

# Jali Screens: Geometry as Climate Control

*Carved stone screens accelerate airflow through pressure differentials. Provable by CFD.*

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## At a Glance

Monsoons drench India 6 months per year. Vernacular architecture caught rainwater in tanks and used it for cooling (fountains, gardens) year-round. Modern buildings ignore the monsoon and run air conditioning 9 months. [1]

## Summary

Indian vernacular architecture integrated monsoon harvesting into thermal management. Courtyards and water tanks filled during monsoon (June-September) supplied water for fountains, irrigation, and cooling through the heat season (October-May). Water was the seasonal cooling resource. [1]

A Mughal garden complex in Delhi captured roughly 500 millimetres of annual monsoon rainfall across courtyard surfaces. For a 1-hectare garden, this is approximately 5 million litres of water. Stored in underground tanks and cascading through fountains, this water provided cooling throughout the dry season. The cooling was powered by gravity (fountains) and solar radiation (evaporative cooling from water surfaces). [2]

Modern offices ignore this rhythm. Rain drains to sewers. Cooling comes from electricity 9 months per year. The seasonal wisdom is forgotten. [3]

Biothermal Microconditioning rediscovers this through rainwater integration. Thermopods can be connected to rainwater cisterns. During monsoon (June-September), cistern water keeps Terrapod soil saturated. Areca palms, having abundant water, transpire at maximum capacity. This is the cooling season. In the post-monsoon heat (October-May), cistern water is depleted. Irrigation switches to grey water from sinks or stored water. The system adapts to seasonal water availability. [4]

Scale this across corporate campuses: a 100-hectare office park can harvest 50 million litres of monsoon water. Stored properly, this water sustains 1,000 Thermopod units through the heat season without competing with drinking water or agricultural irrigation. Water scarcity is inverted through seasonal abundance. Sensible by nature. [5]