

**Author:** Mark Smout of Smout Allen  
**Research Output 2:** *Blooming Landscape*

**Co-Author:** Laura Allen

**Output Type:** Design

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

**Date:** 2002

**Design shown in Group Exhibition:** *Blooming Landscape*, Royal  
Academy Summer Exhibition, London, 2004

## 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

Model exhibited and catalogued at the Royal Academy Summer Exhibition, London, 2004. Blind-selected by Royal Academicians and RA President Sir Nicholas Grimshaw.

Discussed and documented in Laura Allen and Mark Smout 'Restless Landscapes', conference paper, 'In The Making', Copenhagen. Catalogue and internet publication, 2005, and Smout Allen, *Augmented Landscapes*, Pamphlet Architecture 28 (New York: Princeton Architectural Press, 2007).

### Authorship

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

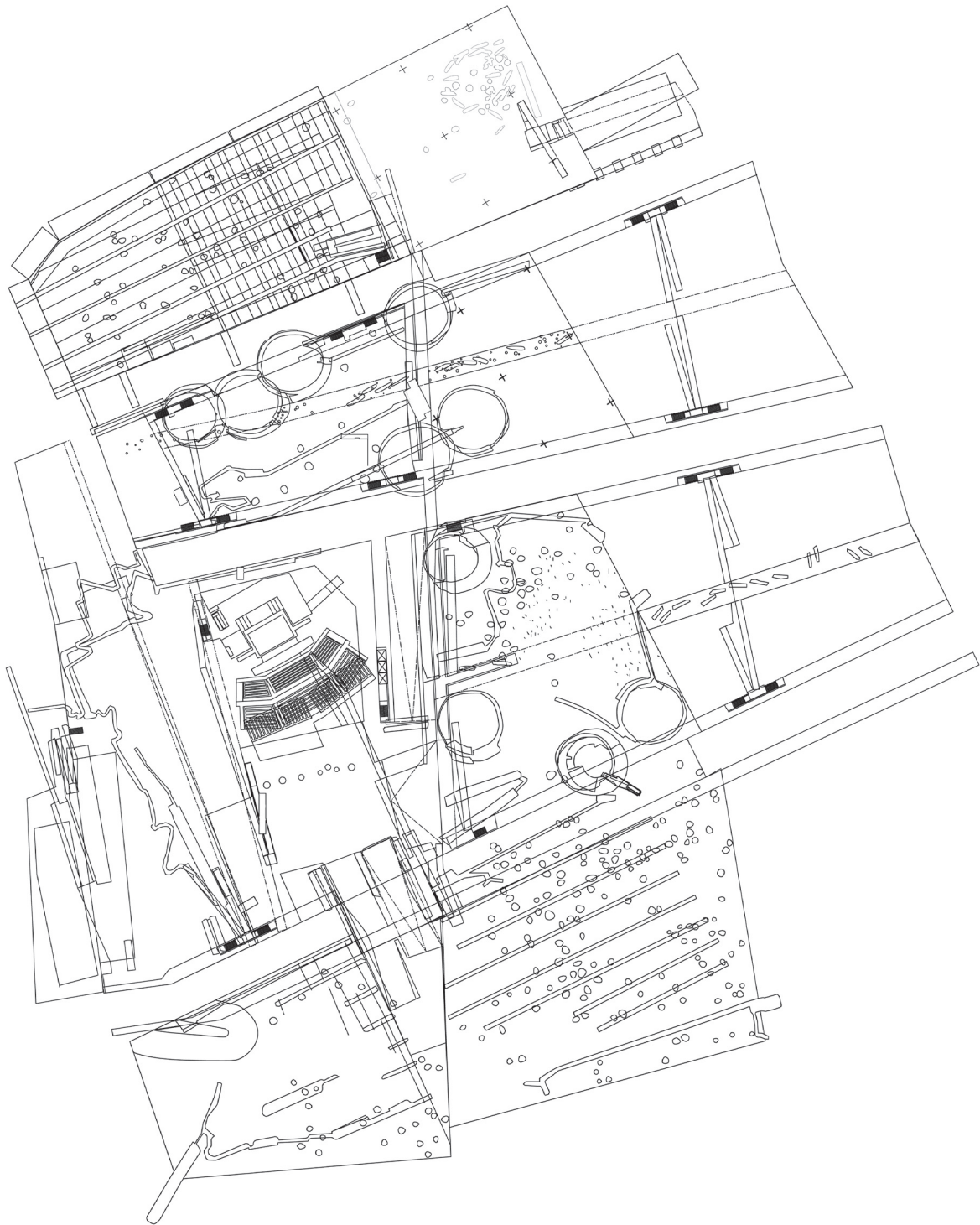


Image 1  
Plan.

## 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)

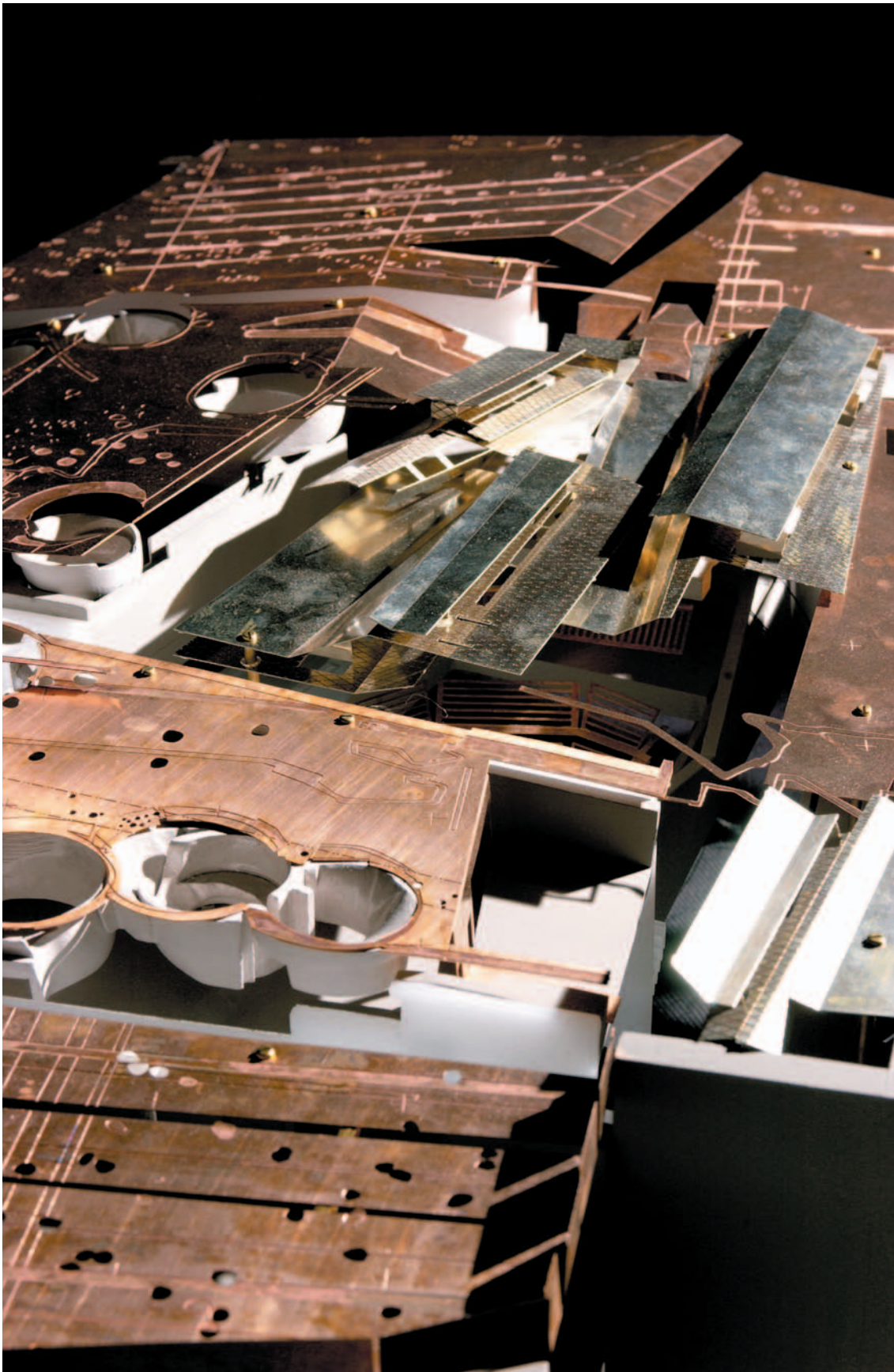


Image 2  
The landscape plates, roofs,  
and gardens contribute to the  
museum's environmental strategy.



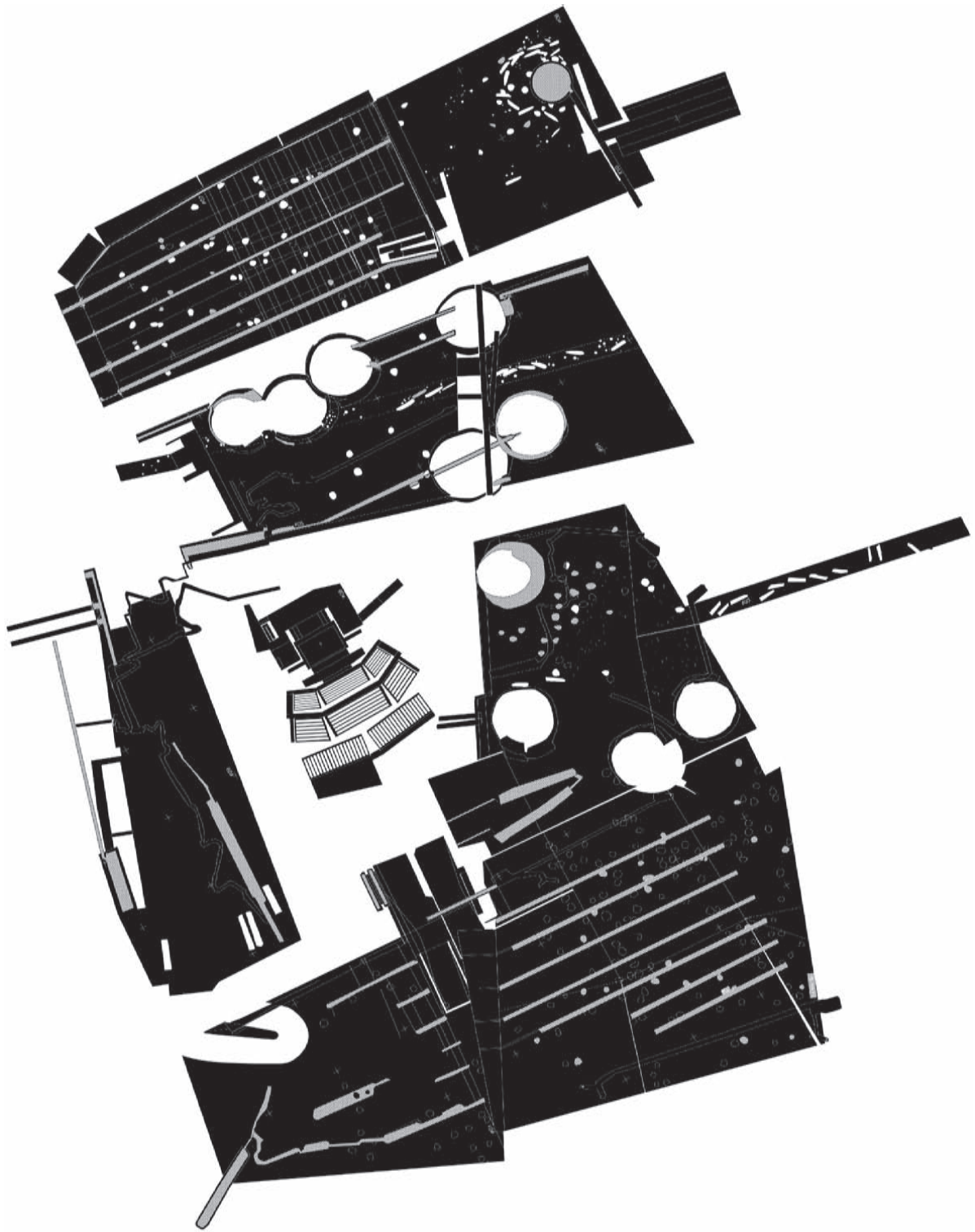


Image 3  
Architecture and landscape  
merge.

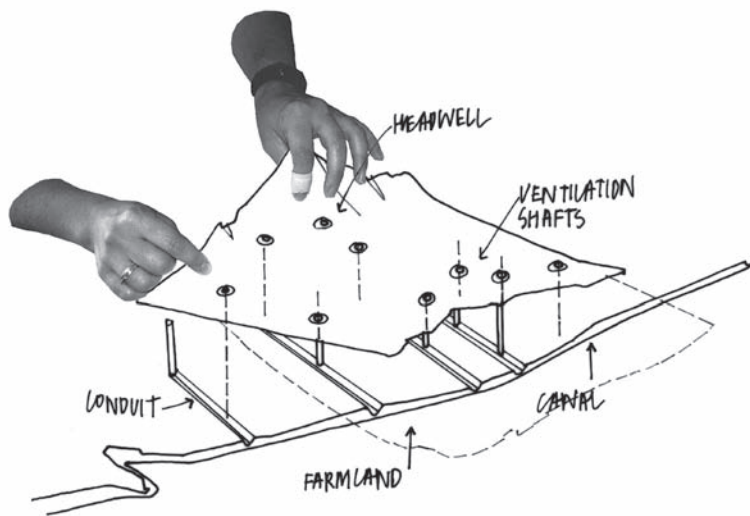


Image 4

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)



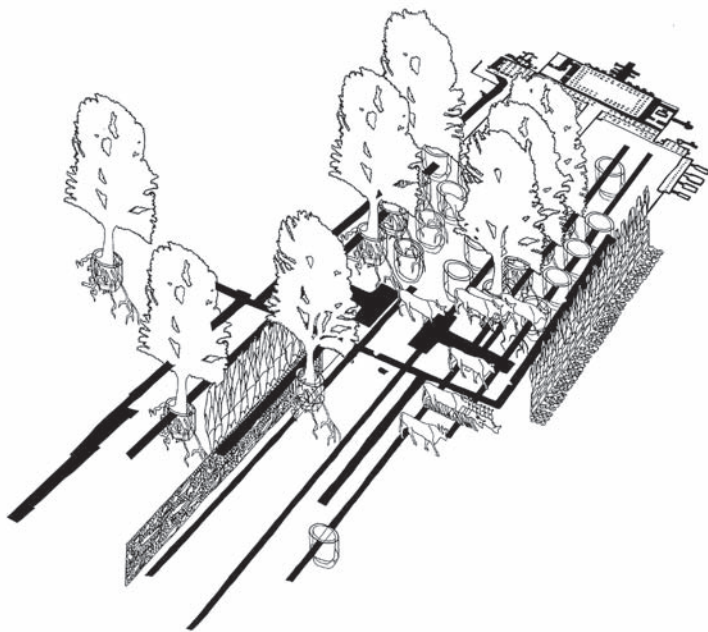


Image 5

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.

## Contexts

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.



Image 6

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)

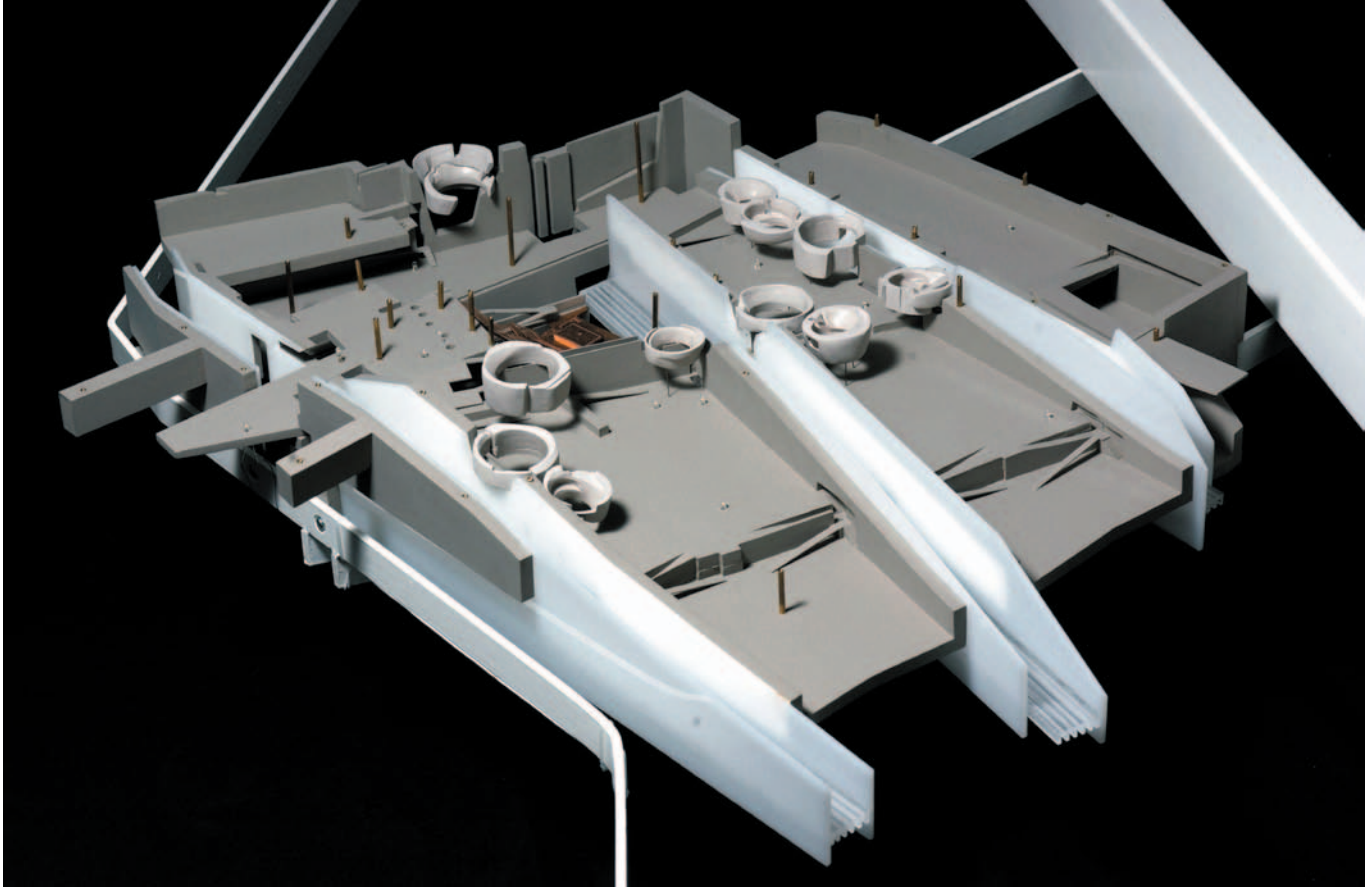


Image 7  
Model with augmented landscape removed. The main galleries are exposed below the skin. Eleven sunken workshops are suspended in the 'deep surface'.





Image 8  
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.

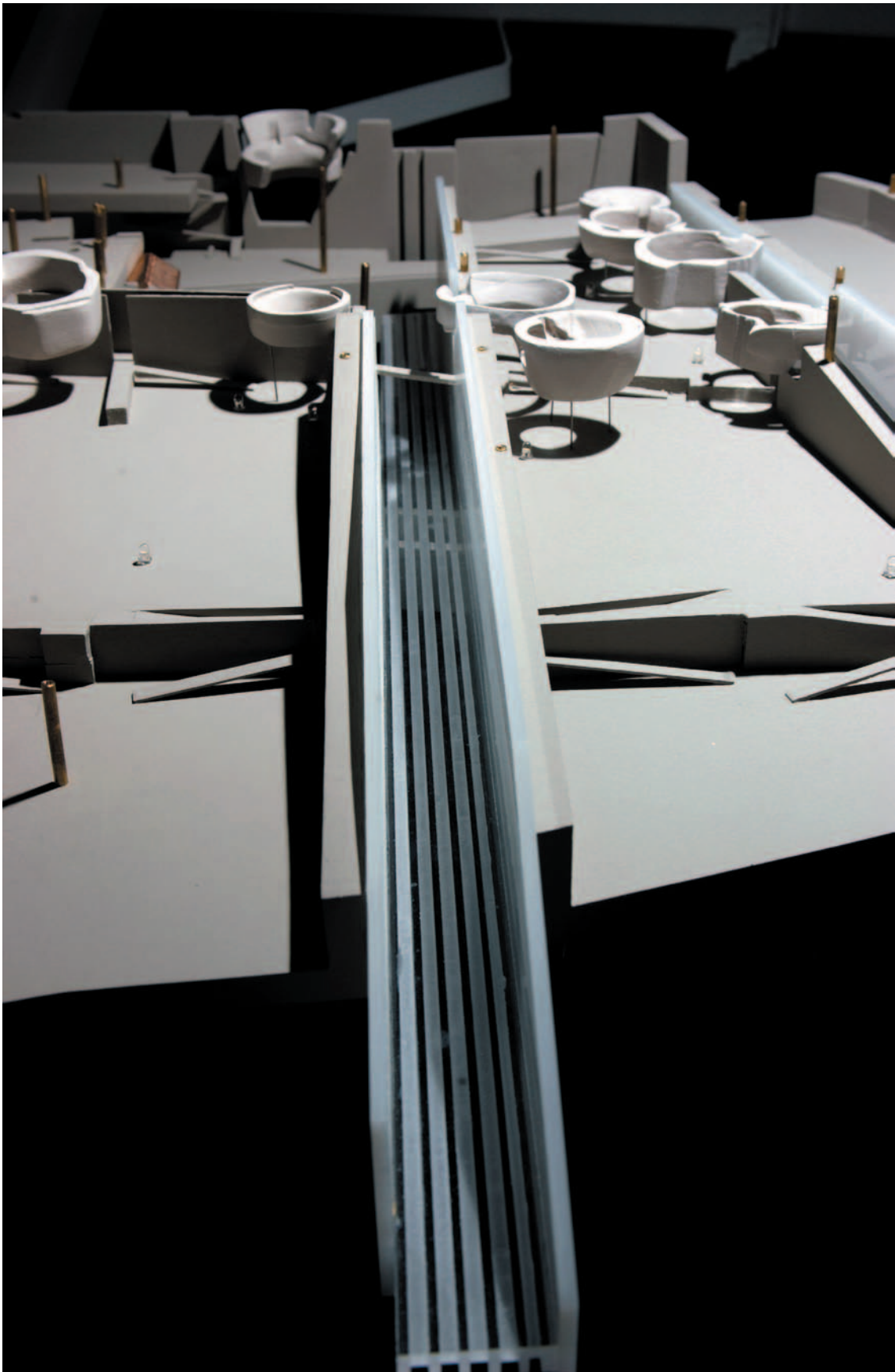


Image 9  
Model view along the chasm  
corridors.

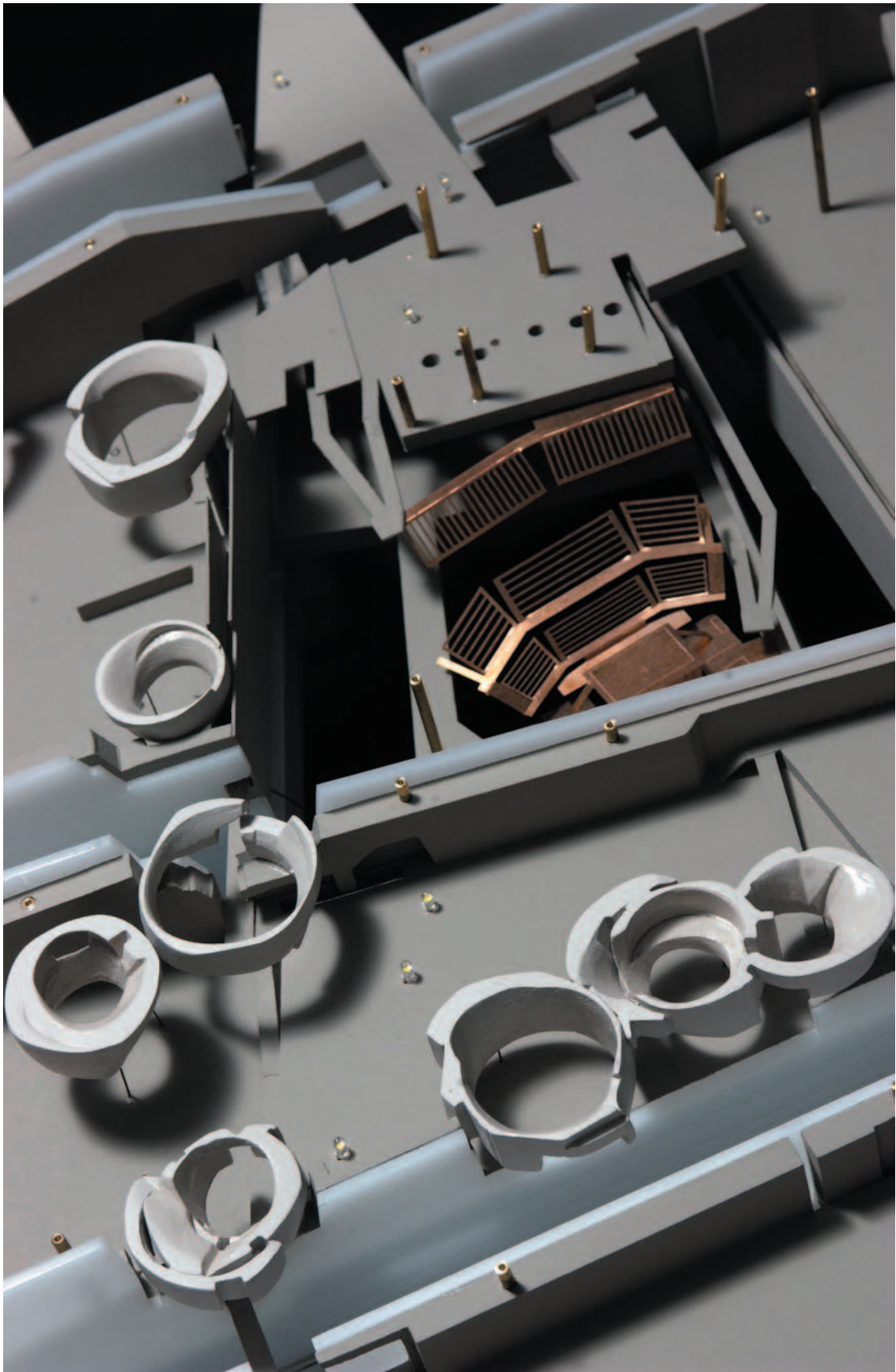


Image 10  
Model view onto workshop  
spaces.



- A: Chasms (external public areas) chronographically regulate light and shade
- B: Tiled linings to chasm walls. Faceted tiles have a partial faience face to reflect the midday sun. Unfinished matt facets absorb and diffuse solar energy at dawn and dusk.
- C: Excavated "deep surface" gallery spaces and circulation
- D: Water-chilled draught corridors and service tunnels
- E: The vegetal chronograph, a diurnally and seasonally changing landscape of blossoming vernacular planting. Varieties of water lilies bloom throughout the day, the blue from morning to midday and the white from late afternoon to the following day.
- F: Final stages of the far-reaching *qanat* network. Networks of this kind bring life to an otherwise uninhabitable desert.
- G: Cisterns
- H: Irrigated "flood plain" gardens
- I: Sunken and shaded workshop courtyards pierce and puncture the augmented landscape.
- J: Evaporative cooling from irrigated landscape to museum spaces below (the Ancient Egyptians hung wet mats outside as cooling devices).
- K: Mass temperature is controlled by constantly regulating the flow of water in the irrigated landscape and therefore the overflow of water down the chasm faces and floors.
- L: Profiled roof surfaces, with "wet blankets" to the internal faces, provide ventilation of thermally modified air to the main body of the museum.
- M: Horizon
- N: A frayed edge exists between the natural dunescape and the augmented landscape.
- O: Prevailing wind draws out the museum's stale air through profiled surfaces.
- P: Surface perforations

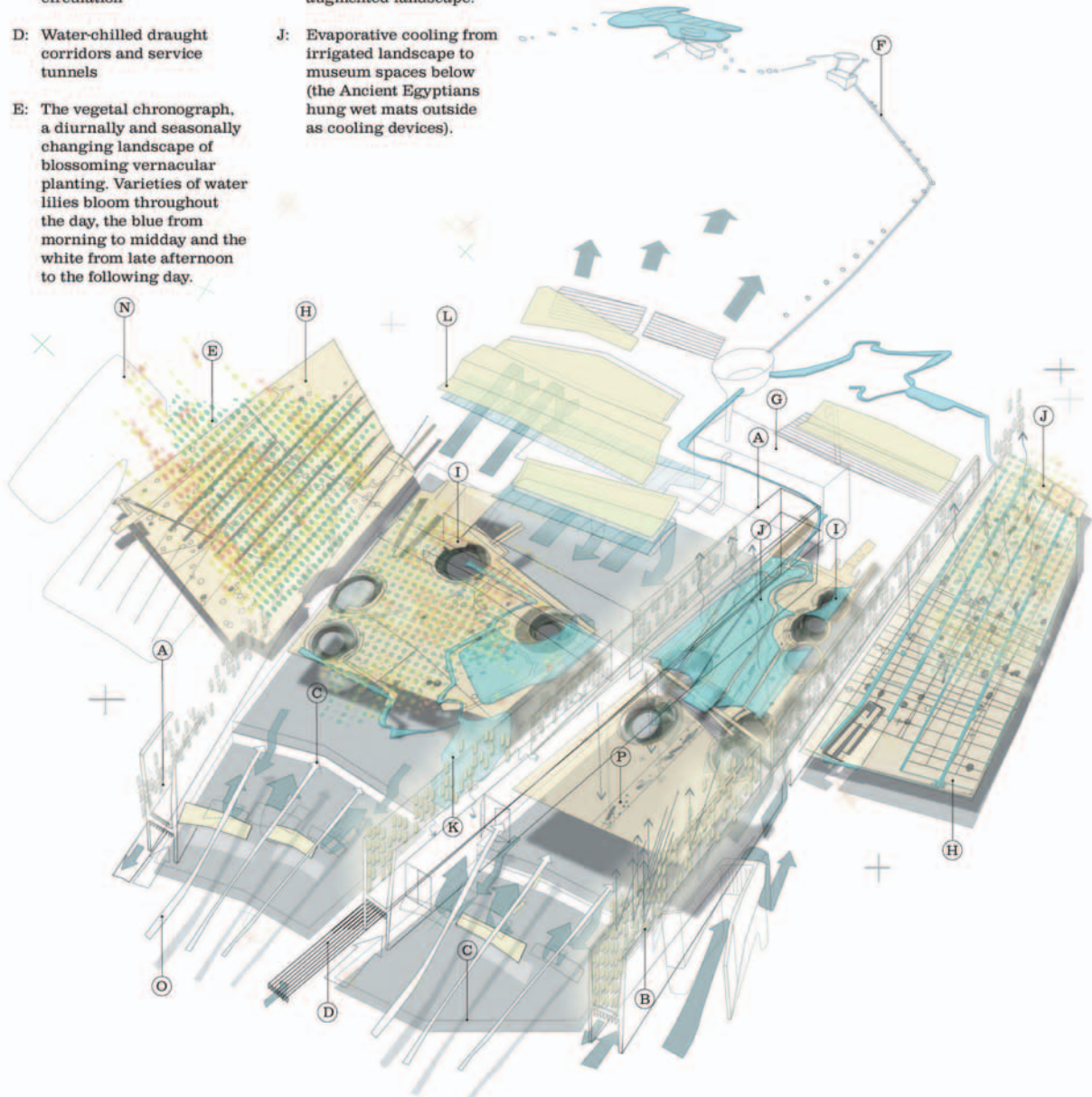


Image 11  
The environmental performance  
of a landscape and architecture.

Vernacular technologies are studied and reinvented with the aim of reducing the architecture's reliance on artificial environmental control. (image 11)



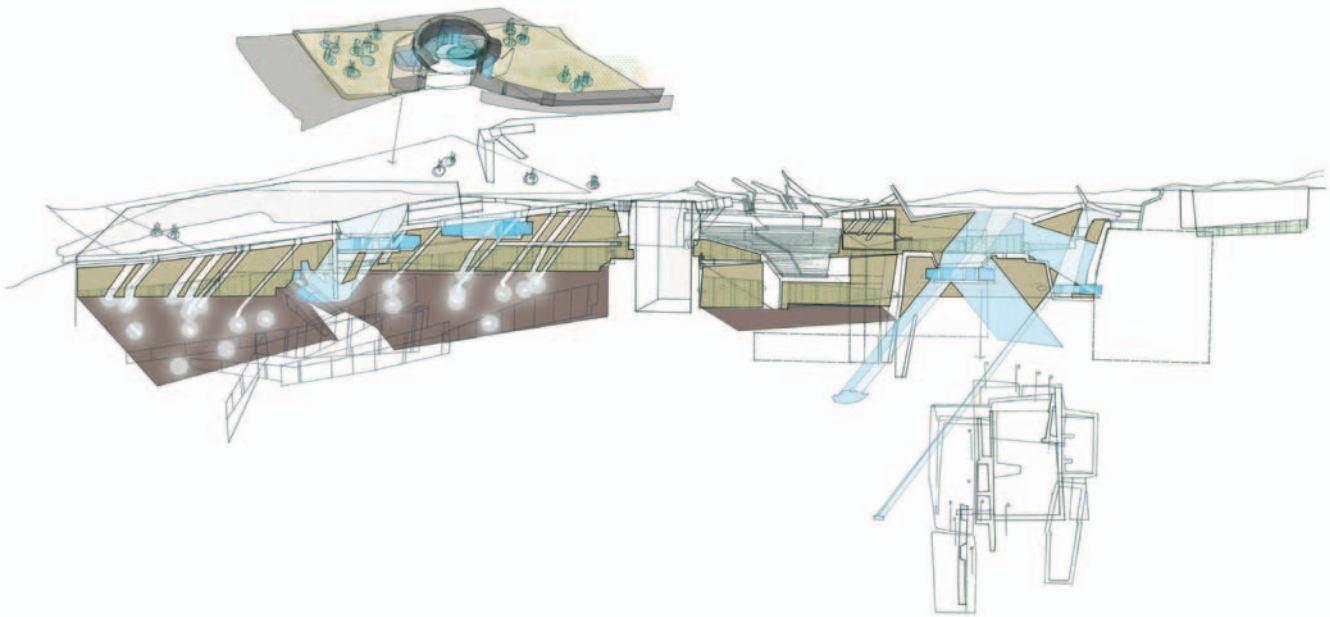


Image 12  
Section through the museum galleries, auditorium, and service spaces shows the 'deep surface' penetrated by light via cuts in the irrigated plate and through the sunken workshops suspended above the museum floor.

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

Model exhibited and catalogued at the Royal Academy Summer Exhibition, London, 2004. Blind-selected by Royal Academicians and RA President Sir Nicholas Grimshaw.

Exhibited in joint exhibition with John Smout RCA, *Augmented Landscapes*, the Royal Cambrian Academy, Conwy, Wales, 2007.





## Appendix 1: Related Articles by Smout Allen

(1.1) Discussed and documented in Laura Allen and Mark Smout, 'Restless Landscapes', conference paper, 'In The Making', Copenhagen. Catalogue and internet publication, 2005. [See Laura Allen: Research Output 1]

(1.2) Discussed and documented in Smout Allen, *Augmented Landscapes*, Pamphlet Architecture 28 (New York: Princeton Architectural Press, 2007). [See Mark Smout: Research Output 4]

