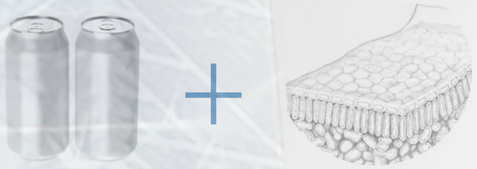
SMK16515

VELELLA

Vēlum: sail, -ella: bacteria

The Velella is generally two parts. The upper dome for solar energy collection and diving delta for seawater desalination. The technique used for floading facade of collecting solar energy involves mixing of ready to use "stabilizing powder" with agricultural waste such as grass clippings to create a green goo that performs photosynthesis even after the plant's death. Tapping into Photosystem-I Chlorophyll molecules from plants to the floating façade makes this technology highly malleable and inexpensive. While this technology is not as efficient as the regular photo voltaic cells (0.1% efficiency as compared to 15-18%), it is non-toxic, affordable and easy to install. The rough surface of the floating façade is connected through a web of zinc nanowires that run through the recycled cans and interconnected LED lights that activate in the absence of daylight.

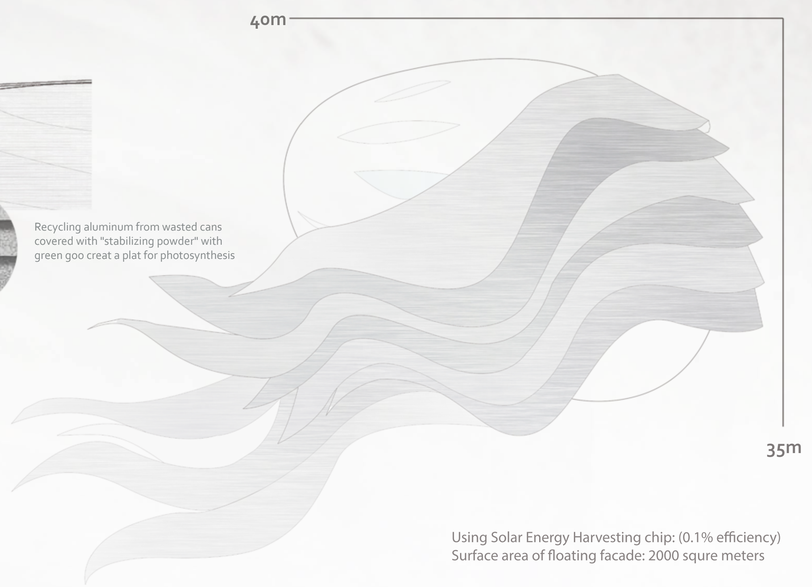


Wasted Cans + Chlorophyll = ?

Bionic Floading Facade for Collecting Solar Energy

Solar collecting chips are connected with a web of zinc nanowires. Each layers have spaces to cool the architecture and chips

Recycling aluminum from wasted cans covered with "stabilizing powder" with green goo creat a plat for photosynthesis



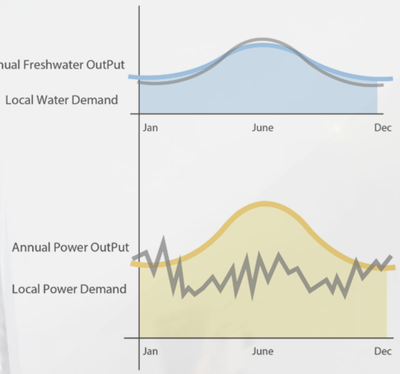
Using Solar Energy Harvesting chip: (0.1% efficiency)
Surface area of floating facade: 2000 squre meters

In 30 years, the facility would be able to-

Manage energy consumption to 3600 MW h
Output 1028 tons of desalinated sea water
Reduce Carbon Dioxide emissions by 3665.8 tons
Reduce Sulphur Dioxide emissions by 10.54 tons
Reduce Nitrogen Oxide emissions by 10.24 tons
Reduce miscellaneous wastes by 265 tons

VELELLA Structure Section

Above Dome
Solar Energy Collector



Total Water Desalination
Annual Output: 35 tons
for supporting tourisms
and seaside piers

Total Solar Power
Annual Power: 365 MWh

120 MWh for supporting
Seawater Desalination

245 MWh for supporting
480 houses

Diving Delta
Seawater Electrolysis Desalination