

2nd International Student Competition on Tall Building Design



UNIVERSITI
TEKNOLOGI
PETRONAS

Guidelines and Details



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Objectives



- The objective of the 2nd international students' competition on tall building design is to prepare future engineers for performing engineering practices in the Post-COVID era.
- Experts suggest that the future green building technologies will be focusing on the impacts of pandemic for assuring occupants health and well being.
 - The president of the Singapore Green Building Council defines that the future Green Buildings will be like giant N95 facemask, protecting you from harmful toxins the moment you step inside the building.



Objectives



- Nearly after a year of the pandemic spread, global cities are opening their economies and peoples are returning to work, which urges installing green building technologies in shopping centers, offices and other share spaces for limiting the impacts of COVID19 and future diseases outbreak for keeping occupants in good stead.
- Therefore, in the 2nd version of tall building design competition, participants are expected to develop a model design for a global IT hub by incorporating green building protecting technologies for always assuring the health and wellbeing of occupants without stopping building operations.
 - **Refer Technical Details for further actions**



Technical Details



Building Size and Details

- Office Space : **5000 persons**
Cubicles, open office spaces, director rooms, meeting rooms, Discussion Rooms, One Conference hall (200 capacity)
- Location : **Any urban location in the world**
- Gross Floor Area
Open Office Space: 9 to 12 m²/pax
Cubicles and directors: 15 – 20 m²/pax
Meeting Room: Up to 25 Pax
Discussion Room: Up to 6 pax
- Services, Facilities at each floor
Pantry, dining room, prayer room
Server room, storage
- Vertical Transportation (Lifts)
Maximum Waiting Time: 3 Minutes
- Parking Spaces
Basement parking: 1500
Open parking at ground: 500



Technical Details



- Tentative Plot Size : **3000 m² (30,000 ft²)**
- Maximum usage of plot area : 60% of the plot size
- Building Height Limit : **200 m (650 ft)**
- Building Structure : Reinforced Concrete Structure
- Green Building Rating : PLATINUM (LEED or Equivalent)
- Design Life : 60 years
- Ground Conditions : According to your chosen location



Operational Requirements



For different segments, following are the requirements (whichever applicable):

1. Green Site and Building Exterior Management

- i. Erosion & Sedimentation Control
- ii. Storm Water Management
- iii. Heat Island Reduction
- iv. Public transport connectivity

2. Water Efficiency

- i. Water Efficient Landscaping
- ii. Innovative Wastewater Technologies

3. Energy & Atmosphere

- i. Minimum Energy Performance - as per EPA (environmental protection agency) ENERGY STAR Building



Operational Requirements



4. Indoor Environmental Quality

- i. Outdoor Air Delivery Monitoring and Control
- ii. Demand control ventilation and prevention of airborne viruses & bacteria transmission
- iii. Deep reduction in building carbon footprint
- iv. Prevention of lighting pollution
- v. Innovative disinfection of air handling units
- vi. Sensing and control of personal ventilation system
- vii. Inherent protection system for sterilizing the building
- viii. Thermal comfort
- ix. Green Cleaning



Competition Submission Package



1. Video File (maximum 10 minutes long) – It should contain

- i. A 3D digital model of the building
- ii. Narration Explaining the concept and features
- iii. Novelty for POST-COVID Green Building Requirements

2. Technical Report (Maximum of 50 pages) – It should Contain

1. Project background and design Philosophy
2. The concept (how to address the technical requirements supporting with details and justifications)
3. Expected Performance of the Building (how to address the features highlighted for operational requirement and justifications i.e., LEED scoring or equivalent)
4. Concluding Remarks
5. Appendix – Containing plans and details



Judging Criteria



Creative Approach (15%):



Relationship with Site and Structural System (35%):



Sustainability and Environmental Performance (25%):



Functionality and Operation (15%):



Video Presentation (10%):



Prizes and Entry Fees



Gold Prize

RM 1000 and Certificate

Silver Prize – Four Winners

RM 500 and Certificate

Bronze Prize – Five Winners

RM 200 and Certificate

Special Prizes:

Best Video Presentation

RM 500 and Certificate

Best Design Concept Report

RM 500 and Certificate

Jury's Choice Award

RM 500 and Certificate

Entry Fees:

RM 200/team