

ENERGY RESOURCE FROM NATURE

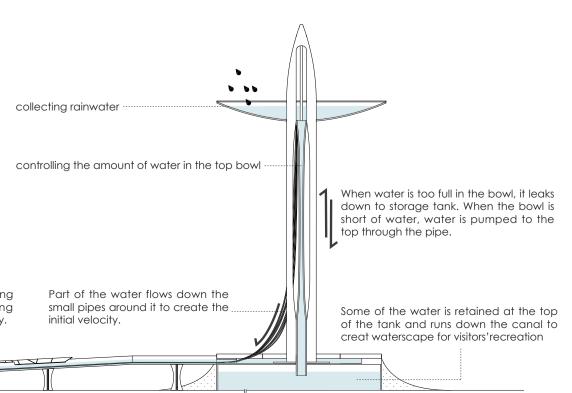
There is a long history in man's utilization of hydraulic power, but Mannheim is not a fitting city for building major hydropower stations. Opposite to that, we propose a new way of generating electric power from water movement - triboelectric charging.

Along the aqueduct system is bundles of airtight pipes released from the sky bowl of the water tower. With the initial velocity generated by gravity, the water inside the pipes flows along the elevated aqueducts. As it flows, the friction between the water and the inner surface of the water pipes is converted into electricity.

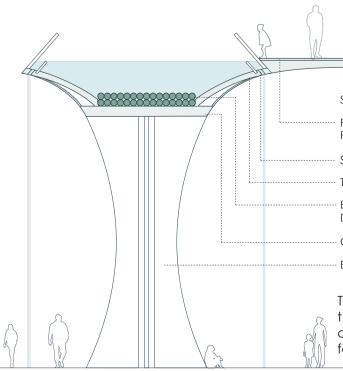
The highest power density can be up to 8.84μ W/cm3.

The water ends up in a pond and flows back through underground pipes to storage tanks at the bottom of the tower.

The water continues to flow along downsloping pipes at the bottom of the channel, rubbing against the walls of pipes to generate electricity.



ECO-AQUEDUCT SECTION



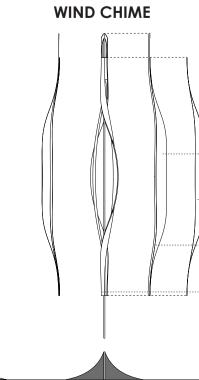
Skywalk - concrete - 3 metres wide Pressure-sensitive paving
Piezoelectricity

· Seepage line - For water curtain The sides of the canal - Acrylic wall

-- Electrostatic friction rubber hoses Diameter 30 mm -- Canal bottom - Acrylic slab

-- Buttress - Concrete

The eco-aqueduct is used not only to store the waterpipe generators, but also to create a high-line water-friendly platform for local residents and visitors.



A breeze of 1.6 m/s is enough to power the triboelectric nanogenerator of the design. The nanogenerators performed best when wind speeds were between 4 and 8 meters per second, which allowed the two plastic bands to swing in sync.

FEP Film Fixed on an steel structure

that changes in shape

PVDF Film Connecting the middle support structure, or the electric energy transmission structure.

Fixed Pole

Fixing one side of the membrane so that the movement of the membrane does not destroy the overall shape. Support and Conversion system The backbone of wind vibration. Many of the devices together to deliver electricity to the underground summary.

PRIVATE SCHREBERGARTEN TENT PUBLIC SCHREBERGARTEN TENT Wooden roof framing oden roof framii ansparent low-e gla olycarbonate panels Foundation - Foundation

Accordingly, two types of small houses have been designed, a translucent 'tent' for exclusive use and a fully transparent 'tent' for public use, to meet the needs of local residents and visitors for indoor rest, recreation and social interaction. Unlike traditional Schrebergarten, electricity can be supplied for the new type of Schrebergarten of the 21st century, but only generated from renewable sources on site in order to achieve zero energy consumption for the FRINGE.