LAGI 19

*Objective*:

***How to create a {close-to} Net-Zero\* construct implemented to produce reusable energy*** -

The design process behind my 2019 submission was based on energy efficiency by way of eco-friendly building materials. Based on the current location of this year’s design competition, it was apparent that the landscape didn’t allow for coastal influences. The key element in design was based around the varying environmental factors: Flat plains, High sun exposure, wind currents, High traffic area. These environmental characteristics shaped the way in which these new constructs would be conducive to governing power grid/ the operational Kilowatt standards.

Once these parameters were met, essentially the goal is to keep a low-carbon emission for the build location and the surrounding areas. The concept behind the design is based on, 'What is the best way to implement a new building, without disrupting the existing infrastructure?’; ‘How to build a construct that will stand the test of time within a newly establish metropolitan area?’ From there the next step was to consider ‘How will this design impact future generations?’ Which is of importance, as they will be the one’s occupying/investigating how to maintain a sustainable construct for further use.

**The element of the design process was recreate/reinterpret traditional aesthetic elements, though with a modern/forward- thinking approach**

The basis of this year’s submission was to identify ways in which this newly established city could incorporate an eco-friendly, yet visually appealing structure. This a newly built plotted area will establish a recognizable structural marker for those who inhabit/visit. One that is capable of emphasizing the landscape of Masdar City.

With this concept, I look to have this project produce a close to ‘net-zero’ sustainability; with the option to expand for future 'energy-efficient' design. The idea behind this submitted design-construct, was based on creating a built-installation that has a cohesive structural appeal in the newly established Coefficient Community’.

Based on the current area-of-occupancy, the layout will accommodate to a persons' daily usage. Whether it is ranging from a local commute or more along the lines of recreation. It will all be based on building a structured area reminiscent of its foundation, though built with a modern aesthetic.

Each facility is to be built using ‘Eco-friendly’ materials, as well as, pre-fabricated unit framing for certain key areas within/applied-to structures. The goal is to turn this unique parcel of land into, what potentially could be its’ own ‘net-zero’ operating community. The new build should be a reflection of the present state of the interactive community; not overshadowing the previous designs/works of those prior. The main objective is to create a feel of “Interwoven-Engagement”, through plural placement and availability of ‘engage-directed activities'.

Total-Common-Area\*

***Electricity Usage*:**

* Common baseline electricity for other devices [i.e. ***Fans, Ventilation Systems, Pumps, Elevators, Indoor & Outdoor Lighting, Parking Garage***, ***et*c**.] Common variable electricity  for  space heating  {if  electric  re-heat  or baseboard heaters  are  used in the  corridors  or  elsewhere}\*

***Solar Paneling*:**

- Thermal heating panels installed throughout the construct. Low-cost maintenance.

- Based on the current location, it is important that any recovery of stored energy is

reused as an alternative power source.

[*When acquired through solar paneling*]\*

***Wind Energy Conductivity:***

- Alternative Power Source

- If recovered through ‘Wind-Sourcing’

***Regenerative Electrical Installation:***

- Conductive Generators

- Nano Lumen\* takes less space than others, yet delivers more light and saves energy with halogen lamps. The tiny 2.5" aperture is barely noticeable in the ceiling plane.

- 71 Watts Maximum

 - GU5.3 base MR-16 lamp

***Energy Reductive Window Paneling:***

- Energy efficient windows keep cold air out during winter and air conditioning in during summer. These windows typically have more than one layer, low-E coatings, and high quality edge spacers and frames.

- Fixed-pane windows are the most energy efficient type of window. They don’t open and are sealed around the edges to prevent air infiltration. These airtight windows are easy to clean and come with double or triple glazing for even greater energy efficiency. Fixed-pane windows cost 15 percent less than windows that open.

Energy Output/Use

- Capacity in kWp {peak output measured in kilowatts of power}: 75kWp

- Annual kWh {kilowatt-hours} under average site conditions: Low: 20,000kWh annual

High: 30,000kWh annual

- Average kilowatt usage (2) per person: Low 5.7 kWh per day /Mid 20.3kWh per day/ Peak 42.5kWh per day

-   Wind Power: 35,625.97 MW (10.0%)

-   Solar Power: 28,180.71 MW (7.9%)

Land parcel recovery upon completion; reserved space (***area***) for future use. Any additional unused parcel designated for occupancy should fall under a public hearing. {***Vote-of-Construct***}\*

