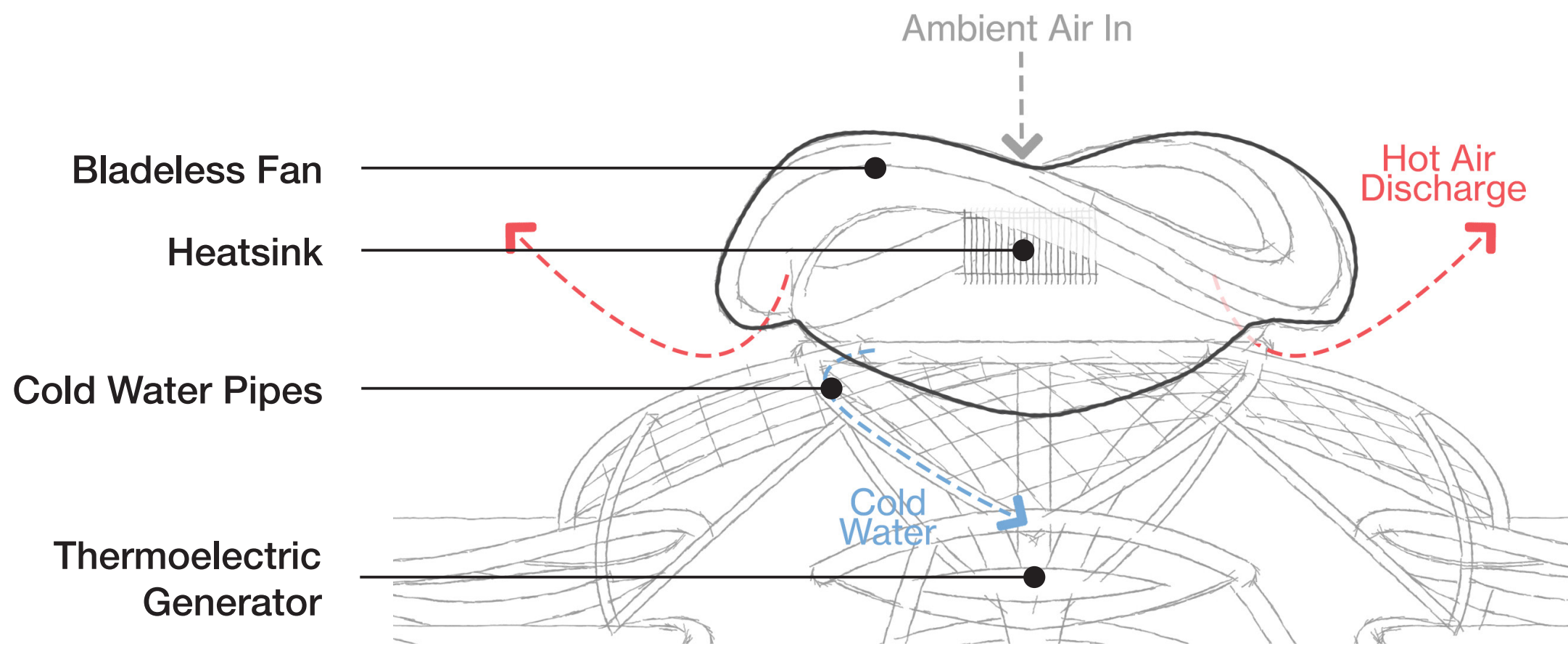
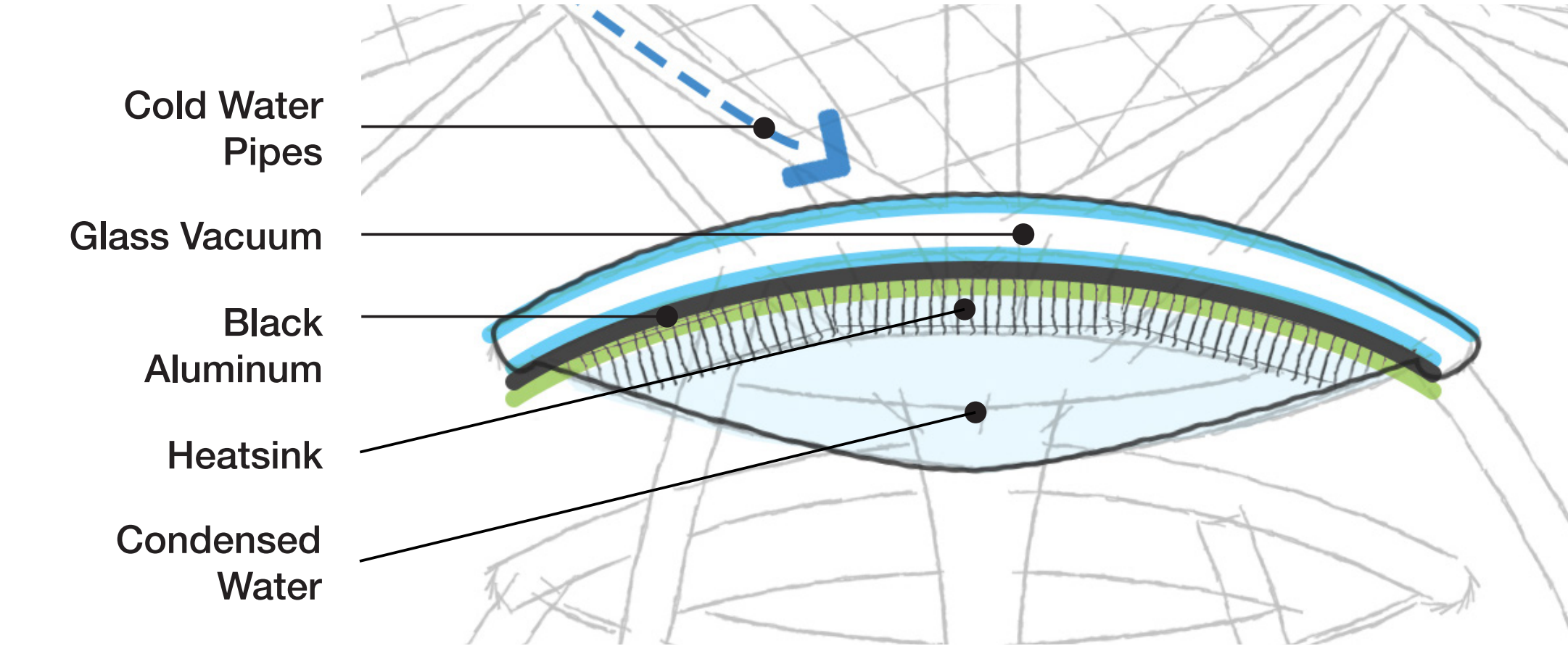


Thermoelectric Cooler Pod



PV solar cells powers the central thermoelectric cooler pod. The high temperature and high humidity will condensed water in the cooler pods. Series of pipes are connected to the cooler pod distribute the condensed water to the bottom chamber thermoelectric generator pods.

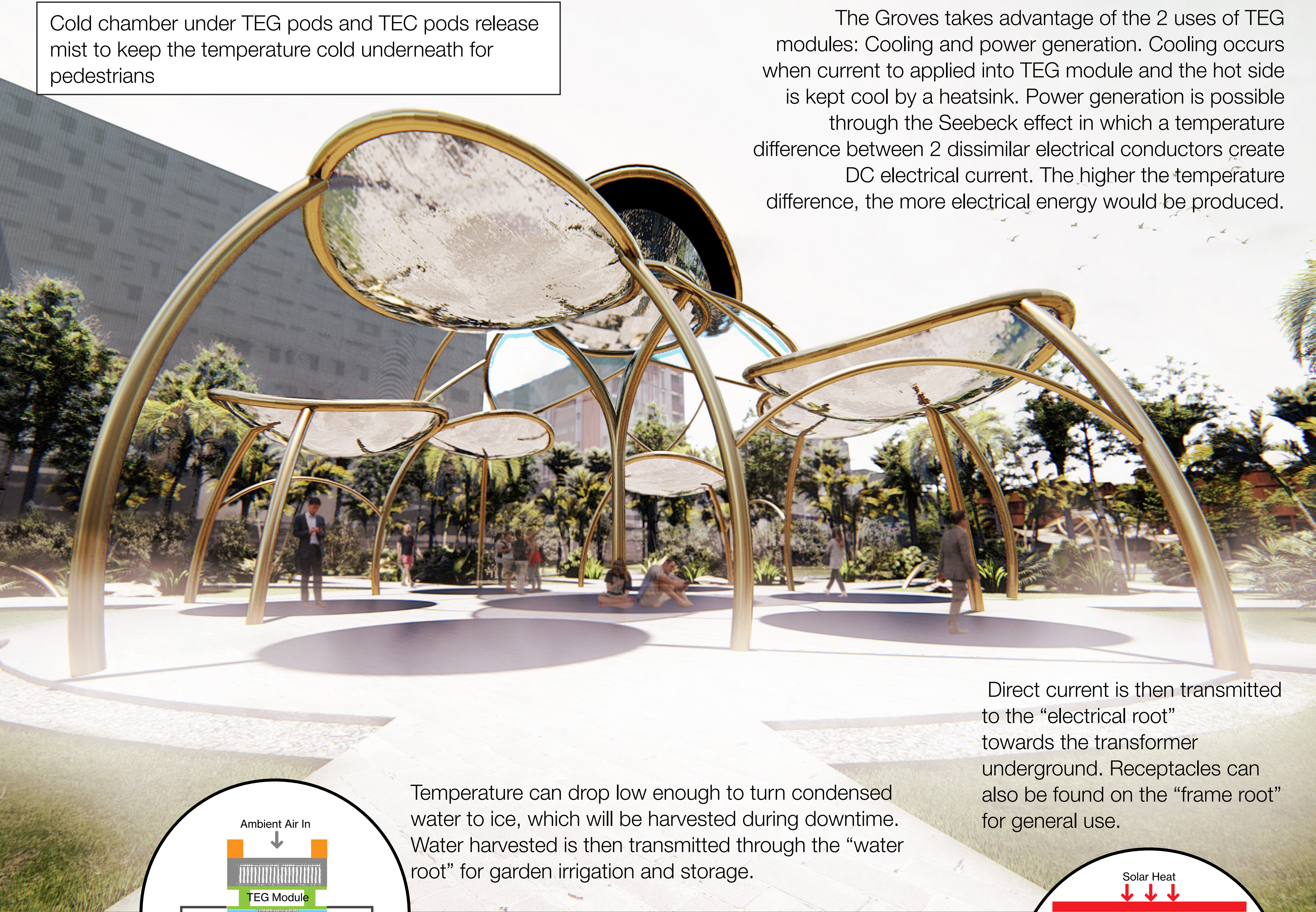
Thermoelectric Generator Pods



The top side of the thermoelectric generator pods is kept hot by the black aluminium body sealed by glass to trap maximum heat.

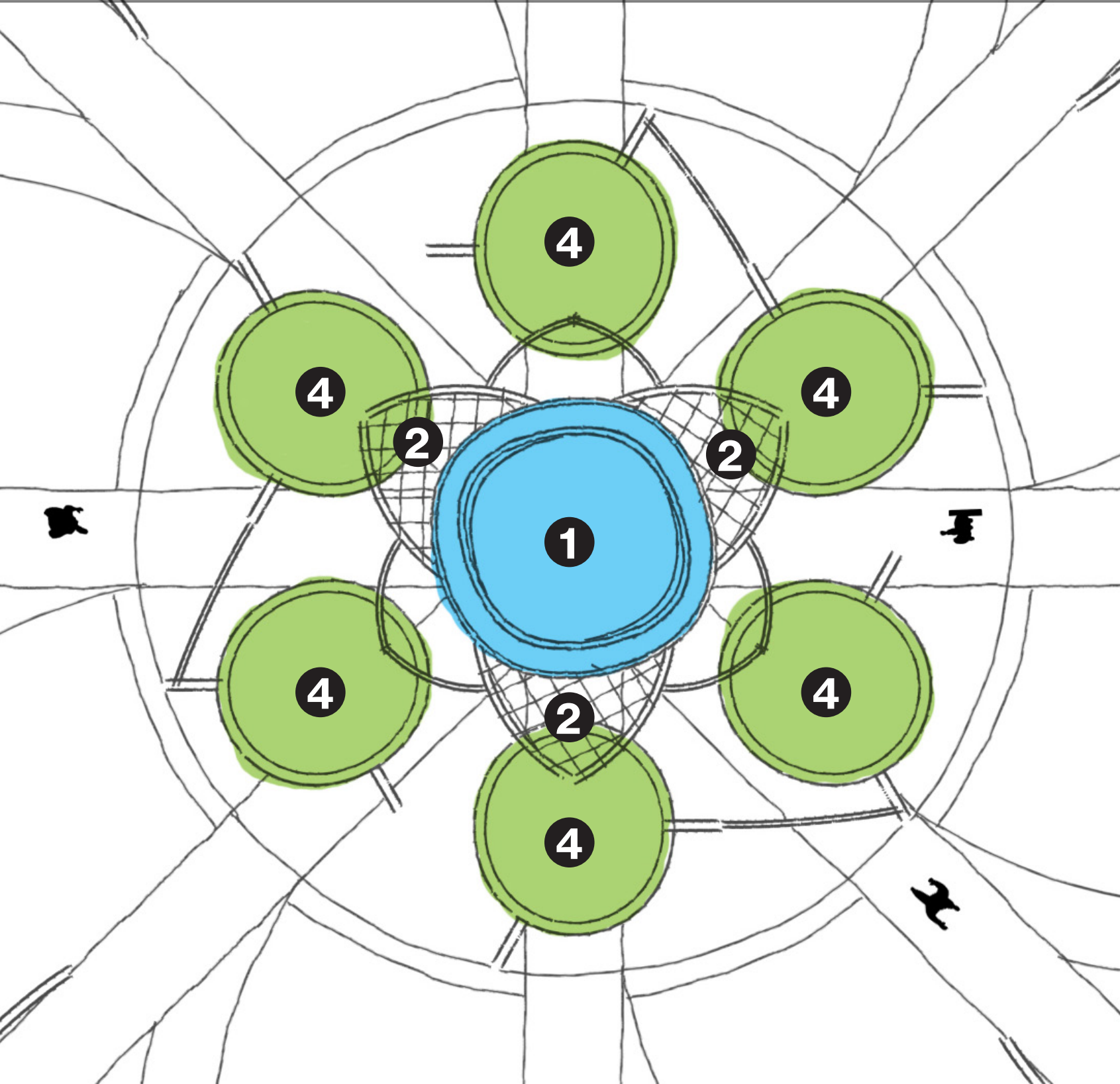
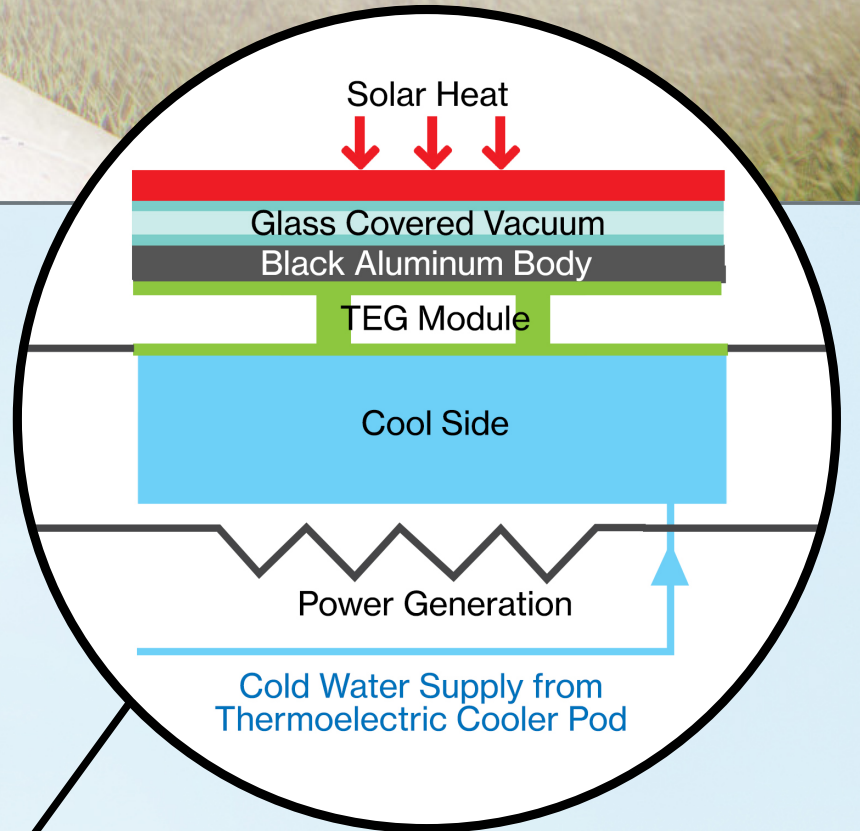
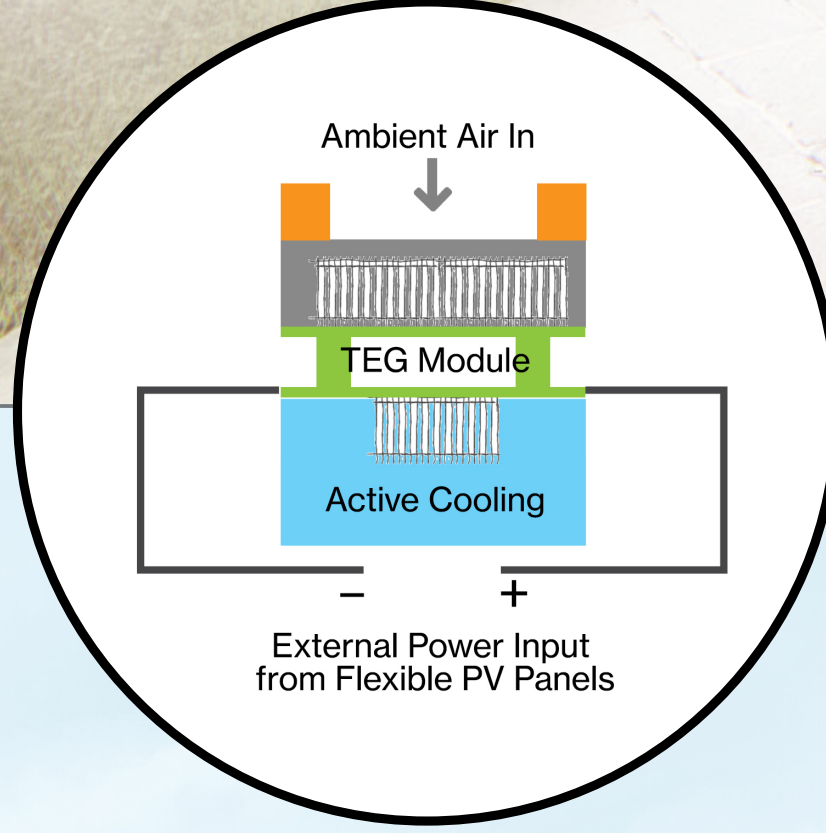
Cold chamber under TEG pods and TEC pods release mist to keep the temperature cold underneath for pedestrians

The Groves takes advantage of the 2 uses of TEG modules: Cooling and power generation. Cooling occurs when current is applied into TEG module and the hot side is kept cool by a heatsink. Power generation is possible through the Seebeck effect in which a temperature difference between 2 dissimilar electrical conductors create DC electrical current. The higher the temperature difference, the more electrical energy would be produced.



Direct current is then transmitted to the “electrical root” towards the transformer underground. Receptacles can also be found on the “frame root” for general use.

Temperature can drop low enough to turn condensed water to ice, which will be harvested during downtime. Water harvested is then transmitted through the “water root” for garden irrigation and storage.



- 1 Thermoelectric Cooler Pod
- 2 Flexible PV Panels
- 3 Cold Water Pipes
- 4 Thermoelectric Generator Pods
- 5 Structural Root
- 6 Electrical Root
- 7 Water Root
- 8 Distributer Roots

