BLOOM LINE

A living flower exchange where architecture, water, and cultivation merge into a single ecosystem. The project reimagines the journey of the rose from field to market as a shared cultural and economic experience.

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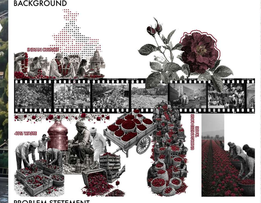
BACKGROUND



PROBLEM STETEMENT

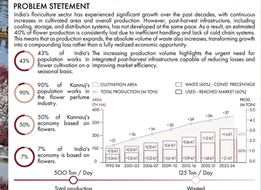
India's floriculture sector has experienced significant growth over the past decades, with continuous increases in cultivation area and production. However, the supply chain has not developed at the same pace. As a result, an estimated 40% of flower production is consistently lost due to inefficient handling and lack of cold chain systems. This means that as production expands, the absolute volume of waste also increases, transforming growth into a compounding loss rather than a fully realized economic opportunity.

43% — 43% of India's The increasing production volume highlights the urgent need for population works in integrated post-harvest infrastructure capable of reducing losses and flower cultivation on a improving market efficiency. seasonal basis.

90% — 90% of Karnaj's population works in the flower perfume industry.

50% — 50% of Karnaj's economy based on flowers.

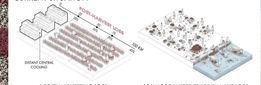
7% — 7% of India's economy is based on flowers.



500 Ton / Day — Total production

125 Ton / Day — Wasted

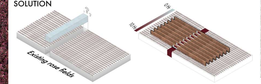
CURRENT SITUATION



1.POST-HARVESTING LOSS
No immediate cooling near the fields, the roses begin losing freshness during transportation to the distant central cooling. This delay increases post-harvest waste and value loss gradually rise.

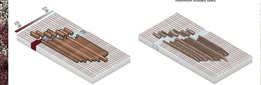
02.UNORGANIZED TRADE & VALUE LOSS
Informal trading systems fragmentation prevents a global rose market hub. Yet sales are mostly local and informal, limiting access to premium markets and reducing the value of cooling. The fragmentation creates wider pollution, and a loss of market value.

SOLUTION



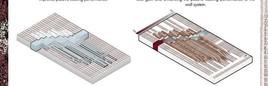
01.Cooling Spine
A central cooling spine cutting the existing rose fields to support passive cooling, while also forming a floating market for boats.

02.Initial Wall Arrangement
Regular parallel wall is introduced along water. However, the direct sun hours simulation showed this configuration did not provide the maximum shaded area.



03.Optimized Wall Configuration
Water walls are rotated to face the sun and shaded flavour to respond to direct sun exposure. To generate greater shadow and improve passive cooling performance.

04.Cultivated Roof Continuity
The rose fields are extended onto the roofs, maintaining the same fields area. The soil layer also works as thermal insulation, reducing heat gain and enhancing the passive cooling performance of the wall system.

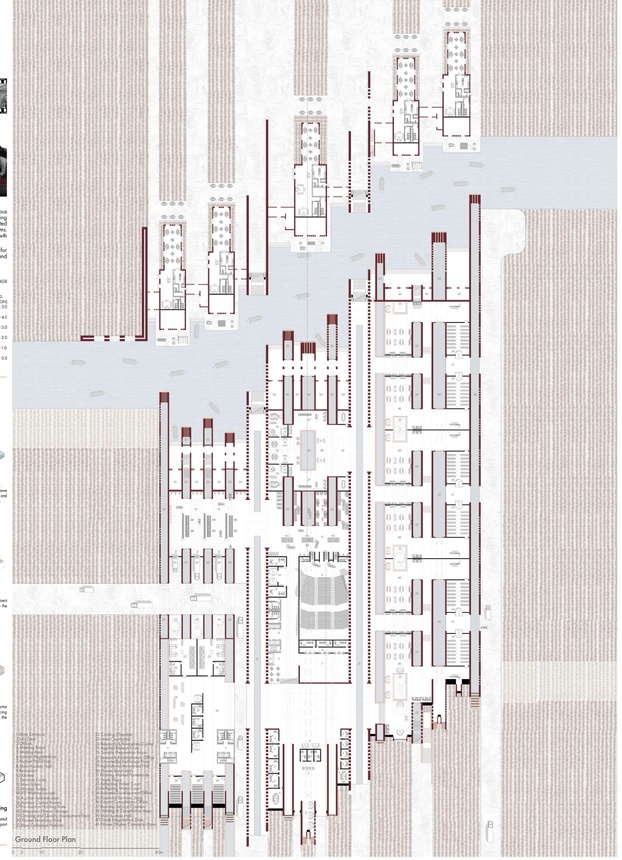


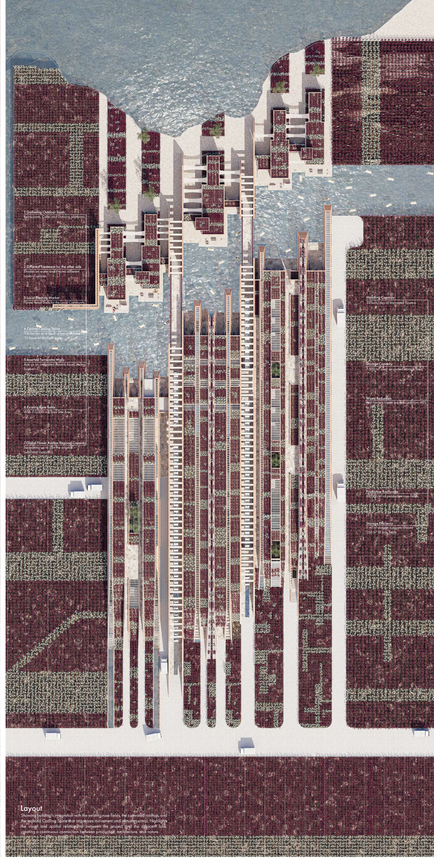
5.Extended Cooling Water Network
The cooling spine expands beneath the walls, forming a water network that improves the microclimate and supports passive cooling.

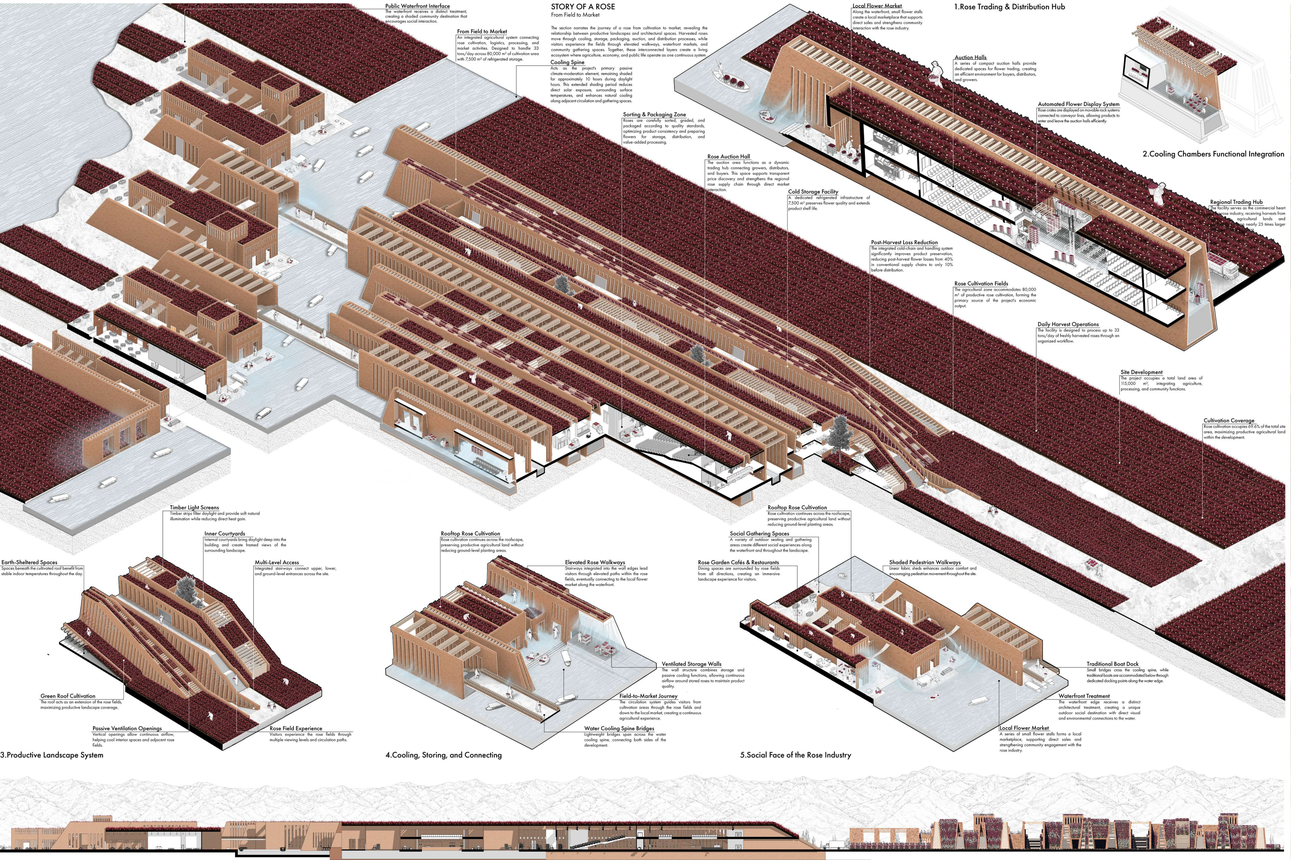
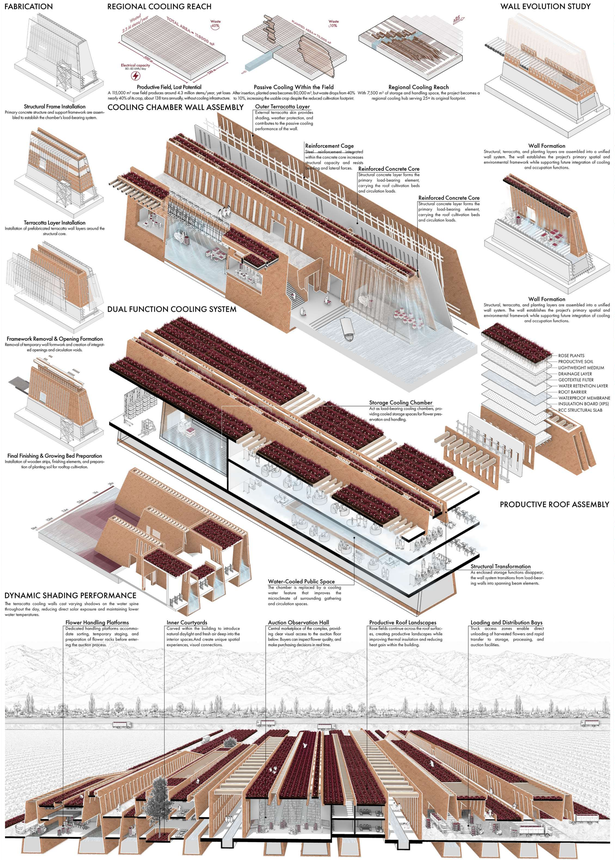
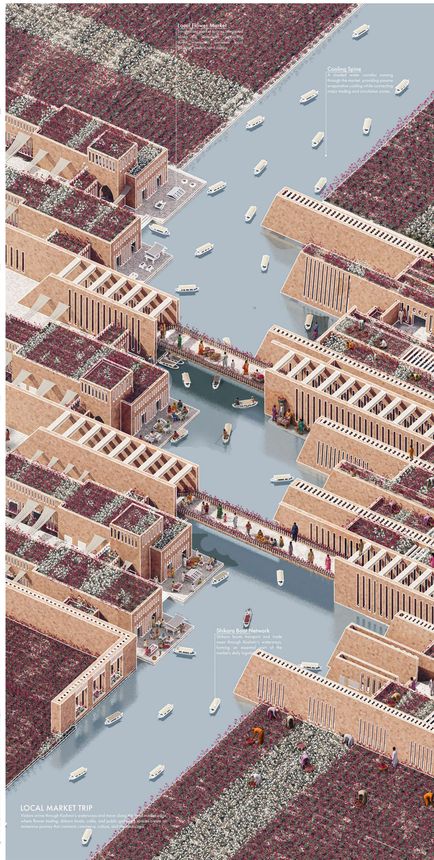
6.From environmental strategy to a living functional market
Fully activated floriculture market where the exterior walls, cultivated roofs, and wall openings work as one integrated system to support cooling, ventilation, movement, and daily market activity.

500 Ton / Day — Total production

25 - 30 Ton / Day — Wasted







FABRICATION