P A R A – S O L

*Form & Spatial*

PARA-SOL seeks to connect with the continuity of history and the particularities of its place; to identify what the locals love and to recreate that in an interesting and thought provoking way, and to do it in a way that is sensitive to its surrounding. The design objective was not to reproduce what was there before but to retain the image of the past; a place that is engaging with the nature and the people, and at urban scale, a place that endeavours to tie in with the existing fabric of the city.

Image and identity is one of the keys to a successful public space. The sculptural form of the structure takes its cues from its natural landscape and surrounding scale; the natural curves of the beachside, parks and grassy slopes, which are all very iconic to the city. The tensile structural form provides a connection from the inside to outside site by opening up its structure to allow uninterrupted flow of visitors and to enable a visual connection between the two spaces. The views from the public thoroughfares to and across the site resonate strongly with the community and forms an important characteristic of the history of the site and the raised roof structures, which are made up of solar PV (photovoltaic) panels, allow an undisturbed view to the beach from the slopes.

Creating a sense of destination and a gathering space is articulated through flexibility of the open spaces allowing multiple events and activities to happen at different time of the day, and by taking on seasonal strategy, the spaces can always be operating at any given time. The sections of each space are divided to create multiple events to happen at the same time and through connecting “bridges” the visitors are naturally led to interact with multiple events and activities. The locals are encouraged to perform in front of the public, exhibit their work, buy and sell by setting up markets and to enjoy with their family and friends.

*Technology – Solar PV Panels*

We need energy that is cheap and has zero CO2 emission and is as reliable as today’s energy system. Electrical from renewable sources is clean, safe, abundant and is becoming more and more affordable. It is cheaper to operate a photovoltaic’s and batteries than a diesel generator that needs regular maintenance.

Solar PV panels, which are arranged in a tensile structure, capture solar energy and convert the energy into usable electricity. The panels are held by aluminium frames that are connected by lightweight steel space frame to hold the structure together. The solar PV panels can be arranged in different ways to increase solar access by vertical movement of the steel structural post used to bring down the collected electricity.

The energy that is collected by the solar panels are then converted from DC to AC through the inverter located outside in the arrival points. The concrete base structure housing the inverter is design to be interactive with the community with electrical meter and reading bar indicating the current state of the electricity being transformed into usable electricity and current electricity stored in the basement. This will give an indication of how the electricity is being used in a way that is quantifiable to the visitors. The unused excess solar energy is then stored underground that is then distributed to grid connection points when needed.

*Estimate of generated energy (Annual Capacity)*

5000 Solar PV Panels @ 250W per panel x (5 hours/day) x (365 days)

Total = 2,281,250kWh

*List of primary materials*

- Solar PV Panels (size varies)
- Structural steel
- Concrete base

*Environmental Impact Statement*

PARA-SOL uses solar PV panels to generate electricity that is then stored in the basement for future use and is distributed to grid connection points. The solar panels, which are optimised to create least numbers of panel size variations, are arranged in a tensile structure to gain solar access from multiple directions while creating an interesting formal gesture.

The use of renewable solar energy will reduce CO2 generated in the city and will create awareness to the community and the visitors on renewable energy. The sculptural form seeks to bring the community together by implementing multiple events and activities where the locals can easily take part in; creating a healthier and safer community.

After the panel has finished its life span of 20+ years, the thin-film and silicon modules can be recycled and the research is continuing to improve its recycling program.