



DUNESCAPE: THE UNDULATING PATTERNS OF NATURE

INTERNATIONAL ARCHITECTURAL
COMPETITION OF THE SCIENCE CITY

Out of 145 entries from across the world, Malaysian firm Ngium Partnership bagged the second prize with its highly contextual *Dunescape: The Undulating Patterns of Nature* proposal in the International Architectural Competition of the Science City. The brief for the international competition organised by the Bibliotheca Alexandrina was a comprehensive master plan and conceptual design to create the first 21st century science museum, learning and research facility in Egypt.

FROM TOP: Ground floor plan, Underground floor plan



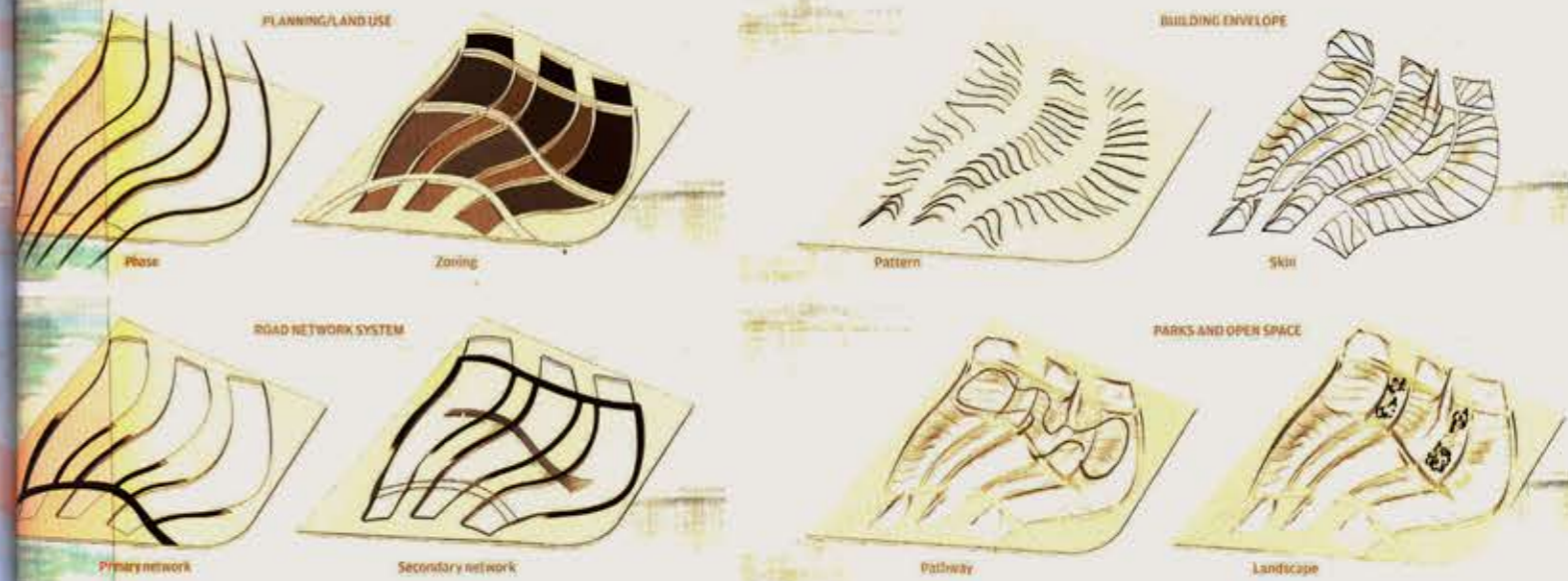
The architectural curves of the *Dunescape* were modelled on the rhetorical analogy of golden sand dunes. The dancing dunes flow like sand waves over the vast desert. Its linear, crescent, parabolic and circular shapes blend harmoniously with the desert landscape of Cairo, Egypt. Soft, endless and rhythmic, its eloquent form creates a melodious sequence of folds on its surface, contouring the bare nature.

Concept Development

The design consists of three series of intersecting dunes rising subtly from the desert. A symbolic reference to its surrounding, the mirage of curves creates depth and dimension, further enhanced by a rising wave-like shell tower from the series of dune sculptures. As a whole, the metaphorical approach of the sand dune concept blurs the rigid line between urban and architecture, as it unfolds into its environment, where architecture makes a statement while blending into the nature.

Phasing

The site is cut into three significant nodal waves to create three different phases for the three campuses. Running vertically along the site, the grid can be expanded along the same wave patterns to accommodate future developments.





FROM ABOVE: Science City; Main entrance; Gondola ride to the viewing deck; Observatory tower



Masterplan

The masterplan is made up of a series of curvaceous, canyon-like entryways with sand dune-inspired walls that are designed based on its surrounding context. The site is accessed to the Science City through its existing roads. On the whole, it is a form that is made to camouflage into its surrounding, yet stand out as an icon with its architectural features.

In terms of passive design, the undulating fan cascading along its wave-like phase is elevated above one another to create slits of openings to bring in natural light and ventilation based on sun path and wind direction.

Ground Floor Plan

The ground floor is made up of the main entrance that is open to the public and users with the ease of public transportation link. The entire road network system connects the building from the main drop-off point to every part of the Science City, as it has access to the observatory tower and science park.

Underground Floor Plan

In the basement, the centralised planning functions efficiently, as the drop-off points are located strategically in the heart of the city. In other words, the design of the plan allows users to orientate themselves to disperse to every other space underground from the very centre of the Science City and the main entrance.

Main Section

The horizontal journey through the city starts at the entrance that leads to the orientation and information hall that can be accessed via ramps. Then, visitors are greeted by an open-air area in the centre that leads to the exhibition halls or science park, before culminating at its peak at the observatory tower. Overall, the play on different volumes and the undulating folds on its surface gives each space a sense of character and enhances the user's experience, accentuated by piercing light rays throughout the spaces.

Elevations

From afar, the undulating waves of the sand-like structure lend its form to the Science City. The tower provokes a sense of curiosity, as it is the landmark of the subtle dunes on the ground. Each phase has its individual characteristics that come together as one, unifying the city as a whole. The form blends in with its surrounding context while evoking a sense of desire to explore the space. ✎



Perspective of the Science City



FROM TOP: South-west elevation; South-east elevation; North-east elevation