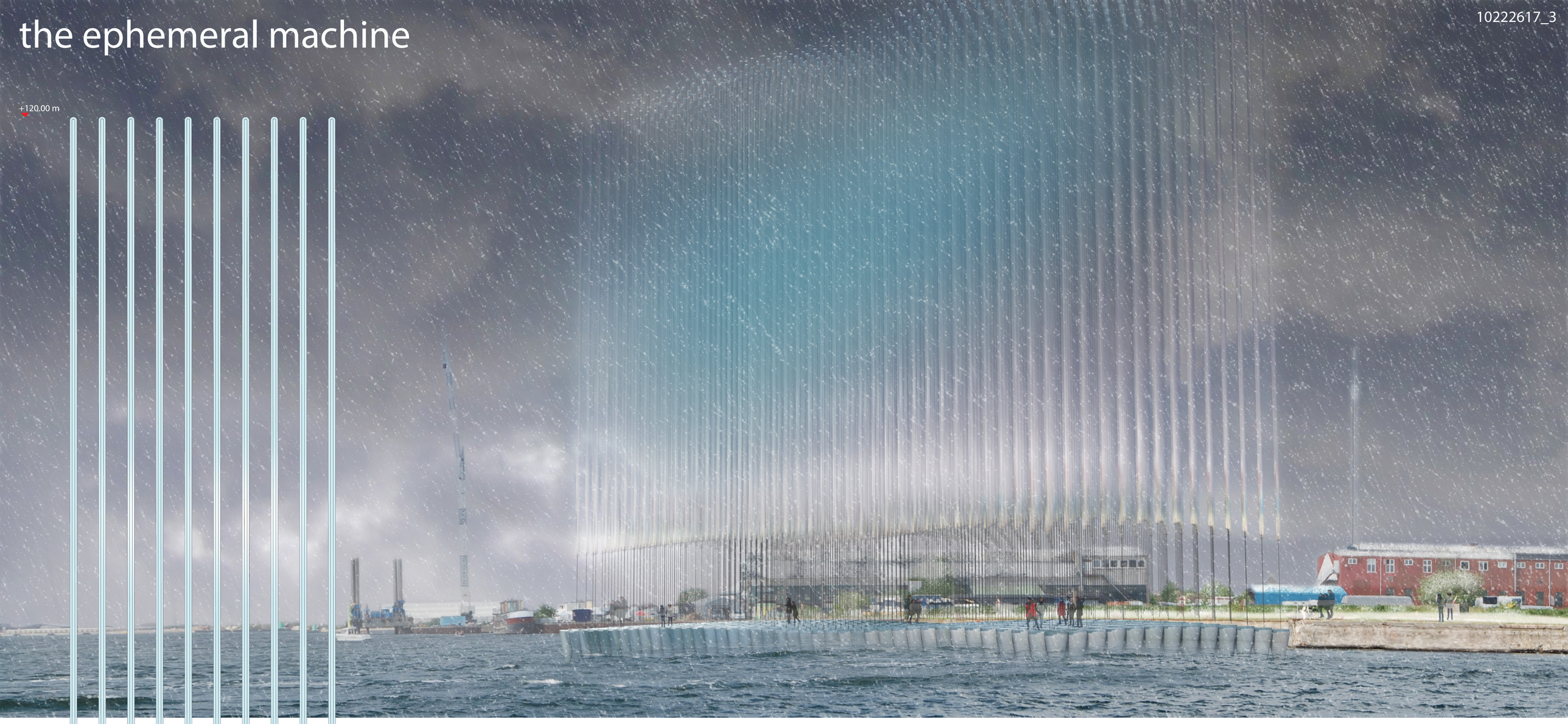
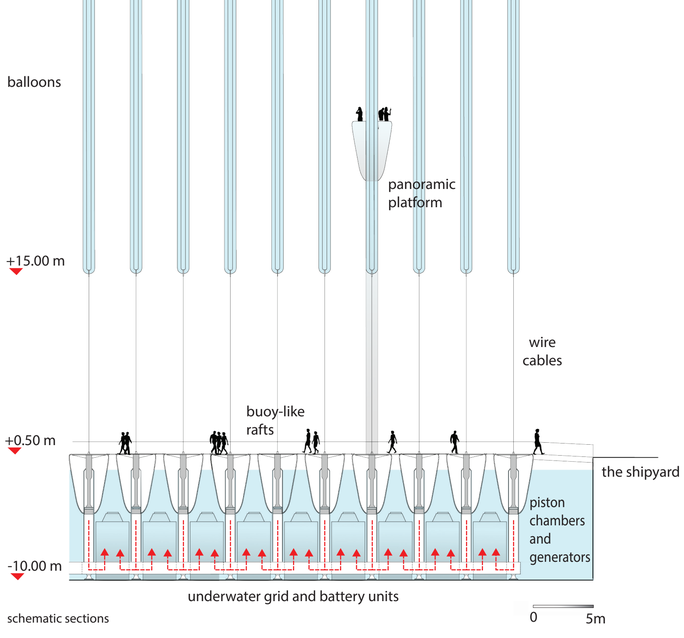
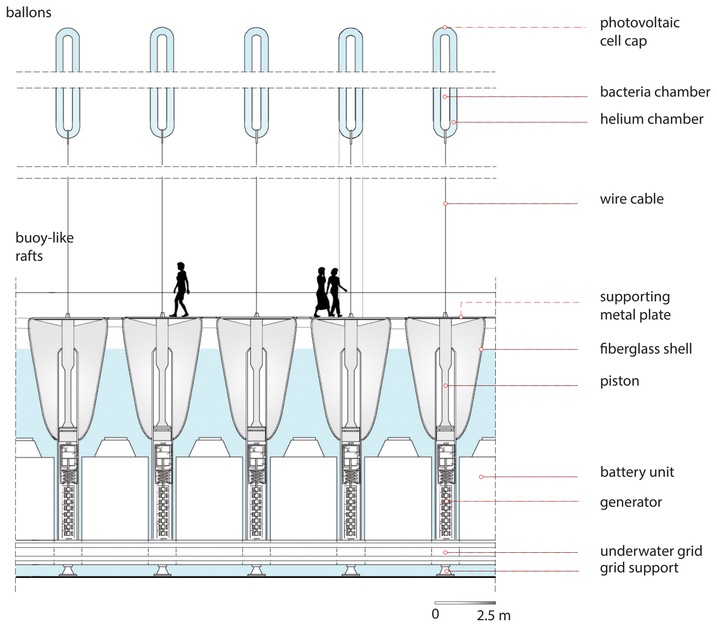
the ephemeral machine





schematic sections



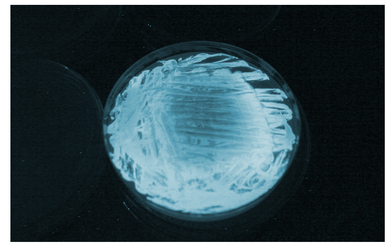
Concerning the production of energy the ephemeral machine utilizes existing technologies. For the buoy-like rafts we used as references the products of Ocean Products Technologies (OPT) that is a leading renewable energy company specializing in cost-effective, advanced, and environmentally sound wave power technology, and particularly the APB 350 Autonomous Power Buoy a patented platform we took as starting poiut for our design. We involved OPT in our early stage design and they told us that this system can produce 7,2 KWh/day.

So, we took as a conservative estimation for ours buoy-like rafts, an average value of 5.0 Kwh/day considering also the movements triggered by the balloons and the visitors. Since the machine is composed by 500 rafts this means that it can reach the average of 2.5 Mwh/day which makes a possible annual production of roughly 900 Mwh. Moreover, the ballons produce energy as well. In fact shaped like capsules they have two semi-spherical caps. The upper one will be covered with semitransparent photovoltaic cells, so that the whole can produce 150 Mwh/ year. Therefore, the machine can have an overall energy production of more than 1000 MWh/year.

Finally, we wanted this machine to consume the minimum of energy possible. Bioluminescent bacteria could be "hosted in a cavity inside the ballons to provide a low-energy means to lit them during night time. More specifically, the Photobacterium phosphoreum emits the brightest light of all bioluminescent bacteria. It is normally found in fish, squid, and octopus that live in the deep depths of the ocean. It has a very promising future in research and technology especially since it has no known pathogenic activity and is not known to cause disease in humans, plants, or animals. So it is possible to envisage the fact to recreate in the cavity of the balloon the same conditions that these bacteria find in the guts of squids and fishes. Of course this is a kind of theoretical approach to be proved, and more probably the machine would be lit by projectors in present day reality.

Nonetheless we propose it because the idea of providing biological source of energy complies with the overall design of a project aiming at minimizing its impact into the surrounding environment. In fact despite its height the machine will have no foundations perforating the site. It adopts only recycled/recyclables materials in a modular design. The transparency is a key factor to integrate the machine with beautiful landscape of Copenhagen and finally biomimicry strategies could be adopted to reduce energy consumption and CO2 emissions.

OPT APB 350 Autonomous Power Buoy.



Photobacterium Phoshoreum