

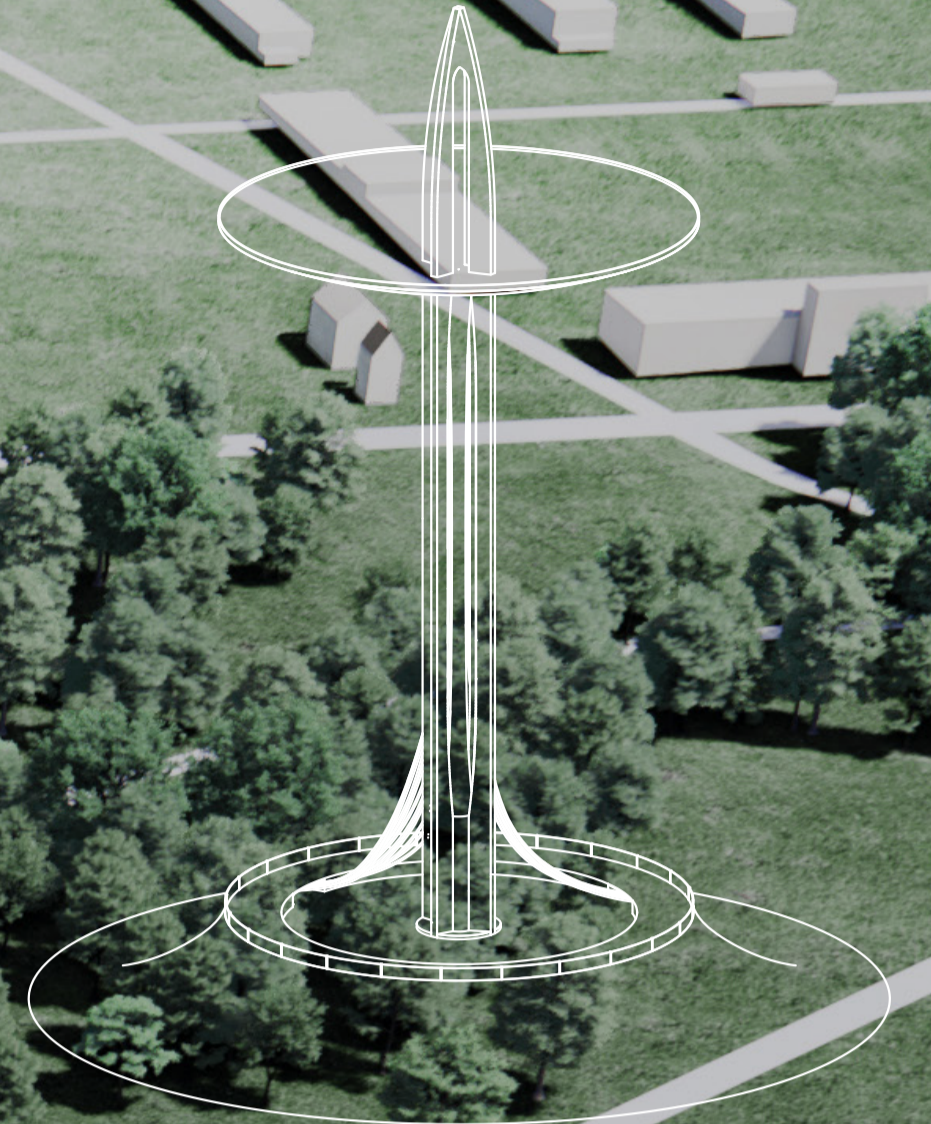
THE FRINGE

21ST CENTURY SCHREBERGARTEN

WATER TOWER

Taking into account Mannheim's pleasant climate and abundant precipitation in all seasons, water is selected as the most important renewable energy source for this proposal with three water towers installed on the site.

Each water tower is topped with a metal bowl that collects and saves rainwater and condensed water vapoured from the air, with a low-adhesion alloy surface. The water stored at the base of tower can also be pumped to the top to recharge water for the bowl, accumulating initial gravitational potential energy for the water.



ECO-AQUEDUCT

The bottom of the aqueduct is lined with bundles of water pipes originally connected from the sky bowl of the water tower. With the initial velocity generated by gravity, the water inside the pipes flows along the elevated aqueduct in a direction away from the water tower. As it flows, the friction between the water and the inner surface of the water pipes is converted into electricity (triboelectricity), which provides the surrounding gardens with the energy needed for lighting and irrigation.

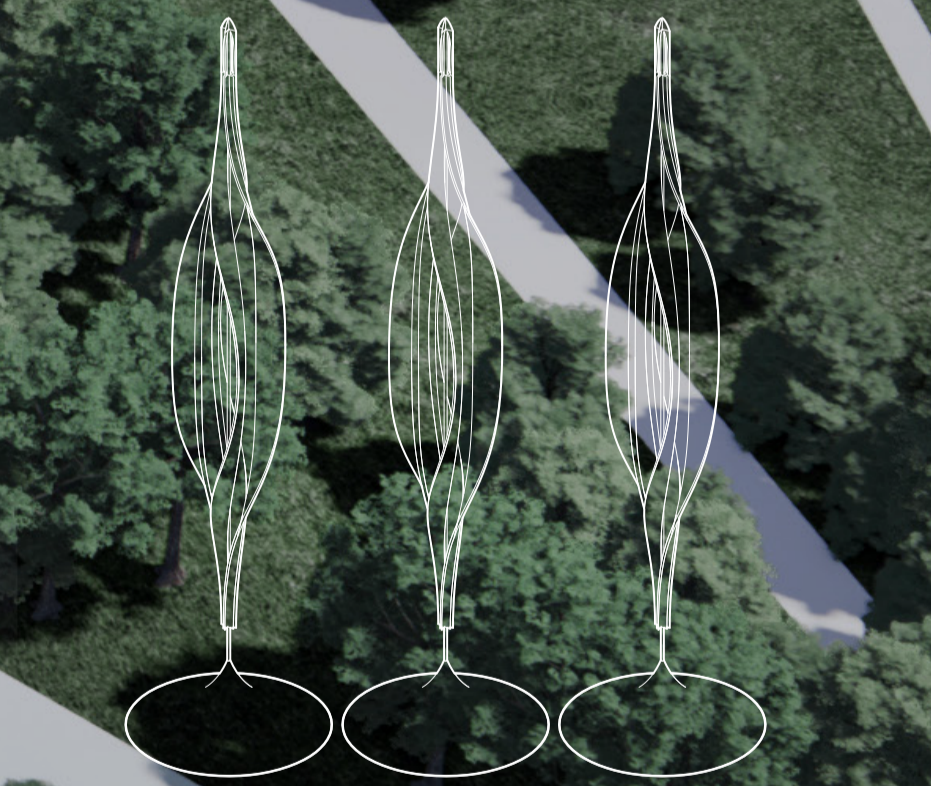
A skywalk is designed to attach to the elevated aqueduct. Piezoelectric generators are inserted into the walkway pavers to harvest the energy of walking or jumping, which supplements the electricity apart from triboelectricity and meanwhile provides auxiliary power for the lift pumps of the water tower.



WIND CHIME

Wind orientation in Mannheim is specifically north-south most frequent. Also working with triboelectric effect, our idea is to create a kind of kinetic installation that captures wind power. We call it "Wind Chime".

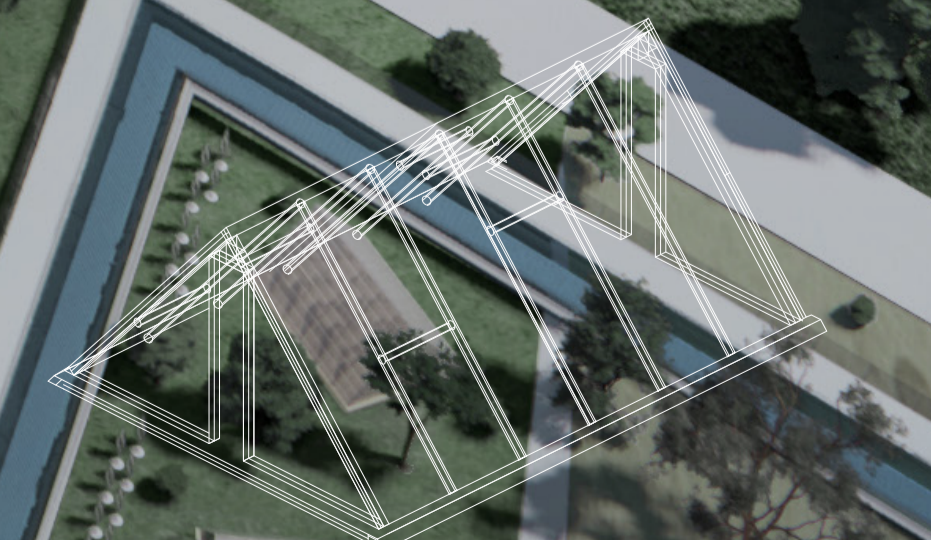
Technically, it's a nanogenerator that consists of two plastic strips inside a tube that vibrate or slap together when there's airflow. Like a balloon rubbed against your hair, the two pieces of plastic become charged when they separate, a phenomenon known as the triboelectric effect. The electricity generated by the two strips of plastic is captured and stored.



SCHREBERGARTEN TENTS

We intend to define a new type of Schrebergarten that belongs to the 21st century. There could be two types, one still open to local residents, where the garden could be rented and maintained by one or more families together.

The other could be open to all the public, including the locals, long-term and short-term visitors, inviting everyone to participate in gardening and planting, so that the Schrebergarten, a unique contemporary German symbol of culture and life, can be fully displayed and made known to a wider audience.



LAGI 2022 MANNHEIM

Redefining the fringe between the city and the park

We choose the strip of land on the north side of Spinelli Park, adjacent to the residential area in Mannheim, as the site for the proposal and named the project 'the FRINGE', which refers to both the edge of Spinelli Park, the main site of BUGA23, and the edge of the urban residential area of the city. In this project we want to blur the boundaries between the artificial and the natural, the public and the private, to redefine the transitional space between the city and the park, and to explore a lifestyle that is compatible with the needs of the individual and the spirit of sharing.

At the same time, through the creative application of renewable energy solutions, the project addresses the dependency of urban public activities on civic electricity system and establishes a sample of sustainability that can live in symbiosis with the urbanism.