

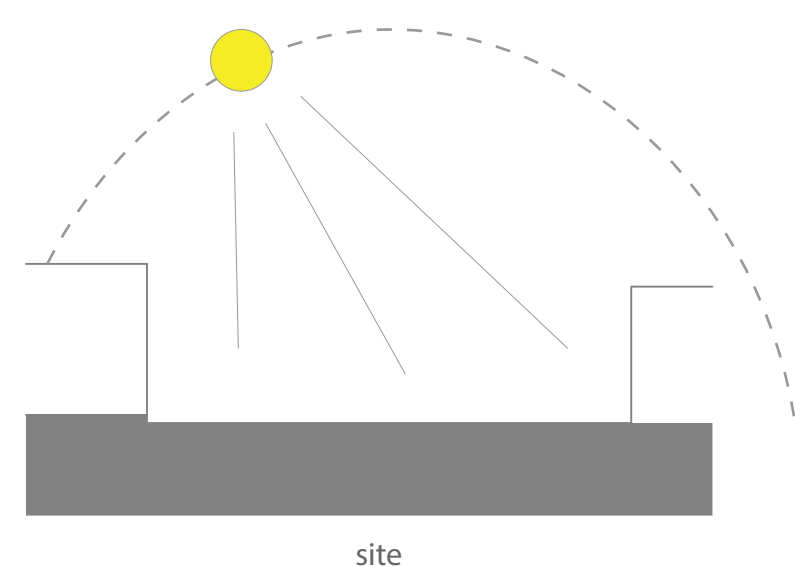
the components of the RO plant and the desalination process

Solar powered RO with gravity

The co-generation plant blends together multiple functions- water and electricity generation as well as a leisure space for the residents of Masdar city. The canopy serves two functions - water storage and houses the solar panels. The capacity of the water tank is four times the daily output. The pressure created by this volume and gravity are critical for desalination to happen without a pressure pump. The top surface of the water tank is embedded with solar panels for an area of 16840 sq.m. to produce the electricity required to run the desalination plant throughout the day. SunPower SPR-X21-345 residential panels convert more sunlight to electricity by producing 38% more power per panel and 70% more energy per square foot over 25 years. The columns act as channels for the water to flow and meet the membrane at the ground level. Underneath the canopy is a well shaded space which also acts as a pause point for the people of Masdar city to rest and unwind.

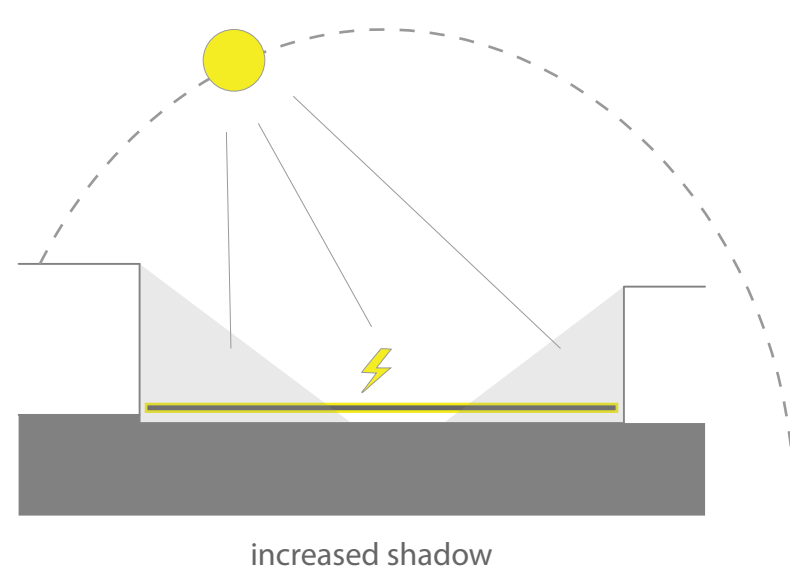
Evolution of the sculpture

The site



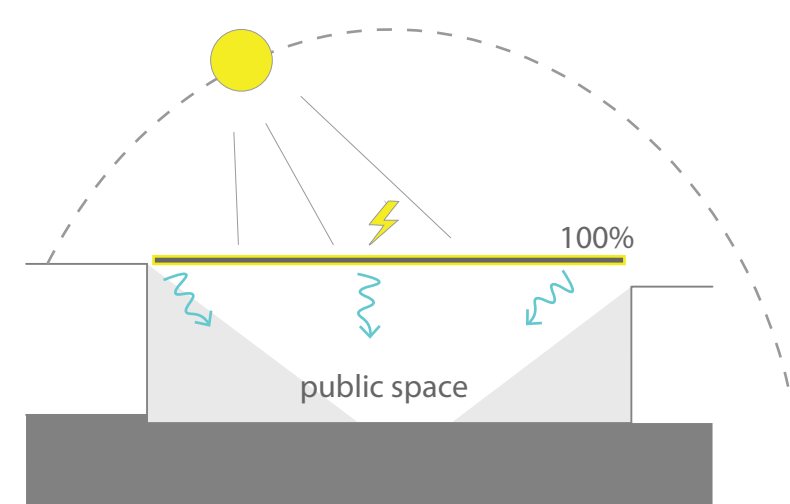
site

Placing solar cells on the site



increased shadow region

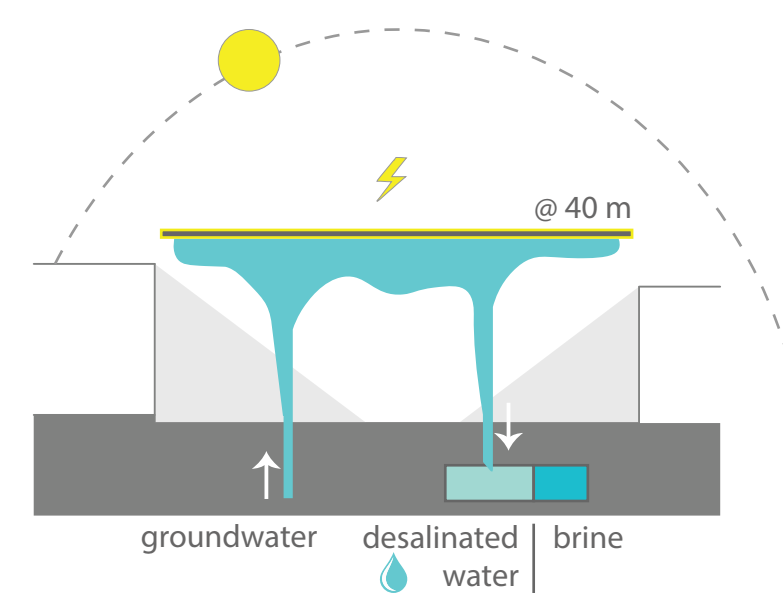
Raising the solar panels above the building to maximize power generation and also to cool the corridor below



public space

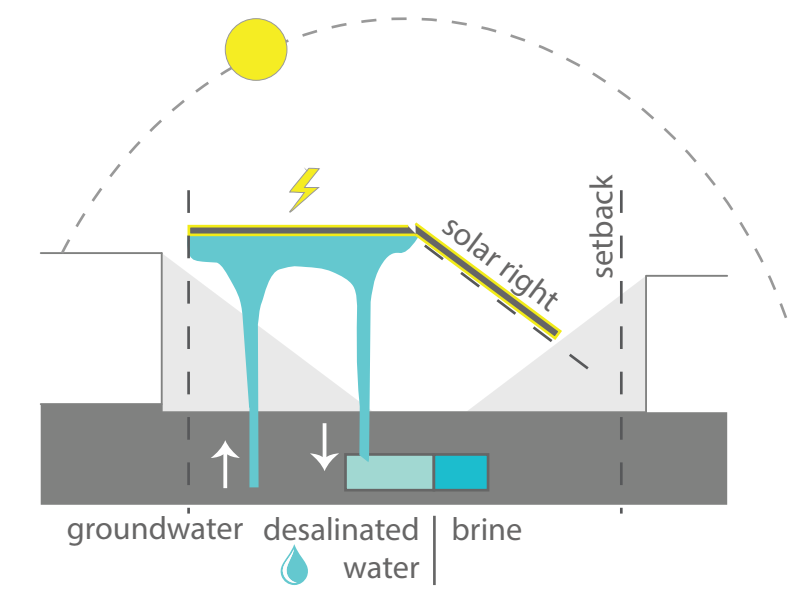
100%

Water tank with a capacity of 12,500 cu. m. (4 x daily yield) is placed at a height of 40 m.



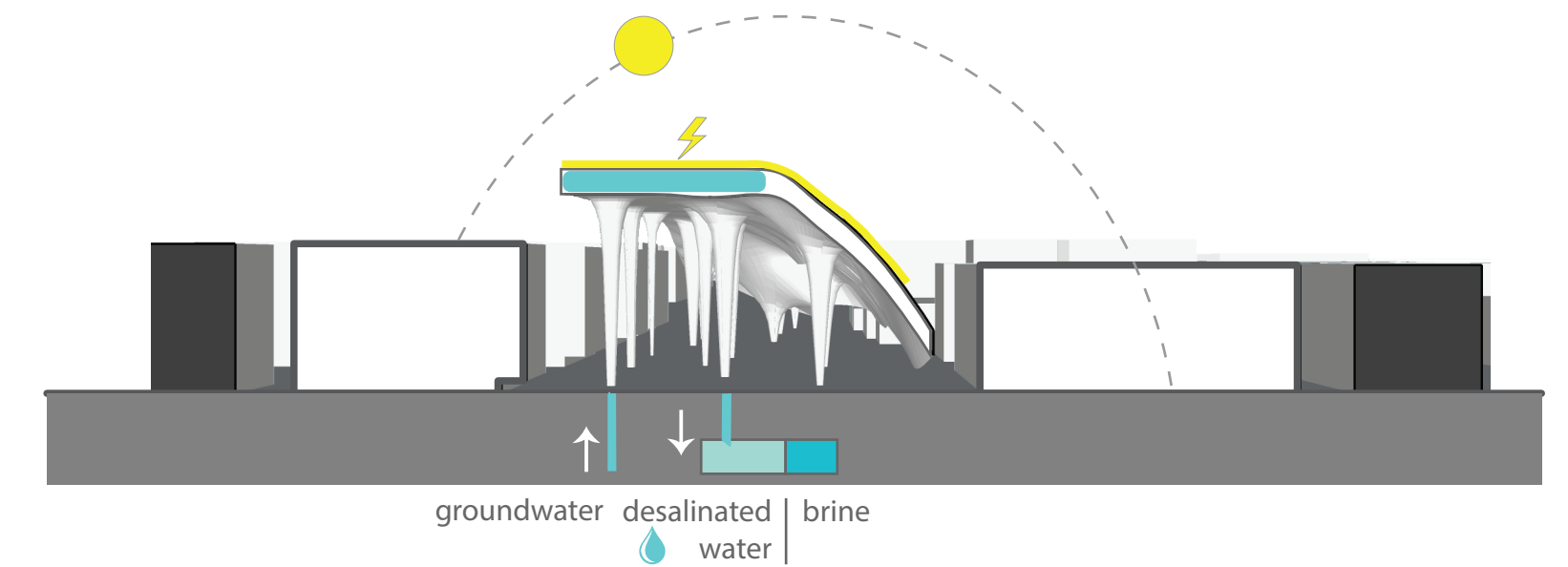
groundwater desalinated water brine

Providing setbacks for the neighbouring buildings and ensuring the solar right of the users



groundwater desalinated water brine

The solar panels are positioned for maximum harvest on the roof and the columns act as channels for water.



groundwater desalinated water brine