The Jean-Marie Tjibaou Cultural Center is located on a narrow strip of land in New Caledonia, a former French colony in the South Pacific. The small island enjoys a temperate climate, with temperatures ranging from 61°F in August and 86 °F in January/December (the mean temperature is a balmy 73 °F). Humidity ranges throughout the year, but stays around 70%. There are four distinct seasons in New Caledonia, two rainy seasons at the equinoxes and two drier transition seasons. The hot season lasts from December to March and is the time when the island receives torrential rain and winds, sometimes cyclones.

According to the psychrometric chart, the climate of New Caledonia is best suited for natural ventilation. A combination of moderate-to-high temperatures and high humidity make air movement the most efficient way to keep a space cool and dry. Natural ventilation was a natural choice for Renzo Piano in his design, which sought to incorporate elements of Kanak architecture, the native people of New Caledonia. The cultural center was meant to celebrate their culture, but also to be an act of reconciliation between the island nation and the French. Piano chose to use a passive cooling design in the same way as the traditional Kanak building.

There are two main natural ventilation systems at work within the building: the Stack Effect and the Venturi Effect. The inner glass shell has many louvres, which allow it to be insulated or ventilated as needed. Most of the time, ventilation is the most important factor in maintaining comfort so they are left open.

The buildings create a Stack Effect by having a glazed, open inner roof structure, which allows the air within the building to heat up, rising out through the chimney and pulling cooler air in from the lagoon.

The buildings create a Venturi Effect by forcing breezes to pass up and over the semi-permeable outer shell. This creates a pressure differential on the leeward side of the shell, pulling hot, stale air up through the chimney and out of the building.

The Cultural Center is a collection of 10 individual buildings, located along a linear breezeway on a peninsula. They are orientated northwards, towards the sun, with their protective bamboo outer shells facing the ocean side. This is done to maximize natural cooling within the buildings.

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