***THE KITE***

A walk on the sea shore rejuvenates us, as we experience being in the lap of nature. The huge body of water, the setting sun on one side and the manmade colonies on the other. The sea shore is the edge. Beyond this edge reside the unknown forces of nature. This seems exciting and thought provoking.

Art is the reflection of man’s thoughts and his abilities to pioneer creative skills.

To a child, a simple kite flying in the sky seems amazing. The skillful design enables it to fly.

What is it? Can one approach it?

It is a visual delight to watch a swaying kite and that too in the context of the ocean. A floating deck choreographed with (high) dancing fountains adds to the visual delight. The kite hovers over the deck and frames the setting sun and mountains on the coast. Light show in the evening seems as a spectacle in the waters.

An approach to the artwork seems possible by means of boats/ hovercrafts. As one approaches the installation, one is awestruck by the scale, composition and the purpose for which it stands there.

A visitor to Santa Monica Bay area would feel amazed looking at a huge kite swaying/ hovering in the middle of the ocean waters. Imagine an amphitheatre gathering / outdoor concert/ New Year party/ light show/ kids enjoying the fountains/fishing and various other recreation activities happening on the deck.

**CONCEPT**

Water is a prominent feature covering 2/3rd of the globe. Any imbalance in the ecosystem therein affects globally. The land art according to us is a water based installation educating the citizens of Santa Monica about the health of the Pacific Ocean.

The installation can boast about state of the art sonar based information system regarding any movement in the St. Andreas fault. It is an energy and water positive installation constantly supplying potable fresh water to the city and enough energy to suffice the needs of 10% of city’s population. The digital display on the kite would keep the city updated about its weather, air and water pollution levels and warning systems. Size and color of the fountains shall be choreographed to indicate and convey climatic changes to the city.

**THE INSTALLATION**

The installation is an aerofoil wing floating over a deck. The kite is 500m long, 100m wide and hovers at a height of 80m.

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| --- | --- | --- |
|  | Component | Purpose |
| 1 | KiteStructure : Helium filled carbon fibreSkin : Aluminium sheet | 1. Support the Helical wind turbines
2. Acts as a digital signage for the city
3. Iconic tourist attraction
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| 2 | Helical Wind TurbineMaterial: Carbon fibreDims: 5m ht, 3.1m dia. | 1. Generate energy
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| 3 | FloatStructure : Metal/ Carbon fibreSkin : Aluminium sheet | 1. Support the deck
2. Desalinate sea water
3. Anchors the kite
 |
| 4 | Deck | 1. Enables mass gathering for recreation
2. Supports fountains and vortex installations
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**TECHNOLOGY**

The kite is actually a helium filled carbon fibre wing suspended in air through cables anchored to the decks floating on ocean water. These cables also help in energy transfer. A series of helical wind turbines are installed on the aerofoil to generate energy.

The deck rests on the existing breakwater and is also anchored to the sea bed. Series of fountains are installed on the decks. These fountains are visually appealing and functional as well. A series of floats (pontoon) are arranged to collect the fountain (sea) water and desalinate it. The desalination involves the process of electrolysis that takes place below the deck. This drinking water is then transported to the city. The entire energy requirement is sufficed by the helical wind turbines.

WATERCHIP technology is proposed for desalination. Unique characteristic of the system is highlighted in the following statement:

 “Operation without extreme hydraulic pressures, massive electrical currents or intense heat sources makes for simple, compact installations with small system footprint.” ([www.okeanostech.com/technology/](http://www.okeanostech.com/technology/))

Overall composition is a subtle gesture of a sail over a boat.

**ACHIEVEMENTS**

|  |  |  |
| --- | --- | --- |
| Annual Energy Produced by single Turbine | 100 | MWh/yr |
| Total Energy Produced by the KITE | 3.7 | GWh/yr |
| Instantaneous Power Output of single Turbine | 11 | kW |
| Instantaneous Power Output of the KITE | 425 | kW |
| Full-fills Electricity Demand (App - each 2000kWh/yr) | 1600 | houses |

**ENVIRONMENT IMPACT**

The entire installation is constructed with light weight technologies and low energy operating systems. The building floats on water with anchors to cause minimum damage to the marine ecology. Wind energy generation increases exponentially with increasing height. Co-incidentally, the south-west coast of California has a consistent WSW wind direction throughout the year. These clues helped us design an optimum device of energy kite. California is currently facing a crisis of fresh water and hence a system of desalination is proposed.