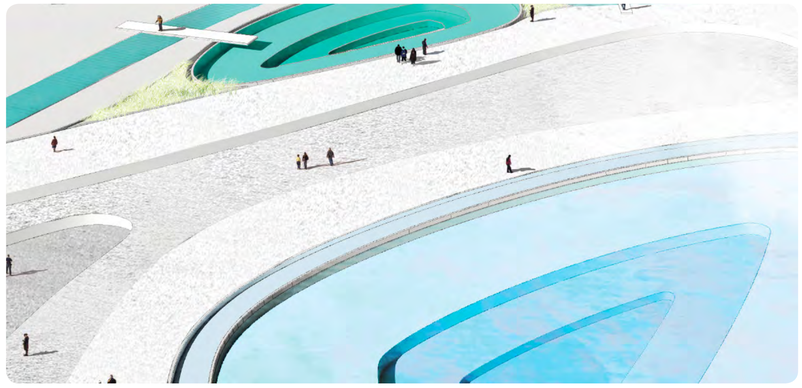

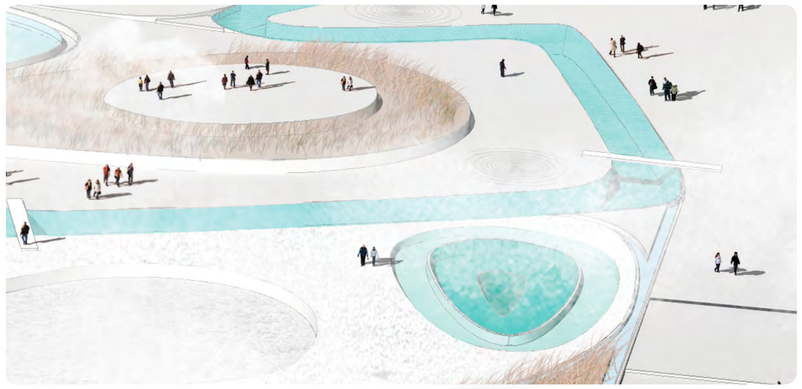

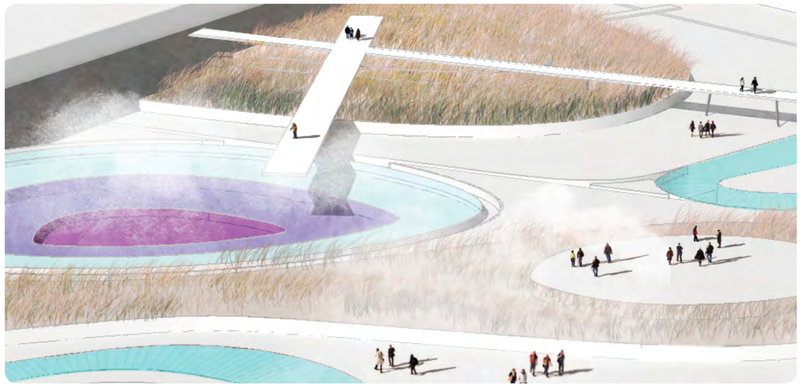

GENERATIVE TECHNOLOGY RGB Spectrum harnesses the abundance of fresh and saltwater in Copenhagen to produce osmotic power. Freshwater has a typical salinity level of less than 0.5 PPT (parts per thousand), while ocean water ranges from 30 PPT to 50 PPT, and briny water measures above 50 PPT. In the osmotic artery, seawater is combined with a briny solution from onsite evaporation pools and separated from freshwater by a membrane. This super-fine and tightly folded membrane maximizes surface area and, with it, energy production capacity. Unfolded, it stretches to a length of over 30 kilometers.

The difference in osmotic pressure between the salty and sweet liquids drives freshwater through the membrane to dilute the salty solution. This pressure spins a series of turbines embedded in the pier, where energy is generated and stored. Insight from the Statkraft power plant in Tofte, Norway suggests that RGB Spectrum has the capacity to produce 25,000 kWh of electricity.

1A SALT WATER UPTAKE
sea water channels into the osmotic artery

1B SWEET WATER COLLECTION
rain water is captured on site
Refshaleøen annual precipitation: ***613 mm***

Ammophila arenaria

Juncus Gerardii

Gravel

2B FILTRATION
rain water filters through grasses and gravel

sea grass

2A FILTRATION
sea water percolates through salt tolerant grasses

3 CONFLUENCE
fresh water pushes through the ***membrane*** *into the salt water, creating high pressure*

SALTY
$Na^+(aq)$
$+ Cl^-(aq)$

SWEET
H_2O

pressurized water

4 TURBINE
pressurized water turns a turbine

5A ENERGY
RGB Spectrum has the capacity to produce 25,000 kWh of electricity.

Dunaliella
{9.0 µm –11.0 µm}
{Pigment: chlorophyll}

Synechococcus
{0.8 µm to 1.5 µm}
{Pigment: phycobilliproteins}

Halobacteria
{5 µm}
{Pigment: rhodopsin}

cleaner saltier water returns to the energy loop yielding greater quantities of energy

5B BRACKISH WATER
the brackish water by-product is channeled to salination pools, whereupon it is warmed with steam from the energy making process and saturated with salt before it is reintroduced to the osmotic artery

18 ppt

brackish pool

40 ppt

briney pool

6 CONCENTRATION
through evaporation salinity is increased supporting the growth of colorful algae which also filter the water in the pools