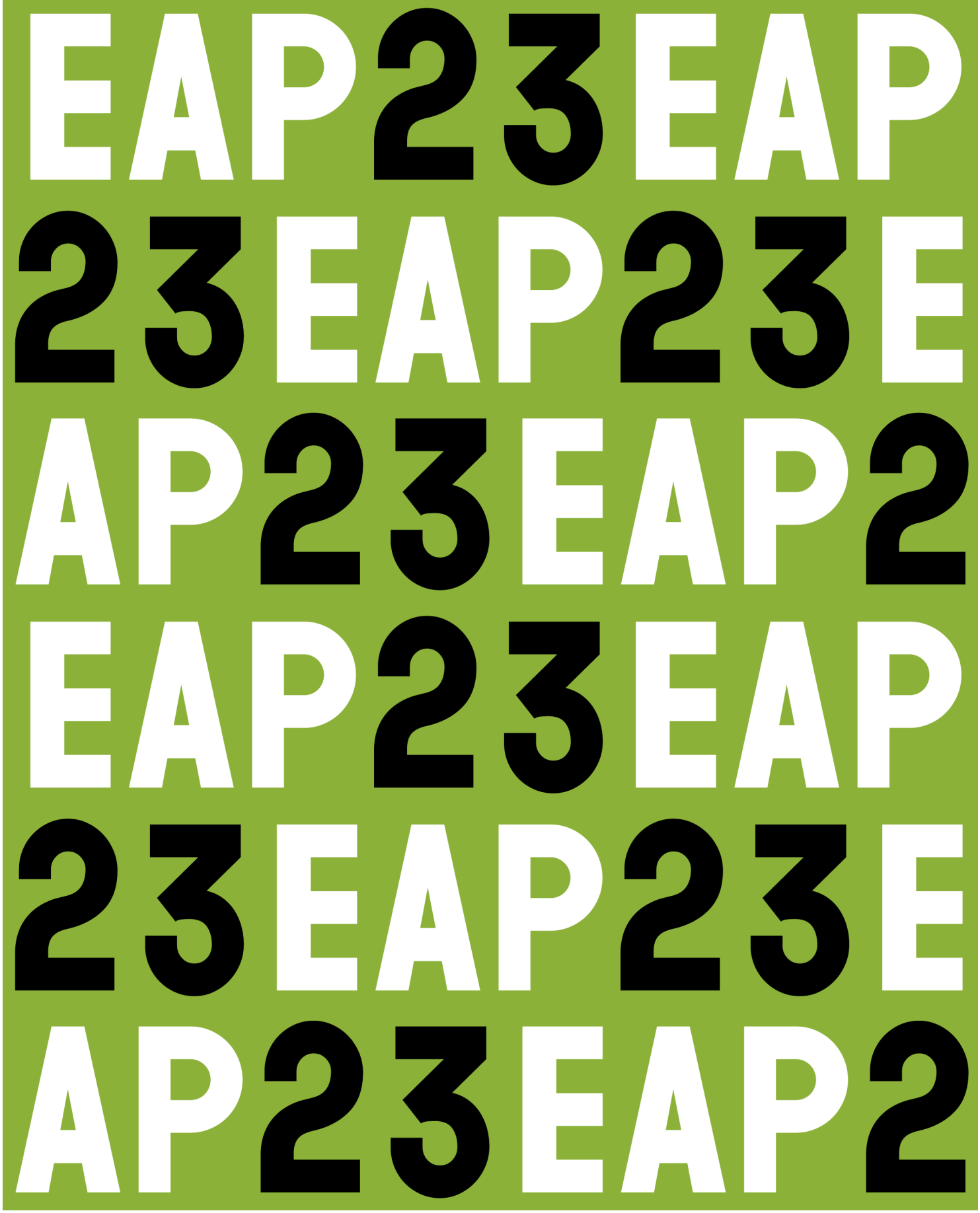
23 Years Euregional Prize for Architecture



Hydroskin-House of material science

Participant info

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Project info

A building has been created which offers space for exhibitions and presentations. The theme of Smart Skin refers to the technology of the façade and to the design of the whole building. The basic idea is to show the encounter between nature and technology.
The organic shape with its curved ceiling panels and skylights as well as its treelike clustered pillars creates a natural atmosphere and contrasts with the technical facade.
As the name “Hydroskin” suggests water plays an important role. The façade profits from two qualities water has possesses.
-Highest heat capacity of all fluids => efficient storage medium
-Low thermal conductivity => ideal for transport of heat and cold
These qualities are used to store heat and cold in an ice-reservoir, and to transport them through the façade according to the season. At the beginning of winter it´s filled with warm water. Outside in the facade warm water rises and runs back cooled inside.
Above, the heat is extracted from the water with help of a heat exchanger and it warms up fresh air coming from outside. The heated air flows into the room. The returning water cools the ice reservoir till the beginning of summer. In summer, the stored can be used to cool down the building.
Transparent insulation keeps the heat in the façade in winter and allows sunlight to pass with an angle of incidence 40° so
that the film remains transparent and the water doesn´t heat up.
In the facade are cubes with different densities. Due to the changes of the temperature the cubes climbs or sink, like a Galileo thermometer.