Wind is powerful. Wind is beautiful. It is all around us. It is universal. It is invisible. It makes its presence known not by sight but by our other senses. The coolness of a breeze against ones skin. The sound of leaves rustling. The ripple and flutter of waves of grass in an open field. All of these sensations are the expression of the wind onto the physical world, a kind of imposition of the intangible onto the tangible. Wind is an experiential thing, so it stands to reason that any project attempting to capture it should focus on the experiential. Flutter is an attempt to take these small sensations and expand upon them, creating a destination for people to come and learn the ways wind can impact our lives and be harvested to power a city.

**Experience**

Flutter is composed of two main areas of focus, the wind garden and the cultural center. The wind garden highlights the experience of wind, while the cultural center highlights the science and education. Walking into the garden from Jacka boulevard, visitors see several patches of tall grass, waving in the breeze. These grasses are the first cue to visualize the overall direction of the wind that day. As guests walk past, or through the field, they come upon a set of colorful walls set into the ground. The reflective material catches in the sunlight, and it is clear that they are lighter in certain places. These are thermochromic wind walls, reacting to the change in temperature caused by repetitive winds hitting their surfaces. The walls not only guide guests while further making visible the prevailing winds, but they also direct those winds into the turbine fields beyond. The turbines are tall, white, monolithic structures that appear to have sprouted out of the ground. These bladeless wind turbines vibrate in the wind to produce energy. Although they appear to be clustered together rather unorthodoxly, as opposed to the streamlined fields of spinning turbines most people picture as a wind farm, their location is actually pinpointed to catch wind coming from any direction.

Across Jacka boulevard, and visible from the wind garden, is the new cultural center. Its bright polished exterior is a polite contrast to the mature design of the Palais Theater. As guests watch, the screen facing the water actually shifts back and forth, fluttering in the wind much like the tall grasses do. Inside, one finds exhibits dedicated to the history of how humans have used and harvested wind, animals that live in and respond to the winds, and the ways in which wind can shape civilizations, as well as several other exhibition halls that could be used for anything from art shows and jazz concerts to coffee tasting competitions. Inside, guests look up through the glass roof to see the natural sunlight streaming in, while other visitors enjoy the new slopes that reach out over the enclosed box of the museum. From the inside of the covered porch, one can feel the breeze created by the passive ventilation, and see the structure of the metal screen on the front. The screen is not only a visual work of art, but each metal panel is attached to a piezoelectric core that harvests energy from the fluttering motion.

The building comes to life even more in the time of festivals. State fairs can set up booths under the roofed structure, art shows could host demonstrations in the classrooms, and during music festivals concerts on the main stage facing the ocean have an increased audience with the new slopes, while inside the building the halls function as smaller venues. By moving the festival ground from its current location across Jacka boulevard to the triangle site, it is ensured that the grounds will be enlivened by this new structure as well as the proximity to the existing palace.

**Energy Collection**

The turbine gardens and piezoelectric screen of Flutter are very energy efficient. Each turbine produces on average 40 kW per hour, and assuming twenty hours of wind at speeds sufficient for collection, the entire garden harvests 35,200 kW per day, and 12,800,000 kW per year. This is enough to power the entire cultural center 13 times over, leaving a surplus that can be directed to the Palais, other adjacent buildings, or to return to the grid and relieve the power draw on the city as a whole. The screen produces another 520 kW per day, which can be used to power all of the lights around the site.

**Picture This**

You have come to the St Kilda Triangle to take part in the annual St Kilda music festival. You drive through the city, heading towards the ocean. As you drive along the esplanade and the city opens up in front of you, you see rows of palm trees leading to the ocean. A large grassy field is filled with blankets and people milling around, waiting for the opening act. Right out in front of you the slopes are full of people as well, and you see bright light shining up from the crack you know is the roof of the St Kilda Cultural Center. You park your car, walking out underneath a great shifting field of metallic sheen, and go through the building to get up to the second level. Inside, music from one of the halls echoes, and visitors are grabbing food from a buffet set up under the huge skylight. You take note of the children looking at the exhibits, spinning a wheel to make a wind current blow. You climb the stairs out to the main festival grounds, where the band is just starting. Your friend says you should head up to the slopes to get a better view, so you follow them to the roof, where plenty of others are already waiting. You’re so glad there’s so much more space to see and hear the bands now.

The sun starts to set, and you decide to head over to the wind garden you can see from up here. As you get closer, a breeze brushes by, and you see it sweep across the grass as a wall next to you suddenly gains a line of yellow where it passes. A little further in, children are playing in and around the white turbines, in the eddies the shifting winds produce. You walk out towards the ocean and see a few people sitting on benches facing the water. You can still hear the music, but its quieter here, more reflective. You turn around and look back at the building, and you’re still amazed that this whole triangle is being powered by the wind. You think about how great it is that this place is here to show everyone how amazing wind really is. Wind is powerful. Wind is beautiful.