

CONCEPT

The site can be interpreted as an intersection area between land and ocean, human and nature. The main concept of this kinetic sculpture is to demonstrate the beauty of balance and imbalance between contradict entities.

TECHNOLOGY

There are three types of energy harvesting technologies: floating buoys with EPAM (Electroactive Polymer Artificial Muscle) system for wave energy from ocean, spherical photovoltaic cells for solar energy from sky, and piezoelectric film system for kinetic energy from motion by wave, wind and human activities.

The artwork has two arms and EPAM buoy is suspended at the ocean side. The movement of attached weight elongates and contracts EPAM and electricity will be generated. Spherical solar devices are installed at the land side. The combination of solar system and wave power system compensated each other. In heavy weather day wave power device will cover the output amount of electricity by solar device, and vice versa in calm weather.

INTERACTION

Besides these two devices, piezoelectric generator installed at each joint point will make it possible to interact between land and ocean, human and nature. As the balance sways in conjunction with wave motion, piezoelectric generator produce electricity through the kinetic energy. The same action is also made from land side. Visitors can activate this energy harvesting system through the attached furniture such as seesaws and hammocks. More interaction between people and the artwork will produce more electricity. The artwork produces a lighting scene at night which will keep changing according to wave motion. This luminous wave line can act as an iconic spectacle that can be an impressive backdrop from opposite shore.

ENVIRONMENTAL IMPACT STATEMENT

The intervention area is at only one edge of the site, and minimum concrete foundation for the column and cable to power grid is required. This artwork can maintain the land formation and coexist in harmony with any future structures. Although the dimension of this kinetic artwork is specialised to the site, the design concept has a possibility of application to any place where liquid medium exists such as rivers, ponds etc.

DATA

Material: Aluminium alloy, Carbon Fiber Composite Cable

Amount of energy: 80MWh/each, totally 720Mwh (Annual)

Reference Company of wave power generator: SRI International, HYPERDRIVE Japan

Reference Company of solar power generator: Kyosemi Japan

