: _____ % of total area

DRAWINGS (A4/A3 SIZE: TYPICAL FLOOR PLAN, SITE LAYOUT, ROOF PLAN, AND VERTICAL CROSS SECTION - MAX 4 PAGES)

ATTACHMENT 3

SUBMISSION FORMAT

NATIONAL ENERGY AWARDS 2023

CATEGORY: EE DESIGNED BUILDING

CERTIFICATION AND COVERING NOTE

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	Max 4 pages	
- Drawings	Max 4 pages	
Pre-Qualification	**Data**	
- Maximum Energy Efficiency Index of Occupied Air-conditioned Area: Office: 128 kWh/m2/yr; Library: 160 kWh/ m2/yr; Retail/Shopping Malls: 154 kWh/ m2/yr; Hotels: 173 kWh/ m2/yr; Hospital: 230 kWh/m2/yr (Normalised to 2,000 hours)	___ kWh/m^2/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 8 watts/m2; Others - Max 15 watts/m2	___ watts/m^2 (GFA)	
- Minimum 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 NEA Board of Judges and other experts that are designated by the NEA committee to visit the building and verify the authenticity of the data. However, two weeks advance notice is required to allow for necessary arrangements. We also hereby agree that NEA organizing party can publish the whole submission in the NEA, Ministry of Energy and Natural Resources and Energy Commission publication and website, without any prior consent of the owner of the company.

We, 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

COVER OF REPORT (1 PAGE)

- Name of building, photo, etc.

OVERALL ON-SITE DESIGN (2 PAGES WRITE-UP) – [15%]

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
2. The use of water body
   - Effective application of water body: location, quantity, etc.
3. The use of wind
   - Effective application of wind: natural ventilation, stack ventilation, etc.
4. Other use of on-site natural environment
   - The use of night sky radiation
   - Others (specify)

ACTIVE DESIGN (DISCUSSION OF 4 FEATURES IN MAX 4 PAGES) – [25%]

1. Air-conditioning system (selection, layout and plant system design):
   _____ kW/ton _____ W/m^2

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

2. Lighting systems: _____ W/m^2
3. Other systems (transportation, etc.) _____W/m^2
4. Indoor air quality (thermal comfort, ventilation, _____ m^3/hour/person, etc.)
5. Overall energy consumption per sq.m. of normal air-conditioned areas: _____ W/m^2
6. Other active design concepts (specify)

ACTIVE DESIGN (DISCUSSION OF 4 FEATURES IN MAX 4 PAGES) – [25%]

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.

2. Envelope design (material, shading, fenestration, etc.)
   a) Material
      - Heat transfer protection
      - Humidity protection
      - MRT effect
      - Colour 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.

3. Overall heat transfer through building envelope:
   Wall _____ W/m^2; Roof _____ W/m^2

4. Daylighting
   - The use of diffuse radiation in building: hall, atrium, corridor, parking, toilet, etc.
   - Zoning for integrated lighting and daylighting
   - Contrast ratio of brightness

5. Natural Ventilation

6. Other passive design concepts (specify)

MAINTENANCE AND MANAGEMENT (DISCUSSION OF 4 FEATURES MAX 4 PAGES) – [23%]

1. Energy management systems
   - Building Energy Management System (BAS)
   - Energy consumption monitoring system etc.

2. Maintenance and management measures
   - Manpower: _____ man-hour/year
   - Maintenance contractor
   - Availability of energy management engineer
   - Training of maintenance workers: _____cumulative no. of hours

3. Others (specify)

ENVIRONMENTAL IMPACTS (GENERAL DISCUSSION MAX 1 PAGE) – [10%]

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

OVERALL PRESENTATION – [2%]

1. Adherence to the guidelines
2. In the limit of maximum page number
3. Infographic

BUILDING INFORMATION (FILL UP DETAILS MAX 4 PAGES)

A. 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)
2. Age of building
3. Any retrofit done? When? What?
4. Total number of storeys
5. Total number of basement floor
6. Number of car park storeys
7. Total gross floor area
8. Surface area of the envelope including the roof to gross floor area ratio
9. Car park area
10. Gross lettable area
11. Air-conditioned area
12. Non-air conditioned area
13. Plot ratio (total GFA / ground area)

C. 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 façade
   - Colour of façade

- Use of shading device

3. Location of service core
4. Shape of building
5. Overall heat transfer through building envelope:
   Wall _____ W/m^2; Roof _____ W/m^2
6. Lighting fixtures
7. *Lighting load _____ W/m^2 (gross floor area)
8. Building air-conditioner system and equipment
   - Fresh air exchange rate: _____ m^3/hour/person
     _____ m^3/hour/m^2
     _____ m^3/hour
   - Energy efficiency of aircon chiller: _____ kW/ton
9. Cooling Load _____ W/m^2 (air-conditioned area)

D. Operation Information

1. Occupancy rate: Minimum _____ % of total area
2. Total number of occupants
3. Ownership of building (occupied by owner(s), renter(s), etc.)
4. Building operating schedule
   - weekdays from _____ to _____
   - Saturday from _____ to _____
   - Sunday from _____ to _____
   - Operating hours/ yr _____
5. 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/m^2/yr (based on 2,000 operational hours/yr)
5. Energy consumption:
   - Electricity _____ kWh/m^2/yr (based on 2,000 operational hours/yr)
   - Fuel _____ Liters/yr (not for electricity generation)

F. Energy Management Information

1. Building energy management system Connected physical points _____ (nos)
2. Energy saving:
   - Schedule programme _____ kWh/yr
   - Duty cycle programme _____ kWh/yr
   - Optimum start / stop programme _____ kWh/yr
   - Power demand programme _____ kW (mean)

G. Maintenance Information

1. Maintenance programme

- Manpower: _____ man-hr/yr
- Maintenance contractor
- Availability of energy management engineer
- Training of maintenance workers: _____ cumulative hours/yr.

DRAWINGS (A4/A3 SIZE: TYPICAL FLOOR PLAN, SITE LAYOUT, ROOF PLAN, AND VERTICAL CROSS SECTION - MAX 4 PAGES)

ATTACHMENT 4

SUBMISSION FORMAT

NATIONAL ENERGY AWARDS 2023

CATEGORY: RETROFITTED BUILDING

CERTIFICATION AND COVERING NOTE

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	
- Total Energy Savings	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	Max 4 pages	
- Drawings	Max 4 pages	
Pre-Qualification	**Data**	
- Maximum Energy Efficiency Index of Occupied Air-conditioned Area: Office: 128 kWh/m2/yr; Library: 160 kWh/ m2/yr; Retail/Shopping Malls: 154 kWh/ m2/yr; Hotels: 173 kWh/ m2/yr; Hospital: 230 kWh/m2/yr (Normalised to 2,000 hours)	___ kWh/m^2/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 8 watts/m2; Others - Max 15 watts/m2	___ watts/m^2 (GFA)	
- Minimum Operating hours/yr: 2,000 hours/year		
- At least 1 full-year of operation after retrofitting prior to nomination in national competition	___ years	
- Total Energy Savings: 20% of the total energy consumption for A/C retrofits; 10% of the total energy consumption for non-A/C retrofits		
Type of Font: Times Roman 12		

The **(name of building)** hereby agreed to allow NEA Board of Judges and other experts that are designated by the NEA committee to visit the building and verify the authenticity of the data. However, two weeks advance notice is required to allow for necessary arrangements. We also hereby agree that NEA organizing party can publish the whole submission in the NEA, Ministry of Energy and Natural Resources and Energy Commission publication and website, without any prior consent of the owner of the company.

We, 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	**Name of Consultant**	**Name of Consultant**
Office, Position	Office, Position	Office, Position
Tel, fax, e-mail	Tel, fax, e-mail	Tel, fax, e-mail

COVER OF REPORT (1 PAGE)

- Name of building, photo, etc.

TOTAL ENERGY SAVINGS (2 PAGES WRITE-UP) – [25%]

1. Air-conditioning system – minimum 20% saving achieved from retrofitting activity
2. Lighting systems - % saving for non A/C retrofitting activity from the total energy saving
3. Others (specify)
   - More than 10% for non-A/C retrofits e.g. lamps, etc. – (include % savings from non a/c retrofitting activity from the % total savings
   - 20% - active retrofit such as A/C

ACTIVE DESIGN (DISCUSSION OF 4 FEATURES IN MAX 4 PAGES) – [25%]

1. Air-conditioning system (selection, layout and plant system design): _____ kW/ton _____ W/m^2

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

2. Lighting systems: _____ W/m^2
3. Indoor air quality (thermal comfort, ventilation, _____ m^3/hour/person, etc.)
4. Overall energy consumption per sq.m. of normal air-conditioned areas: _____ W/m^2
5. Other active design concepts (specify)

PASSIVE DESIGN (DISCUSSION OF 4 FEATURES MAX 4 PAGES) – [15%]

1. Spatial organisation for various functions
2. Environmental improvement of surroundings
3. Envelope design (material, shading, fenestration, etc.)
   a) <u>Material</u>
      - Heat transfer protection
      - Humidity protection
      - MRT effect
      - Colour of envelope (exterior)
      - Infiltration protection and control etc.

      <u>Shading</u>
      - Effectiveness 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.

4. Overall heat transfer through building envelope:
   Wall _____ W/m^2; Roof _____ W/m^2
5. Daylighting
6. Others passive design concepts (specify)

MAINTENANCE AND MANAGEMENT (DISCUSSION OF 4 FEATURES MAX 4 PAGES) – [23%]

1. Energy management systems
   - Building Energy Management System (BAS)
   - Energy consumption monitoring system etc.
2. Maintenance and management measures
   - Manpower: _____ man-hour/year
   - Maintenance contractor
   - Availability of energy management engineer
   - Training of maintenance workers: _____cumulative no. of hours
3. Future improvement plans
4. Others (specify)

ENVIRONMENTAL IMPACTS (GENERAL DISCUSSION MAX 1 PAGE) – [10%]

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

OVERALL PRESENTATION – [2%]

1. Adherence to the guidelines
2. In the limit of maximum page number
3. Infographic

BUILDING INFORMATION (FILL UP DETAILS MAX 4 PAGES)

A. 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)
2. Age of building
3. Any retrofit done? When? What?
4. Total number of storeys
5. Total number of basement floor
6. Number of car park storeys
7. Total gross floor area
8. Surface area of the envelope including the roof to gross floor area ratio
9. Car park area
10. Gross lettable area
11. Air-conditioned area
12. Non-air conditioned area
13. Plot ratio (total GFA / ground area)

C. 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 façade
   - Colour of façade
   - Use of shading device
3. Location of service core
4. Shape of building
5. Overall heat transfer through building envelope:
   Wall _____ W/m^2; Roof _____ W/m^2
6. Lighting fixtures
7. *Lighting load _____ W/m^2 (gross floor area)
8. Building air-conditioner system and equipment
   - Fresh air exchange rate: _____ m^3/hour/person
     _____ m^3/hour/m^2
     _____ m^3/hour
   - Energy efficiency of aircon chiller: _____ kW/ton
9. Cooling Load _____ W/m^2 (air-conditioned area)

D. Operation Information

1. Occupancy rate: Minimum _____ % of total area
2. Total number of occupants
3. Ownership of building (occupied by owner(s), renter(s), etc.)
4. Building operating schedule

- weekdays from _____ to _____
- Saturday from _____ to _____
- Sunday from _____ to _____
- Operating hours/ yr _____

5. 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/m^2/yr (based on 2,000 operational hours/yr)
5. Energy consumption:
   - Electricity _____ kWh/m^2/yr (based on 2,000 operational hours/yr)
   - Fuel _____ Liters/yr (not for electricity generation)

F. Energy Management Information

1. Building energy management system Connected physical points _____ (nos)
2. Energy saving:
   - Schedule programme _____ kWh/yr
   - Duty cycle programme _____ kWh/yr
   - Optimum start / stop programme _____ kWh/yr
   - Power demand programme _____ kW (mean)

G. Maintenance Information

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

H. Environmental Impacts

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

I. Additional Information for Retrofitted Buildings

1. *Energy savings in air-conditioned area _____ kWh/m^2/yr (based on 2,000 operational hours/year
2. *Energy savings in lighting systems _____ kWh/m^2/yr (based on 2,000 operational hours/year)
3. *Retrofitted area: _____ % of total area

DRAWINGS (A4/A3 SIZE: TYPICAL FLOOR PLAN, SITE LAYOUT, ROOF PLAN, AND VERTICAL CROSS SECTION - MAX 4 PAGES)

ATTACHMENT 5

SUBMISSION FORMAT

NATIONAL ENERGY AWARDS 2023

CATEGORY: TROPICAL BUILDING

CERTIFICATION AND COVERING NOTE

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 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**	
- Maximum Energy Efficiency Index: (150 kWh/m^2/yr based on GFA) – Normalised to 2,000 hours - GFA not less than 500m2 excluding car park area - Excludes religious building	___ kWh/m^2/yr	
- Air-conditioning area less than 50% of total gross floor area (GFA)	___ %	
- Temperature and Other Settings: Not less than 21^o C but not more than 26^o C		
- Lighting load (Office – max 12 W/m^2 of GFA; Others – max 20 W/m^2 of GFA)	___ W/m^2 (GFA)	
- Minimum 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	
Type of Font: Times Roman 12		

The **(name of building)** hereby agreed to allow the NEA Board of Judges and other experts that are designated by the NEA committee to visit the building and verify the authenticity of the data. However, two weeks advance notice is required to allow for necessary arrangements. We also hereby agree that NEA organizing party can publish the whole submission in the NEA, Ministry of Energy and Natural Resources and Energy Commission publication and website, without any prior consent of the owner of the company.

We, 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 **Name of Consultant** **Name of Consultant**
Office, Position Office, Position Office, Position
Tel, fax, e-mail Tel, fax, e-mail Tel, fax, e-mail

COVER OF REPORT (1 PAGE)

- Name of building, photo, etc.

OVERALL ON-SITE DESIGN (2 PAGES WRITE-UP) – [20%]

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
2. The use of water body
   - Effective application of water body: location, quantity, etc.
3. The use of wind
   - Effective application of wind: natural ventilation, stack ventilation, etc.
4. Other use of on-site natural environment
   - The use of night sky radiation
   - Others (specify)

ACTIVE DESIGN (DISCUSSION OF 2 FEATURES IN MAX 4 PAGES) – [15%]

1. Air-conditioning system (selection, layout and plant system design): _____ kW/ton _____ W/m^2
2. Lighting systems: _____ W/m^2
3. Other systems (transportation, etc.) _____W/m^2
4. Indoor air quality (thermal comfort, ventilation, _____ m^3/hour/person, etc.)
5. Overall energy consumption per sq.m. of normal air-conditioned areas: _____ W/m^2
6. Other active design concepts (specify)

PASSIVE DESIGN (DISCUSSION OF 4 FEATURES MAX 4 PAGES) – [40%]

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.

2. Envelope design (material, shading, fenestration, etc.)
   a) Material
      - Heat transfer protection
      - Humidity protection
      - MRT effect
      - Colour of envelope
      - Infiltration protection and control etc.
   b) Shading
      - Efficiency of shading devices
      - The use of natural shading devices
      - The use of shading from adjacent buildings etc.
   c) Fenestration
      - Fenestration design: location, nature and size of opening
      - Light to solar heat gain ratio (LT/SC) etc.
3. Overall heat transfer through building envelope:
   Wall _____ W/m^2; Roof _____ W/m^2
4. Daylighting
   - The use of diffuse radiation in building: hall, atrium, corridor, parking, toilet, etc.
   - Zoning for integrated lighting and daylighting
   - Contrast ratio of brightness
5. Natural Ventilation
6. Other passive design concepts (specify)

MAINTENANCE AND MANAGEMENT (DISCUSSION OF 4 FEATURES MAX 1 PAGE) – [13%]

1. Energy management systems
   - Building Energy Management System (BAS)
   - Energy consumption monitoring system etc.
2. Maintenance and management measures
   - Manpower: _____ man-hour/year
   - Maintenance contractor
   - Availability of energy management engineer
   - Training of maintenance workers: _____cumulative no. of hours
3. Others (specify)

ENVIRONMENTAL IMPACTS (GENERAL DISCUSSION MAX 1 PAGE) – [10%]

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

OVERALL PRESENTATION – [2%]

1. Adherence to the guidelines
2. In the limit of maximum page number
3. Infographic

BUILDING INFORMATION (FILL UP DETAILS MAX 2 PAGES)

A. 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)
2. Age of building
3. Any retrofit done? When? What?
4. Total number of storeys
5. Total number of basement floor
6. Number of car park storeys
7. Total gross floor area
8. Surface area of the envelope including the roof to gross floor area ratio
9. Car park area
10. Gross lettable area
11. Air-conditioned area
12. Non-air conditioned area
13. Plot ratio (total GFA / ground area)

C. 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 façade
   - Colour of façade

- Use of shading device

3. Location of service core
4. Shape of building
5. Overall heat transfer through building envelope:
   Wall _____ W/m^2; Roof _____ W/m^2
6. Lighting fixtures
7. *Lighting load _____ W/m^2 (gross floor area)
8. Building air-conditioner system and equipment
   - Fresh air exchange rate: _____ m^3/hour/person
     _____ m^3/hour/m^2
     _____ m^3/hour
   - Energy efficiency of aircon chiller: _____ kW/ton
9. Cooling Load _____ W/m^2 (air-conditioned area)

D. Operation Information

1. Occupancy rate: Minimum _____ % of total area
2. Total number of occupants
3. Ownership of building (occupied by owner(s), renter(s), etc.)
4. Building operating schedule
   - weekdays from _____ to _____
   - Saturday from _____ to _____
   - Sunday from _____ to _____
   - Operating hours/ yr _____
5. 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/m^2/yr (based on 2,000 operational hours/yr)
5. Energy consumption:
   - Electricity _____ kWh/m^2/yr (based on 2,000 operational hours/yr)
   - Fuel _____ Liters/yr (not for electricity generation)

F. Energy Management Information

1. Building energy management system Connected physical points _____ (nos)
2. Energy saving:
   - Schedule programme _____ kWh/yr
   - Duty cycle programme _____ kWh/yr
   - Optimum start / stop programme _____ kWh/yr
   - Power demand programme _____ kW (mean)

G. Maintenance Information

1. Maintenance programme

- Manpower: _____ man-hr/yr
- Maintenance contractor
- Availability of energy management engineer
- Training of maintenance workers: _____ cumulative hours/yr.

H. Environmental Impacts

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

DRAWINGS (A4/A3 SIZE: TYPICAL FLOOR PLAN, SITE LAYOUT, ROOF PLAN, AND VERTICAL CROSS SECTION - MAX 4 PAGES)

ATTACHMENT 6

SUBMISSION FORMAT

NATIONAL ENERGY AWARDS 2023

CATEGORY: SPECIAL SUBMISSION

1. **ZERO ENERGY BUILDING (ZEB)**
2. **CUTTING EDGE TECHNOLOGIES AND APPROPRIATE TECHNOLOGY**

CERTIFICATION AND COVERING NOTE (ZEB BUILDING)

Sample:
The (*name of building*) is a *(ZEB Criteria) building* occupies a site area of about _____ square meters and was completed in _____. (Following is a brief description of the building, say.

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

Client : ..... *(Name of Building)*
Type of Building : Office/Library/Retail/Hotels/Hospital/School/Apartments/Others (please specify)
Architect : .....
M&E Engineers : .....
C&S Engineers : .....
Project Managers : .....

ITEM	DATA	COMPLIANCE (PUT CHECK)
Submission Requirement	**(Total must be Max. 10 pages)**	
- Cover of Report	1 page	
- Certification and Note	1 page	
- Project/Activity Overview and Description	Max 2 pages	
- Objective of the Project	Max 2 pages	
- Detailed energy savings method and approach	Max 4 pages	
- Other relevant information (Energy management system, cost effectiveness, ZEB realization plan)	Max 1 page	
- Summary of Building Energy Performance/ Savings	Max 1 page	
Pre-Qualification	**Data**	
- Energy Savings Rate	___ %	
- Renewable Energy Supply	___ %	
- ZEB Category (Net-ZEB/Nearly ZEB/ZEB-Ready/ZEB Oriented)		
- Baseline Reference		
- Gross Floor Area (GFA) of 2,000 square meters or above	_____ m^2	
- 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 NEA Board of Judges and other experts that are designated by the NEA committee to visit the building and verify the authenticity of the data. However, two weeks advance notice is required to allow for necessary arrangements. We also hereby agree that NEA organizing party can publish the whole submission in the NEA, Ministry of Energy and Natural Resources and Energy Commission publication and website, without any prior consent of the owner of the company.

We, 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

A. ZEB BUILDING

COVER OF REPORT

- Name of building, type of building, ZEB Category, photo, etc.

PROJECT/ACTIVTIY OVERVIEW

- General discussion to focus on the description of the building, the rationale, the technologies and design of the building, and the ZEB Category.

DETAILED ENERGY SAVINGS METHOD AND APPROACH

- To include detailed methods and approaches being implemented to achieve one of the ZEB categories, including passive design, active design, along with each of its energy savings results and renewable energy introduction. The Baseline used must also be informed.

OTHER RELEVANT INFORMATION

- Discussion of other relevant information such as:
  - Energy Management System
  - Cost Effectiveness
  - ZEB realisation plan The orientation of building

SUMMARY OF BUILDING ENERGY PERFORMANCE/SAVINGS

- A table summary of the energy performance/savings achieved may be provided to compare each technology/design/approach being implemented, along with the baseline reference, building’s total energy consumption, and the amount renewable energy supply.

B. CUTTING EDGE TECHNOLOGIES AND APPROPRIATE TECHNOLOGY

COVER OF REPORT

- Development and/or innovative use of technology, materials, equipment and processes

PROJECT/ACTIVITY OVERVIEW

- General discussion to focus on the description of the building, the rationale, the technologies and design of the building, and the ZEB Category

GENERAL GUIDELINES CUTTING EDGE TECHNOLOGIES AND APPROPRIATE TECHNOLOGY SUB-CATEGORY

- Special submissions are projects which involve significant development in the field of energy efficiency in buildings. Such development may be achieved in the areas of equipment, material, system applications, design and management processes. Such development and innovation may be demonstrated through actual application in real project(s).

- To qualify under Cutting Edge Technologies and Appropriate Technology Sub-Category, a project must involve the development and/or innovative use of technology, materials, equipment, and processes. Special focus will be given to projects which contribute to the promotion and development of the country. The application of new technology has not yet been applied in other countries. The project should present new idea, new concept, and new design.

- The entry must submit a proposal of not more than 10 pages to the secretariat. The proposal should contain the following:
    i. Objectives of the project
    ii. Detailed description of the project
    iii. The special contributions and benefits of the project to the nations
    iv. The special contributions and benefits of the project to the ASEAN Region
    v. The special contributions and benefits of the project to the International Development of EE&C
    vi. Other relevant information