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Research Output 2: *Blooming Landscape*

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Output Type: Design

Competition Design Entry for Building: Museum of Egyptian Culture, Giza, Egypt

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300 Word Summary

The project is a response to the competition brief for the relocated Museum of Egyptian Culture, which asked for an extensive range of spaces on an exposed site in Giza and four landscaped territories that ‘exhibit’ the varied Egyptian landscape. The site is manipulated as conceptual archaeology. A ‘deep surface’ punctures, excavates and compresses around vast galleries, responding to Egypt’s indigenous landscape and architectural traditions. Subterranean galleries are connected by chasms for ventilation, circulation and division of the collection. The landscape and roof structures are merged into stratified layers and interstitial spaces to combat the extremes of the local environment. These are configured with zones of bright sun and deep shade, draught corridors and plenum spaces.

Questions/Aims/Objectives
This proposal aims to reinterpret notions of architectural space and landscape design and to investigate the roles of boundary and facade. The project questions whether traditional vernacular technologies can be re-appropriated today to provide the sensitive environment required for the display and storage of antiquities.

Contexts
Ancient Egyptian gardens plotted with trees, groves and pools in symmetrical arrangements create synthesis between building and landscape via levels, terraces and viewpoints. This project aims to reinterpret these notions and test them against the rigorous demands of the contemporary museum environment.

Methods
Design investigations are tested through prototype and iteration as a research method. Vernacular technologies are studied and reinvented with the aim of reducing the architecture’s reliance on artificial environmental control.

Dissemination/Esteem

Authorship
As part of the joint architectural practice Smout Allen, Allen and Smout both contribute equally to the research.
General Description

The project is a response to the competition brief for the relocated Museum of Egyptian Culture, which asked for an extensive and varied range of museum and ancillary spaces on an exposed dune site in Giza and four landscaped territories that ‘exhibit’ the varied Egyptian landscape. In this proposal the site is manipulated as conceptual archaeology. A ‘deep surface’ punctures, excavates and compresses around vast galleries for the museum’s collection of antiquities, responding to Egypt’s indigenous landscape and architectural traditions. Three subterranean galleries which extend the full length of the museum are connected by chasms for ventilation, circulation and division of the collection. The landscape and roof structures are merged into stratified layers and interstitial spaces to combat the extremes of the local environment. These are configured with zones of bright sun and deep shade, interspersed with draught corridors and plenum spaces. Roof structures, which peel up from the ground, generate locally accelerated wind flow and evaporative cooling. (images 1–2)
The landscape plates, roofs, and gardens contribute to the museum’s environmental strategy.
Image 3
Architecture and landscape merge.
Image 4
Sketch illustrating the series of sunken chambers laid down onto the site that relate to the vernacular qanat system. Qanats are an ancient water-management system typical in desert regions that allow large quantities of water from underground aquifers to be delivered to the surface without the need for pumping, exploiting ground water as a natural resource. The surface is pockmarked by vertical shafts that lift cooled air from the qanat tunnels to the surface, cooling the air above ground.
Questions/Aims/Objectives

This proposal aims to reinterpret notions of architectural space and landscape design and to investigate the roles of boundary and façade in architectural form-making and spatial organization. The resulting design is essentially façadeless. Organization is laid down through the site rather than across it and therefore spaces, as if arranged in courtyards, make reference to one another internally rather than to their exterior. (image 3) The project questions whether traditional vernacular technologies can be re-appropriated today for the sensitive environment required for the display and storage of antiquities. (image 4)
Image 5
Diagrammatic arrangement of structures, water and planting based on the plan and painted reliefs of incense
trees and cattle from the funerary temple of Queen Hatshepsut at Deir El-Bahari. Water was a fundamental
feature in ancient Egyptian garden design. Canals cut into the gardens fed water into the orchards and
planting beds. Trees were planted in pits cut into the ground of inner gardens so they could each be watered.
Water for refreshment was provided in pools. To aid access, these had stepped edges that were revealed as the
water level dropped.
The design responds to Egypt's indigenous landscape and its traditions. Ancient Egyptian gardens plotted with trees, groves and pools in symmetrical arrangements create synthesis between building and landscape via levels, terraces and viewpoints. Environmental modification was achieved with unroofed inner courtyards and sunken atrium gardens shaded with tree canopies and vine pergolas. Initial studies take the form of collages of temple plans and funerary drawings that aim to prescribe the organization of landscape and architectural elements. (image 5)

This project aims to reinterpret these notions of passive environmental control and test them against the rigorous demands of the contemporary museum environment.
The competition for the Grand Egyptian Museum provided an extensive and exposed sand dune landscape as the site for the relocated Museum of Egyptian Culture. The model employs a painted two-dimensional glass surface to represent the existing site and the augmented, or ‘artificial’, landscape. An aperture in the painting (through which the roofscape and delta is viewed) is modelled with patinated bronze panels.
Methods

Design investigations are tested through prototyping and iteration as a research method. A large model acts as a test bed in which the effects of massing, daylighting and materiality can be assessed. However, it is not a typical architect's model. The architecture is seen under, and constructed from, a series of layers: firstly, glass which denotes the landscape skin and which is painted with the delta, marsh and irrigations cuts; secondly, etched bronze panels which represent the fused landscape and roofscape; and thirdly, by a solid mass of chambers and galleries below. (images 6–10)
Model with augmented landscape removed. The main galleries are exposed below the skin. Eleven sunken workshops are suspended in the ‘deep surface’.
The long museum galleries run uninterrupted from the back to the front of the site and step down to allow a procession through the collection.
Image 9
Model view along the chasm corridors.
Image 10
Model view onto workshop spaces.
Image 11
The environmental performance of a landscape and architecture.
Vernacular technologies are studied and reinvented with the aim of reducing the architecture’s reliance on artificial environmental control. (image 11)
Section through the museum galleries, auditorium, and service spaces shows the 'deep surface' penetrated by light via cuts in the irrigated plate and through the sunken workshops suspended above the museum floor.
The design proposes an architectural intervention as an augmented landscape – a blooming and watery condition which is in living and verdant contrast to the desert. The museum’s vast roofscape is flooded with water in various states that fray into the surrounding dunes. Glass-bottomed tanks and wells allow the sun to filter through to the museums below. This produces a caustic light that drenches the walls and floor of the galleries. (image 12) A circulation of water flows from irrigation channels and drains to a shallow delta which is planted with indigenous flora which flowers in sequence throughout the day and acts as a vegetal chronograph of diurnal and seasonal abundance.

The museum is also adorned to take advantage of the passage of the sun across the site. The chasms are clad in faience tiles, a glazed material that replicates the effect of precious blue-green stones. The Egyptians called it tjehnet, meaning ‘that which is brilliant’, and its surface gleams and glistens with a light that becomes a metaphor for life and eternity. The tiles are faceted to reveal an array of shadows and shimmering reflections at dawn, noon and dusk.
Dissemination/ Esteem


Exhibited in joint exhibition with John Smout RCA, Augmented Landscapes, the Royal Cambrian Academy, Conwy, Wales, 2007.
Appendix 1: Related Articles by Smout Allen

