✿ THE ENERGY PLANT

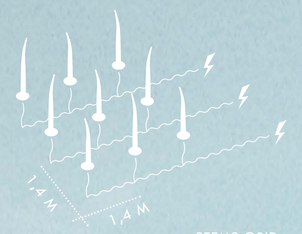
THE KYST consists of a rasterized placement of 1400 single stems that combine into a sculptural landscape installation on the water edge of the given site. The installation occupies the water and the land at the same time, placing 1/3 of the stems in water and 2/3 on land.
The size of the built-up area, the clearances and the inscribed 1.4m raster are defined by the aimed spacial experience, perceived from a human scale on site. The choice for a small width and a great length of the energy park area supports the iridescent effect of the installation, the moirée effect of alternating views as the beholder approaches the site.

The conoid energy generating stems come in four different sizes: the tallest with a diameter of 25cm at the ground level and a height of 25m, ranging down to the shortest with only 3m in height and 5cm in diameter.
As an ode to nature and a calligraphic element, the stems have leaf-like structures added to the pole to harvest energy as they move with the wind, the water or the rain. Even more importantly, the "leafs" enable and encourage human interaction of visitors: it can be touched, moved by hand and it is generating small amounts of electricity with every movement that can be seen in its glow in the night.

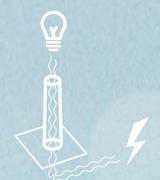
The stems are built of glass-fibre-reinforced polymers, as common in naval architecture and shipbuilding. Piezoelectrie-fibre-composites are placed inside the hollow structure to collect the energy from the leafs and from swaying stems. When the stems catch their own resonance frequency and vibrate like a flagpole in the wind the highest output can be generated.
As a visionary approach to the possibility of energy harvesting by the usage of the piezoelectrie effect, each stem will be upholstered with a three-dimensionally woven piezoelectric fibre, which can be woven into any material and absorb kinetic energy. This new technology is currently being developed by the University of Bolton's Institute for Materials Research and Innovation. On a windy day with many waves, THE KYST can harvest on average electricity for 600 households; which means 10 stems can supply the energy for 4 households.

Only the down-reaching parts of the stems that are implemented underneath the surface of the water are touching a habitat. Sea life in the access area of the harbor is very limited and far from a natural coastal condition thus the impact on the environment of the installation can be considered low.

PLACEMENT



STEMS GRID

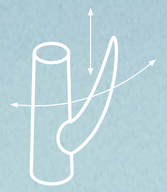


ELECTRIC CIRCUIT

SHAPE

COMBINED SYSTEM

FLEXIBLE STEM



JOINTED LEAF

HUMAN INTERACTION

DIMENSIONS

HUMAN SCALE GRID

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