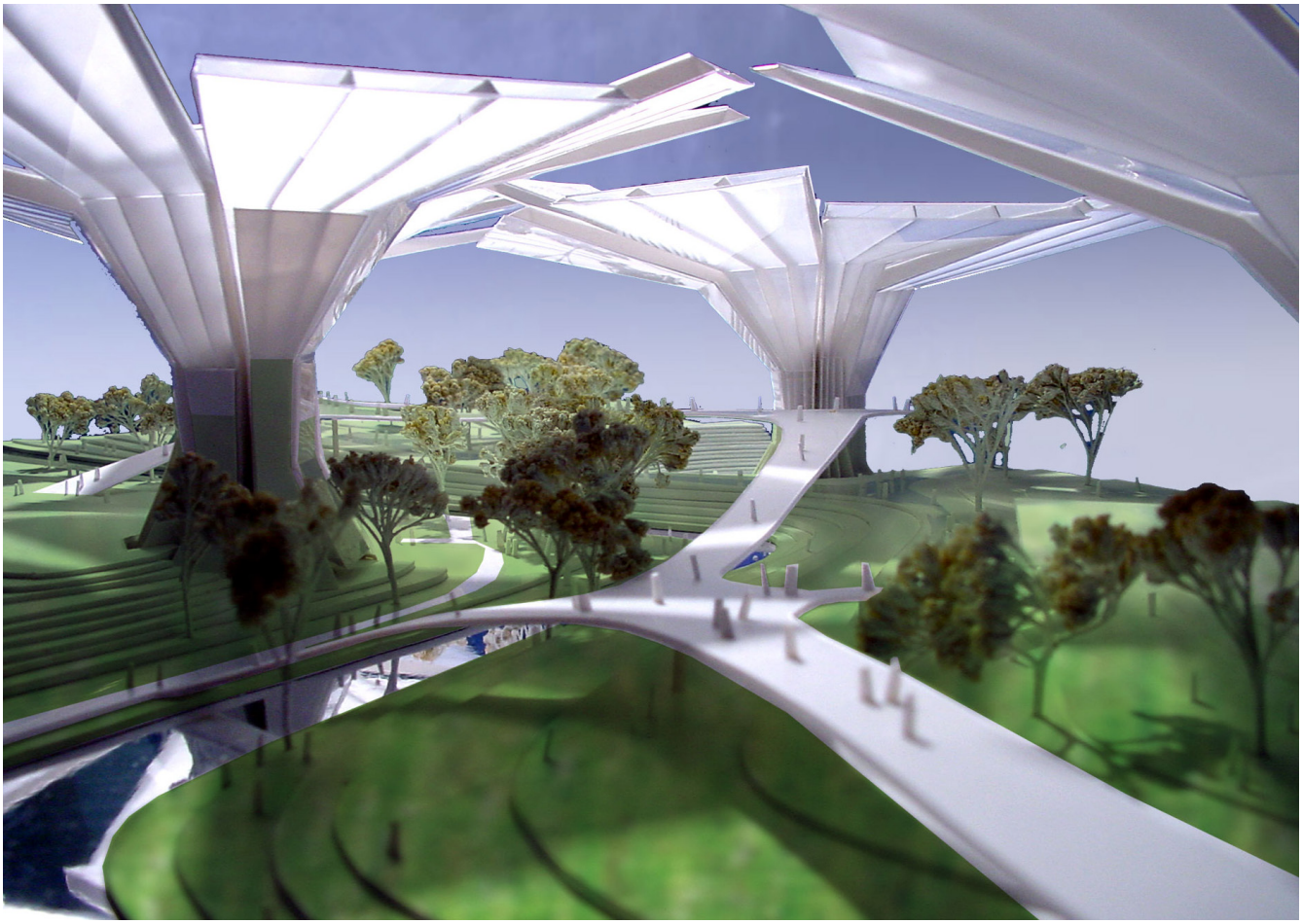


SENSCITY PARADISE UNIVERSE

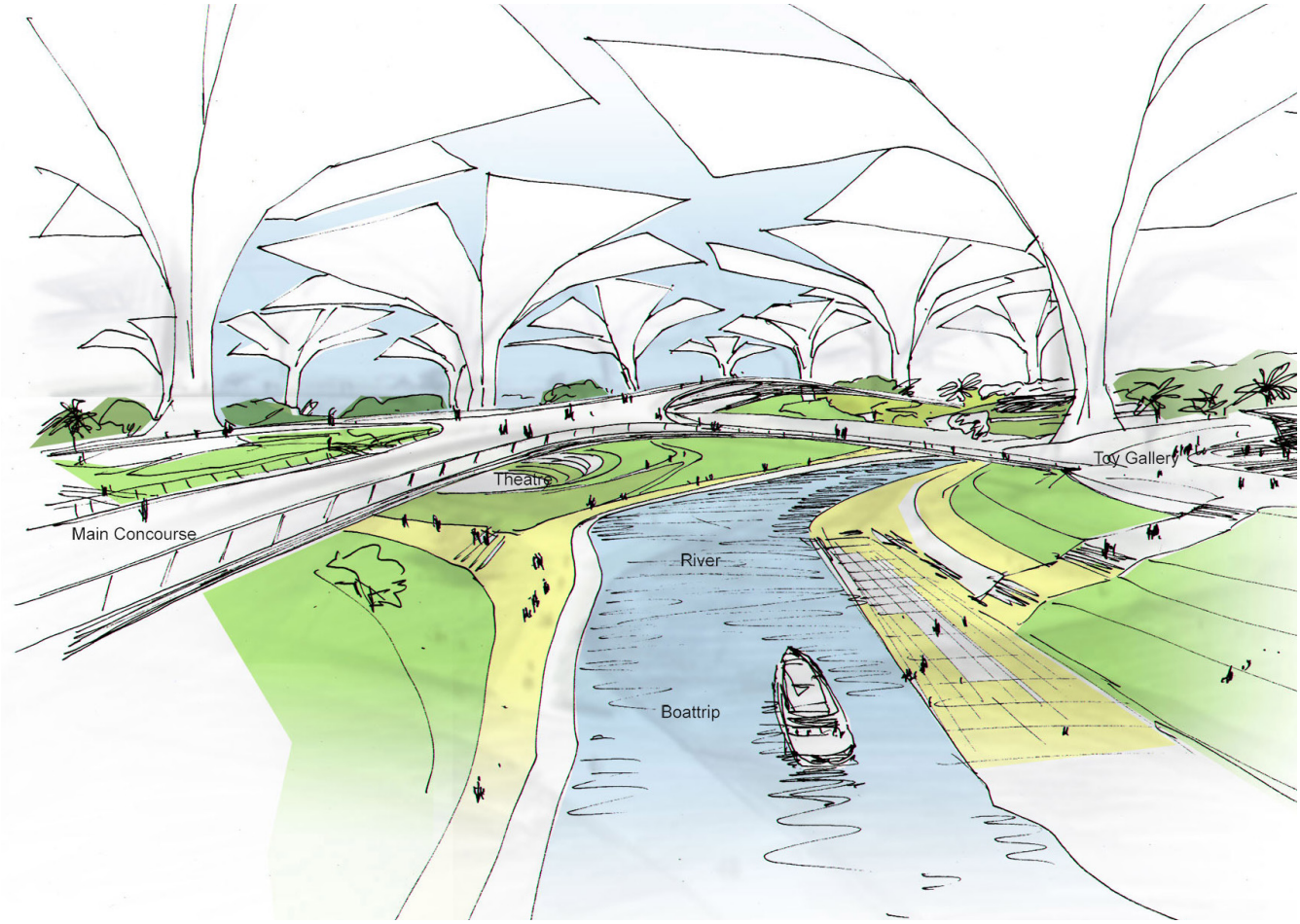
LAS VEGAS, USA, 2004

Client
WCP Group, Glenview, CA, USA
Architect
Behnisch Architekten
Competition
2004
Environmental Consultancy
Transsolar Klima Engineering
Gross
86 ha / 9,256,962 sq.ft.
Address
Las Vegas,
Nevada,
USA

The concept for Senscity was first developed for a client in the United States, then modified to suit the demands of another site in Dubai. The revolutionary project combines elements of a typical theme park with theaters, restaurants, public gardens exhibition spaces and a series of playgrounds. A primary objective of the project was to create a leisure park for families that also serves as a large-scale inhabitable educational tool capable of demonstrating natural laws. Reduced consumption of non-renewable energy will be an essential element of the design concept. The project's large exhibition halls are not conceived as conventional buildings, but as elements firmly embedded in the landscape, with a park running between and across the undulating rooftops. The theme park areas are oriented along a central 'valley' with a large artificial lake and extensive vegetation.

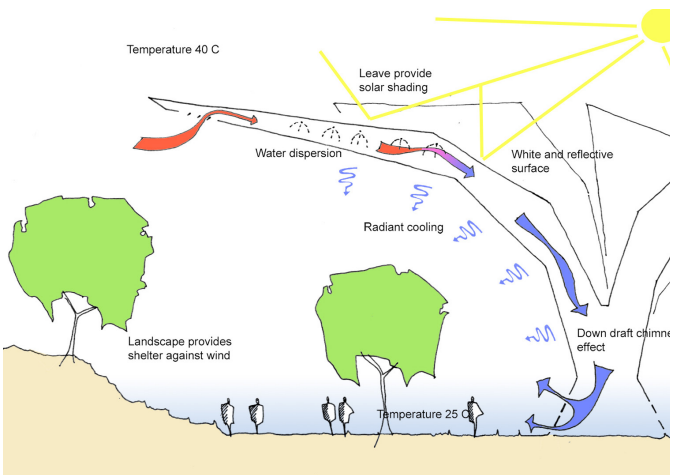
The creation of a comfortable outdoor climate in the desert which is suitable for year-round recreation is a potentially energy-taxing demand. Green outdoor spaces require sufficient water and efficient sun protection, which needed to be avoided here. An integrated design process between the architect and the structural and mechanical engineers led to the development of a series of innovative, multi-purpose 'flower-like' structures, which call upon the remedial qualities of tree and plant clusters. The one-hundred-twenty-feet-high, three-hundred-feet-wide structures will span large parts of the park, providing both shade and cool air, on even the hottest summer day.

The Las Vegas desert climate allows to take advantage of the phenomenon of evaporative cooling which will be achieved by pumping

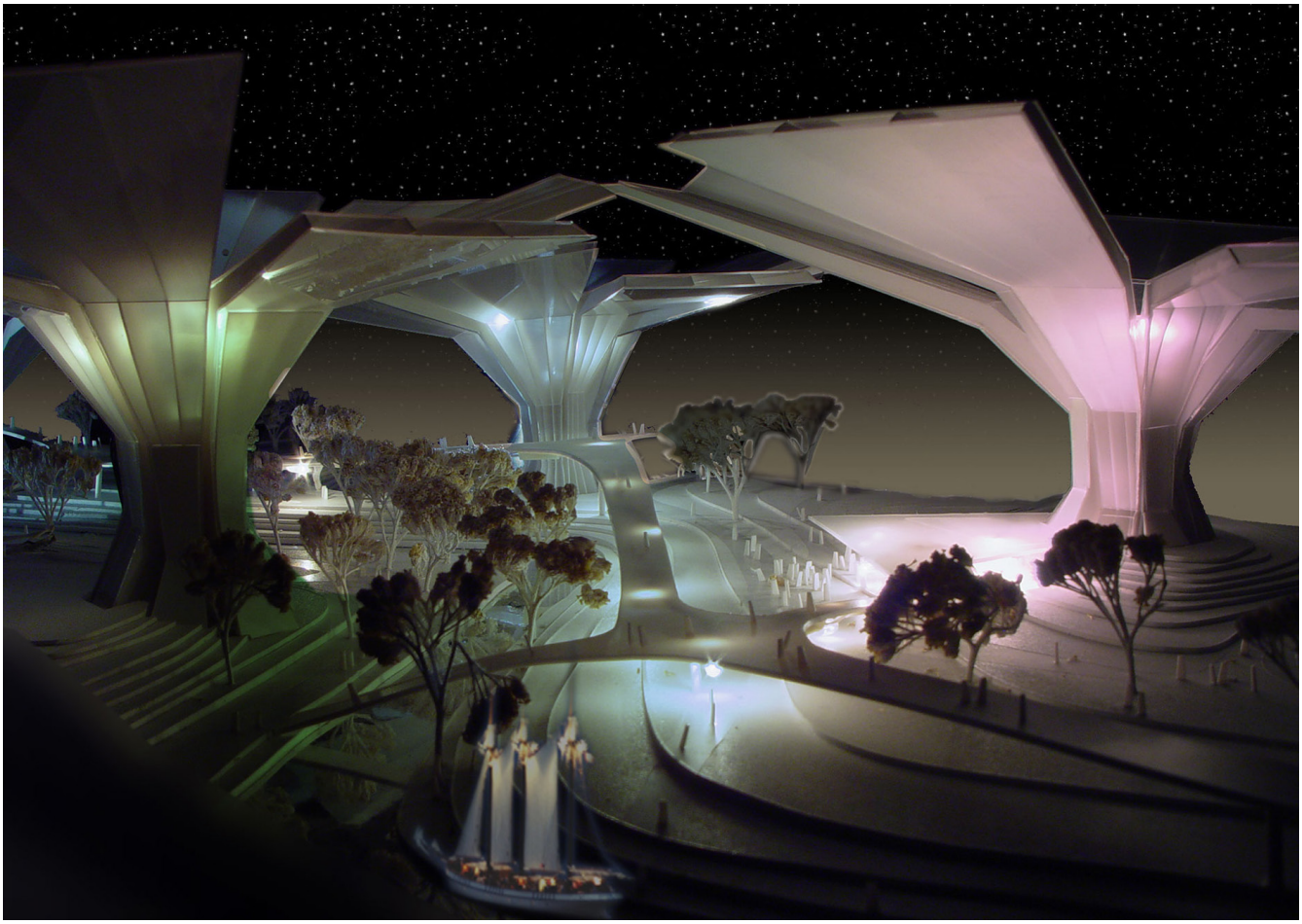


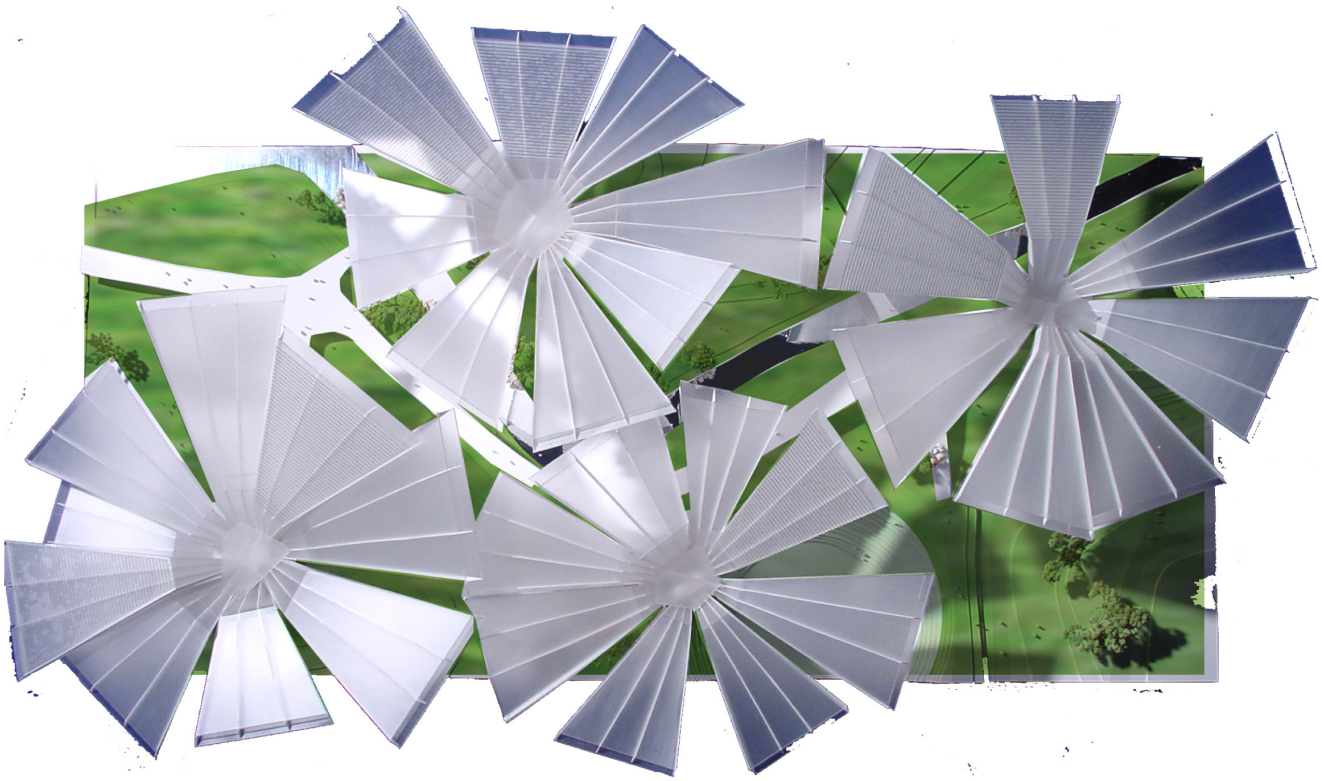
water through hollows in the leaf forms. While the evaporating water on the leaf cools the surrounding air, the flower height causes them to act like chimneys, with a stack effect generating beneficial down-draft airflows. The cold air streams into the 'valley'. Functioning as exhaust shafts, the flowers also provide for natural ventilation of the exhibition halls below the ground; the geometry of the leaves can be adapted to capitalize upon the Venturi-effect.

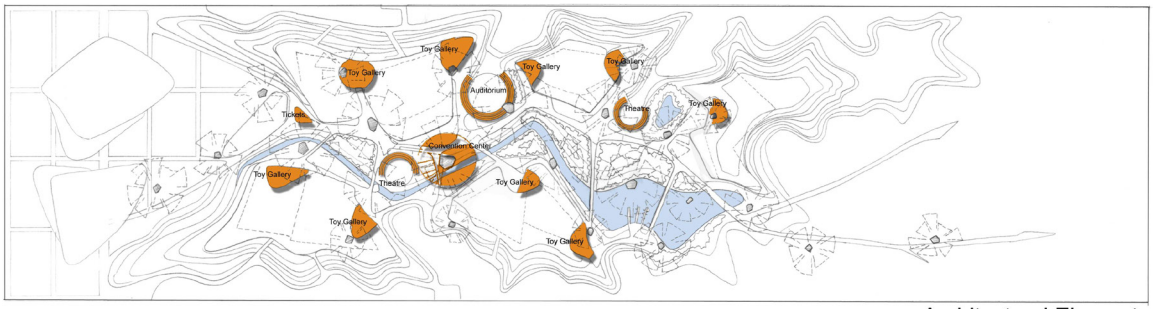
The leaves are envisaged as energy collectors as well: photovoltaic cells or solar collectors within their construction are capable of transforming radiation into electricity or heat, which could, for example, be used to operate an absorption chiller.



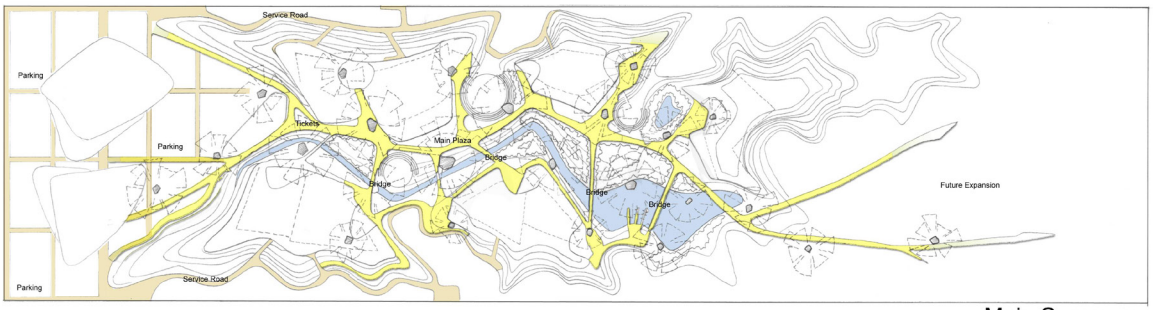
Evaporation cooling leave





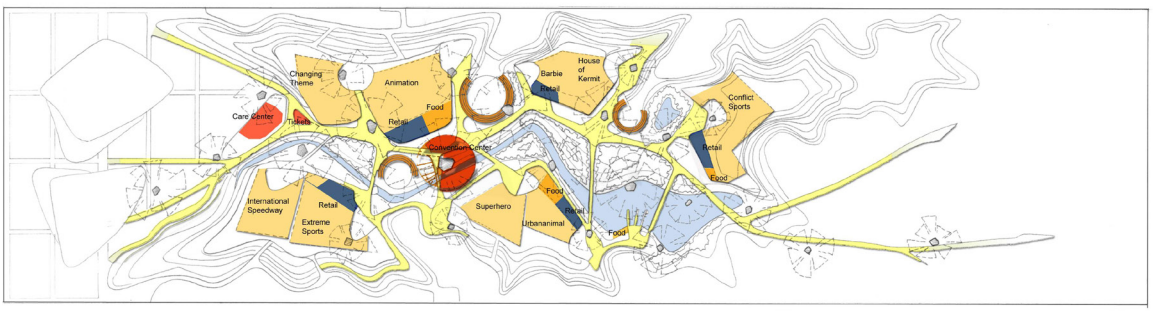


Architectural Elements

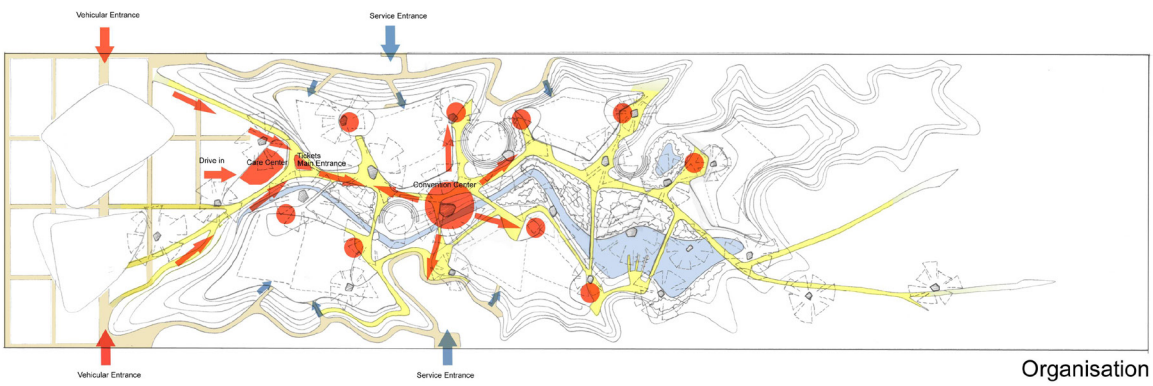


Main Concourse

Green Elements



Facilities



Organisation