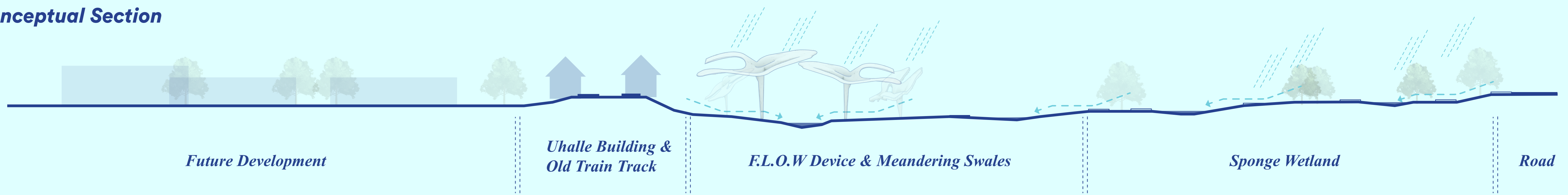


## Conceptual Section



# The F.L.O.W Device

The scultural device is a culmination of the history identity and the future of Mannheim. Taken influence from shape of water lily plants growing in Neckar River, the FLOW (For Life of Water) device is an art sculpture which helps collect and clean rainwater to be reused for misting and irrigation purposes. Rainwater is collected on top of the canopy, circulated through the pipe, bio-filtration and then stored underground or reused. The device could be installed and functions individually or to generate more energy, to be constructed in group.

## Bladeless Wind Generator

**Total on-site energy generation Annual - 11 Mega Watt Peak**

Bladeless Wind Generator is an induced vibration resonant wind generator. It harnesses wind energy from a phenomenon of vorticity called Vortex Shedding. Basically, bladeless technology consists of a cylinder fixed vertically with an elastic rod. The cylinder oscillates on a wind range, which then generates electricity through an alternator system. In other words, it is a wind turbine which is not actually a turbine.

Bladeless wind generators are more similar in features and cost-effectiveness over time to solar panels than to regular wind turbines.

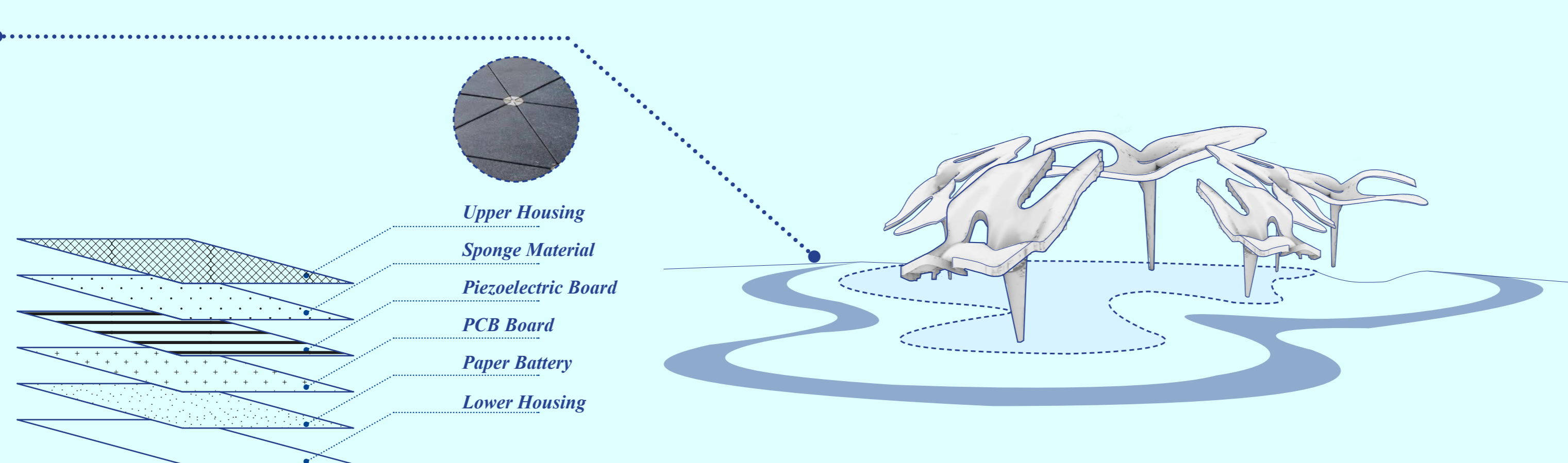
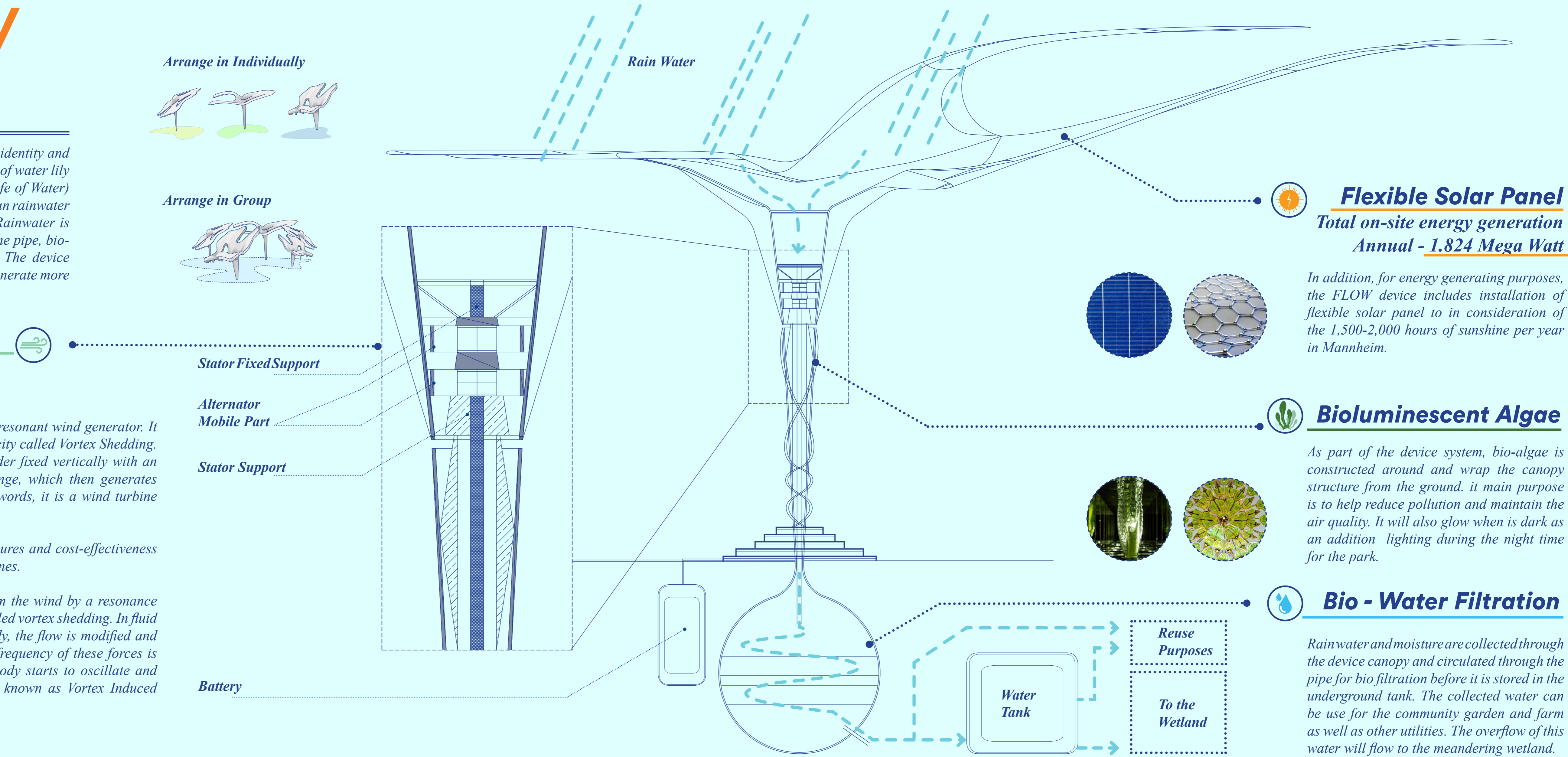
Bladeless wind Generator captures the energy from the wind by a resonance phenomenon produced by an aerodynamic effect called vortex shedding. In fluid mechanics, as the wind passes through a blunt body, the flow is modified and generates a cyclical pattern of vortices. Once the frequency of these forces is close enough to body's structural frequency, the body starts to oscillate and enters into resonance with the wind. This is also known as Vortex Induced Vibration (VIV).

Piezoelectric board

## Kinetic Floor

**Total on-site energy generation Daily - 2.7 Mega Watt Peak Annual - 985.5 Mega Watt Peak**

Bladeless Wind Generator is an induced vibration resonant wind generator. It harnesses wind energy from a phenomenon of vorticity called Vortex Shedding, which then generates electricity through an alternator system. In other words, it is a wind turbine which is not actually a turbine.



**Total Annual On Site Energy Generation**  
**2,820.5 Mega Watt**