

HW03_Marim Elhanafy_201803468

by Marim Elhanafy

Submission date: 10-Nov-2022 10:18PM (UTC+0300)

Submission ID: 1950425689

File name: HW03_Marim_Elhanafy_201803468.pdf (150.01K)

Word count: 346

Character count: 1861



College of Engineering

GENG 107 – L53: Engineering Skills and Ethics
Fall 2022

Assignment #3

Submitted To:
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Submission Date: **10/11/2022**


Question 1:

You are supposed to design a project entitled “World tallest energy savings building – SKY-QATAR”. You need to identify 8 Design criteria/constraints for this project and also list the name of 3 standards/codes you are going to consider in the design. Your response will be in the following form:

Design Criteria/Constraints:

1. Budget (commercial constraint)
 - The project’s budget should not exceed 800 million \$.
2. Technical constraints
 - The tower should be 600 meters tall.
 - At least 40% of the building’s power consumption should originate from the solar panels attached to the roof, glass, and ground around the tower.
 - The building should be made from environmentally friendly concrete and recyclable materials such as steel.
 - The building should be made such that it only allows the installation of electrical appliances that are needed, and said appliances have to be highly efficient in terms of electricity consumption such as the use of LEDs for lighting.
3. The building structure and glass should be made such that it has resilience against natural disasters such as lightening or earthquakes.
4. The building should be made such that it considers all safety measurements to ensure the workers’ and the environment’s safety.
5. The assigned schedule to finalize the design of the building is within a period of 5 years from the starting date and the project planning must consider Qatar’s 2030 vision as point of reference.
6. The building structure if properly maintained should have a lifespan of at least 200 years.
7. The building should be made such that it applies the most recent available technologies in site investigations, energy supply and efficiency, wastewater, and water management.
8. The reliability of the building design (building lifespan, potential failures) should be thoroughly studied and measured for future planning.

Standards/Codes:

1. International Code Council (ICC).
2.  & Local Building Codes.
3. International Green Construction Code.

FINAL GRADE

GENERAL COMMENTS

Instructor

10/10

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Comment 1

what about local and regional standards