GRAVITATIONAL ENERGY STORAGE SYSTEM

Dealing with the load difference between peak and valley

The general system we propose is two folds - one system collects micro power of wind and human movement during the day, the other stores and releases electricity power during the night. We design the latter as a gravitational energy storage system that functions via water transformation. The energy generated by the aforementioned system during daytime can be stored by the mechanism of pumping water up to the top container of the three water towers.

This is a modern version of pumped-hydro energy storage system. The bowl shape container at the top works also as a collector of rain water and condensed water vapoured from the air. Water released from the tower, runs through series of round airtight pipes, reaches the water collector at the end of skywalk. Such water, together with rainwater harvested from hard paving landscape, return back to the container at the base of the three water towers.

TYPOLOGY OF WATER TOWER & AQUEDUCT

The water tower in the proposal evolves from the building type of traditional water tower. It is meanwhile a response to two historical landmarks of the city, the Mannheim water tower and the telecommunications tower in Luisen Park.

The eco-aqueduct is an analogy of ancient Roman aqueduct, forming the crucial horizontal design element of the proposal. In the past people built aqueducts to transport water for domestic use while in the future a new type of aqueduct is designed to transport energy.