

SOLAR TRIANGLE

FORMAL DEVELOPMENT

What are the available clean energy sources at the site? It is majorly solar energy, more accessible and stable than wind energy. What is the existing identity of the site? The first word jumping to the mind is 'Triangle'.

As a triangle in its planar nature coincides with the existing solar panels, at the first design phase of Solar Triangle, a conceptual super-triangle composed of solar panels is slanted at 38° (as this angle makes solar panels most efficient in Melbourne region) over the whole site, creating a huge semi-open space for the public. This super-triangle has the maximum area for the absorption of solar energy over the site.

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Next, due to height restrictions and constructability, the super-triangle is divided into seven substructures by six east-to-west lines such that the first six parts are below 20 m in height and only the southmost triangular substructure, which is less than 400 m² when viewed in plan, is just 42 m in height. Viewing from the esplanade, the height of the front most six parts are lower than the adjacent Palais Theatre and the Lunar Park, while the south most part humbly strikes out behind the Palais Theatre. Hence, this spatial volume below the slanted parts not only respects the surrounding historic buildings, but also maintains the overall sea view along the esplanade, while the tallest spiky substructure attracts pedestrians to walk through the triangular site, to reach a semi-open outdoor theatre beneath the tallest part, and get impressed by the welcoming beach panorama. Next, to encourage all-directional movement of the pedestrians across the site, the bottom belt of 5.6 m width, which is also overlapped by the shadow of the previous substructure, is removed from each substructure to give 3.5 m clearance for all-directional permeability. Next, structural columns and beams are positioned to support all the substructures with robust stability. In the final design phase, the seven substructures are divided into mosaic fan shapes that are actually multicolour solar panels constructing together into one piece of aboriginal artwork on the surface of each substructure. This reminds people of the deepest part of the local identity — aboriginality.

Moreover, to complement the Solar Triangle and to resonate with the existing palm trees that give inspirations of how natural form absorb maximum solar energy, several Solar Palm Trees are positioned along the esplanade to substitute existing street light poles.

