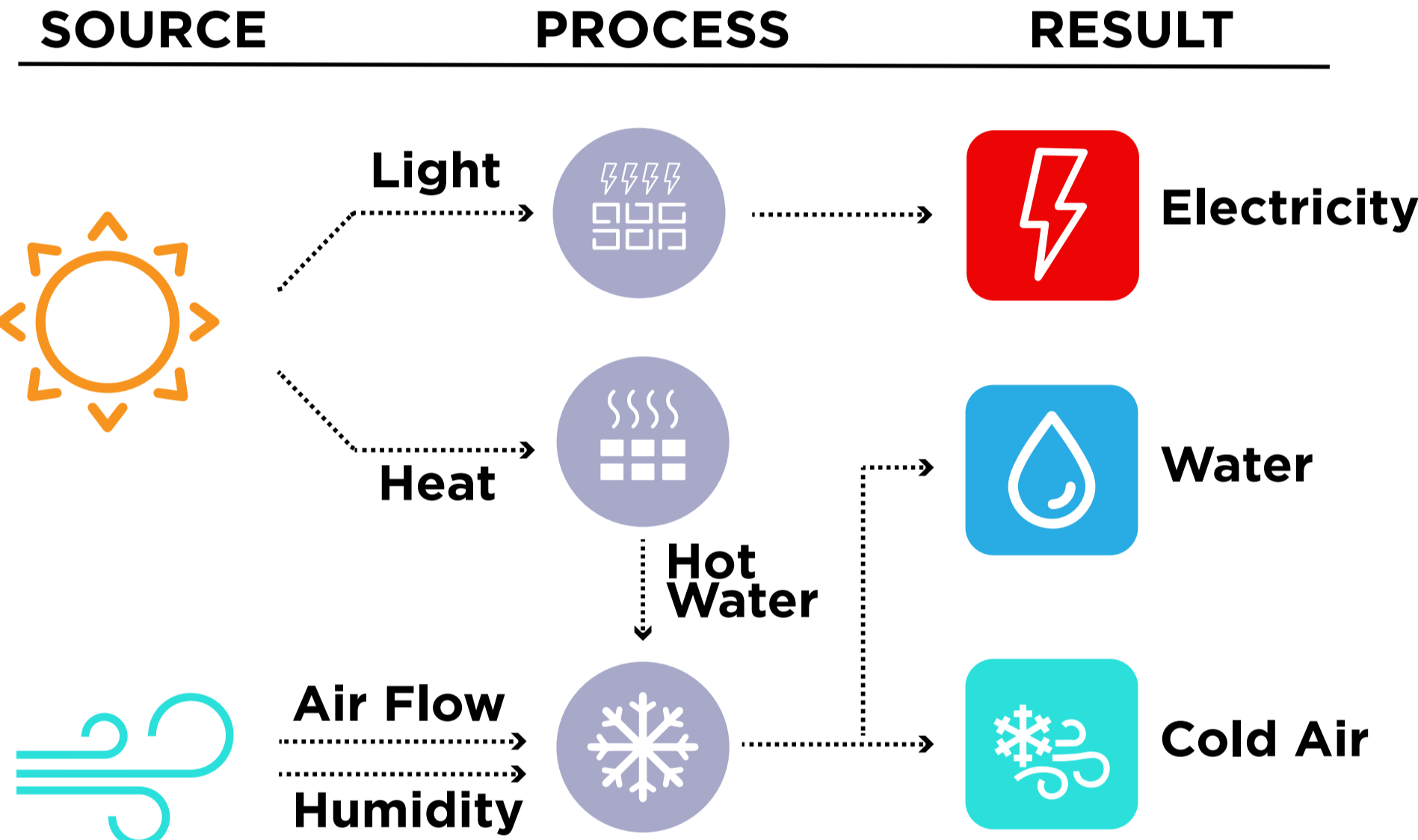
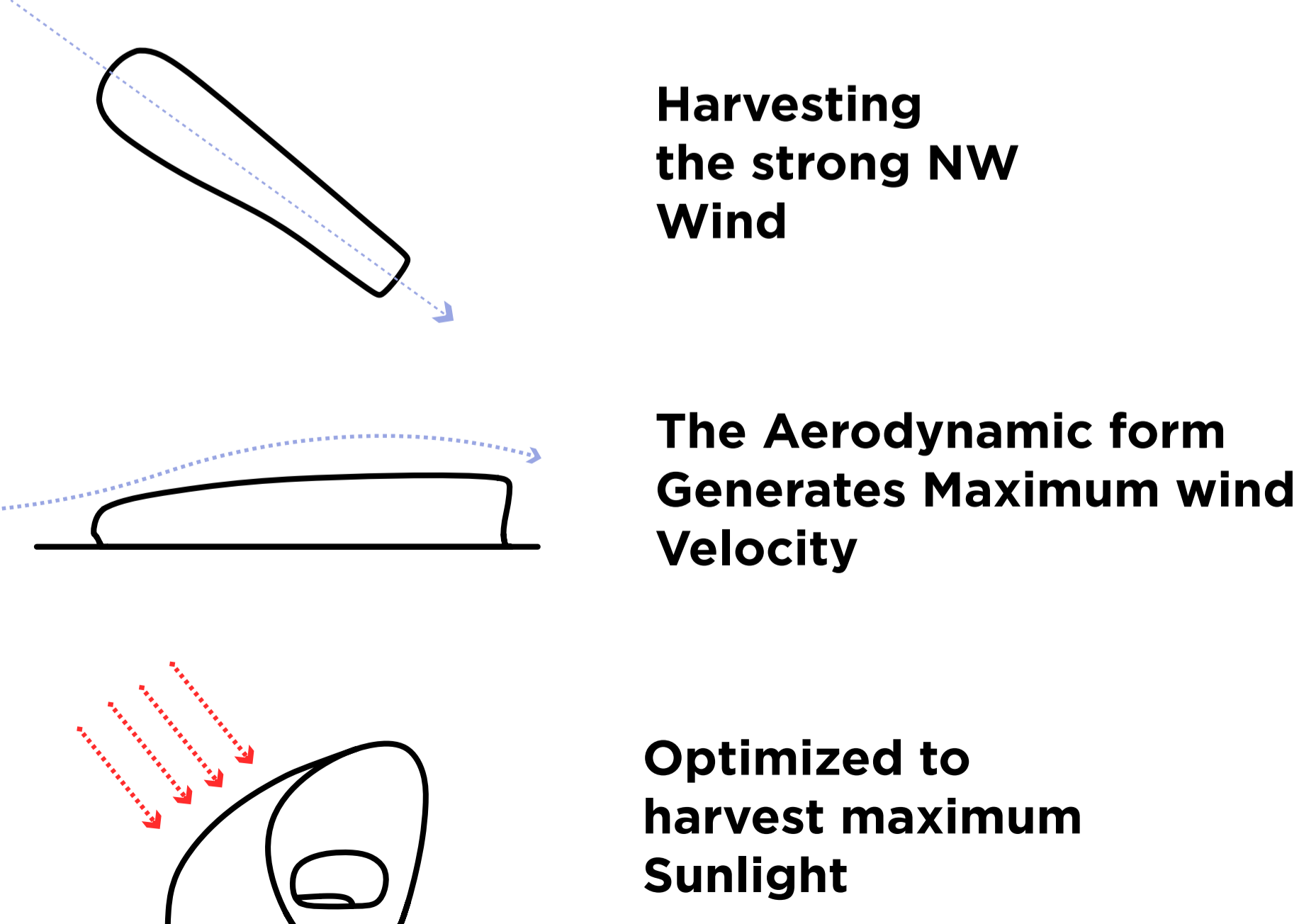


HOW IT WORKS

For the Oasis to become a reality at Masdar city we needed three basic resources: water, electricity and refrigeration. The prospects of sourcing any of the three proved challenging if we were to follow conventional technologies. Purification of water and refrigeration demanded immense electricity and a water source, while electricity production demanded refrigeration and water for cooling. To answer these challenges, we turned to the most abundant resources in Masdar city: wind and sunlight. Through a very specific orchestration of existing technologies we were able to create a self sustaining Oasis at the heart of Masdar city.



SHAPE AND ORIENTATION



OUR HARVEST

1 HARVESTING THE SUNLIGHT : HEAT AND ELECTRICITY

Our VirtuPVT solar panels have a dual function: absorbing sunlight for creating electricity as well as absorbing the heat for creating hot water. The winning point here is twofold: Firstly, these heat-absorbed (water cooled) solar panels perform at 1.5 times the efficiency of regular solar panels (thereby generating -0.4 kWh/m2 of electric energy) generating abundant electricity for The Oasis. Secondly, the hot water by-product of this process becomes the essential resource for our second component - The Absorption Chiller - which produces our cold air.

2 HARVESTING THE WIND : REFRIGERATION AND HUMIDITY

The absorption chiller is the beating heart of the Oasis for creating cold air. For its function, the chiller needs the constant flow of two things: hot water and wind. As mentioned above, the hot water is readily available as a by-product of our solar panel cooling system. The wind as well, is abundantly available thanks to the geography of the region, as well as the unique design of the structure shaped to create the flow needed. Inside of the chiller, the cooling process provided by the capture and flow of the humid wind, yields to a constant condensation process, giving yield to over 8,288 Litres of pure water per hour.

