

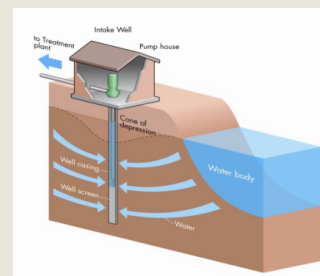
The water desalination plant of the hotel



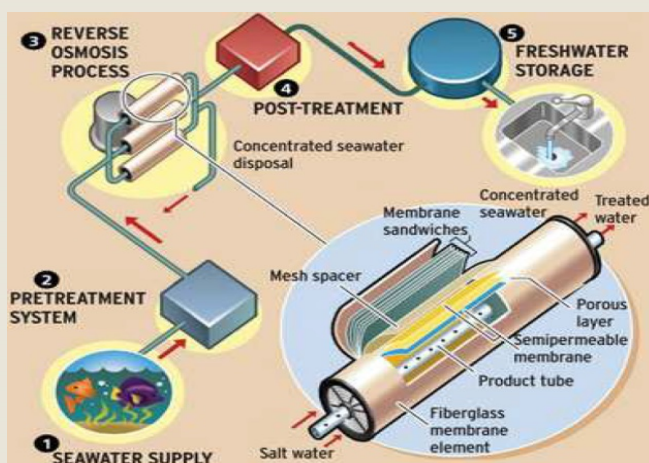
For running the hotel Severin Sea Lodge needs – according to occupancy – more than 80.000 to 100.000 liters of fresh water daily. But due to an inadequate and dilapidated water reticulation infrastructure, a regular supply can't be guaranteed by the public water network. The quality of water supplied by water bowsters cannot be guaranteed as their water source is unknown hence is not an option for water supply. Therefore, the hotel has invested in its own water desalination plant with a capacity of 15,000 liters per hour.

But what did we put into operation exactly and how does it work?

Through a 20 m deep borehole (1) groundwater is pumped into the desalination plant at the Green Building. But with the Indian Ocean directly in front of our door, this water is too saliferous. Desalination can be done in different ways in order to remove salts and minerals from the water. In our case, we adopted reverse osmosis.



Osmosis is based on a natural process, e.g. plants that take humidity out of the ground with their root cells. The same process is found in the human body and caters for an exchange of substances through the cell membrane. If you separate two liquids of different concentrations with a semipermeable membrane, the liquid molecules will move from the less concentrated solution into the more concentrated one, thus equalizing the concentrations on each side of the membrane. Reverse Osmosis is a process by which a molecule passes through a semi permeable membrane in the direction opposite to that for natural osmosis when subjected to a hydrostatic pressure greater than the osmotic pressure.



After the initial pre-cleaning using two sand filters (2), the brackish water is pumped through a semipermeable and synthetic PA membrane (3) with the help of high-pressure pumps (20 to 30 bars). Here the TDS (Total Dissolved Solids value) of the water is reduced from 13,000 mg/l (brackish water) to <500 mg/l (product water).

The pH value of the product water is brought to World Health Organizations Standards by post-treatment (4) before the water is stored in the hotel's fresh water tank (5). From the tank the water is pumped through our own distribution network into your hotel room (shower, basin, toilet) and the public facilities

(swimming pool). After further UV treatment, the aseptic clean water runs through distribution pipes into the kitchen and the ice cube machine.

With this investment, Severin Sea Lodge supplies you with clean drinking water at any time and is also able to provide the local public with water due to free capacities of the facility.



We will be happy to show you our water desalination plant during your stay at our hotel!