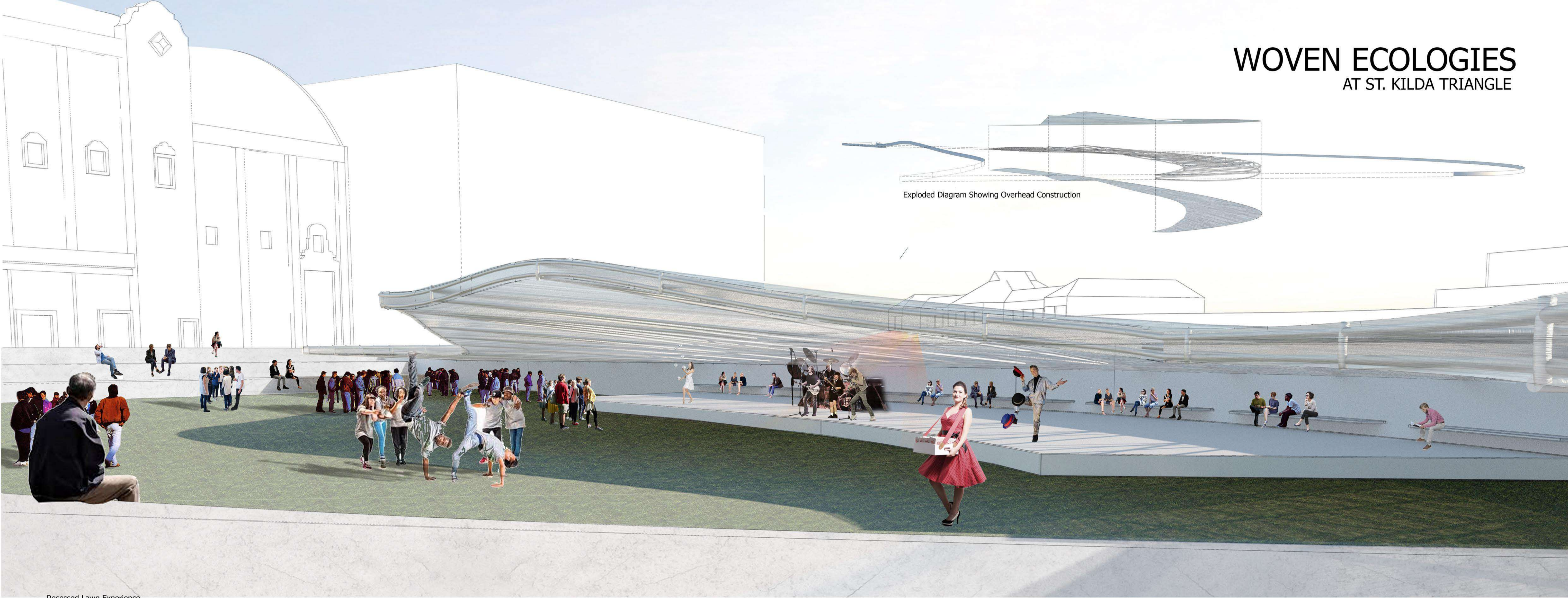


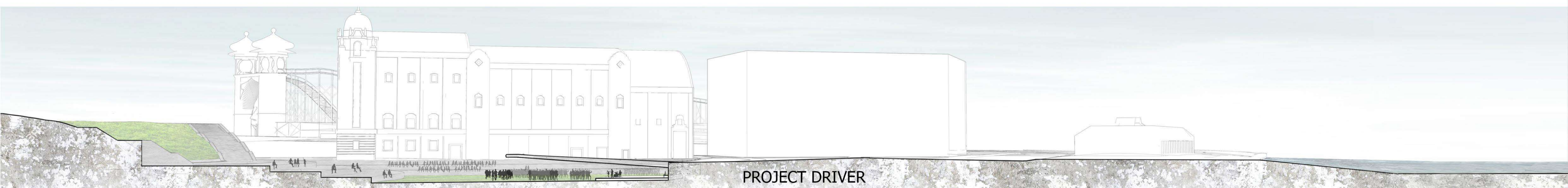
WOVEN ECOLOGIES

AT ST. KILDA TRIANGLE



Exploded Diagram Showing Overhead Construction

Recessed Lawn Experience



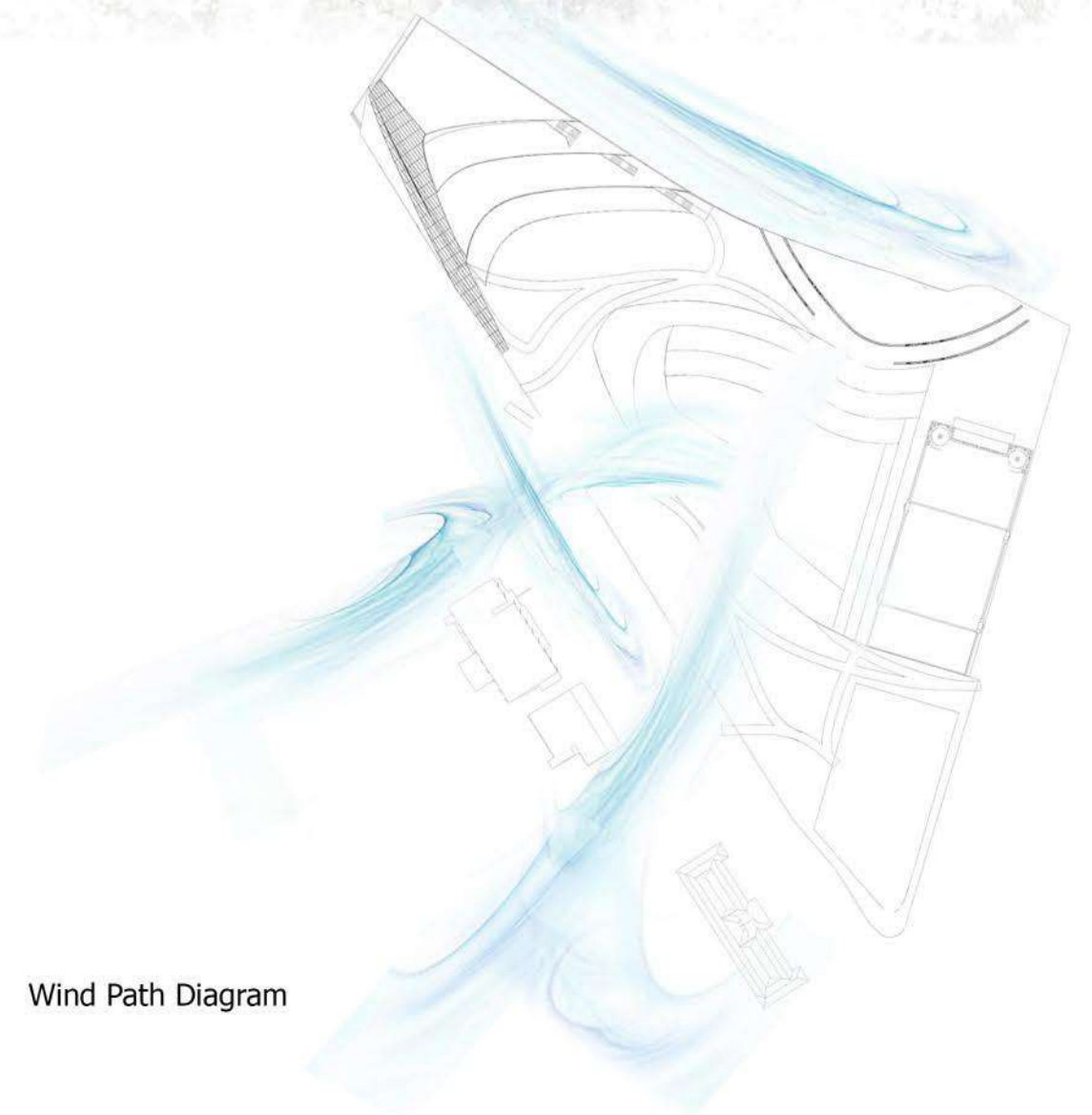
Section Cut Through Lawn and Overhead

PROJECT DRIVER

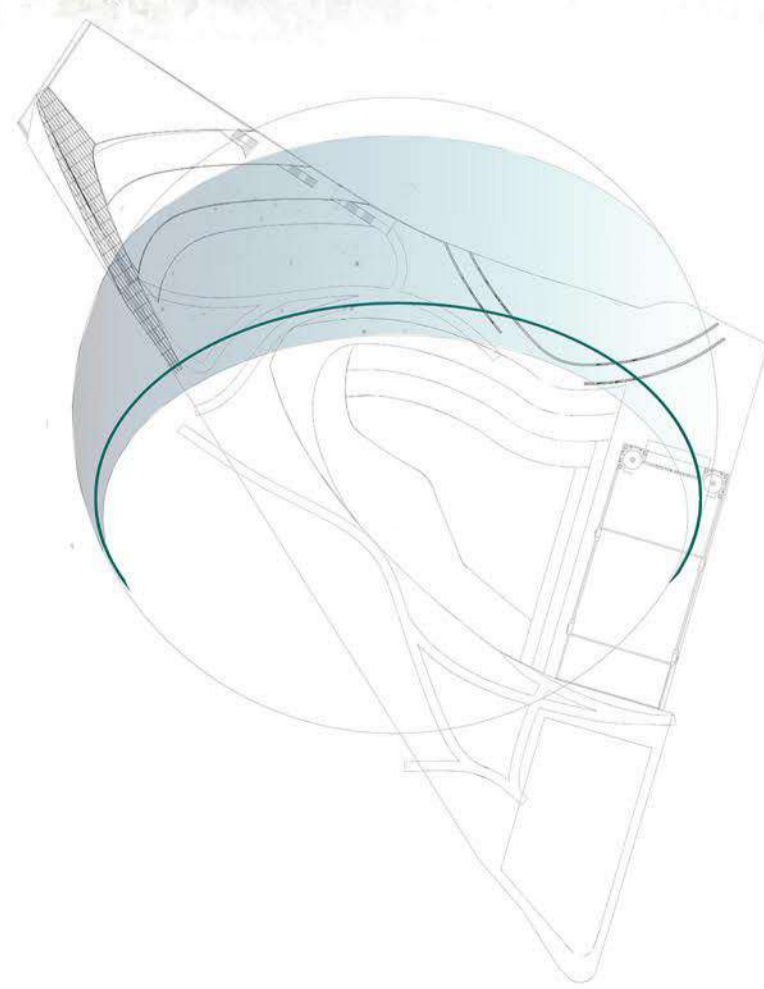
In a city such as Melbourne, where the daily life is full of strenuous activities, it is important to slow down every so often and take a breath of fresh air. This is now possible because of Woven Ecologies. Woven Ecologies brings together the vast flora of Australia to one place. By bringing a large amount of landscape to the site it not only becomes a cooler place to be temperature wise but it is also a good place to wander around and experience Australia. The key component of this site design are three green roof terraces of the Cultural Center, featuring four rare or endangered flowers from the state of Victoria. Each terrace is a different environment in order to situate the flowers and are organized in a way in which the sun exposure is adequate for each environment. Along with the terracing there is a series of teaching gardens on the ground level that educate the citizens of Australia on how to grow an authentic Australian garden. In doing so, the site is hoping to extend its flora in to the city and its residents homes and turn their gardens in to ones that are more manageable and easily cared for. Woven into the teaching gardens there is a recessed lawn with an overhead in which performances or markets can be held. The overhead is composed of a steel frame which an energy generating fabric is wrapped around.

ENERGY GENERATION

The featured overhead is a 2,000 square meter canopy made out of an energy harvesting fabric, as mentioned before. The fabric reacts to both solar and wind in order to generate energy. It works in the following way. Fiber-based triboelectric nanogenerators are woven together with a cotton or wool material. The wind blowing constantly causes these two different materials to rub together. This motion creates energy which is stored for later use. In order to harvest power from the sun, photoanodes made in a wire-shaped fashion were woven together with other fibers to collect the solar energy.



Wind Path Diagram



Sun Path Diagram