'SUNNY SIDE UP' AS THE NEW ICON

'SUNNY SIDE UP' - PROMINENCE ACROSS THE B AY

SUNNY SIDE • UP

'Less than a full day's worth of sunshine has made its way through the winter clouds this January. Weather service DMI said that up until yesterday, the sun had broken through the murk for only seventeen hours since the start of the year, making this the dreariest January for some 26 years"
The Copenhagen Post, January 19, 2014

An Imagery - The Nocturnal Sun

With a severe winter climatic condition in Denmark, the lack of sunshine in vast part of the winter season informed the start of the project. Sunny Side Up is a sculpture and thermal landscape created by unfolding and reconstructing the process of geothermal power generation. Taking advantage of the consistency in the supply of vast subsurface energy, Sunny Side Up recreates a perpetual imagery of light and heat, a 'Sun' that extends through the nocturnal scenery of the site.
In contrast to a nominally buried process, the project resurfaces each critical component of the system, distributing products and by products of electricity generation across the site. Making the process of electricity generation a new public landscape.
Sunny Side Up emerges as a new anchor at the harbor. Along with with Copenhageners' all time love, The Little Mermaid across the bay, Sunny Side Up construes a new sculptural icon for the city.

Technology - Geothermal Energy with Externalized Thermal Buffer

Sunny Side Up makes use of flash steam geothermal technology, by which heat is extracted from underground converting water into steam. A compact structure at the center of the site houses a vertically arranged turbine for electricity generation. Kinetic energy of the spinning turbines lits rings of LED bulbs arrayed along the core, indicating electricity generation. Excess steam and heat produced in the thermal exchange process is expanded to an inflated structure made of recycled industrial balloon materials. The 'sun' acts as a condensing surface, in which water is collected back to a thermal reservoir at the base. In contrast to traditionally housing the process in a black box structure, Sunny Side Up exposes the continuous flow of energy, converting an imperceptible subsurface heat source into a sensual spectacle of movement, light, steam, heat. With Geothermal energy 20L of fresh water is used for each MWh power generated. (compared to Nuclear, coal and oil, which use 1000 liter of fresh water used for each MWh power generated) Geothermal energy produces 122 kg of green house gases per kWh generated. (coal produces eight times as much green house gases in comparison. The project is estimated to produces a quarter of the amount of a typical well doublet, about 1.2 MW.

Ecology - An Atmospheric Landscape

Water transforms into different state across the site through thermal exchange process and
provde a thermal comfort environment for visitor. Residual steam produced from the geothermal process is released through an array of steam pipes distributed throughout the site to provide a warm atmostpheric environment. A repeated thermal process is exposed as a thermal reservoir circulating system across the site, providing a semi controlled atmospheric condition for the spectators. By token of a new thermal comfort zone, spectators are able to engage with the landscape, directly observing and interacting with the energy extraction system at an otherwise thermally bleaak site. The new thermal landscape stretches activities over longer periods of time over seasons -sunbathing, swimming in summer and thermal bath in winter.

'SUNNY SIDE UP' - THE NOCTURNAL SUN