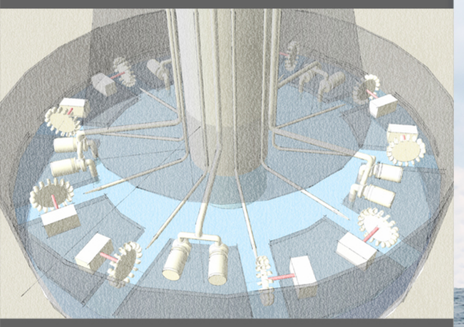
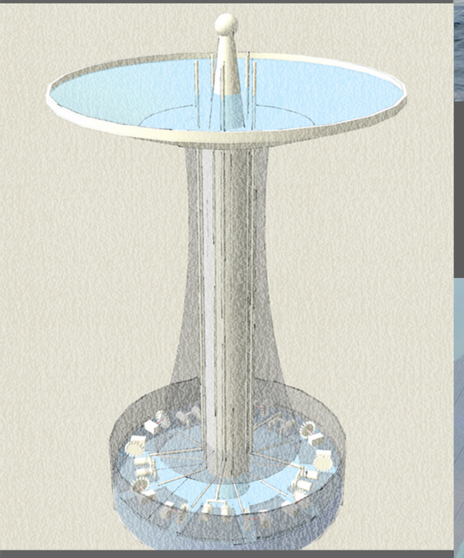
PORT WATERFALL

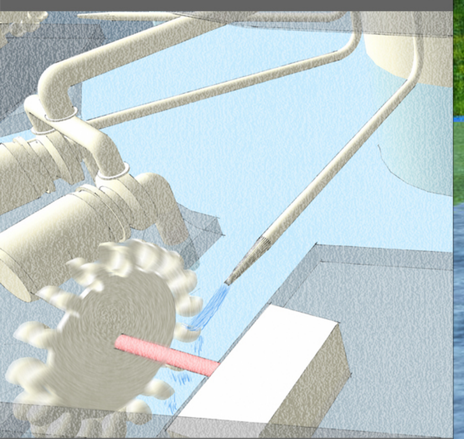
Each chamber is divided into two levels: Below is the reservoir which stored 400 m³ water volumes under the sea level, above is the mechanical room where included lift pumps and pelton turbines. There are 10 lift pumps, 10 pelton runner and its generators in each chamber.



Water from the sea enters into the system and is separated to chambers by gravity flow without consuming any energy. Water in the reservoir is lifted to 25m high by pumps into the pools. Required electricity for pumps is compensated adequately from OPV sheets. Each pump capacity is proposed 0.11m³/s. Therefore, 1.1m³/s water is lifted in every column. Then, 1m³/s water in the pool is dropped down along 25m inside of pipes by gravity till the water nozzles.



Every pelton runner, diameter 1m, works with one nozzle. Every nozzle sprays 0.1m³/s water with nearly 22m/s velocity to the buckets. Turbine is rotated 214 rpm. Due to high efficiency of hydropower system, %90 performance is assumed for the turbine generator system. Thus, these generators would produce 34650 MWh/a electricity.



Port Waterfall was designed in harmony with ecosystem in advance. In order to provide natural ventilation in the garden park, east and west sides were not covered. Due to greenhouse effect of the structure, plants and trees were going to be alive in every season. Thus, free lands inside of the park can be used for educational and/or rural aims.

Several waterfalls are supplied via water pumps and flowing from the platform to the ground. Due to lack of natural waterfall around Denmark, the effects of artificial waterfall combined with Garden Park caused solicit contemplation from viewers at the first moment.

Small hydro system where receives water from sea enrich the oxygen level of the channel while water was drop down from the pool to the reservoir. Through the natural flow, enriched water in reservoir is mixed with sea in the channel. Therefore, vitality of seabed in boat parking ways existed on the north and south of the project area is increased in opposition to current situation where water circulation is not enough.

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