

SCIENCE CITY



SCIENCE CITY

At Cairo's western edge, this master plan for a science museum and research facility transforms the existing desert into a habitable park beneath a canopied megastructure.

Three strata define the project in section: a top layer hosts circulation routes and 35,000 square meters of photovoltaics; the middle is split between interior departments and exterior courtyards; and the lowest handles service and parking. Undulating with the existing topography, the monumental canopy shades the excavated space below where the earth's thermal mass further cools the interior departments and garden courtyards. Widespread, rammed earth insulation throughout the complex allows for more efficient active cooling, which is achieved sustainably with evacuated solar tube thermal collectors that heat absorption chillers. Rising through the layered canopies, an observation tower is translated through vernacular desert architecture as a stacked and

rotated windcatcher, which channels wind from multiple directions to stimulate airflow for the complex below.

Like the medinas found in the Nile River Delta, the proposal produces a fine grain fabric conducive to pedestrian circulation, self-shaded gardens, and refuge from the harsh climate. Unlike many cities that extrude vertical skylines from a grid, this proposal explodes a gridded matrix in three-dimensions to support the interpenetrating layers of canopies and courtyards. Formal articulation of the canopy, circulation, interior program, and green space are all generated by a single pattern, which is rotated and offset. The pattern is determined by varying scales of void and coverage, while preserving the required ratio of built to unbuilt area. By dismantling the distinction between interior city and immersive environment, Science City restores and evolves ancient climate-resilient technology for the 21st Century.

PROJECT
Contemporary science and technology museum, auditorium, black box theater, offices, cafe, store, restaurant, archive, laboratories, exhibition landscape, conference hall

SIZE
85,000 m² (914,932 ft²)

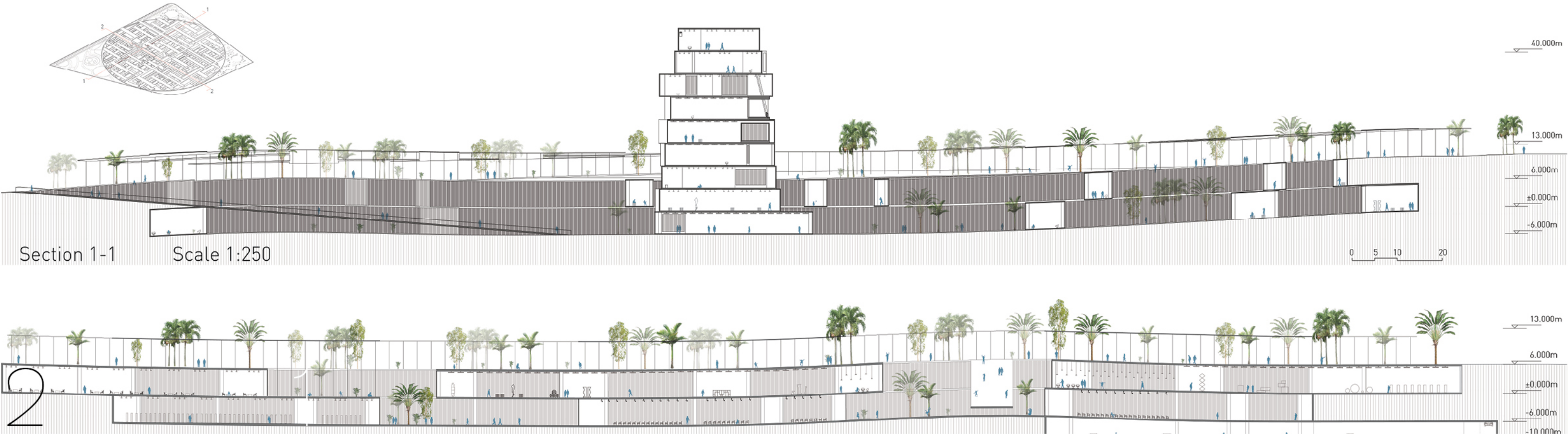
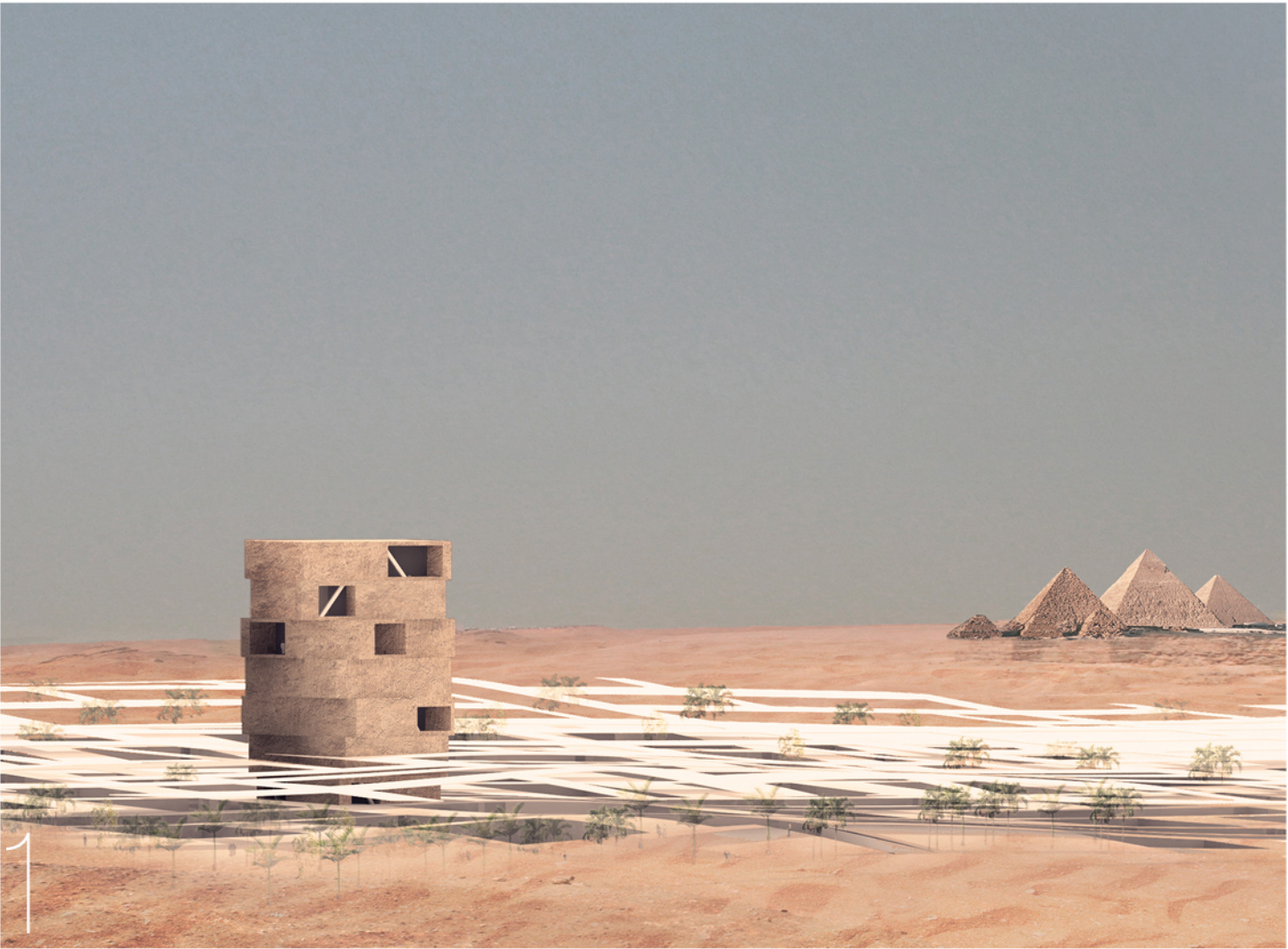
CLIENT
The Bibliotheca Alexandrina

LOCATION
6th of October City, Egypt

STATUS
Competition, concept, unbuilt

KEY PERSON
Andrew Heid

TEAM
Mel Loyola Agosto, Jean Lien, Li Jin, Renjun Liu, Shuying Mi, Peter Park, Qun Pan, Nicholas Stewart, Weiyao Zhang



1. View toward tower. 2. Sections.