Den Sejlskib

Den Sejlskib is located on Refshaleøen at the sail entrance of Copenhagen and it strives to be the new gateway of the city. Its arc shape is reminiscent of a sailing ship, which is reflected in a water blade, whose sails are blowing in the wind replicated on the ground by shadows and paths. The work is based on pure volumes, integrated into the geometry of the pier and at the same time marked by forms inspired by naval architecture to recall the history and vocation of the city, at the same time projected towards new challenges.
The arc is designed for minimal wind resistance; it also constitutes a new panoramic viewpoint over the city. Several floors are distributed along the structure and mutually connected like lenticular rings to an elevator with the function of structural bond beams.
The wind is the primary energy source of Den Sejlskib and sea water is used to store potential energy through a small pumped-storage hydropower plant using the fountain pool as an upstream reservoir.
In addition, the fountain effects of moving jets of water and colored lights highlight the system operation, or they can be programmed for specific events and shows.
The whole structure is clearly visible and can be visited by following the paths in the surrounding garden.

The Den Sejlskib the technology used is not proprietary, the equipment is available worldwide and is scalable and easily testable in order to minimize the economic risk, avoid delays in system building, and guarantee performance and dependability.
Den Sejlskib's energy capability is mainly based on 3 Horizontal Axis Wind Turbines (HAWT), with a nominal power output of 250 kW each.
A secondary energy source is a small pumped-storage hydropower plant using the fountain pool as an upstream reservoir; it is based on two horizontal Francis type turbines, acting as pumps, driven by inverters and permanent magnet synchronous generators running as electrical motors with a total power output of 150 kW and a power consumption lower than 180 kW.