

RENEWABLE ENERGY: FEATHER SKYLINE, SI

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INTRODUCTION

Sustainable energy conversion and beautiful aesthetics is not a contradiction. The new millennium is the heyday of wind, water and solar power, and energy converting structures are thus obligated to act as the educational interface between natural energy sources and the consumer. By engaging energy consumers physically in the process of converting energy the structure conveys an understanding of natural energy systems. But how can sustainable energy be an experience? How can we “aestheticize” cutting edge energy conversion methods? How can this energy production device reflect the power, dynamic and diversity of natural forces or in other words potential energy resources?

MERGING ENERGIES: WIND, SUN

The answer can be found on Staten Island, NY. This fifth borough of New York City has the image of being the suburban leftovers from the economical and cultural high-roller party on Manhattan. During post-war decades the island was mostly known as landfill for the New York City area. This era ended in 2001 after the debris from the World Trade Center was deposited here. For the past decade the four mounds of Freshkill Landfill have been capped and the area started transforming into a vast recreational parksite.

The new parksite of Freshkills Landfill offers great opportunities of exploring sustainable energy production in a large scale. However, the meteorological conditions of the New York area are far from constant. Greywater replaces sun, which replaces wind – and so forth. Creating an optimized energy producing structure requests the designers to take into account the ever-changing weather conditions and thus combining different, individual energy production methods. FEATHER SKYLINE is an example of how such strategy can be realized. It reflects the current meteorological conditions. A carbon skeleton with piezoelectric elements enables the structure to move by catching the wind in the solar sails mounted between the carbon rods. The structure is lit by shimmering LEDs to show the real-time variations of energy production. Carbon rods and the solar sails are only the visible part of the energy system: The structure is connected to a methane gas energy storage system, which is creating by using the existing decomposition management system that produces natural gas, providing electricity to more than 20,000 households in the New York area. Furthermore, the installation is tangled in the features of a smart grid, thus allocating energy according to current consumption.

HUMAN INTERACTION

The hope is that Staten Island will gain a strong identity with its own landmarks – its own iconic skyline like that of Manhattan. The dynamics of the structure tells its own story of how energy is produced – and will be a story of how future energy production is not only a question of kWh, but also has to address equally aesthetics and human experience. Pure necessity or technological vision: Energy production can be beautiful.