**SOLAR WAVE**

SOLAR WAVE represents a concept of sea wave with a futuristic twist emphasizing one of the biggest environmental catastrophe due to climate change which is the high rise in sea level that could wipe entire cities by the end of this century and it is challenging the minds of visitors to the site and inspiring them to look forward to completely new sources of renewable Energy that could be used now and in the future.

SOLAR WAVE aims to inspire the world about the beauty of renewable energy infrastructures and bring a positive message about life in a post-carbon future and it is also pointing at the danger of Climate Change and its negative impact on our planets and us now and then.

**Brief description of the project:**

SOLAR WAVE main source of energy is the sunlight , convert it into electricity, during the day to maintain the site electrical needs and the left overs are turned to Hydrogen Fuel Stored underground for night purposes and further more to transmit the electrical power to a grid connection point to be designed by others.

And it doesn’t generate greenhouse gas emissions or other forms of environmental pollution, it will be 100% self-sustained structure and site by the clean energy it produces.

SOLAR WAVE is about inspiration; as we can see, in the western north Entrance to the site; we will find a model of a ship surrounded by water surfaces and a large scale water drops acoustic levitator making such a surreal scene of patterns and shapes.(9)

Also With such an epic abstract scene in the main lobby which shows a clash between Green Developments and a Post-Apocalyptic scenario with an Interactive Gallery Showing the negative Impact of Climate Change since first Industrial revolution till the current date.

SOLAR WAVE is about imagination and testing the limits of science by providing in the site Conceptual models of some bold ideas which the scientific community wonders about; like the Dark Energy and the Light Trap Mock-ups.

More the 5 recreation spaces available in the site for events and activities, each spot lays within a very unique perspective view of the structure and open areas.

**Technical assessments:**

SOLAR WAVE is an organic Form of a steel tensile Structure with 8562 Solar Panels of Perovskite material ( perovskite solar cells have achieved high efficiencies (over 22% under standard solar irradiation) at low production costs) attached to its outer surface and the interior skin of PTFE glass cloth coating material painted with a high reflective transparent paint, using Solar cells with embedded nanostructures of mirrors to introduce a light trapping effect (1), which increases the efficiency of the solar panels as if the sunlight is always a normal perpendicular to the surface.

The Annual Energy Production for the whole system is approx. calculated to be 4125.4MWh/y

With a total Peak Capacity of 2140.6KW/h powering over 1672 Houses, and the leftover of the electricity will be turned to hydrogen energy(4).

The Structure cost doesn’t exceed the Energy produced cost as per stated approx. (42,812,500$ ENERGY-25,000,000$ Construction and Materials = 17,812,500$ Cost difference estimation)

And All the Interior paths in the site is provided with special type of tiles of piezoelectric materials (3) to produce electricity from visitor movements, as well uses wood-based technology that creates electricity from heat.

**Environmental Impact assessment:**

SOLAR WAVE is a futuristic structure to inspire more green and self-sustaining Buildings as the concrete used is greener (8), using graphene to reduce the impact by 40% and most of its components are pre-cast and assembled, it also;

* It doesn’t affect its surroundings or the surrounding environment with any negative impact
* It is also produces water from the water in the air as a positive impact considering that water is one of the valuable potential resources of energy in the future (5).
* It has clean energy resources that can be saved and use like hydrogen energy which is stored underground for visitor safety as well.
* SOLAR WAVE structure provides a form of wind tunnels that is feeding the whole site with passive air circulation.
* Almost all the used materials are greener and with cutting edge technologies added to all of them ; ( Concrete , Steel , Glass , Tiles , wood , Light sources ) all to ensure the positive impact on the environment ; the new graphene-reinforced concrete material also drastically reduced the carbon footprint of conventional concrete production methods, making it more sustainable and environmentally friendly(8)
* SOLAR WAVE is pragmatic and constructible, and employ technology that can be scalable and tested.
* It also provides opportunities within a variety of spaces for recreation, events, and interaction and even for wind installation as a next stage development.

Climate Change has very negative impacts on all of us and SOLAR WAVE provides an opportunity and inspiration to the visitors who from who can make our buildings greener and self-sustained or to reach a higher awareness to the potentials of renewable energy sources.

SOLAR WAVE Team Thanks You

Best Regards,