**What's next to the moon?**

The place where grit meets glam, those from all backgrounds are invited to strut their stuff on the beachside promenades and be a party to the wicked delights of St Kilda.

In designing the triangle, the aim was to highlight what truly makes St Kilda great. St Kilda has always been synonymous with fun and unique characters. Artists and musicians frequent the streets next to bustling cafes, young backpackers next to a Ferrari and bikies cruising. The colourful cocktail of life in St Kilda is iconic to Melbourne and attracts tourist from around the globe.

Once you enter through the crystal gates you are transformed, and begin to let go of the perpetual worries that hang over your everyday life. Here you are wild and frivolous, you can act out your hidden desires, here you become a part of the unruly fun fest for the perverse.

The solar crystals are constructed from dye-sensitive solar glass colored to create an otherworldly experience inside the triangle. The crystal motif was inspired by rock n' roll music and its sharp powerful sound and the history of the Palais de Dance theatre. Walter Burley Griffin used the crystal motif in his design of the Palais de Dance as a symbol of light and transformation. The idea of light and, in particular, spotlight has been used to carve out the landscape of the site.

In studying the urban landscape of St Kilda it was clear that it is not just one large island site but instead a group of smaller island sites. This includes Acland St, Fitzroy St, Luna Park, O'Donnell gardens and Catani Gardens. Thus it was decided the triangle need to be its own island within the island.

The site scheme includes a rock and roll hotel museum, large greenery areas, amphitheater and stage, playground, exercise circuit and a bridge across Jacka Boulevard. The site is wrapped in a wall of solar crystals harvesting the sun's energy to be used on site.

Inside the hotel museum is luxury suites, exhibition spaces, community multifunction spaces, restaurants and cafes, boutique shops and studios for artists to produce music. Inspired by the Palais de Dance, the museum also contains dance studios on the lower level facing the triangle where visitors to the site can watch through the windows adding to the liviness of the community.

Sprinkled across the site are museum exhibits, pieces of musical and St Kilda history that invite visitors to stroll around the site during the day. Also throughout the site are a series of exercise circuits for trendy workout goers.

Dimensions

Hotel Museum:132,000m3

Stage:2,250m3

Tallest height of crystal wall (beach view): 13m

Amphitheatre: 2,023m2 ground area

The main construction materials in the design are the Dye sensitive solar panels, steel for hotel, glass, concrete, sandstone pavers and grass.

**Environmental impact statement**

Dye sensitive solar cells work because the dye in the cells is photoactive. Therefore it produces electricity when it is sensitized to light.

The dye uses the energy from the light to excite electrons. The dye moves the excited electrons into the titanium dioxide, then it is pushed out by nanocrystalline titanium dioxide. A chemical electrolyte causes the electron to move back to the dye. The movement of the electrons creates the energy for use on the site.

The use of sensitizers and oxide films of nanocrystalline morphology in dye sensitive solar cells means these cells can harvest large quantities of sunlight in comparison to regular solar cells. Companies are working to produce low cost production method of these solar cells and they will eventually be cheaper to manufacture than regular solar cells. This technology can harvest energy from natural and artificial light thus can be used in a range of weather conditions.

Current Solar cells on the market are 11% efficient and new developments have found they are able to produce cells that are 37% efficient.

**E = A \* r \* H \* PR**

**E** = Energy (kWh)
**A** = Total solar panel Area (m2)
**r** = solar panel yield or efficiency(%)
**H** = Annual average solar radiation on tilted panels (shadings not included)
**PR** = Performance ratio, coefficient for losses (range between 0.5 and 0.9, default value = 0.75)

E= 6524\* 11 \* 1503.8

**Predicted solar output:**

**E=107,918,073.2 KWH**