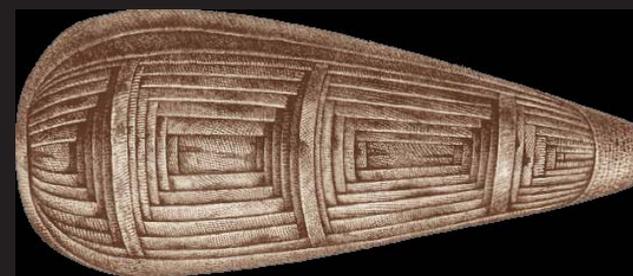


بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

“Besm ALLAH AlRahman Al Raheem”

By the name of Allah, the most Gracious, the most Merciful



Silence, Darkness and Light
The Grand Egyptian Museum

Thesis submitted to the graduate faculty of
Virginia Polytechnic Institute and State
U n i v e r s i t y
in partial fulfillment for the degree of
Master of Architecture

Approved by :

William Brown, Chairman

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Silence, Darkness and Light
The Grand Egyptian Museum

Ahmed K. Ali

B l a c k b u r g
J u n e 2 0 0 3



Dedication

This book is dedicated to my mother and my father,
without your faith, love, care and supplication,
I would not be here now.
To my brother, my sister and my nephews
And to the sound of the Pigeon...

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How can the unique legacy of the most ancient of civilizations be represented within a single building? How can one building spans the area between heaven and earth, the space described in the cosmology of our pharaonic ancestors? Certainly, to design such a building is a unique challenge, and an unprecedented opportunity, on this most privileged of sites in the history of mankind, that a museum is to be constructed capable of linking the immemorial past with the distant future spanning both the horizons of the ancients and those as yet unseen.

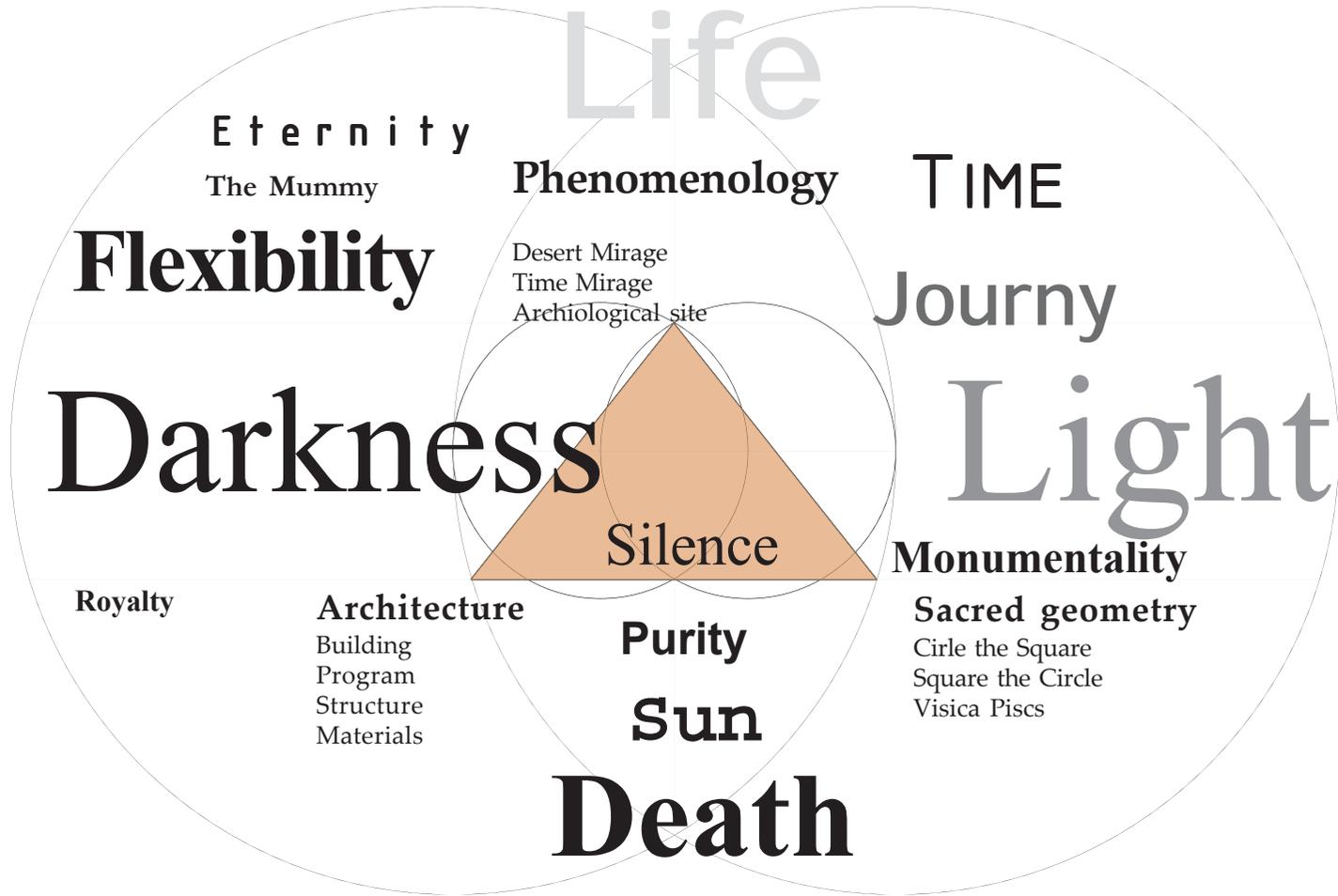
Through the investigation of phenomenology, geometry, simplicity, purity and light, listening to the voice of silence, emerging to the light from the darkness, and by understanding the strength of simplicity after passing through complexity, This thesis offers an endless stream of ideas that challenge the mind.

The vision for the Grand Egyptian Museum(GEM) is to establish a place where people from different nations and cultures will be able to immerse themselves in the rich culture heritage from more than 5.000 years of Egyptian civilization. With the support of new technology, more effective and efficient dissemination of information can be achieved, enabling the New Museum to be a source of enjoyable, entertaining, educational and cultural experiences for all visitors.

This project aims at structuring a complex of exhibits and facilities, which will accommodate all Pharaonic periods, it will be the largest museum in the world, and will provide access to information and future knowledge. It results from the careful articulation of the problem and a subsequent ordering of constraints within the context of the competition proposal.

"Inspiration is the off feeling at the beginning at the threshold where Silence and Light meet".

Louis Khan



Journey: The museum is conceived of as linear journey/ route through the site towards the Pyramids. This journey starts from the arrival point to the site, with the ultimate destination being the Pyramids. This route is expressed as a series of moments, this path, the grand ramp, being the guide of the complex, offers the visitor access to all the various elements of the museum during the journey, and encourages the visitor to customize his/her experience, offering an infinite number of flexible routs that in every time he will enjoy a new path.

Monumentality: The sheer scale of the program poses the challenge of creating a scheme with a sufficient degree of monumentality while at the same time exercising restraint. The scheme cannot hope to compete with the pyramids in terms of historical significance: a lucid and symbiotic relationship between them is essential. This potential conflict is avoided and turned complementarily because the scheme is perceived not as a volume, but as hidden mass" the sunken city".

Flexibility: The arrangement of the gallery modules solves the complex issue of chronological and hypertextual routes, while simultaneously allowing a free and flexible interchange between different types of galleries and exhibit spaces. The conceptualization of the exhibition modules as self-structured boxes intersect with the "shortcuts" modules which allows the flow between the complex spaces.

Geometry: A very strong relationship between the museum's geometry and the way the Egyptians used to preserve their mummies, with layers of cloth woven in a square pattern, the footprint of the museum is exactly as the footprint of the great pyramid.

Four basic principals govern the development of the project (from the competition brief)

Modularity
Full historical coverage of the pharonic period. One or more buildings will be dedicated to house specific periods a chronological demonstration of pharonic periods will be presented in their order:
Prehistoric
Early dynastic
Old kingdom
First intermediate period
Middle kingdom. etc.

Thematic
Periodic programs will be created. Each reflecting one period or one aspect of history. To be planned and possibly broadcaste to other centers and museums nationally and /or abroad.

Dynamic
Visitors will be able to see new exhibits on each visit. New exhibitions and collections will constantly be developed and displayed.

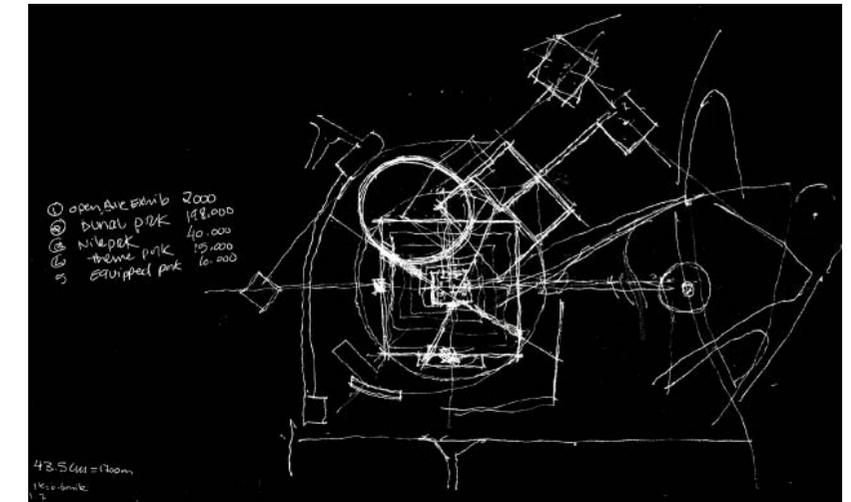
Networking
The intention is to link the new Egyptian museum with world wide museum's visitors using satellite communication technology to allow for the virtual display of the museums' collections worldwide.

Such arrangements are intended to be reciprocal collections from other international museums should be displayed in- house.

The Grand Egyptian Museum

The Grand Egyptian Museum (GEM) is conceived as an expression of the extraordinary legacy of Egyptian civilization. Few civilizations have aroused such awe, admiration, imagination, and wonder among peoples throughout the globe. By their sheer monumentality, the Great Pyramids of Giza, the Great Sphinx and the other landmarks of Egypt remain today among humankind's most remarkable architectural and artistic achievements. These colossal creations have captivated generations of artists, poets, philosophers, mathematicians, and scientists. They have launched the human imagination beyond the confines of the present to contemplate both the past and the future – both this life and the after-life.

In the Grand Egyptian Museum, the richness of creation is manifested in the objects displayed. A dramatic climatic and geographic diversity is embodied in the surrounding parks, demonstrating to the visitor the creative virtuosity and remarkable tenacity that characterized the enduring civilization of Egypt. Indeed, ancient Egypt's longevity has few equals in the history of mankind; its remoteness in both time and practice shrouds it in mystery. There is so much that we do not know, yet yearn to know, about this ancient civilization that accomplished so much, so long ago, leaving such an enduring and captivating legacy. A vast digital network interwoven throughout the galleries delivers a universal message. The Museum's technical connection to global human culture begins on the Giza Plateau and reaches around the world through networked multi-user reality experiences for both physical and virtual Museum visitors. High speed connections provide links to the world and other UNESCO institutions, making exhibits at the Museum the focus of a shared cultural experience.



Referring to standards and technology solutions common to UNESCO member institutions, the Museum's technology is planned from the outset to provide a global presence. Highlighted are, the daily experience of human culture and the ongoing advancement of the sciences. Though complete understanding of ancient Egypt will likely forever remain beyond our grasp, the scale, scope, and complexity of the Grand Egyptian Museum will, for the first time, quench mankind's unquenchable fascination with the Egyptian civilization. Further, the Grand Egyptian Museum will demonstrate that the ambition and vision of the ancient civilization continues in present-day Egypt, where appreciation for the wonders of the past and anticipation of the possibilities of the future are married in a facility that redefines what a museum can and should be. The Grand Egyptian Museum will set a new standard of excellence to which other museums of the 21st century will aspire.

The Architectural Proposal:



The site: the GEM is placed between the modern complexities of Cairo and the ancient culture of the pyramids, situated on the first desert plateau outside Cairo. The site acts as the intersection between modernity and antiquity, literally redirecting the visitor from the modernity of Cairo and Alexandria to the ancient heritage of the Egyptians. This transition state has a strong influence on the material selected for the museum. The dialogue between modernity and the ancient falls between a dominate ancient-look bulky massive buildings of materials like (concrete and stone) and the circulation/light reservoir buildings of modern slick high-tech materials like (steel and glass). From an urban design perspective, the museum is the node marking the point at which the visitor changes direction from the city towards the pyramids. Significantly, THE GEM defines the new profile for the plateau without competing with the pyramids.

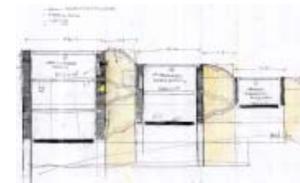


The Sunken City: with an overall area of one million square feet and a perimeter equal to the perimeter of the great pyramid, this huge museum complex is one of the largest buildings on earth. In recognition of the strong presence of the pyramids, the huge GEM structure is sunk into the ground, yielding to the strong presence of the pyramids and not competing with it.

Light as a material: from the scale of the entrance hall to the scale of the display case, light, which is considered the source of life in ancient Egypt, carves and defines the quality of the space of the museum complex on three levels as following:



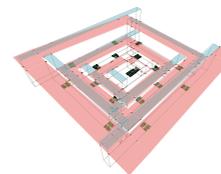
1- Entering the main entrance hall (the hall of 100 virtual columns) from a long, dark narrow tunnel transforms the visitor's feeling from darkness and mystery to total light and greatness using light to create a virtual Hypostyle hall. At night, the inverse occurs, when these columns become lights shooting beams to the sky. The effect creates an identity as well as a landmark for the museum complex, while adding another experience to the central open plaza.



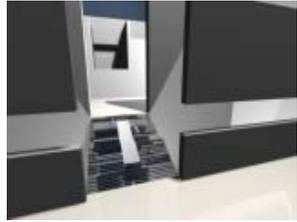
2- The transition between any two mass buildings is filled with daylight. While the visitor perceives the artifacts inside the long dark galleries, the daylight penetrates the walls from the "shortcuts", inviting the visitor to discover a new dynasty, from the dark to the light, then into the dark again, an in/out relationship of contrasting emotions and feelings.



3- Light travels from the light reservoir buildings into the display cases which are recessed inside the walls which are gradually varies in width (from 3 feet to 9 feet). This light washes the walls and the artifacts in such a diffuse manner that the visitor will not be able to determine where the light comes from.

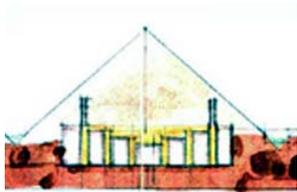


The Grand Ramp (The Chronological Route): the ramp represents nine chronological dynasties floating over three sides of the museum complex, leaving the fourth side as a spacious non-exhibit areas works as a break from the museum fatigue. The chronological route ascends from the main entrance hall with a grand staircase, starting a counter-clock wise journey of exploration into ancient Egyptian history.

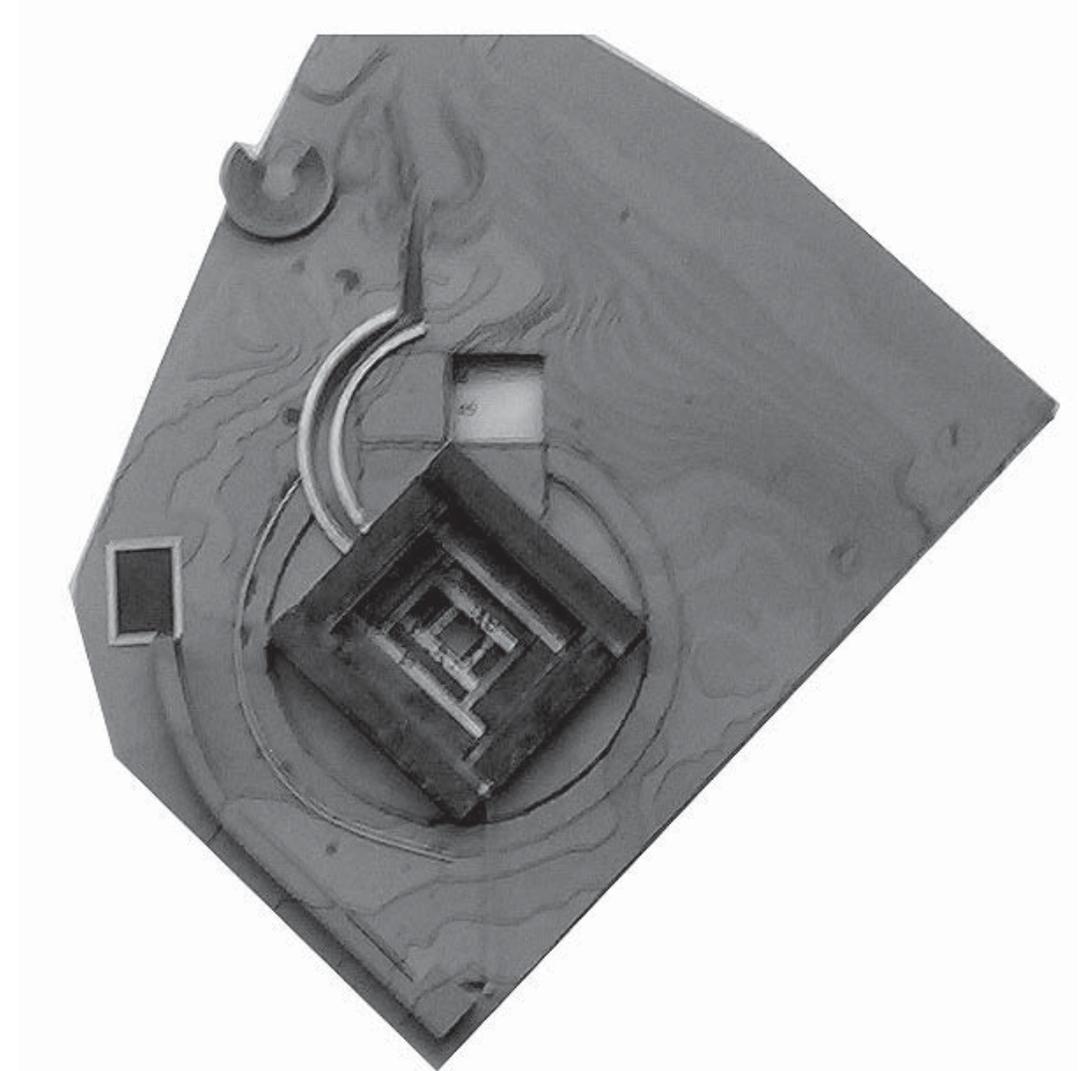


Synchronic versus Diachronic:

Along the chronological journey (the diachronic theme) a number of organized synchronic shortcuts (cross movement), situated along the grand ramp, provide a high level of flexibility known as “Hyper textual route of display itineraries”. In these synchronic sections, the permanent exhibitions areas on the top floor are interrupted by twelve perpendicular shortcuts which allow the visitor to create his/her own route upon every visit to the museum. These shortcut nodes act as points of intersection between different galleries, demonstrating periods of overlap between different dynasties. In addition, synchronic sections act as a primary access to special exhibits and non-chronological galleries below the grand ramp.



Dunal Park and the Plaza: on the museum roof, a large man-made park covers the entire complex. This large park acts as an Oasis in the desert and can be seen from points intermediate to the museum complex and the plateau of the pyramids. This idea represents the mirage phenomenon as an architectural solution, dissolving the large structure of the museum in submission to the strong presence of the pyramids. The park is terraced according to the different levels of the twelve mass buildings which house the whole complex’s facilities. With an eye on over- heating and other special weather concerns in Egypt, the planted roof acts as any roof garden in terms of cooling, bringing the inside environment to a comfortable level while creating a controlled environment for the priceless artifacts. In the center of the park is the Piazza, which is the roofed area of the main entrance hall. The Piazza is a space of gathering and exchange; it is an active open space both at night and during the day time, which remains with the park active even when the museum and the other facilities are closed. The beams of light that shoot skyward at night identify the Piazza as the center of the complex, the complex as the center of the Egyptian history, and Egyptian history as the center of the civilization.



The Grand Egyptian Museum: the GEM is not a singular museum in the traditional sense. It is constructed as a complex of different activities, which contribute to a cultural environment that is centered on Egyptology. By weaving different navigation routs through the complex, the world of ancient Egypt can be explored at different modes and levels. The museum is a repository of cultural artifacts as well as an interactive cultural resource itself.

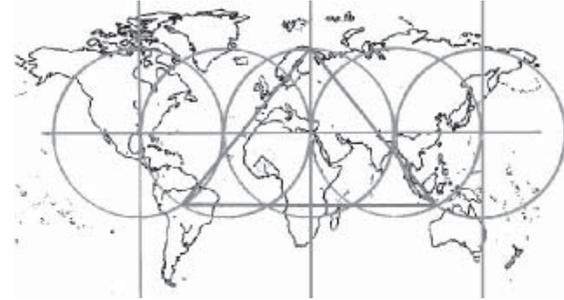
Context, Site and Environment

The unique site neighboring the Pyramids of Giza is “genius loci” for such cultural /architectural challenge that best addresses the world’s Third Millenium and Egypt’s Seventh Millenium. A strong visual linkage between the new museum site and the ancient pyramids themselves suggests architectural opportunities for establishing a kind of formal dialogue.

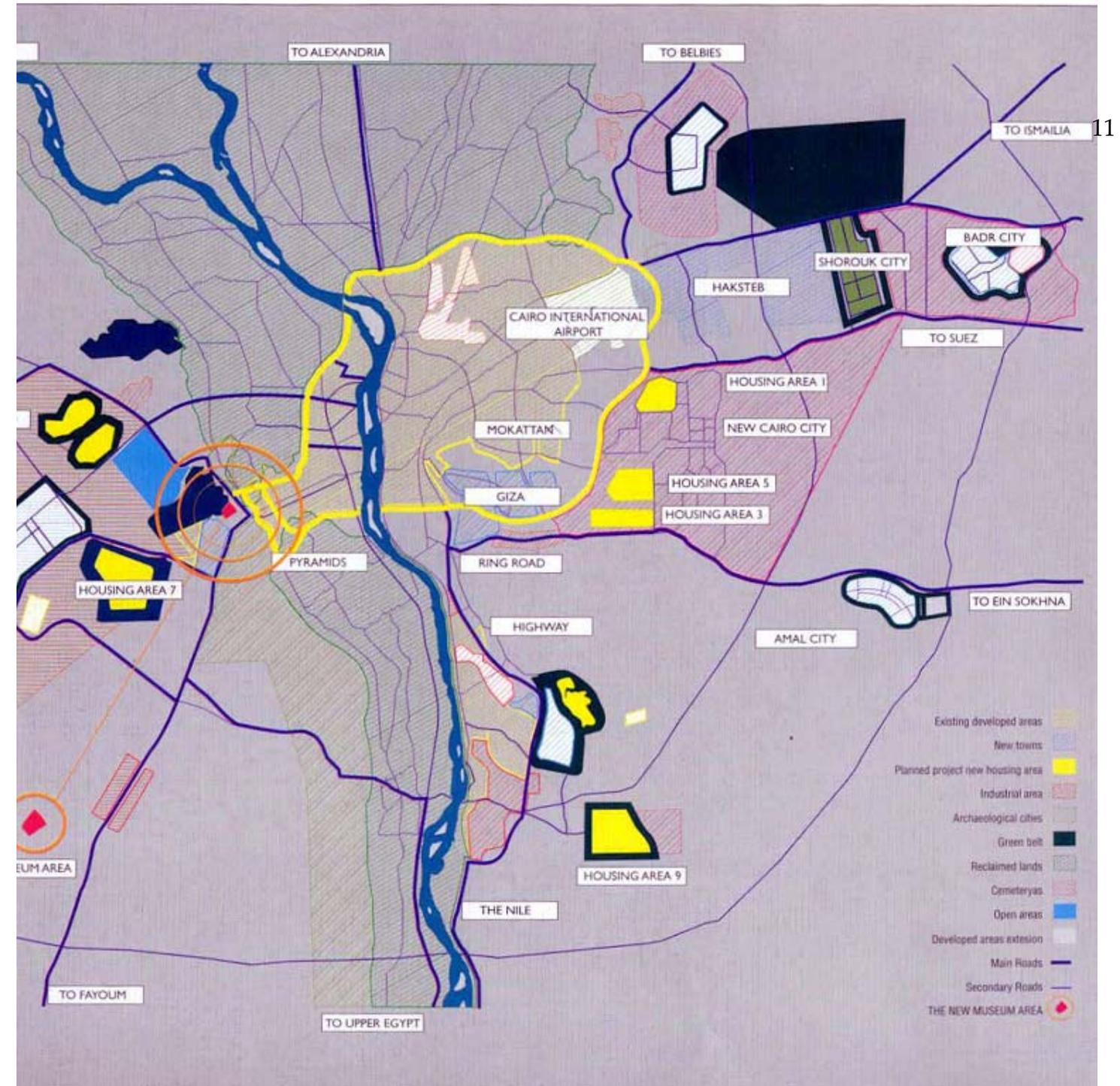
The project is to be constructed near the Giza Pyramids plateau, belonging to a bigger archaeological area and, precisely, to the “UNESCO World Heritage Site - Memphis and its necropolis with the Pyramids field”, which extends in a north-south direction for about 30 km. from Abu Rawash to Dahshur, including Abu Ghorab, Abu Sir and Saqqara archaeological area.

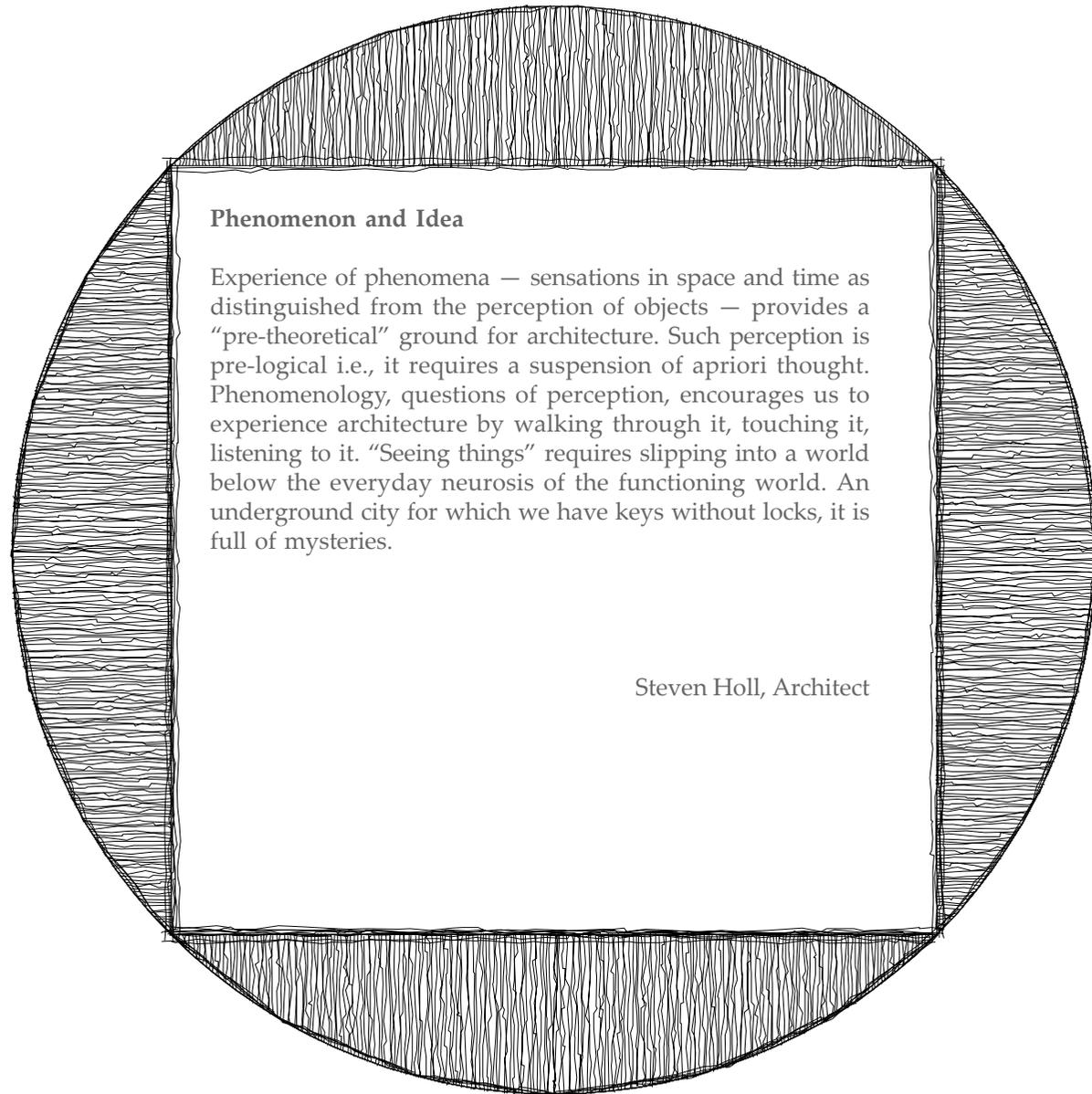
The new museum will establish a synergetic relationship not only with the three pyramids and the Sphinx of the Giza plateau, but also with these other important monuments, at the moment not easily (or at all) accessible.

The area destined to be the new Egyptian museum measures about 117 Feddans (50 Hectares = 480000sq.m.) and belongs to the Supreme Council of Antiquities (SCA).



Context, Site and Environment





What is Mirage Phenomenon?

(mirāzh’) atmospheric optical illusion in which an observer sees in the distance a nonexistent body of water or an image, sometimes distorted, of some object or of a complete scene. Examples of mirages are pools of water seen over hot desert sand or over hot pavement.

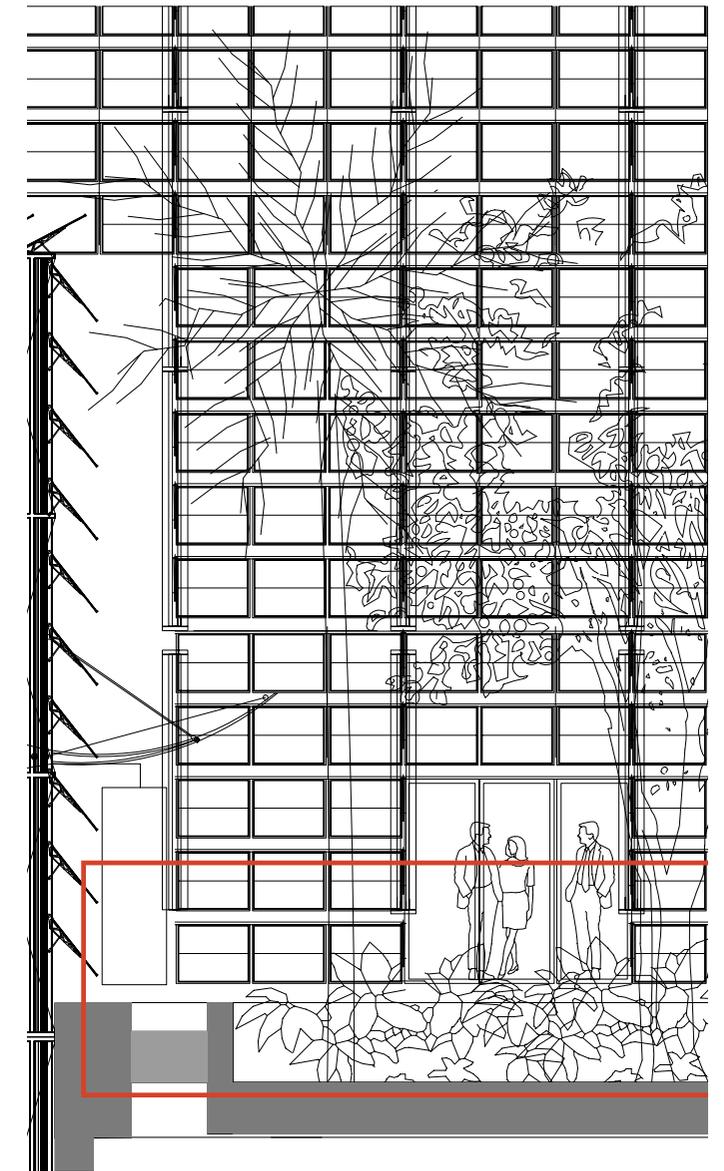
How does the mirage happen? Mirage is a natural phenomenon forms when light rays passing through a warm layer of air are bent (refracted). Refractions occur in the atmosphere when light passes through air layers of different densities.

In the lower atmosphere the air density’s greater variations are caused by temperature changes.

If the temperature one-meter above the surface is greater than 4.4-degrees cooler, a strong mirage forms. The mirage image is a real image. What our eye sees and our mind initially interprets as water are actually light rays from the blue sky above and ahead of us reflected near the surface so that they appear to have come from the surface.

What is the relation between mirage and the concept?

In respect to the strong presence of the pyramids in the context and in order to deal with that presence, I started to look at the mirage phenomenon and the appearance and disappearance of objects in the optical illusion. What could be made as an architectural element that could respond to that?



Illusion of Desert Mirage

There are two architectural solutions that interact with each other.

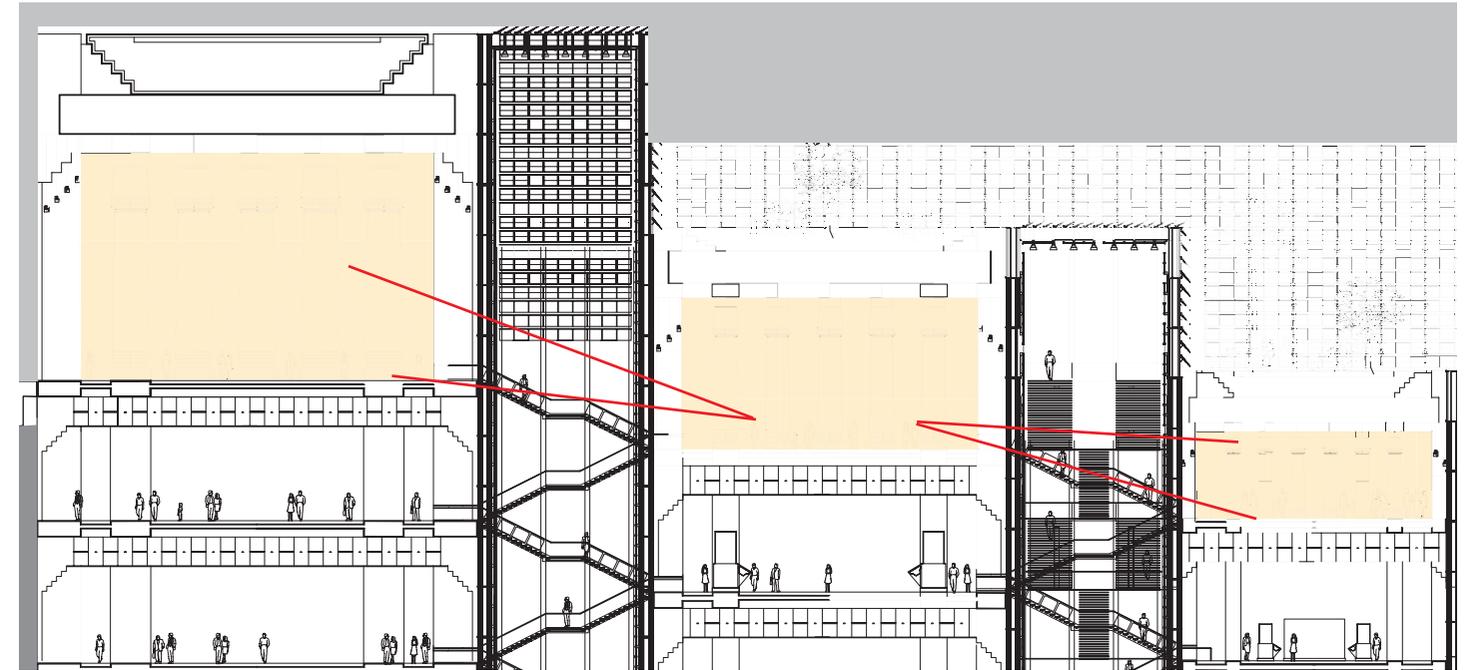
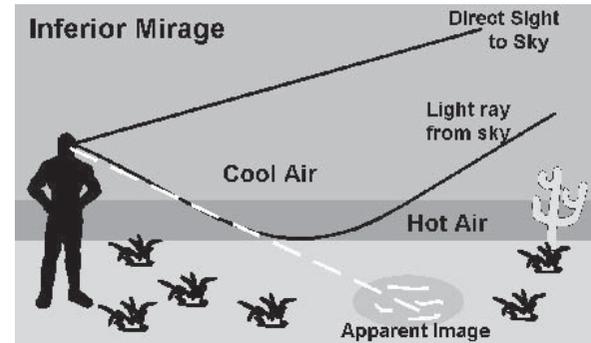
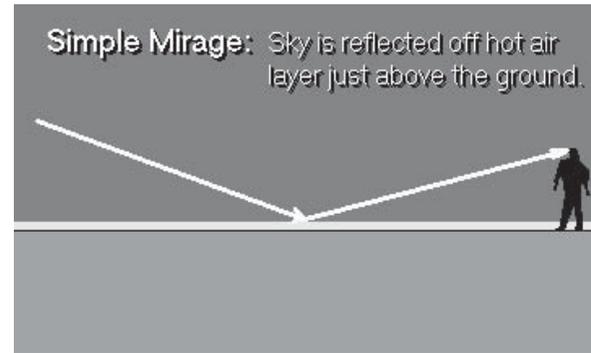
First a body of water that surrounds the building
Second is "Oasis in the Desert", having the idea of the inverted stepped building inward creating the opportunity of having a huge roof garden that is protected by the surrounding buildings providing shade and acts as a stepped terraces with the depth of the buildings' roof the opportunity of planting such a forest could occur.
Looking from such a distance to the whole picture of the museum especially in the "moment of exiting the galleries and the museum" journey, the museum will appear as an oasis in the desert and the shimmering effect from the body of water surrounding the oasis will dissolve the museum in the desert.

Illusion of time

Isn't looking at an artifact from the distance past, seeing it present before us, metaphorically like a mirage?

The organization of the chronological galleries allows such an extraordinary experience in terms of the ultimate flexibility and the interaction between each chronological period.

For example while discovering the first intermediate period gallery (diachronically), a synchronic shortcut create galleries in the perpendicular direction and allowing the visitor to look down to the pre-historic and pre- dynastic gallery, and to look up to the new kingdom gallery, each time you look up or down you travel thousands of years as if you are in a time machine.



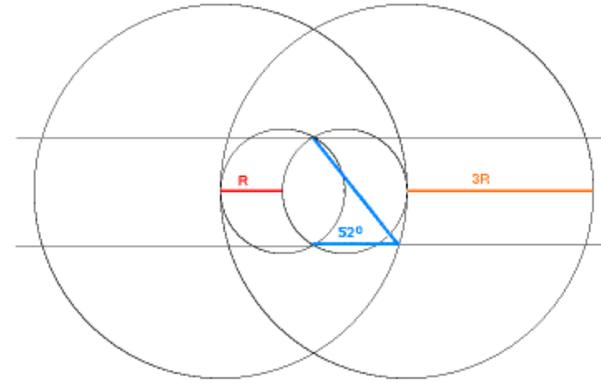
Sacred Geometry

Egypt embodies the Golden Mean which is the ratio that is used in Nature to generate growth patterns in space. Sacred Geometry studies such primal systems which reveal the unity of the cosmos by representing the relationships between numbers geometrically.

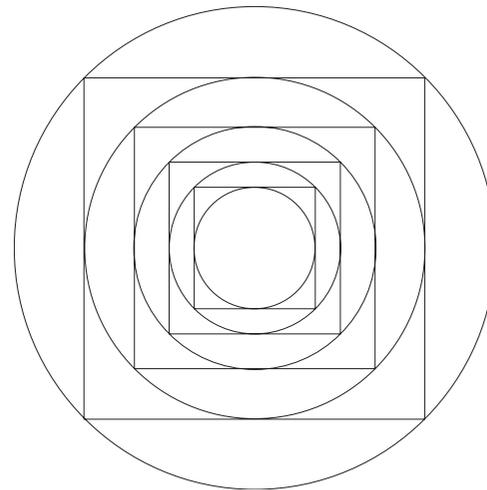
The *Vesica Piscis* is one of the most fundamental geometrical forms of this ancient discipline and it reveals the relationship between the Great Pyramid and the two dimensional expansion of a circle of one unit radius R as shown on the right.

This relationship is more completely described in *The New View over Atlantis* by John Mitchell published by Thames and Hudson. *New Discoveries Linking The Great Pyramid to the Human*

Form Charles R. Henry, Professor, Department of Sculpture, Virginia Commonwealth University, Richmond, Virginia



The Vesica Piscis and the pyramid angle



God, Eternity, Entity, the Circle of life, Expansion

Geometry and proportion



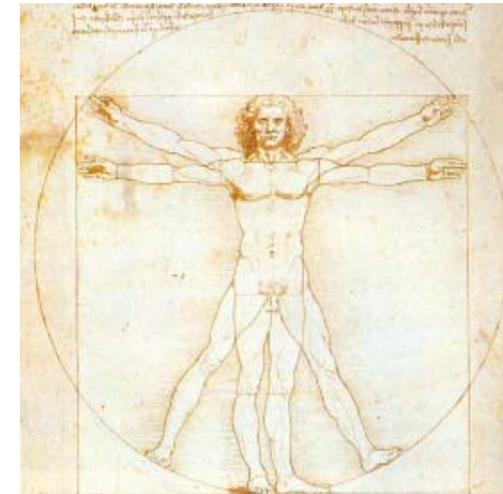
The Holy Ka'ba is the perfect example of circling the square

Circle the Square or Square the Circle?

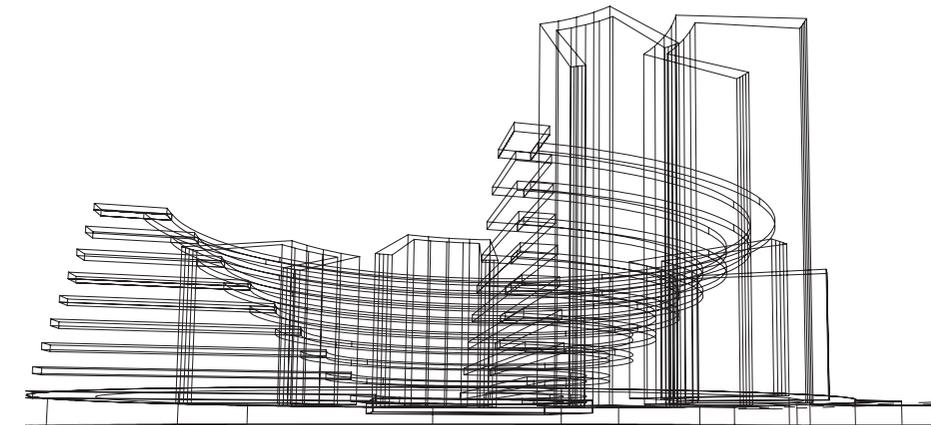
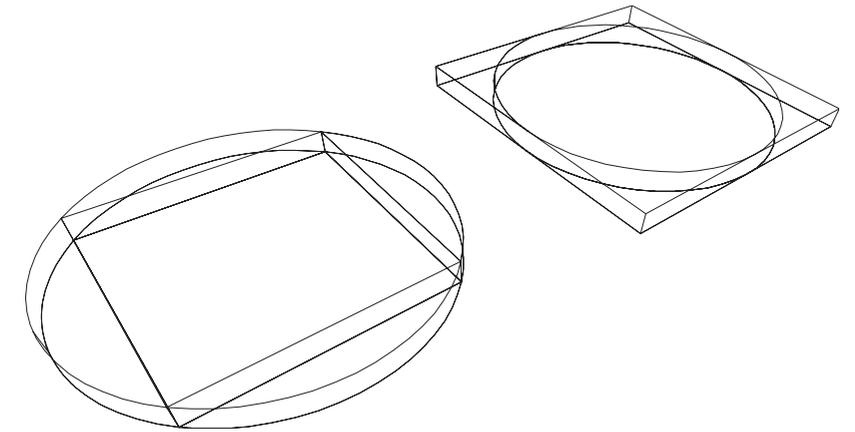
The relationship between the square and the circle is extremely strong, the second scheme represented the museum as a huge circular amphitheatre, this circle is squared to put an end for the horizontal growth and open a potential for the vertical growth, that scheme was appended for so many reasons.

The final scheme and the current one represents the museum as a series of linear buildings arranged to form an outer layout of a huge square circled by a body of water.

This simple and strong arrangement provides the ultimate response to the high flexibility required by the program and at the same time represent the strength of the simple mass and the basic geometry.



Vitruvian Man (Man of Perfect Proportions)



The second scheme, proposal, the Grand Egyptian Museum

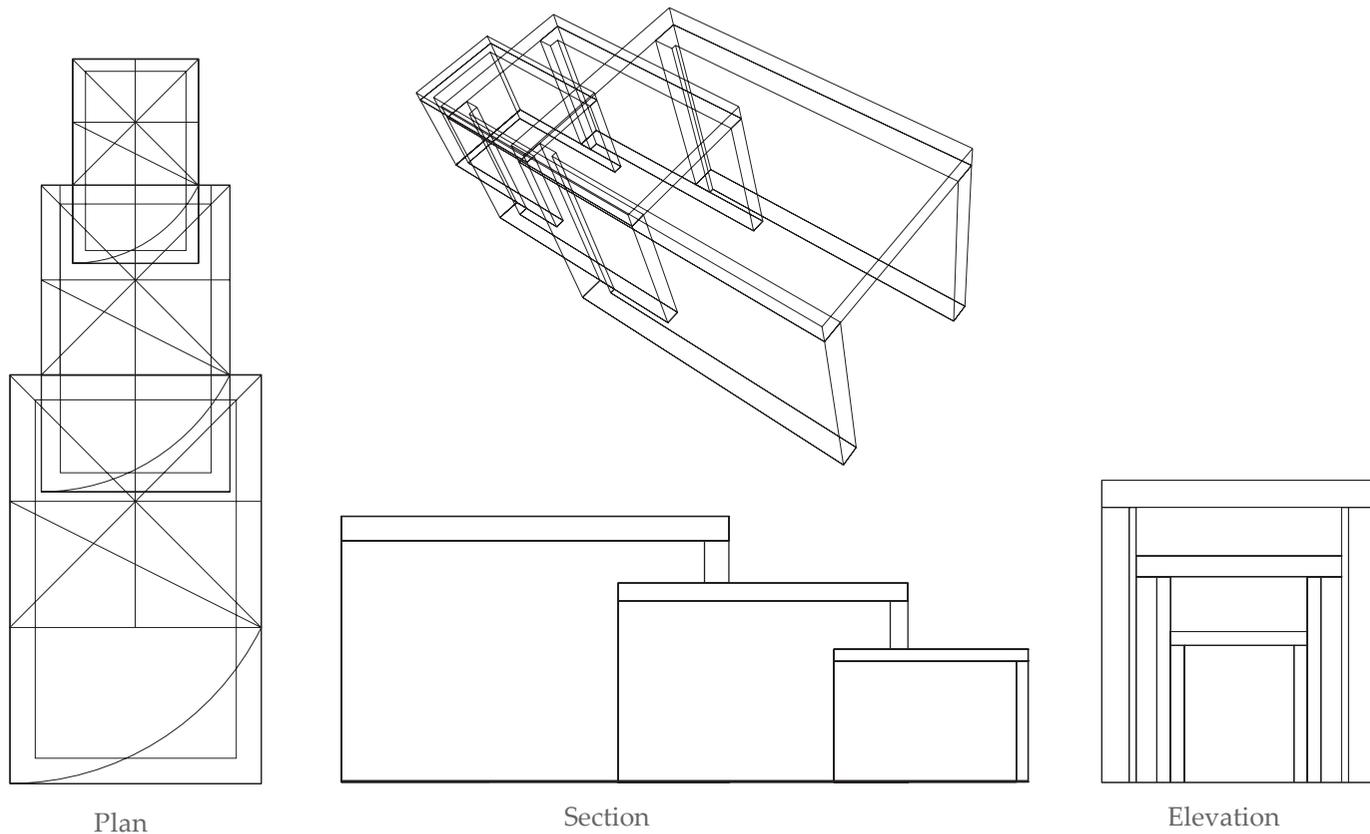
Nesting, Stacking, Stepping, Layering

These arrangements provide a rich architectural language and create exciting moments through the journey, it provides a defined entrance to the mass, an opportunity for a clerestory lighting condition and an integration between the three dimensional space and the architectural drawings (plan, section and elevation)

This idea has been implemented twice in designing the museum, first at the whole layout of the linear building as the dominate mass and second when creating the approach to the museum under ground tunnel and entering the mass.



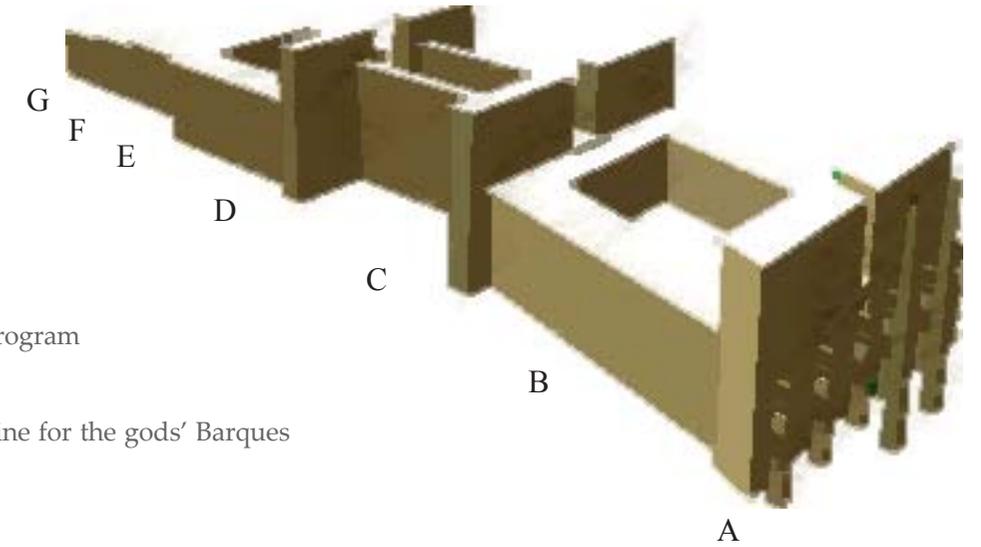
Mesopotamian Ziggurat, Ziggurat at Ur, c. 2100 B.C.



Plan

Section

Elevation

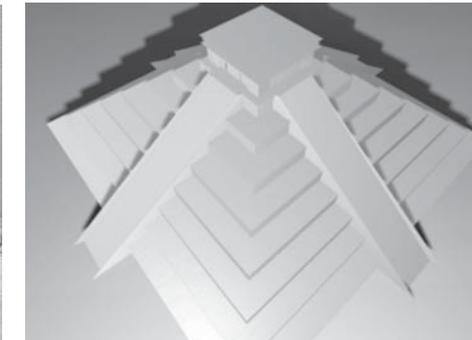


The Ideal Egyptian temple program

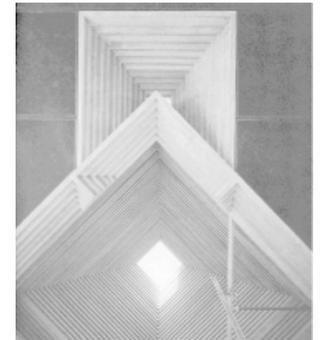
- A - The entrance pylon
- B - Columned court with shrine for the gods' Barques
- C - A Processional colonnade
- D - The Temple proper.
- E - Braque Shrine
- F - Offering Hall with side "Birth" room showing
- G - The "Opet" or private sanctuary containing the Holy of Holies in a smaller central shrine room. The larger room has cosmological features with twelve columns (one for each hour of the day) and at each opposite end the day and the night barques of the sun.



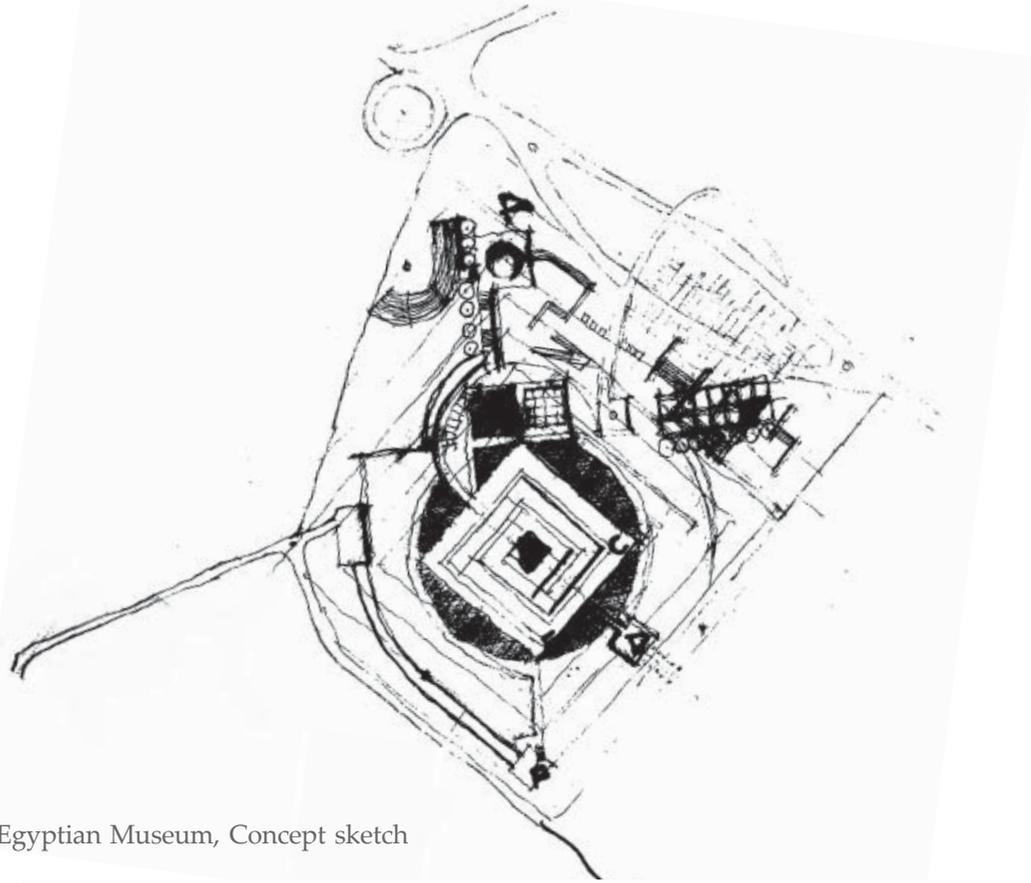
Zoser stepped pyramid, Egypt



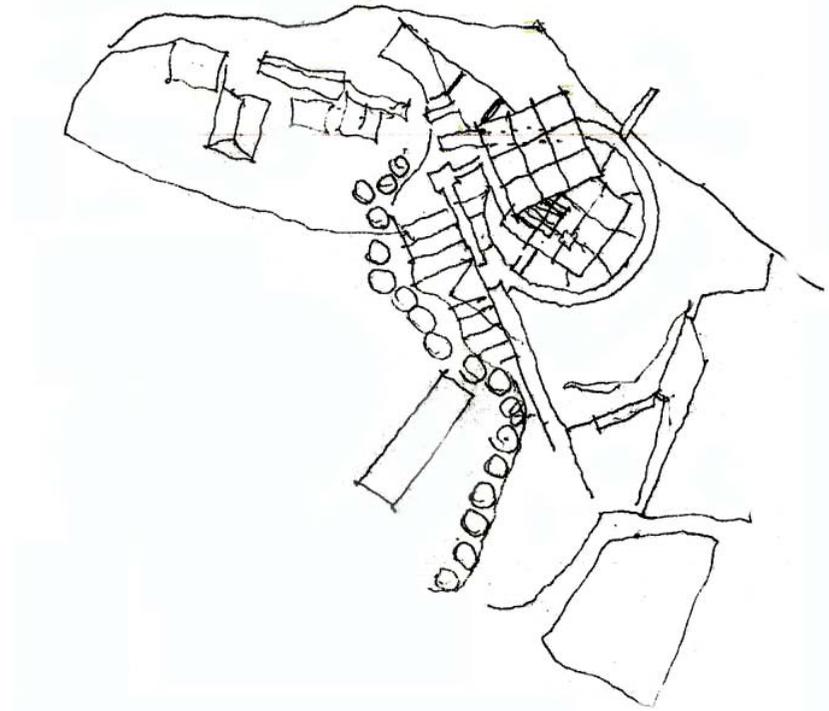
Mayan temple, Mexico



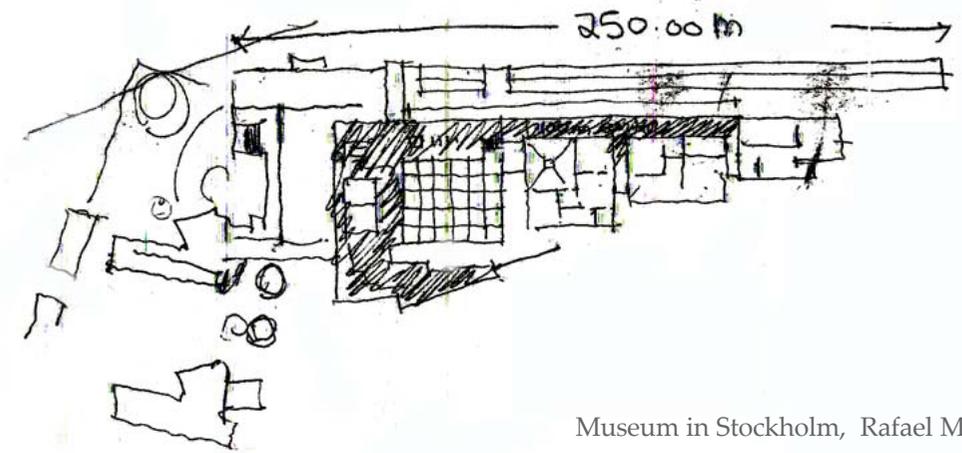
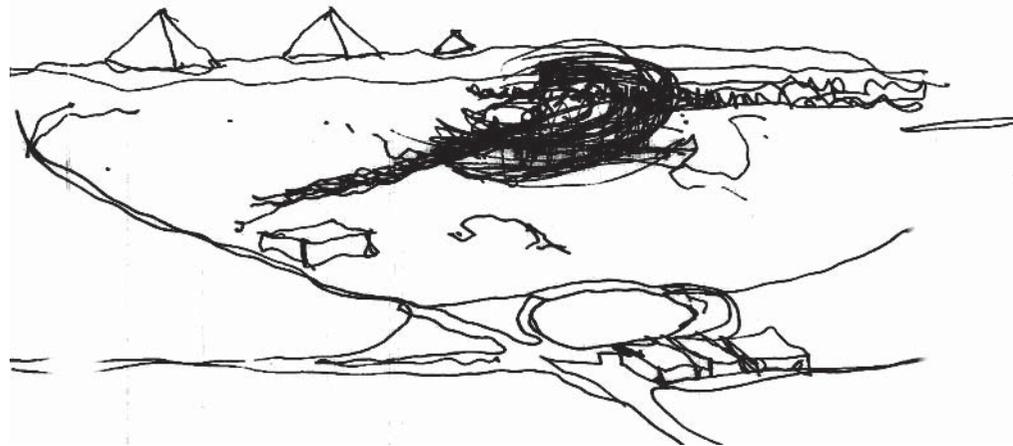
Carlo Scarpa, Brion Cemetery



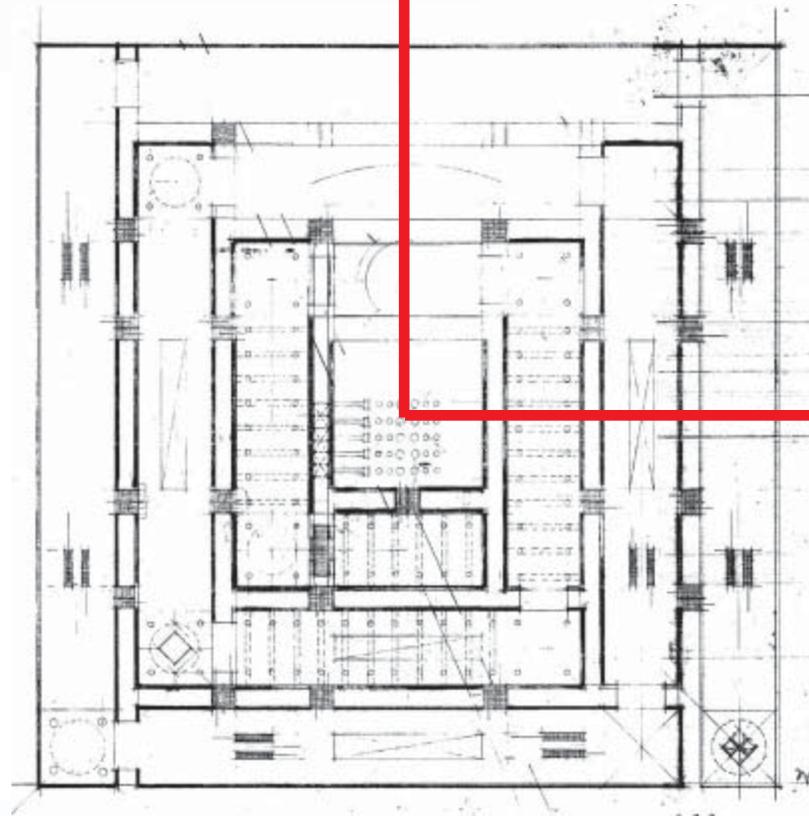
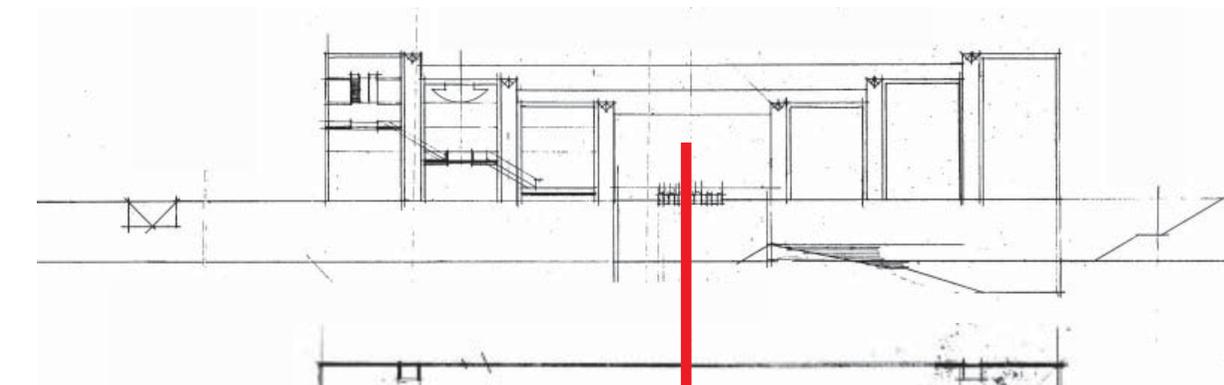
The Grand Egyptian Museum, Concept sketch



Museum of Literature, Tadao Ando, 1888-1991



Museum in Stockholm, Rafael Moneo

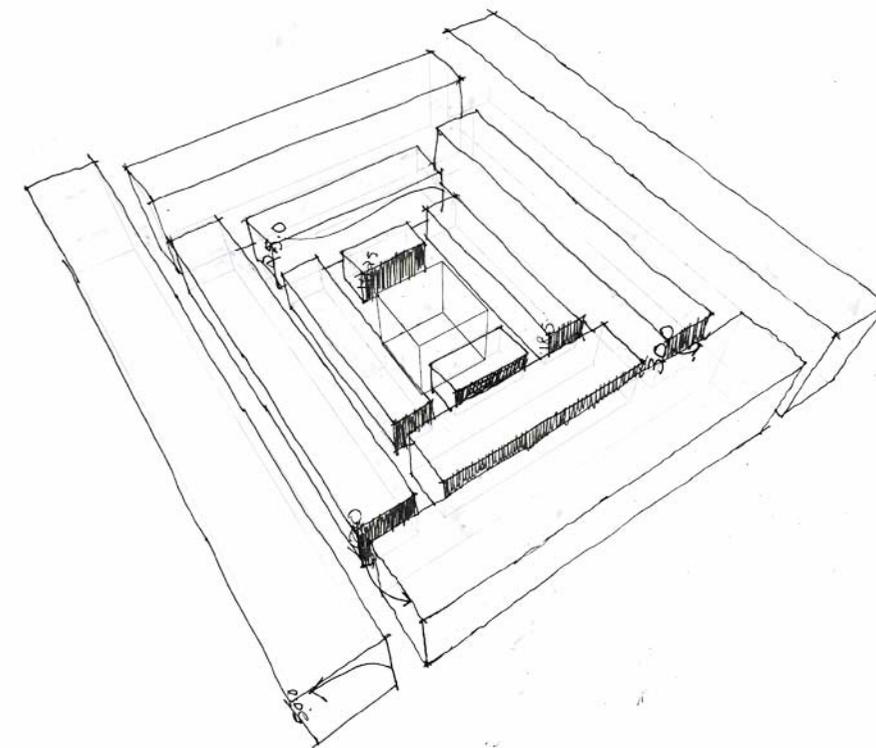


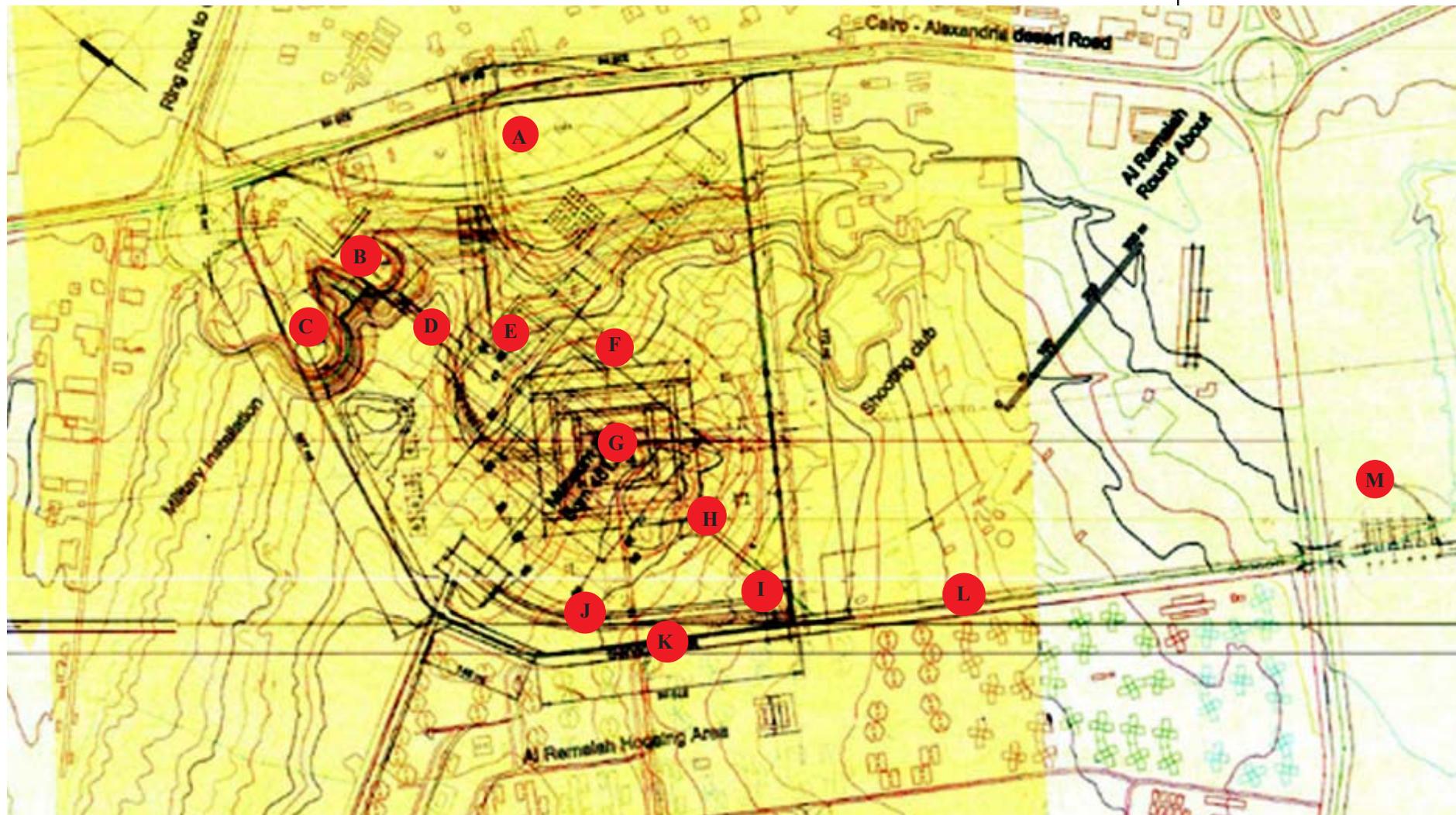
The museum as the center of the universe

As Egypt remains the center of civilization, Sun is the center of life, the search for the mass evolved around the idea of the entrance hall as the center of the complex. With a strong axial relationship with the great pyramid, the mass broken down to twelve linear building that in their assembly creates the foot print of the great pyramid.

That strong dialogue between geometric / axial relationship emphasizes the respect for the strength of the pure and simple geometry of the pyramid.

The first sketch for the museum shows a clock - wise circulation and a fixed width for all the galleries.

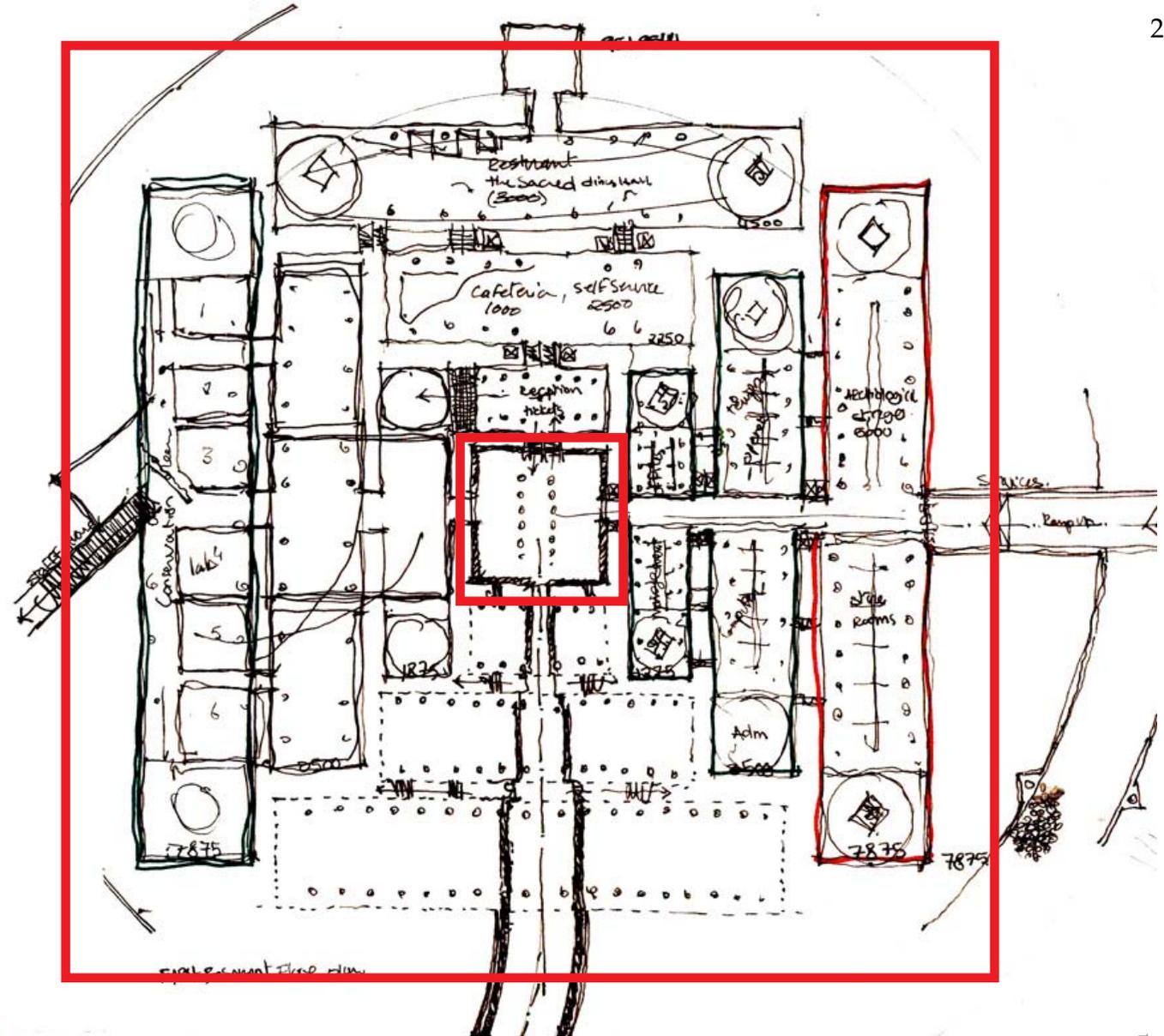
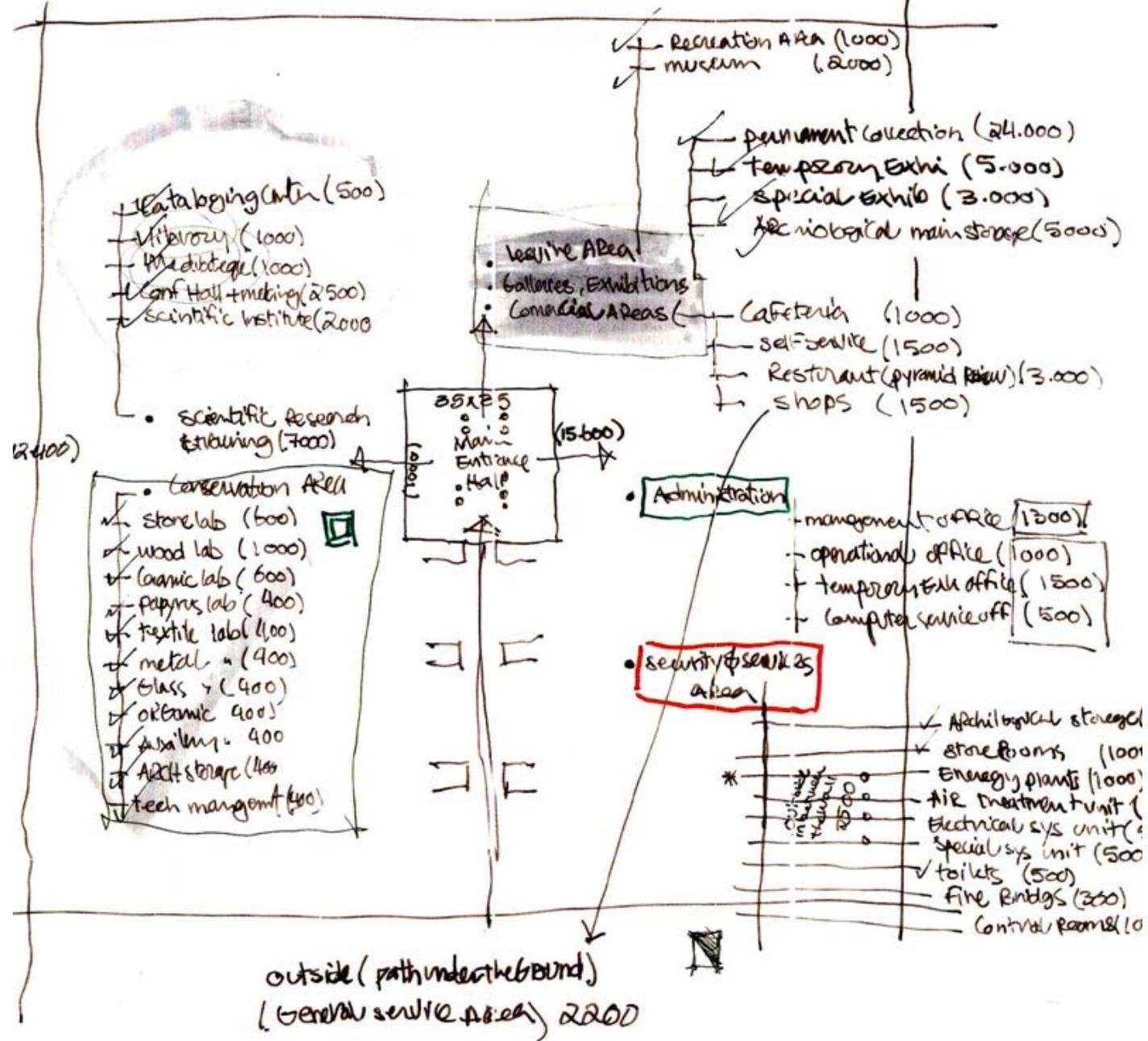


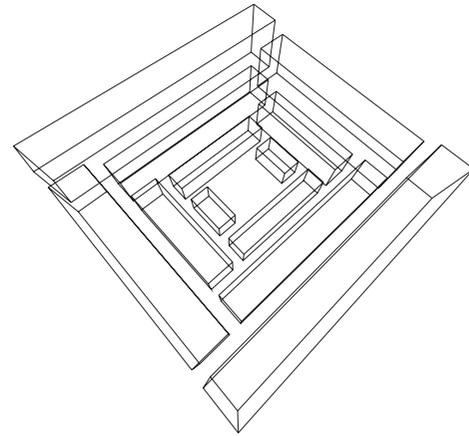


- A - Visitors/Staff parking lot
- B - Underground entrance to the museum
- C - Outdoor amphitheatre
- D - Underground tunnel to the museum
- E - Outdoor exhibit area
- F - Water pool
- G - Main entrance hall
- H - Exit point from the museum
- I - Museum train station departure
- J - Physical plant and services wall
- K - Service road
- L - Palm trees rail road
- M - Train station arrival

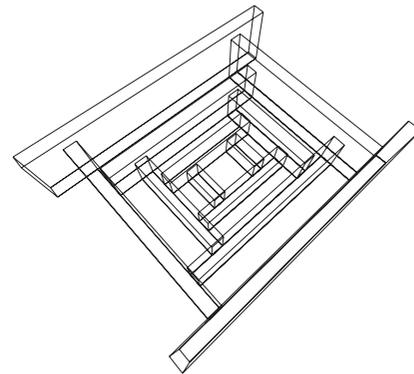


total Area
(50.625 m²)

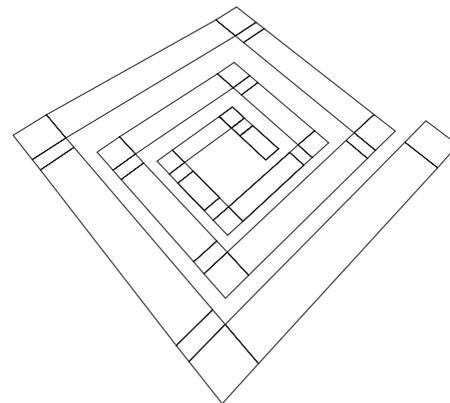




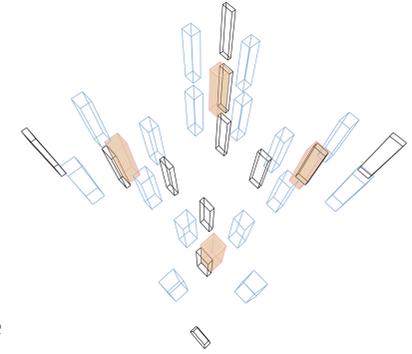
12 Concrete + limestone buildings (galleries + all facilities)



12 Glass and steel buildings (light reservoir, air ventilation, transition places, circulation)



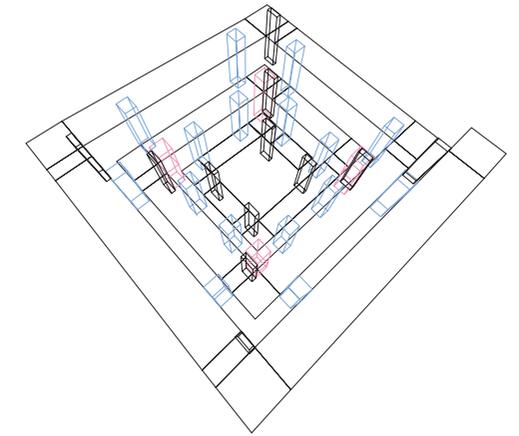
9 Chronological galleries + 3 non exhibit spaces (rest areas, restaurants, cafeteria, and self services)



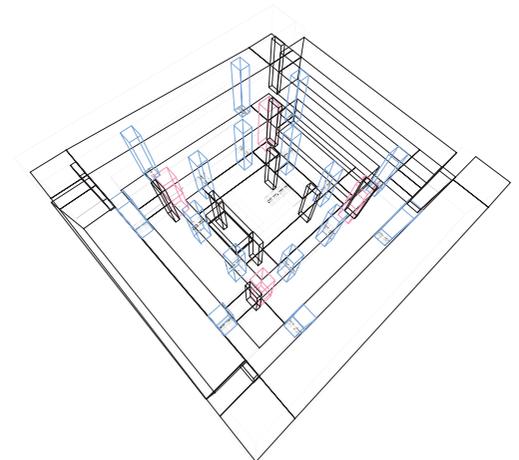
12 public service core (elevators, rest rooms, telephones, etc...)

4 Museum service core (artifacts elevators, fire escape staircases, storage)

16 "short cut" synchronic points and vertical circulation core (dynasty to dynasty / dynasty to other galleries)



Horizontal - vertical relationship (chronological route/vertical cores)

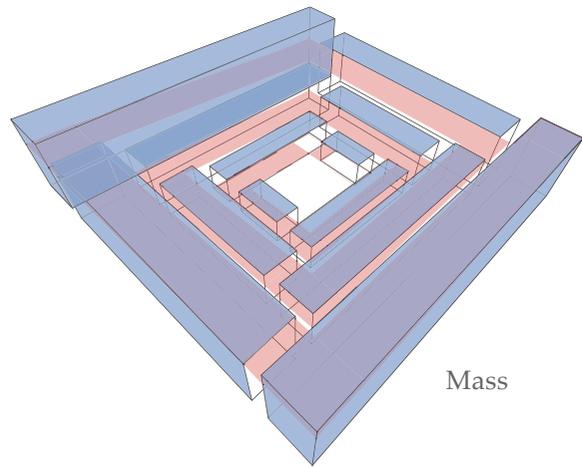
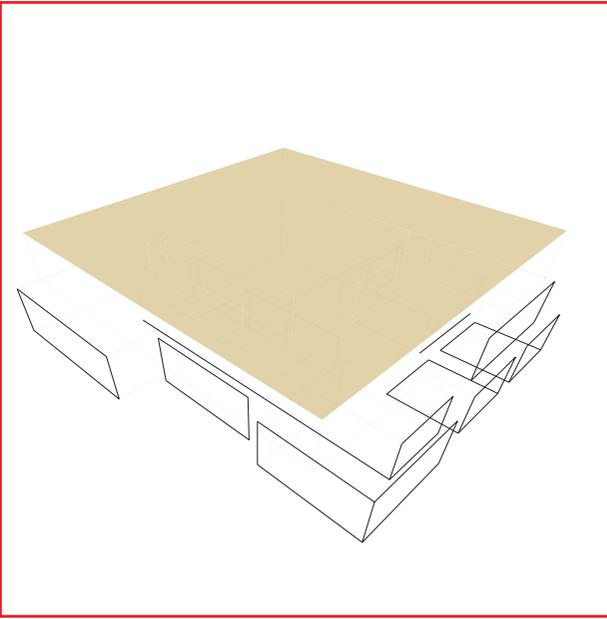
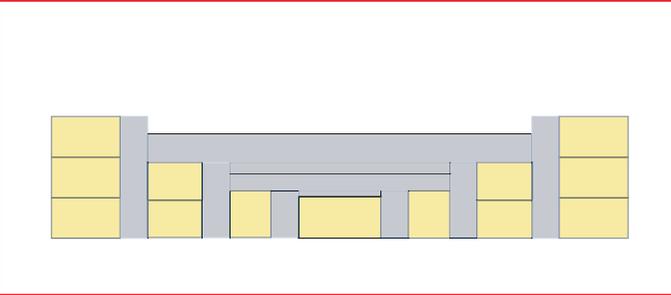
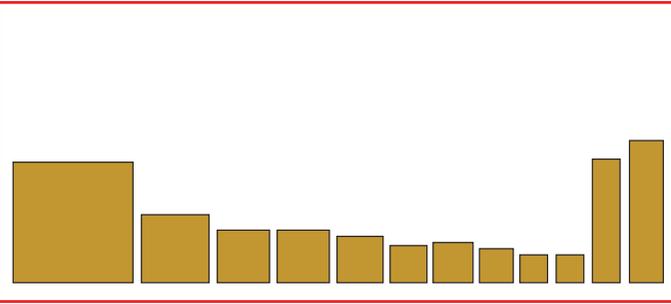


Museum assembly

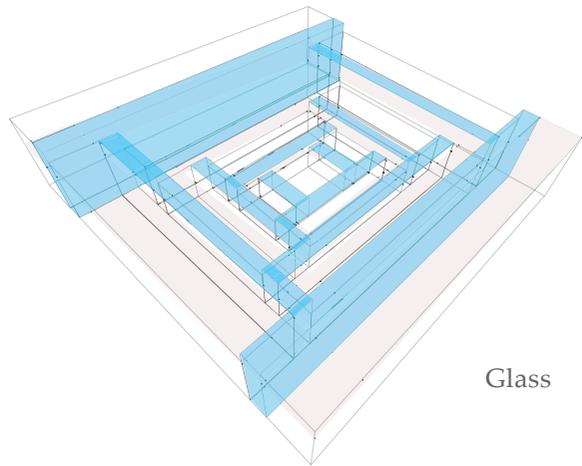
The program required one million square foot facility on a five million square foot site. The challenge was to design a museum campus that houses the artifact, provides a conference center, research facility, commercial spaces and outdoor spaces. to create a place where history becomes interactive, fun, and exciting.

The challenge was to fit the program requirements in one container, emphasis the "All in One" idea and at the same time solve the conflict between different facilities on the vertical/horizontal levels.

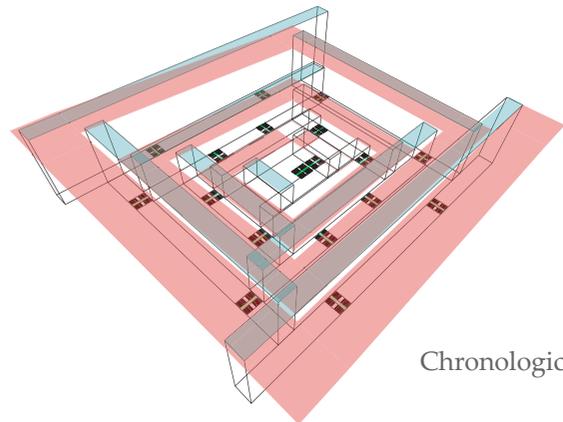
- Visitor's parking lot 12500 sqm
- Network and link systems 9000 sqm
- Open air exhibitions 2000 sqm
- General services area 2200 sqm
- Leisure area 3000 sqm
- Administration 4300 sqm
- Staff parking lot 3500sqm
- Conservation area 5400 sqm
- Scientific research and training 7000 sqm
- Commercial area 7000 sqm
- Security and services area 11300 sqm
- Exhibition area 37000 sqm



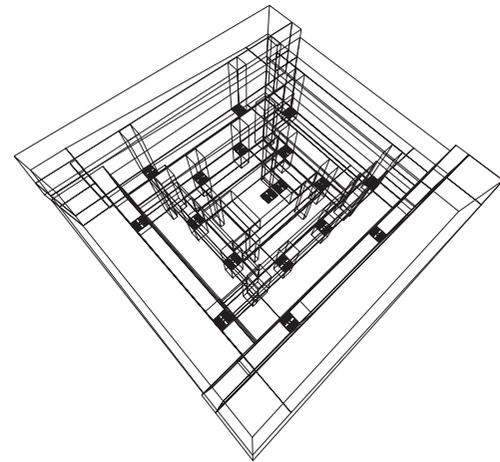
Mass

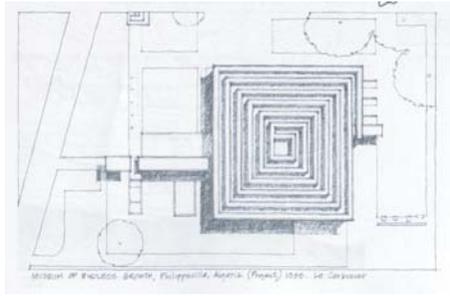


Glass

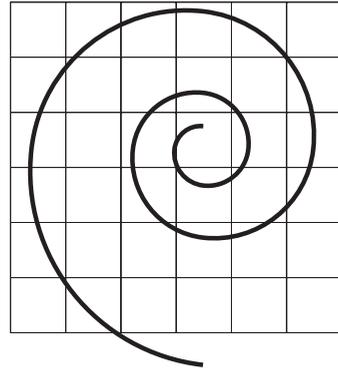


Chronological path

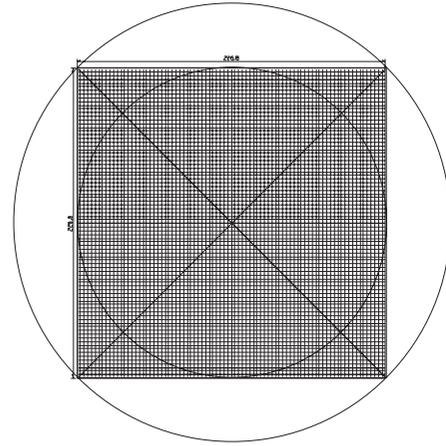




Museum of Endless Growth,
Phillippeville, Algeria,
Project, 1939, Le Corbusier



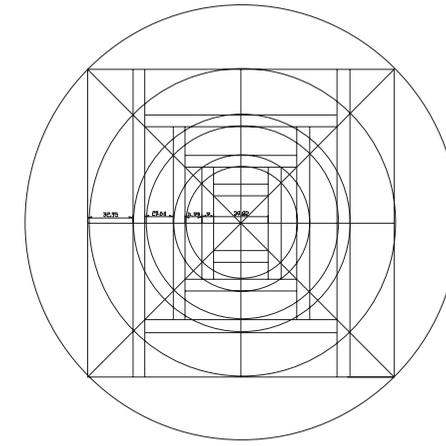
Spiral growth, counter clock wise



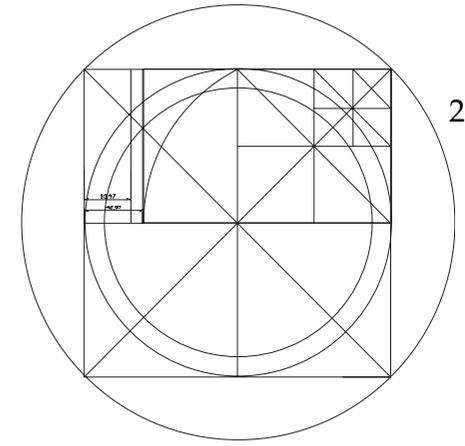
Grid and Size



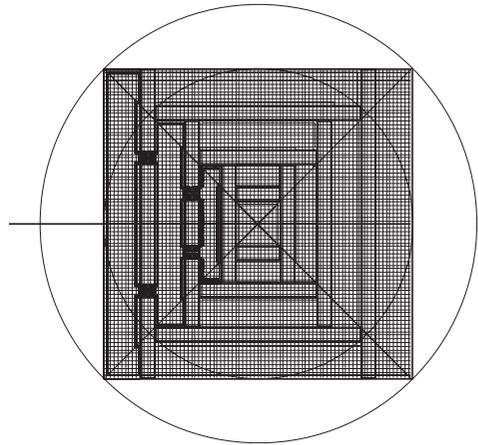
Mummy and weaving cloth



Dividing the Square (2)



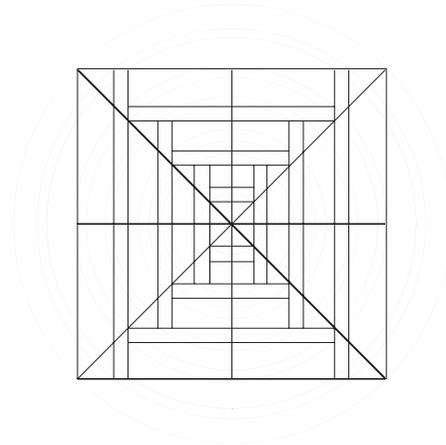
Circle, Square and the Golden section



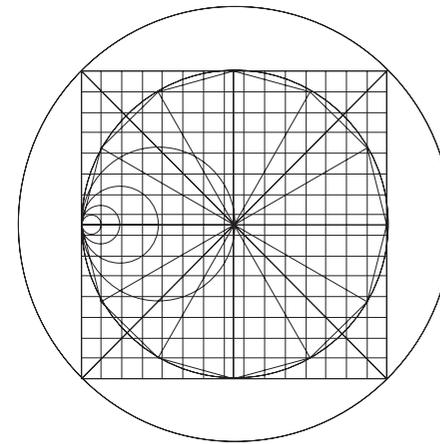
Circulation



Proportion and Mass



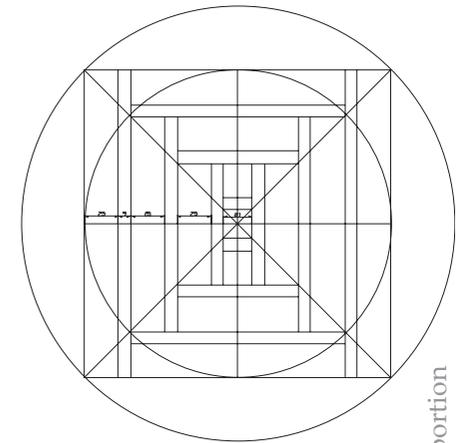
Buildings and growth according to circles



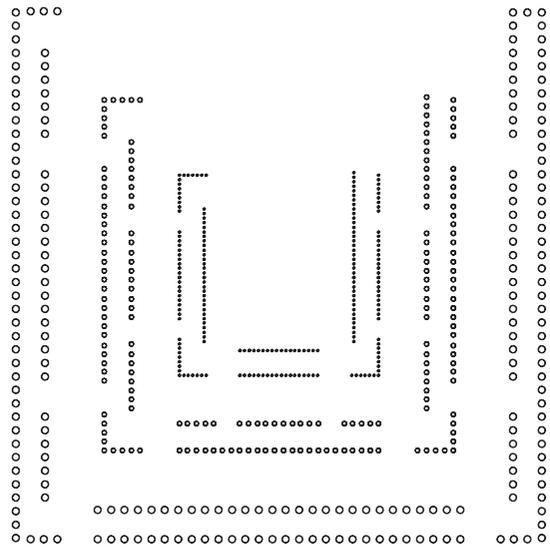
Grid and Circles



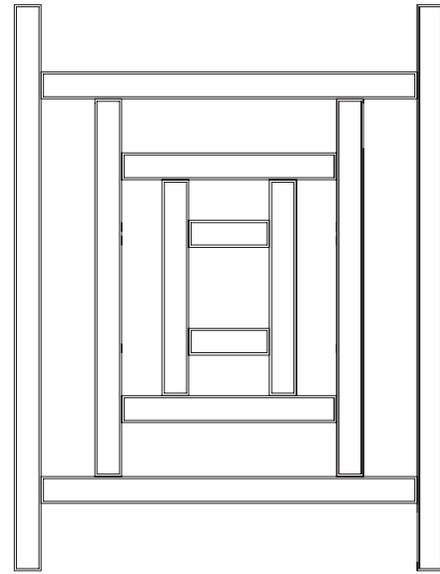
the Great Pyramid's foot print



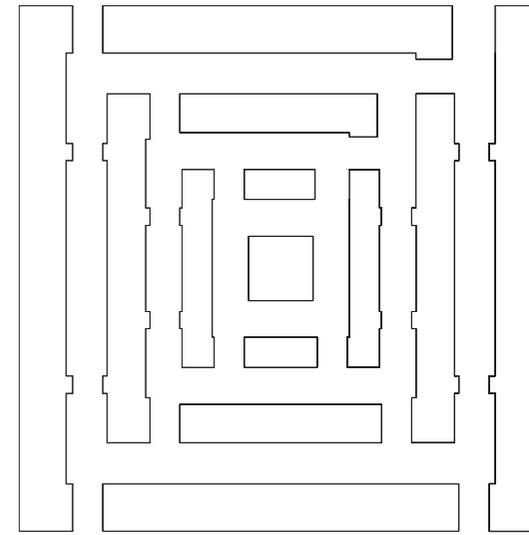
Dividing the Square (1)



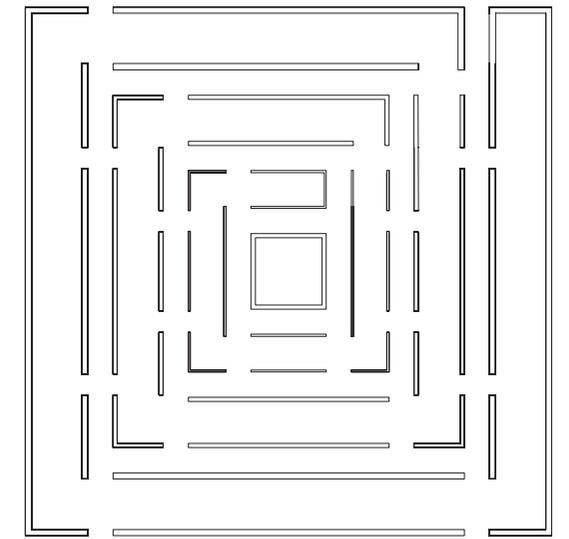
Columns (Screen)



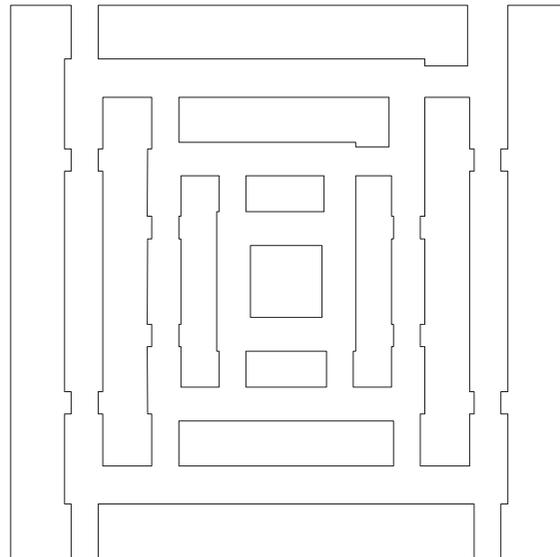
Glass and steel structure(Light wells)



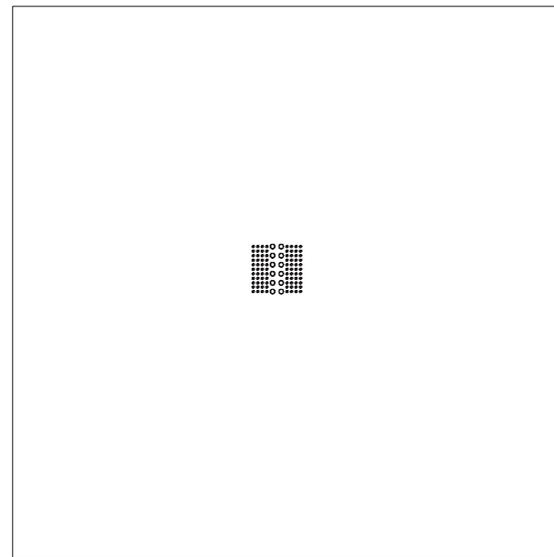
Floors



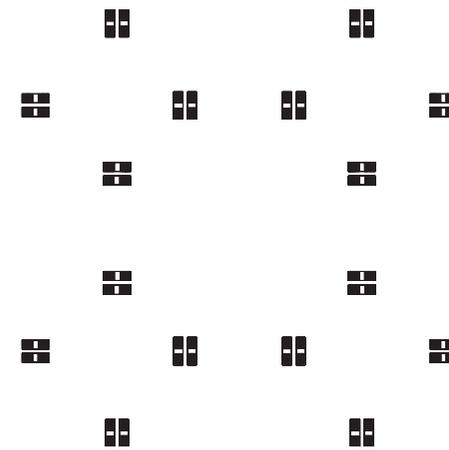
Walls



Roofs



100 Light Columns (Virtual Hypostyle Hall)



Stairs (Synchronic short-cut)Circulation

Seven elements defines the architecture of the museum, these elements are the basic elements for defining any architectural space, Column, Wall, Roof, Floor, Stair...

The seven elements respond to the proportion of the spaces in size and scale, according to the three dimensional measurements of the space (length, width, heights)

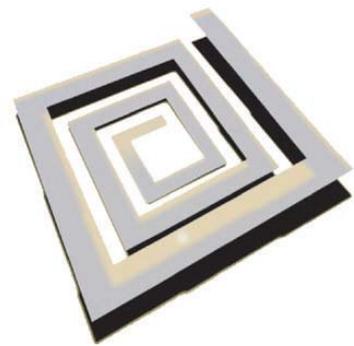
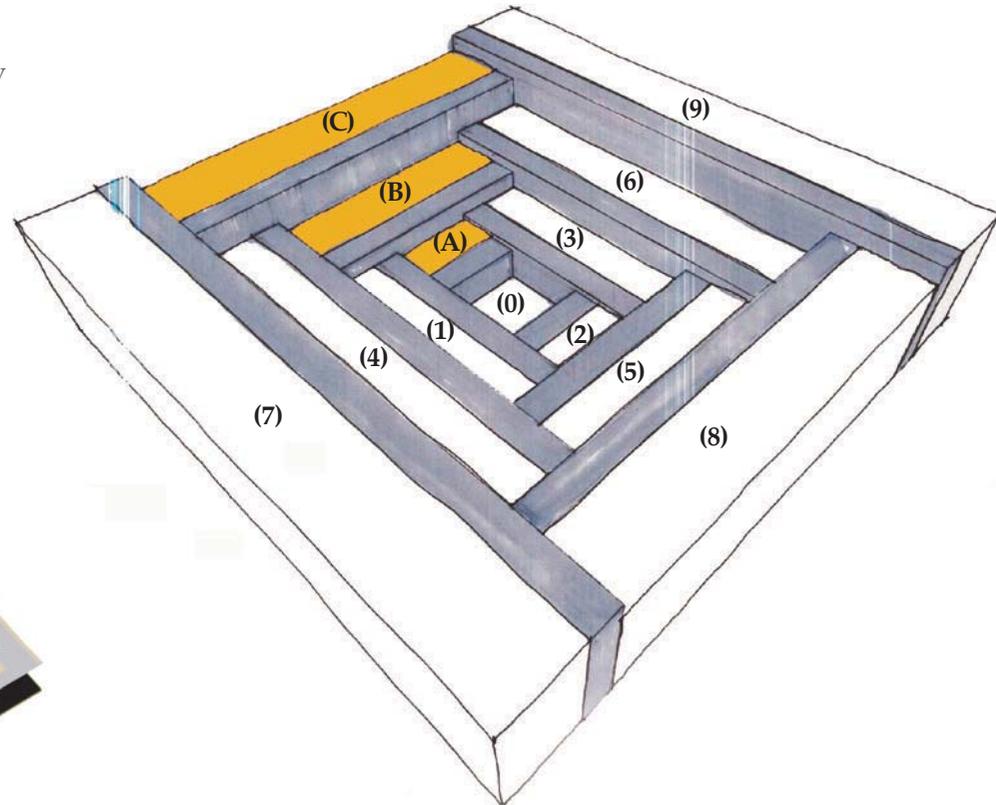
For example the diameter and the height of the columns that define the chronological route and create the display wall screen started from 90 cm (3 feet) at the first gallery space to 270 cm (9 feet) at the end of the museum

That variation makes the ultimate response to both the structural integrity and chronological growth.

Model of the nine chronological dynasties

- (0) Main entrance hall
- (1) Pre-historic and pre-dynastic period gallery
- (2) Early dynastic age gallery
- (3) Old kingdom gallery
- (4) First intermediate period gallery
- (5) Middle kingdom gallery
- (6) Second intermediate period gallery
- (7) New kingdom gallery
- (8) Third intermediate gallery
- (9) Late period gallery

- (A) Non exhibit area
- (B) Non exhibit area
- (C) Non exhibit area



Route concept

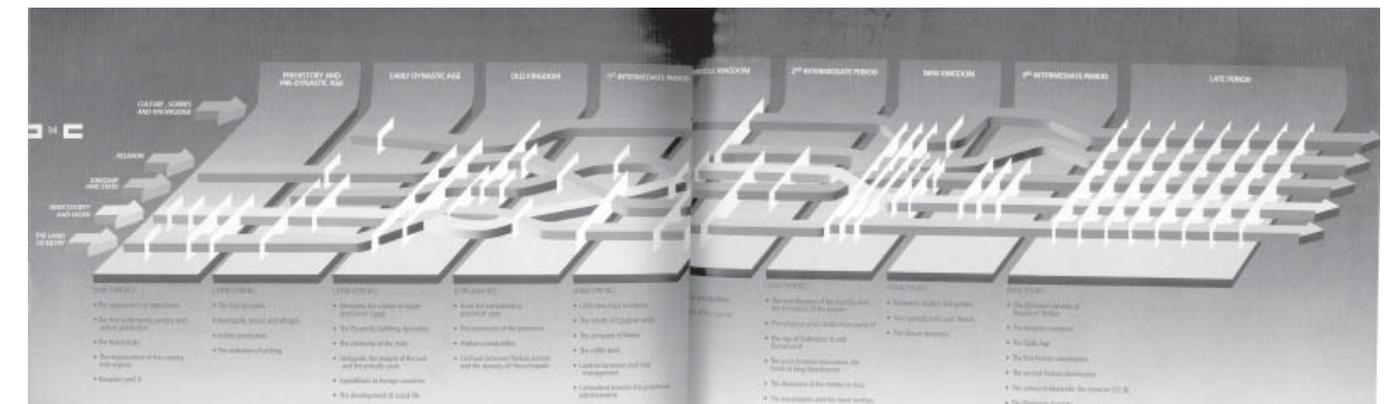
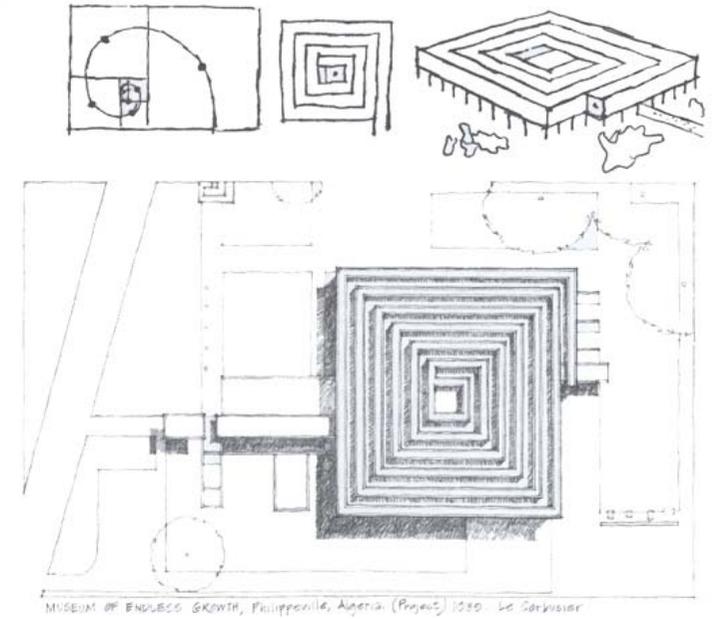
Hypertextual route:
 "Linked or arranged nonsequentially"

In the first half of the 20th century le Corbusier and Frank Lloyd Wright refined the idea of the museum as a "route". Overcoming the concept of the museum as "wunderkammer." To link this concept with the present panorama of communications and culture in general, Creation of a hypertextual route is necessary.

The concept provides a solution for the level of complexity in the route diagram. The nine chronological dynasties are arranged along the main continuous ramped route which floats above several floors of structural and special galleries and creating an end for the museum.

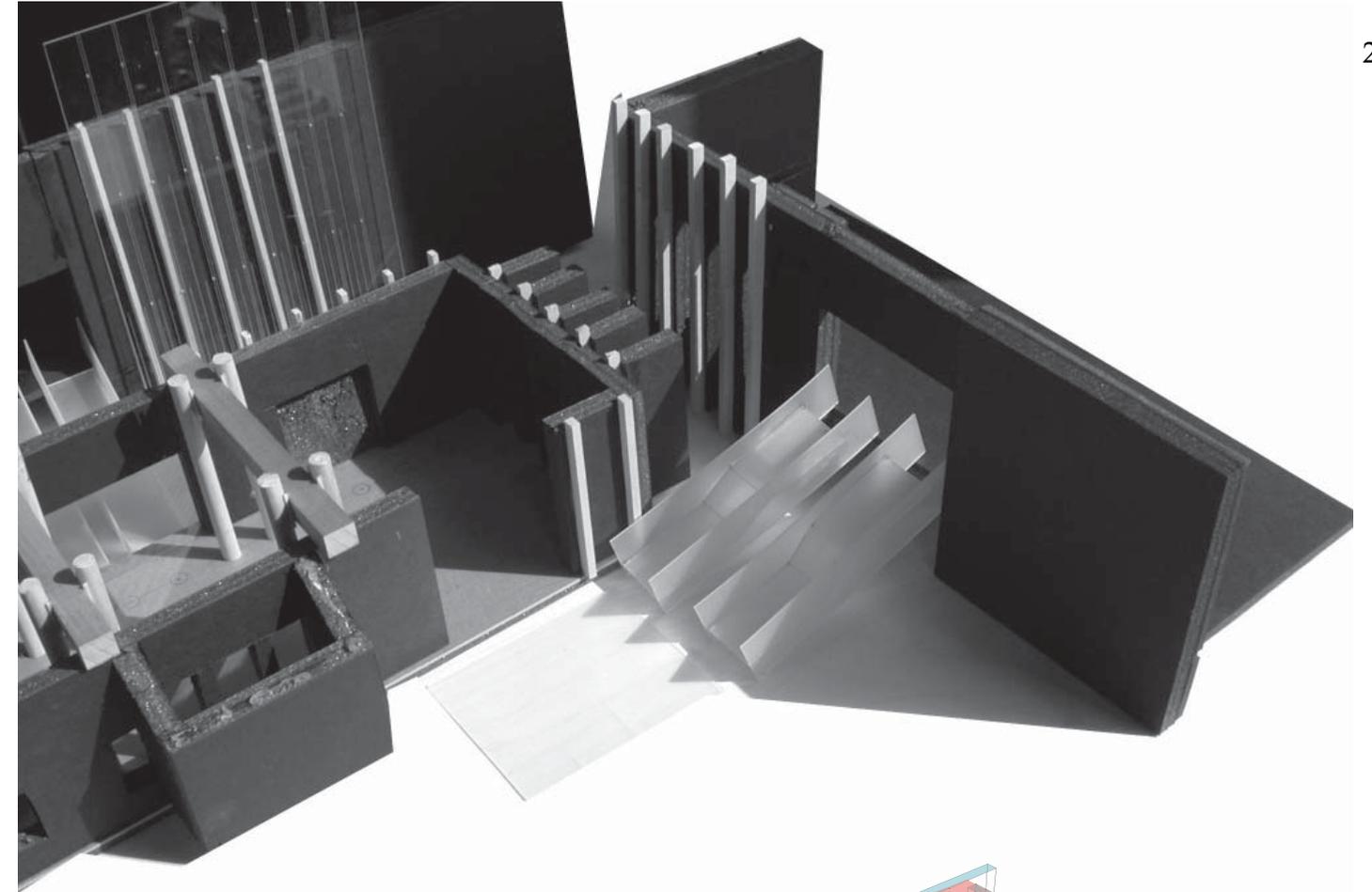
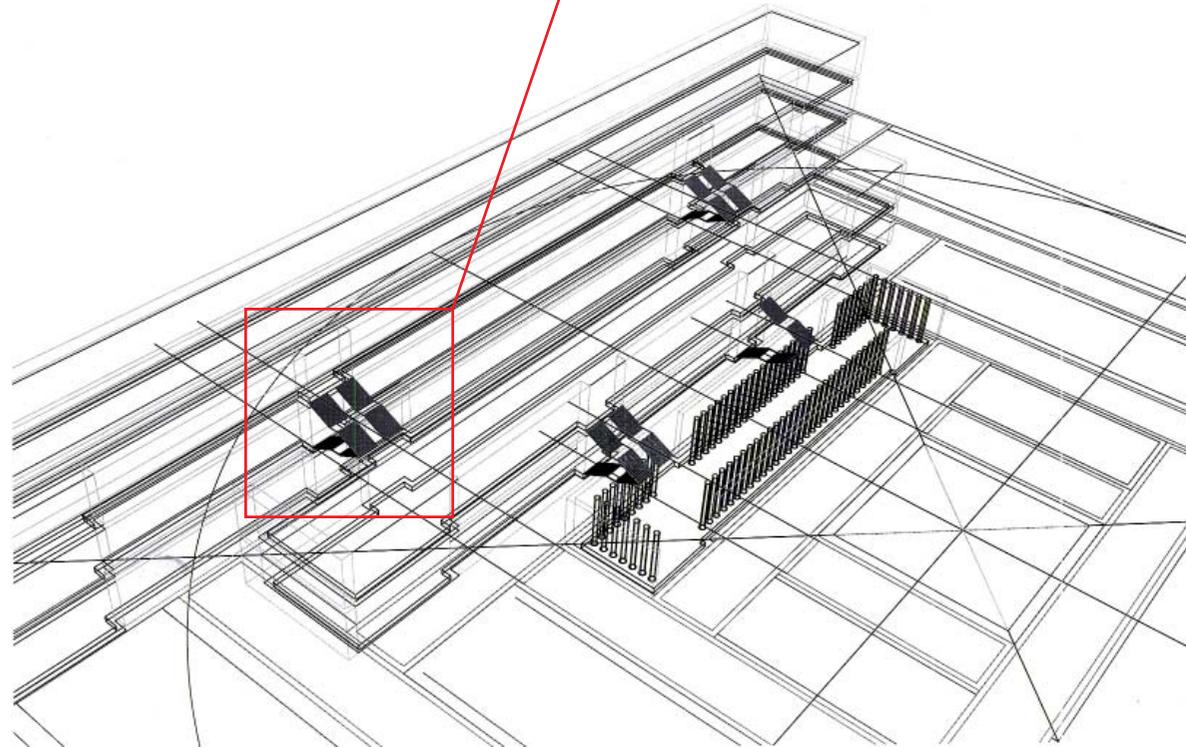
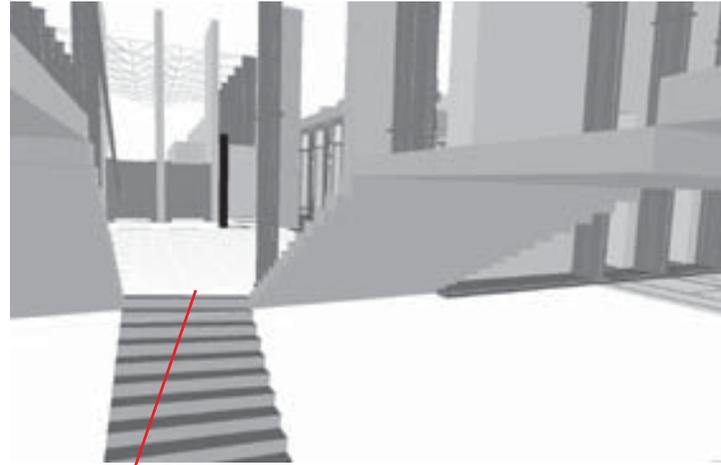
Each dynasty occupies one linear building out of the nine buildings.

Another grid of 16 "shortcut" occurs along the whole building, they intersect with the main route, providing a wide range of choices for the visitor to make his own route and a new path each time he visits the museum.

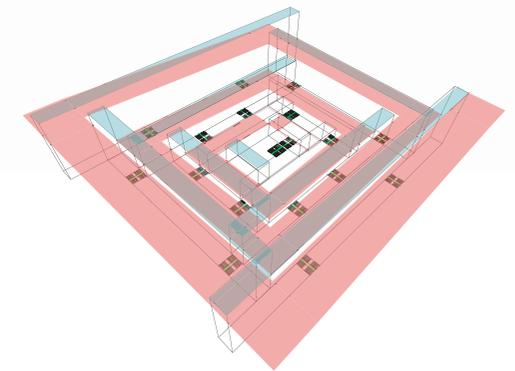


Synchronic versus Diachronic:

Along the chronological journey (the diachronic theme) a number of organized synchronic shortcuts (cross movement), situated along the grand ramp, provide a high level of flexibility known as "Hyper textual route of display itineraries". In these synchronic sections, the permanent exhibitions areas on the top floor are interrupted by twelve perpendicular shortcuts which allow the visitor to create his/her own route upon every visit to the museum. These shortcuts nodes act as points of intersection between different galleries, demonstrating periods of overlap between different dynasties. In addition, synchronic sections act as a primary access to special exhibits and non-chronological galleries below the grand ramp.



The grand chronological ramp



Alexandria-Cairo desert road new exit to the Musuem Site

Ring road to Cairo

Al-Remaiah round about

Shooting Club

Military installation

New-Train Station

Cairo-Fayoum road

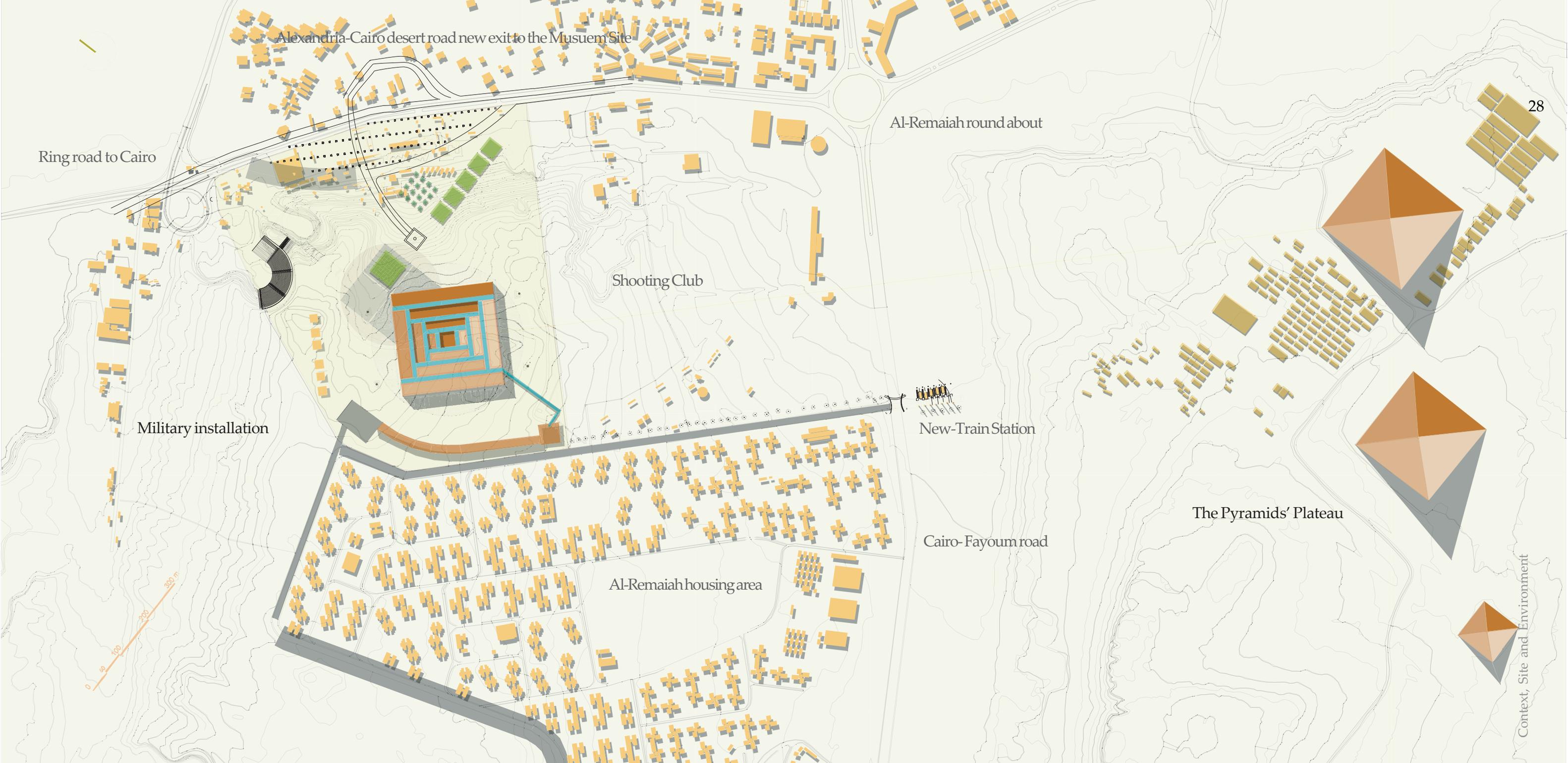
Al-Remaiah housing area

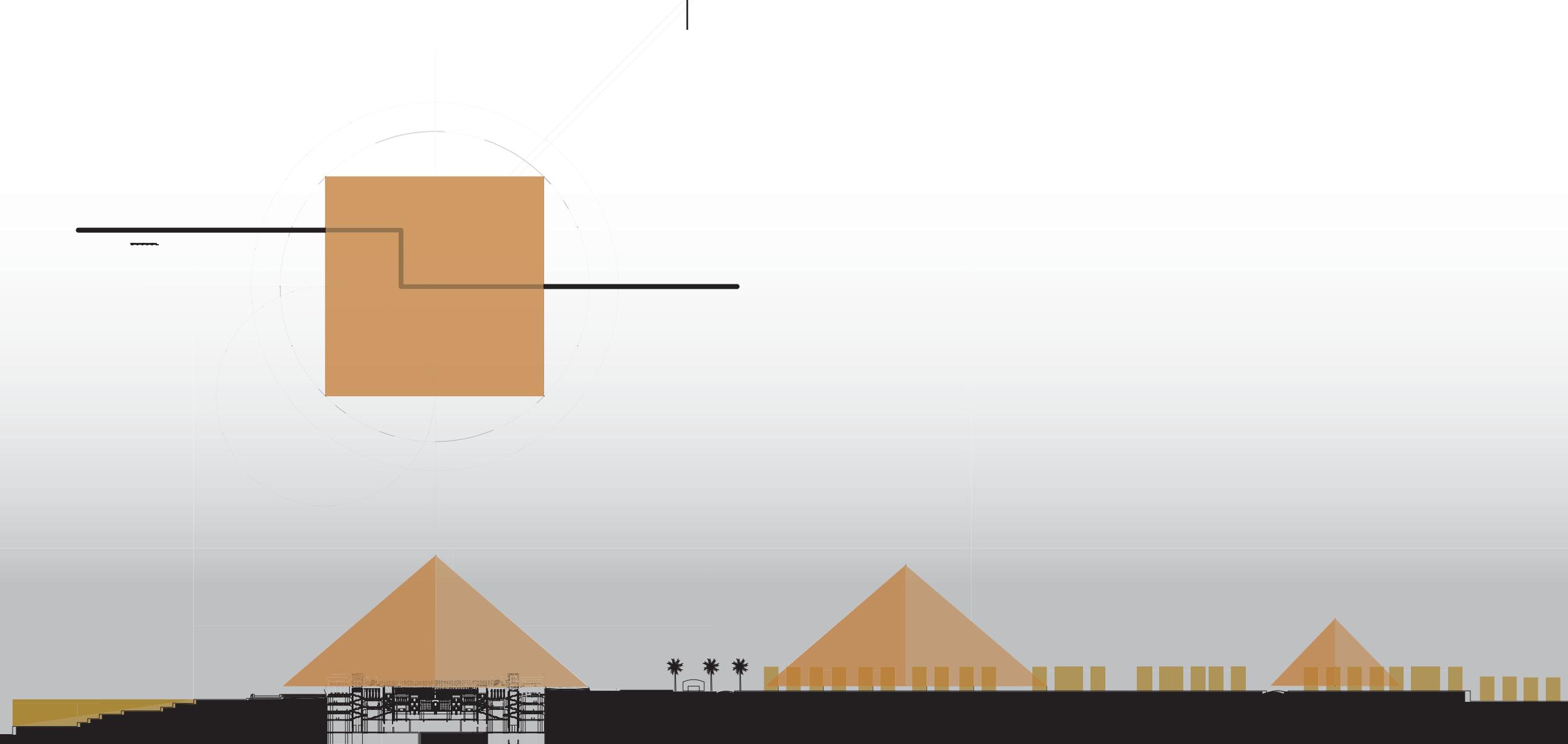
The Pyramids' Plateau

28

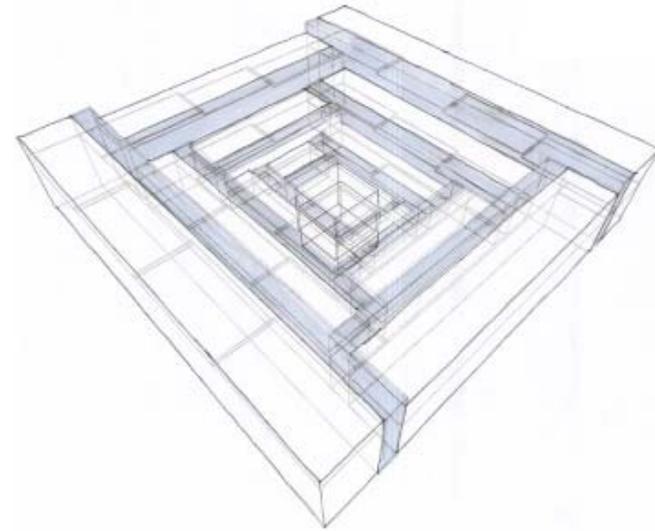
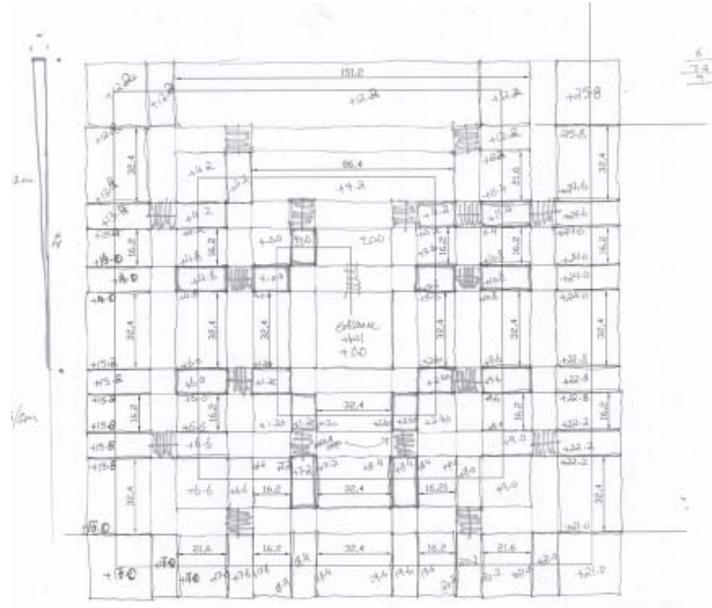


Context, Site and Environment

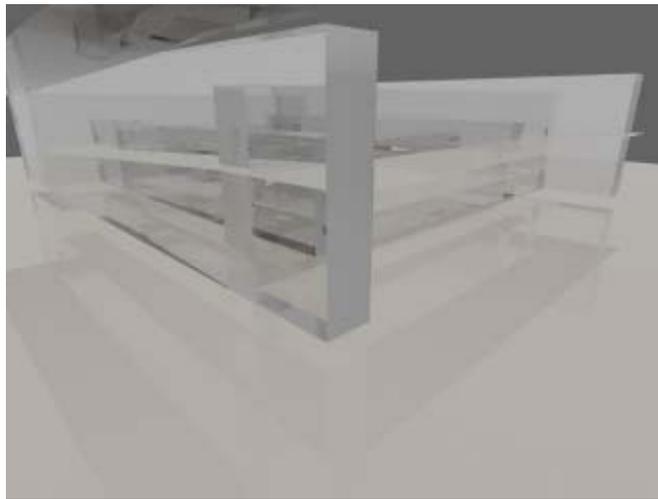




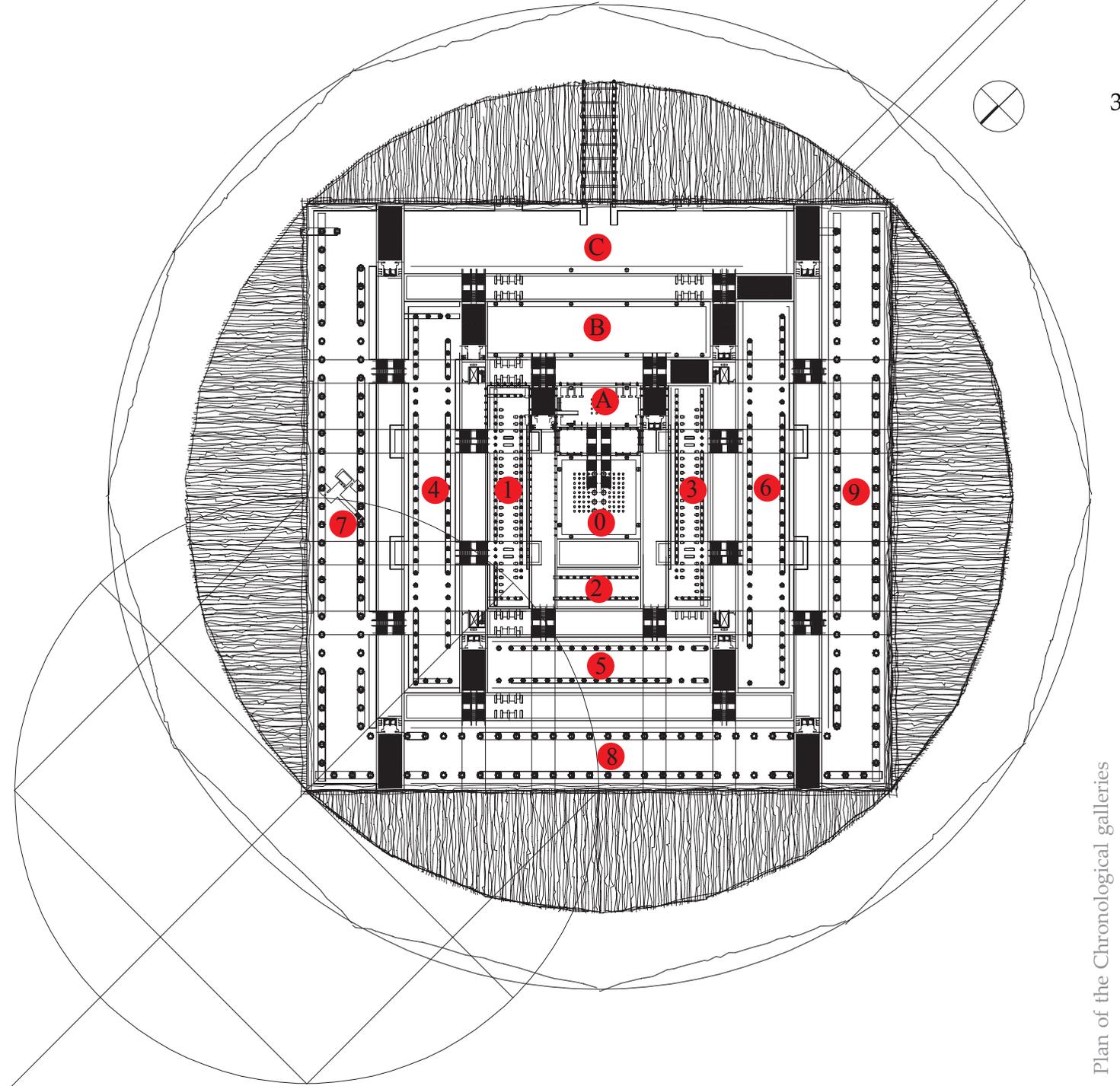




Chronological Route 1:27 slope ramps

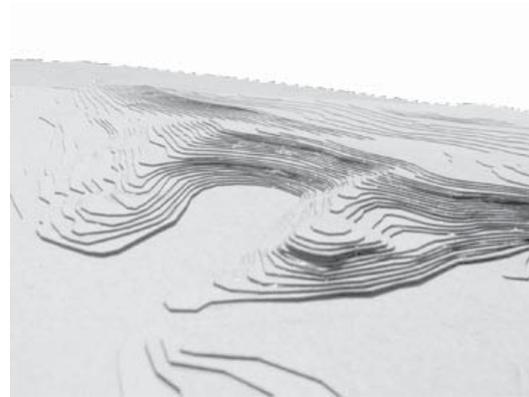


- (0) Main entrance hall
- (1) Pre-historic and pre-dynastic period gallery
- (2) Early dynastic age gallery
- (3) Old kingdom gallery
- (4) First intermediate period gallery
- (5) Middle kingdom gallery
- (6) Second intermediate period gallery
- (7) New kingdom gallery
- (8) Third intermediate gallery
- (9) Late period gallery
- (A) Non exhibit area
- (B) Non exhibit area
- (C) Non exhibit area

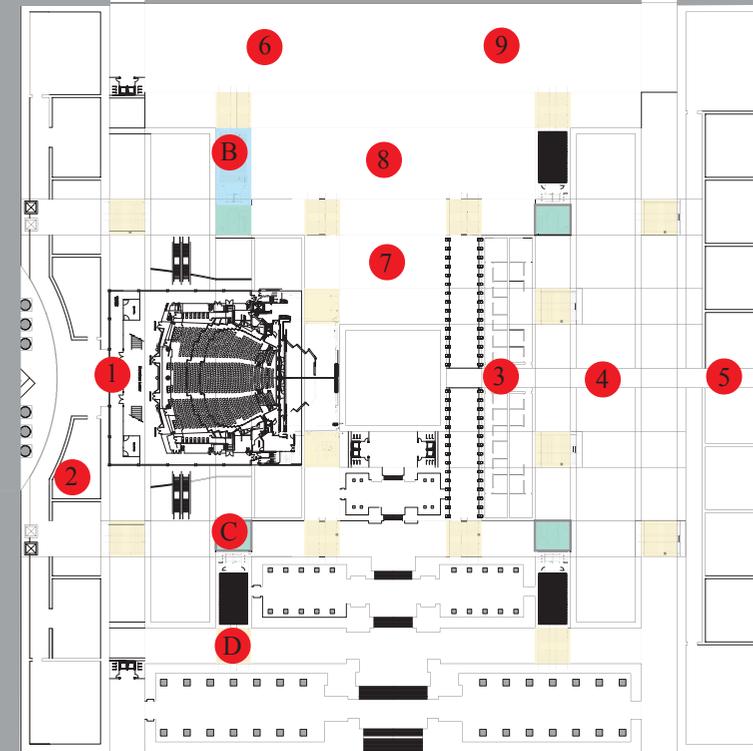




Enric Miralles, Stairway, Igualada Cemetery, Barcelona 1990

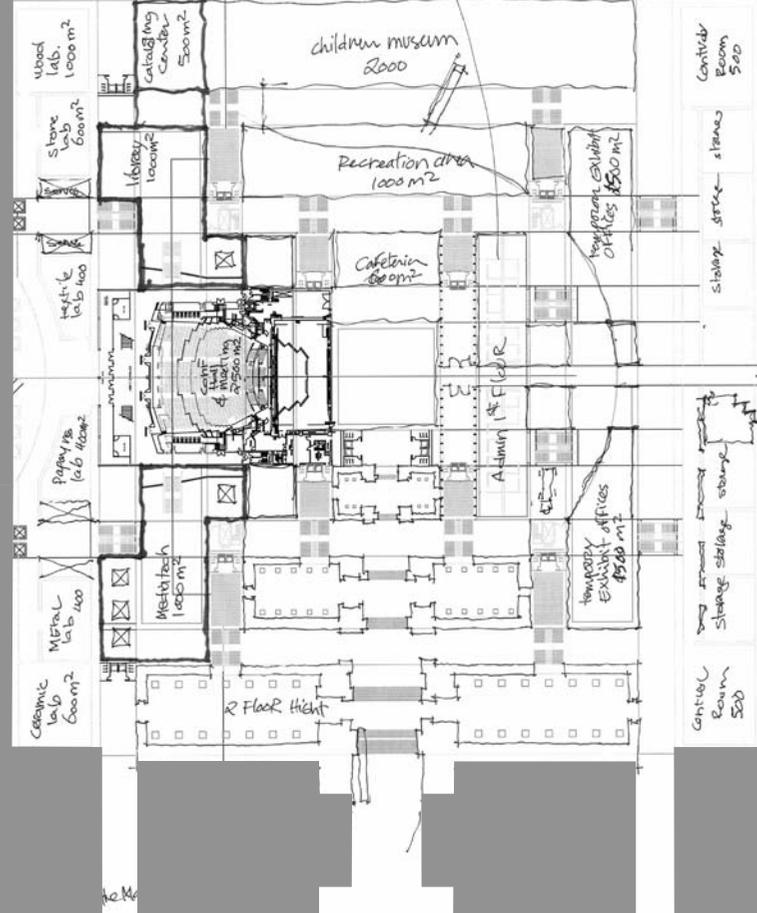


As the visitor approaches the main entrance through the tunnel, gradual changes occur, the ceilings become much lower, the doors become much smaller, the openings become much narrower, and after passing through three pylons (south buildings) the entrance hall (light column hall) evolves and breaks the silence.

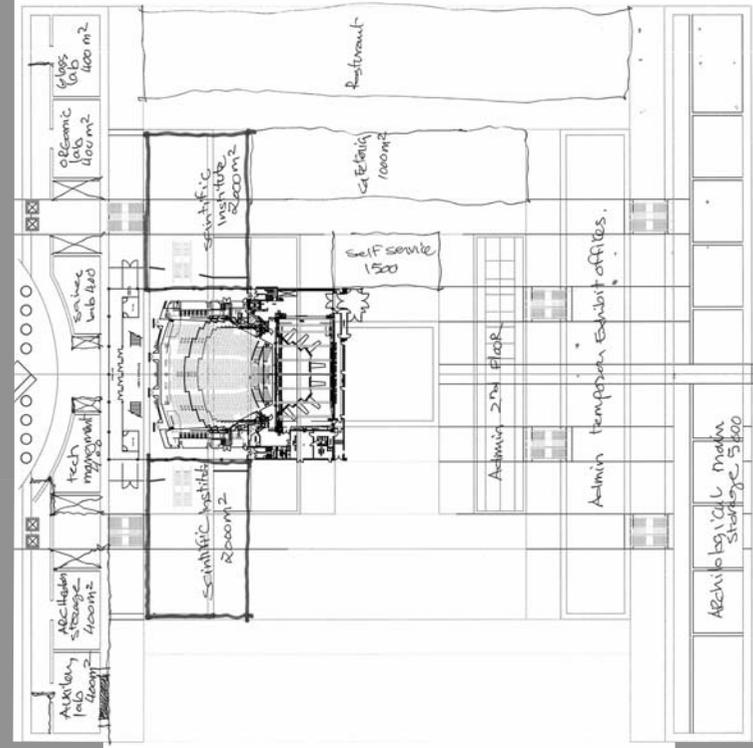


- (A) Main entrance
- (B) Circulation services
- (C) Museum services
- (D) Shortcuts

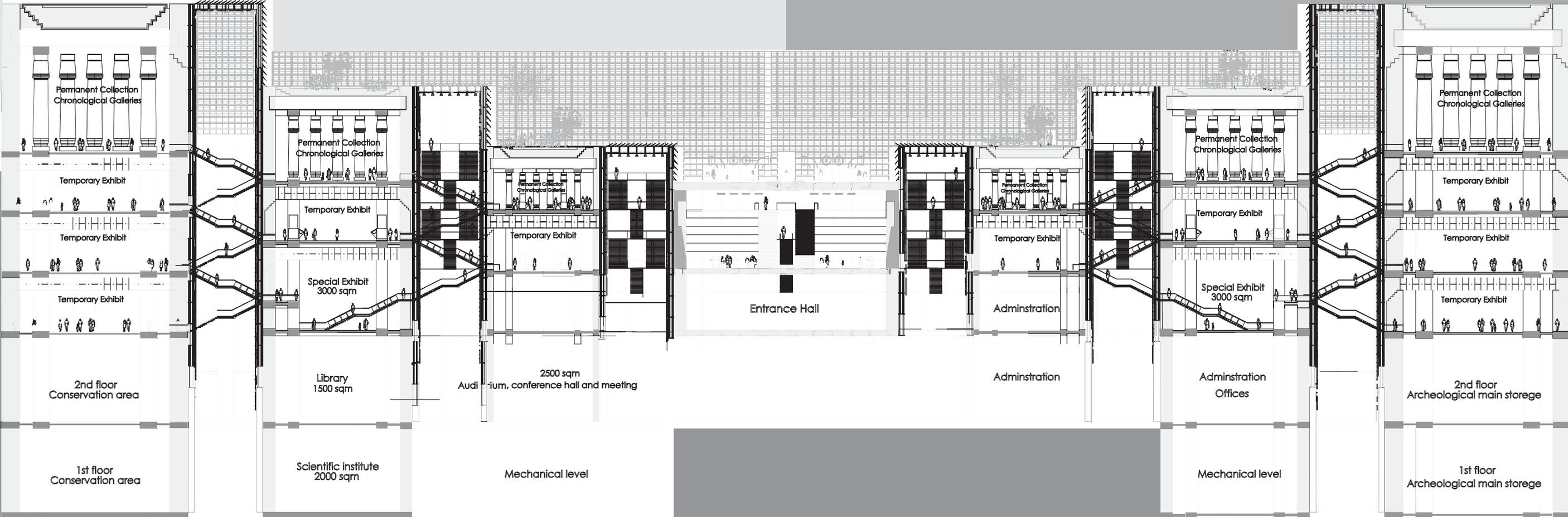
- (1) Conference hall and meeting 2500 sqm
- (2) Conservation area (second floor)
- (3) Administration (second floor)
- (4) Temporary exhibit offices
- (5) Archeological main storage
- (6) Children museum
- (7) Recreation areas
- (8) Cafeteria
- (9) Restaurant

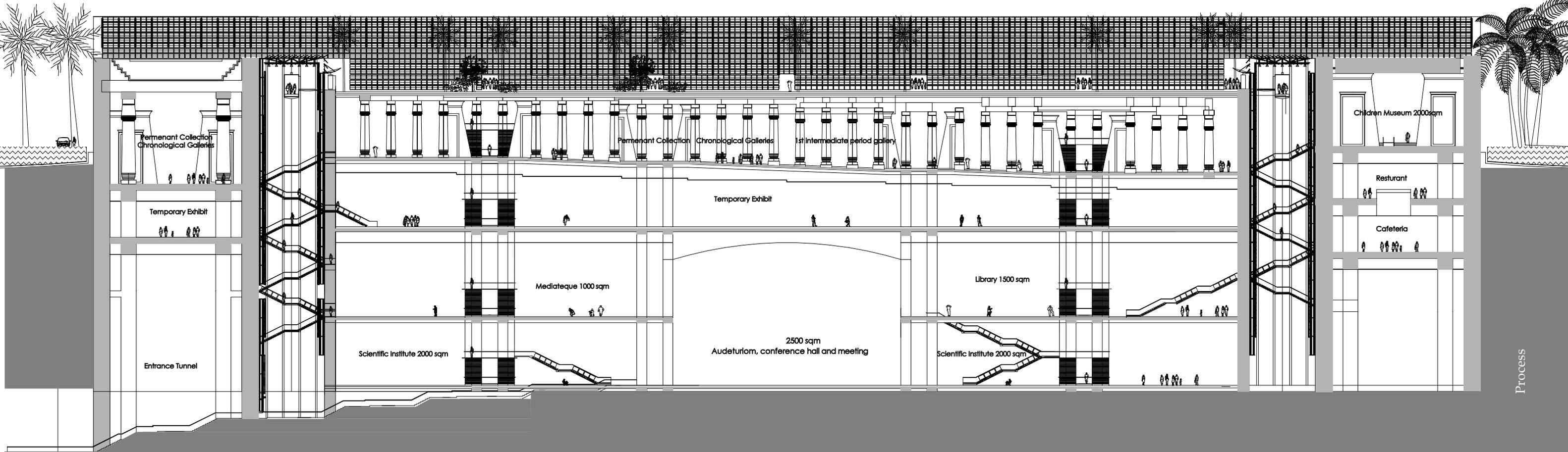


Plan of the Library/Mediatheca level



Plan of the Scientific institute level





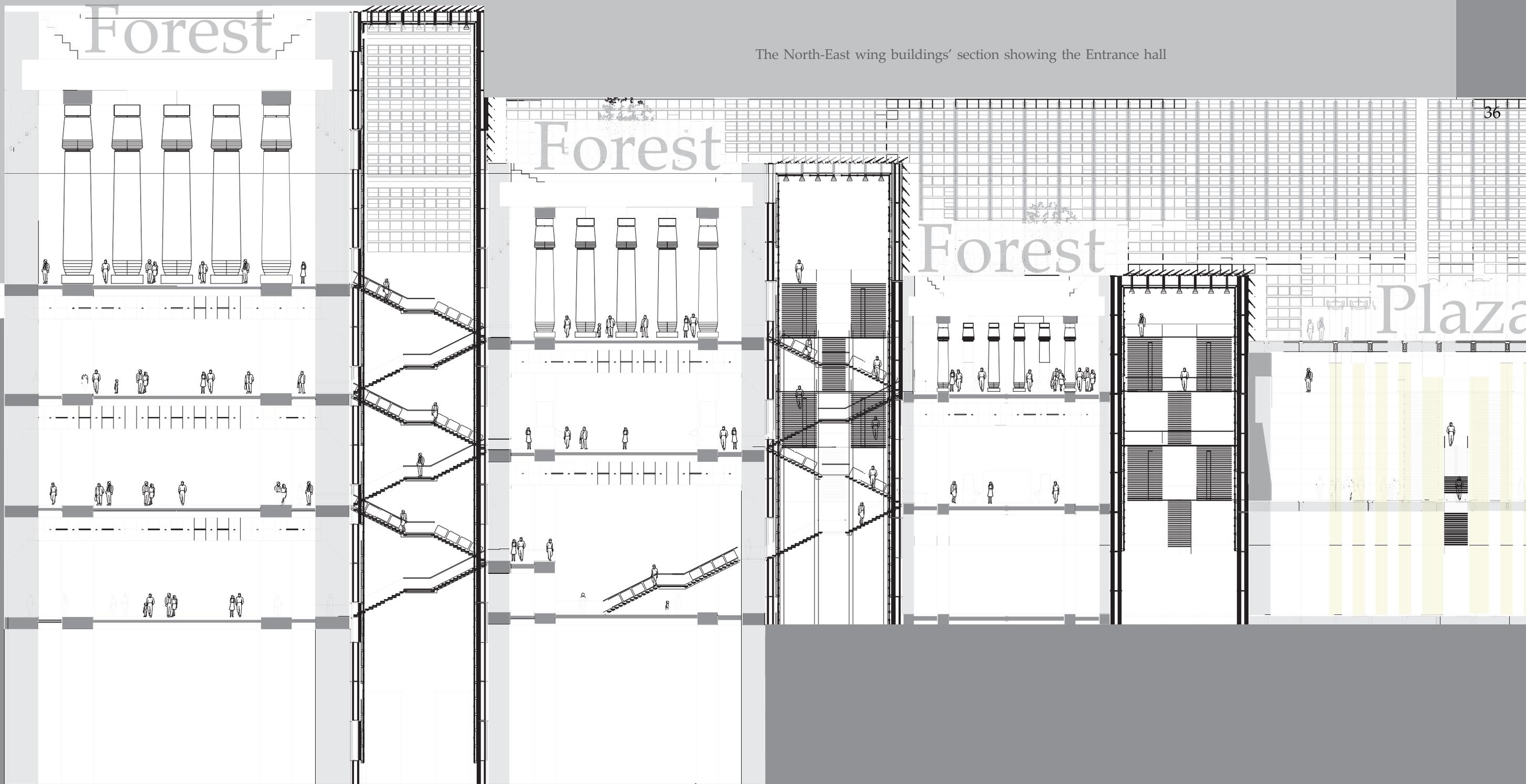
Forest

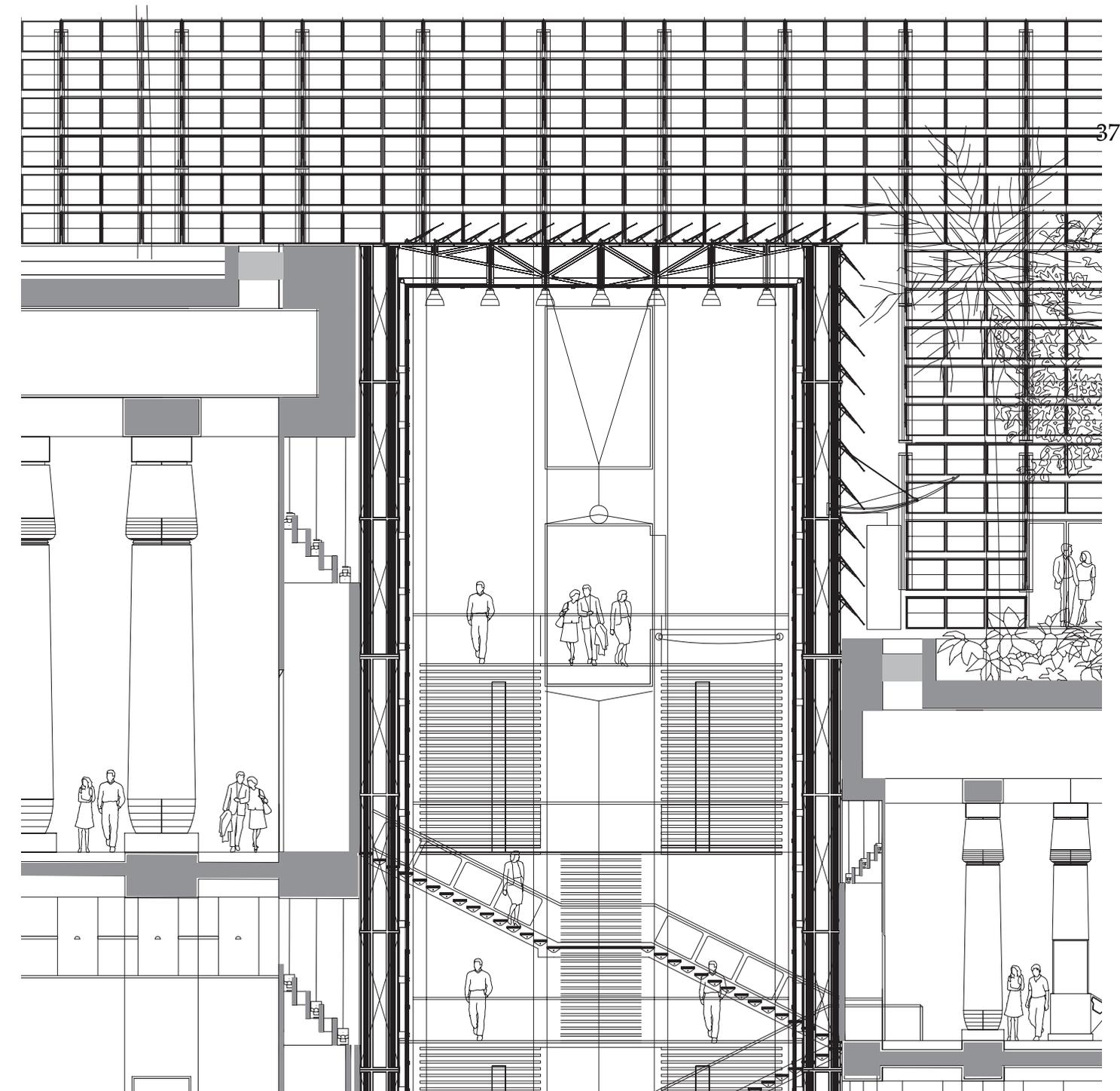
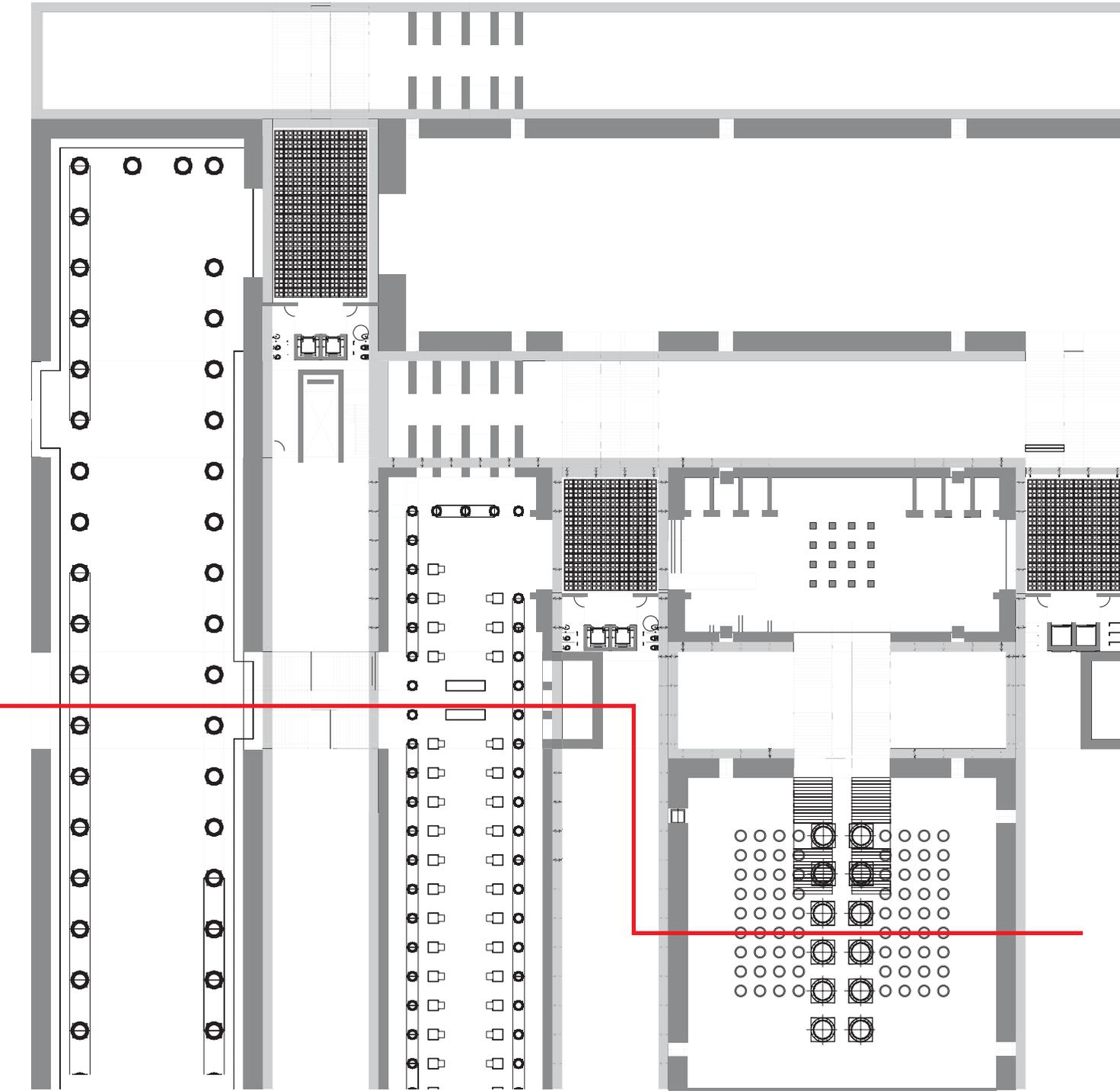
The North-East wing buildings' section showing the Entrance hall

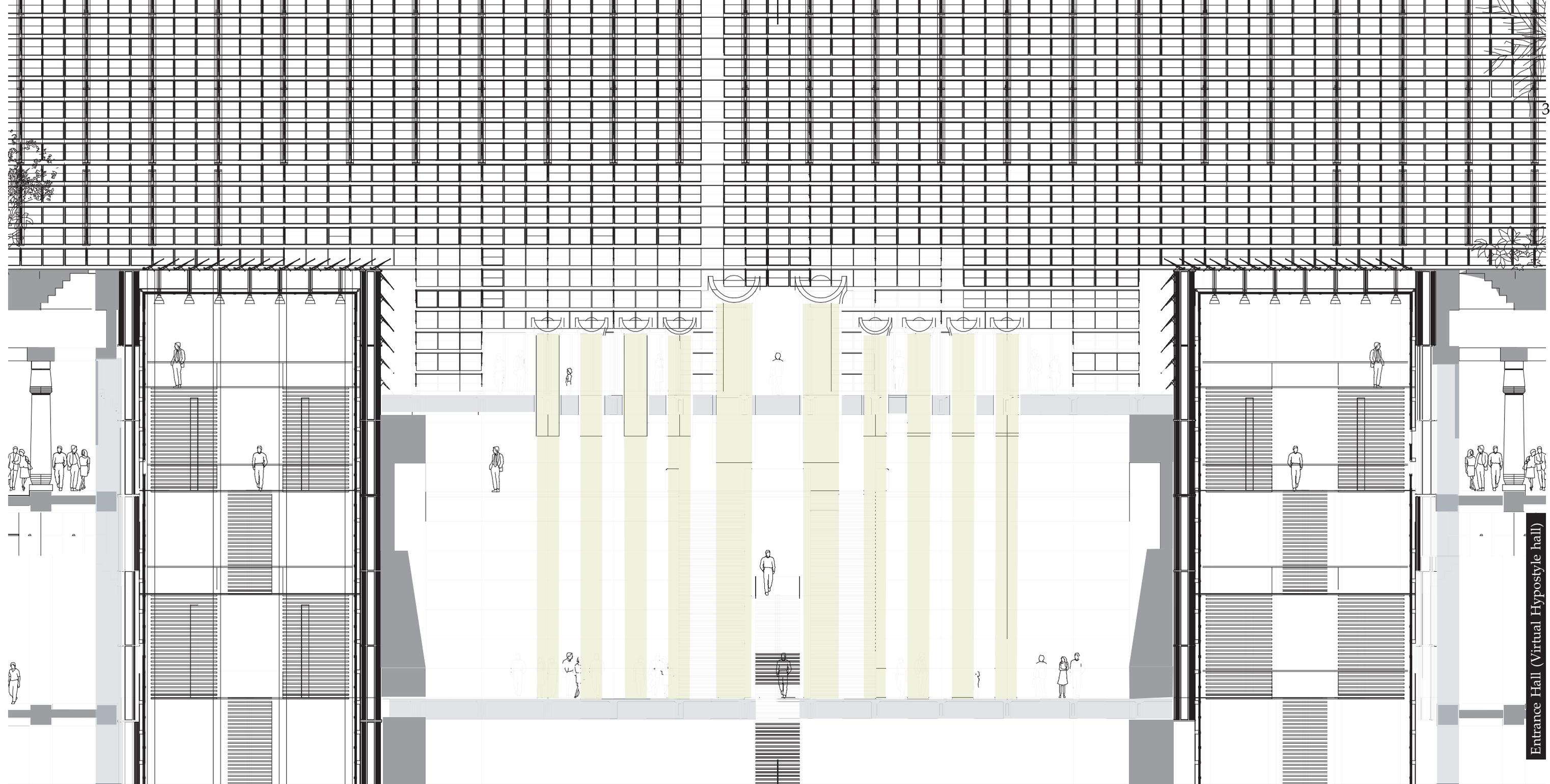
Forest

Forest

Plaza

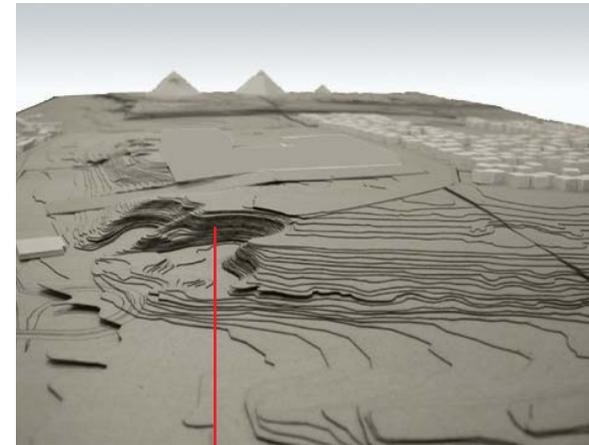
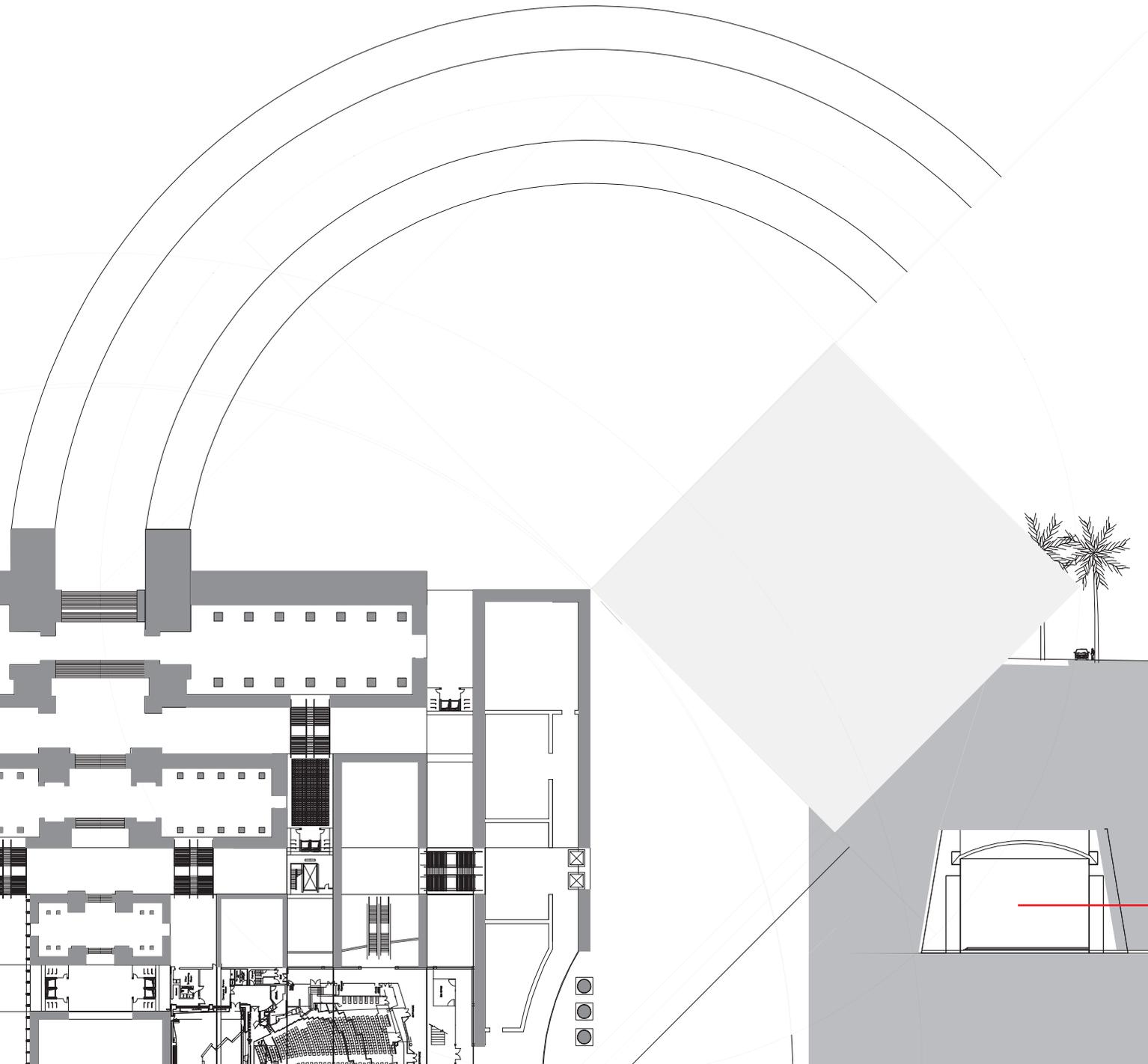




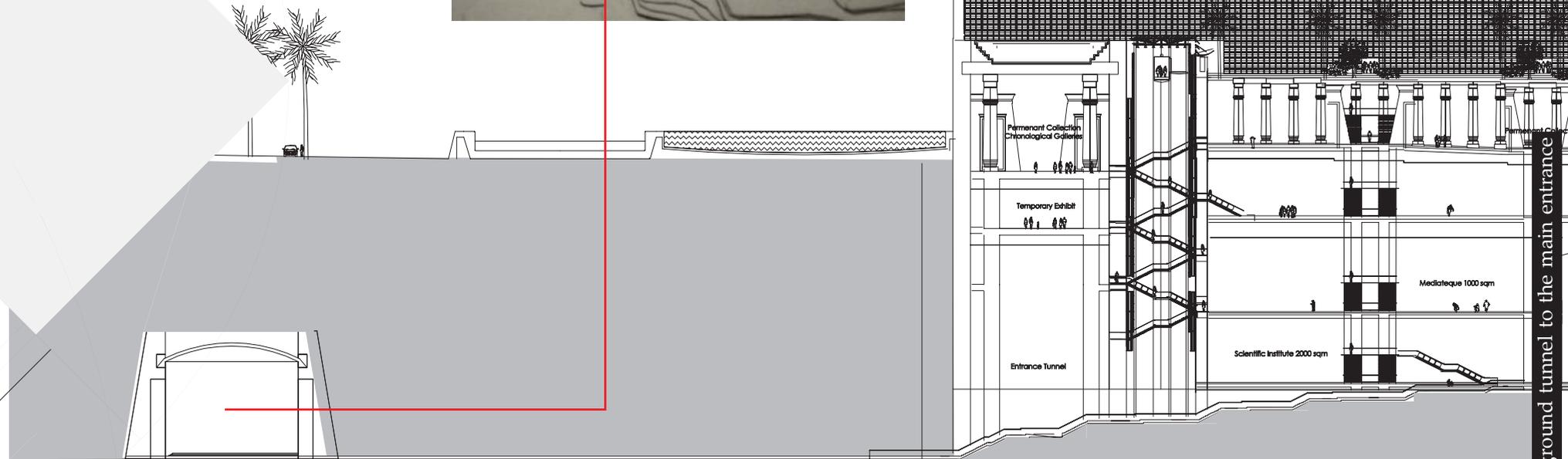


Entrance Hall (Virtual Hypostyle hall)





The entrance to the complex begins with a long three quarter circle tunnel that starts from a point near the parking lot and goes under the ground to the main entrance gate. Along the tunnel, on the left hand side a large glass wall brings the light inside and allow to go in and out to the outdoor sculpture garden and the outdoor exhibit area. As the visitor walks along the tunnel there is no clue about where he goes or what is the building looks like. These moments of silence and caution make the journey enjoyable and mysteries.

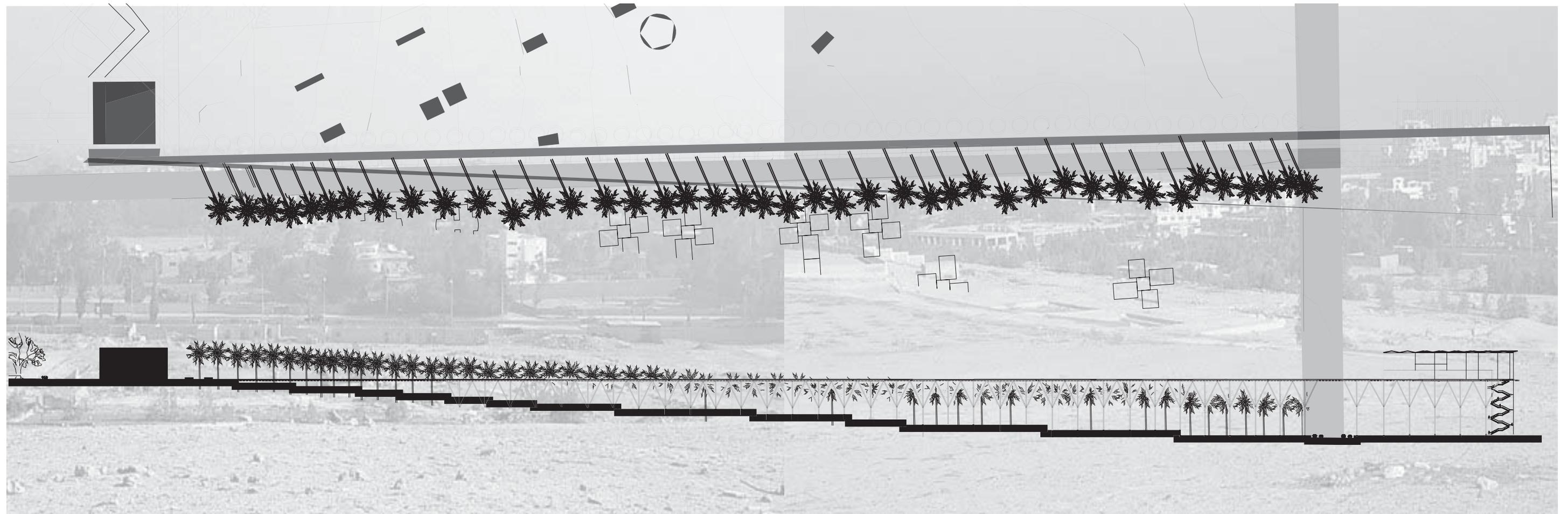


Under ground tunnel to the main entrance

From Inside Out : The moment of exiting the museum building is the last moment of the journey when the visitor will take a small train and go to the pyramids' plateau, to discover the ancient antiquity of the ancient Egypt.

The journey itself is exiting. The distance is almost two miles, which starts from a higher elevation than the arrival point(30 feet) the train moves along a horizontal track surrounded from both sides by two rows of palm trees which are planted according the earth levels.

From the train's window, the visitor will discover different experience with the palm trees and will be able to see them from different angels and level, similar to the experience inside the chronological galleries with the columns.



Train station (tram shuttle)

"It is necessary to return to the point where the interplay of light and dark reveals forms, and in this way to bring richness back into architectural space.

Yet, the richness and depth of darkness has disappeared from our consciousness, and the subtle nuances that light and darkness engender, their spatial resonance - these are almost forgotten. Today, when all is cast in homogeneous light, I am committed to pursuing the interrelationship of light and darkness. Light, whose beauty within darkness is as of jewels that one might cup in one's hands; light that, hollowing out darkness and piercing our bodies, blows life into 'place'."

Tadao Ando, 1993



Tadao Ando gallery, Department of Asian Art,
The Art Institute of Chicago, 1992



Symbolic rule of Light in ancient Egypt.

One of the key aspects of the Egyptian culture is the relationship the ancient Egyptians had with light. To ancient Egyptian, the daily and annual cycle of the sun is the source of all life and the symbol of rebirth.

Sunrise and sunset are felt as critical moments. The sun is obliged to struggle against its enemies. The afterlife, night, is interpreted as the primeval sea through which the sun navigates to bring light and life to the dead, saved by re-emerging at dawn and climbing up into the sky.

The sun is the dwelling of the sun god "Ra" is depicted as having a human body with golden skin and arms (gold is the metal that reflect light) with a falcon's head topped by the solar disc. Every morning, the goddess Nut (the celestial vault) gives birth to the god "Ra" and it is into her star-spangled body the returns at sunset. The sanctuary of Heliopolis used to preserve the "Ben Ben" whose pyramid shaped and gold-plated top would capture and reflect the rays of sun.

from Giedion, S. (Sigfried),
The eternal present: a contribution on constancy and change

Karnak Temple, the Great hypostyle hall

Hypostyle Hall (wadjit, or Hall of Papyriform Columns):

A Greek term for a room or chamber that has many columns. They became a feature of Egyptian architecture, but most such halls are distinguished from other pillared halls by the papyriform, which references the capital of the column often in the shape of the Papyrus Flower.

Main Entrance Hall (virtual hypostyle hall)

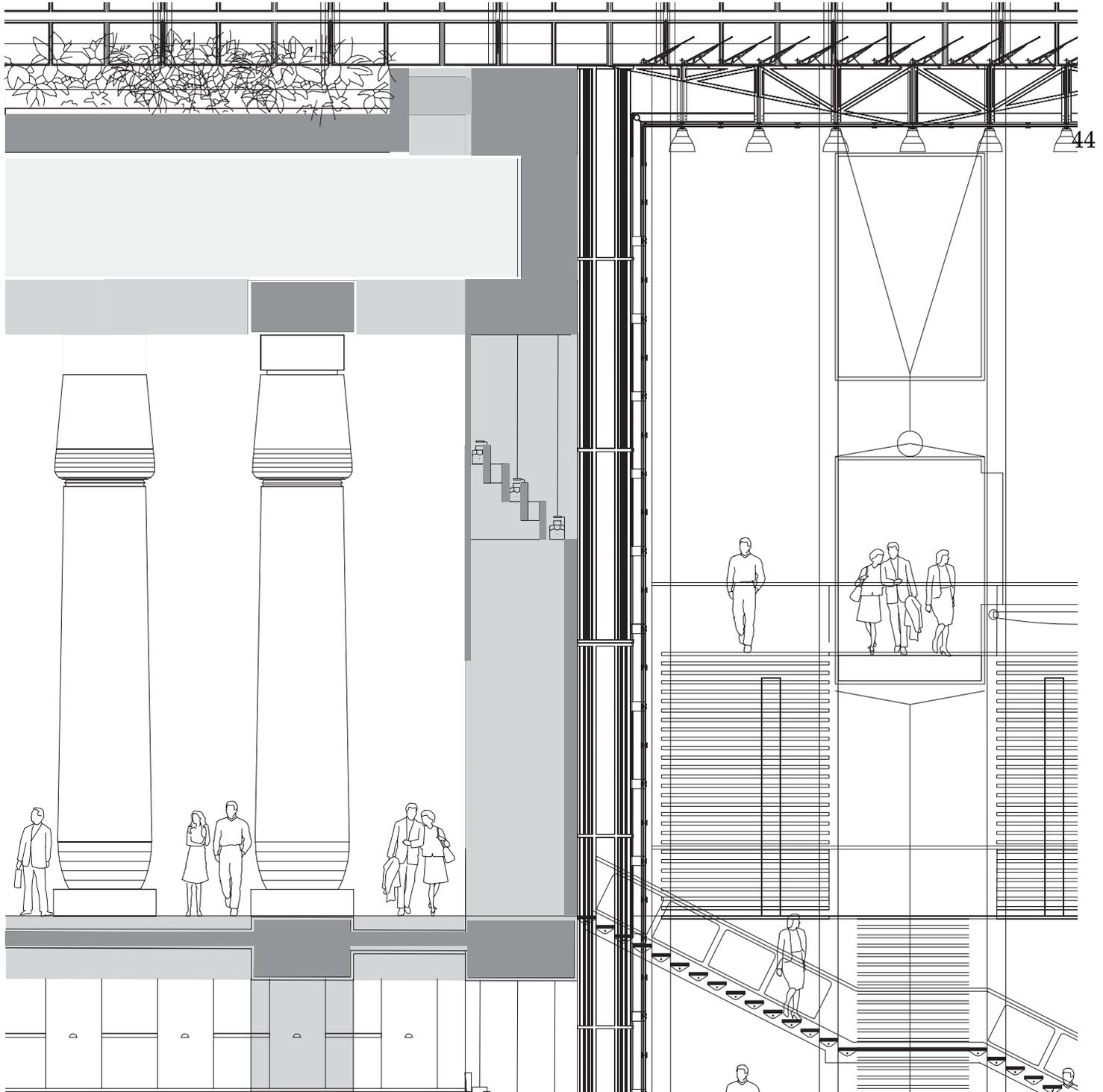
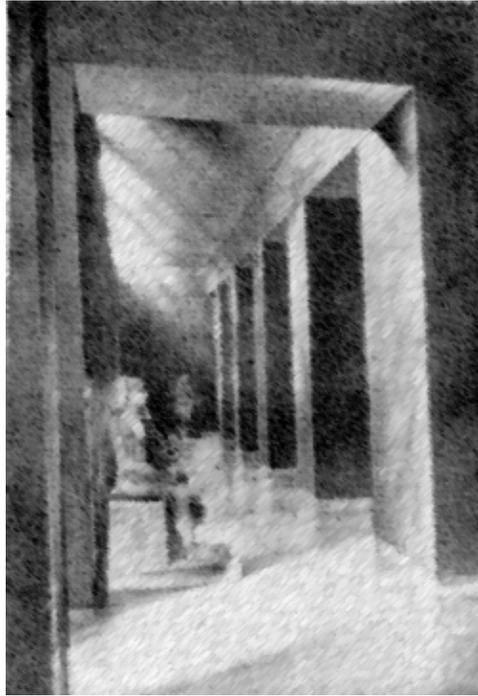
Making the Wall

Walls of light, walls tell stories

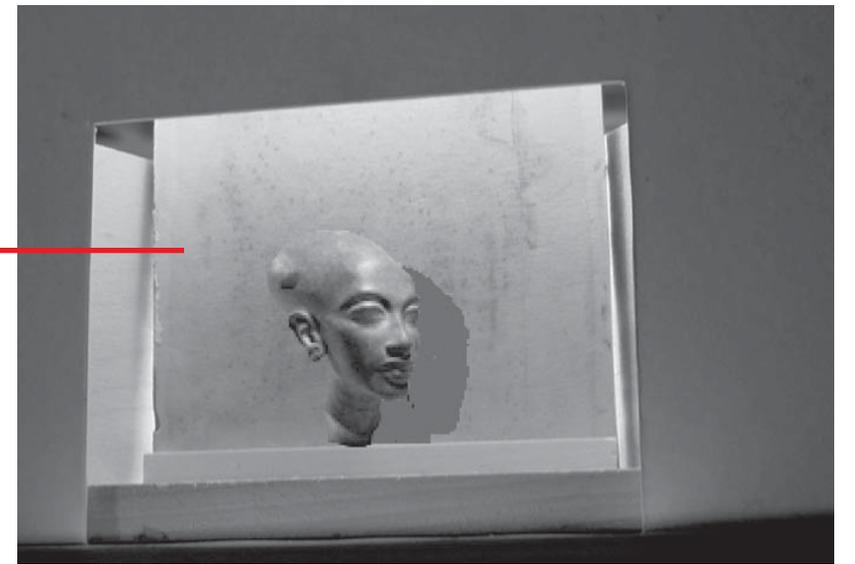
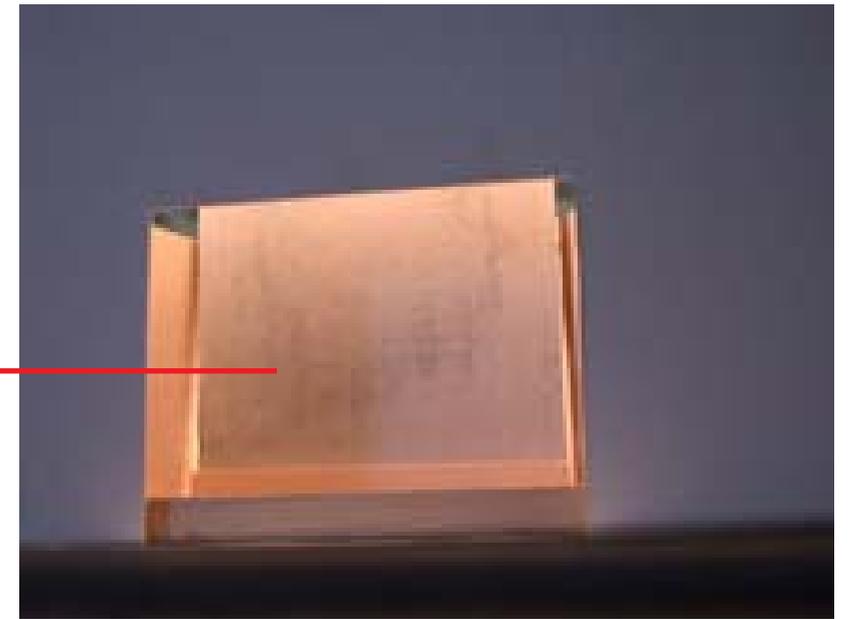
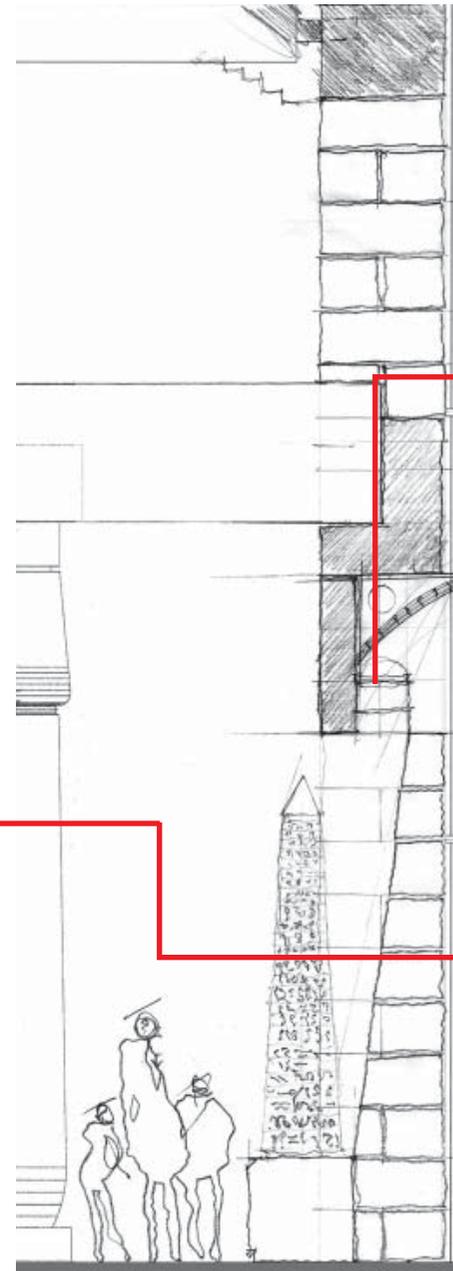
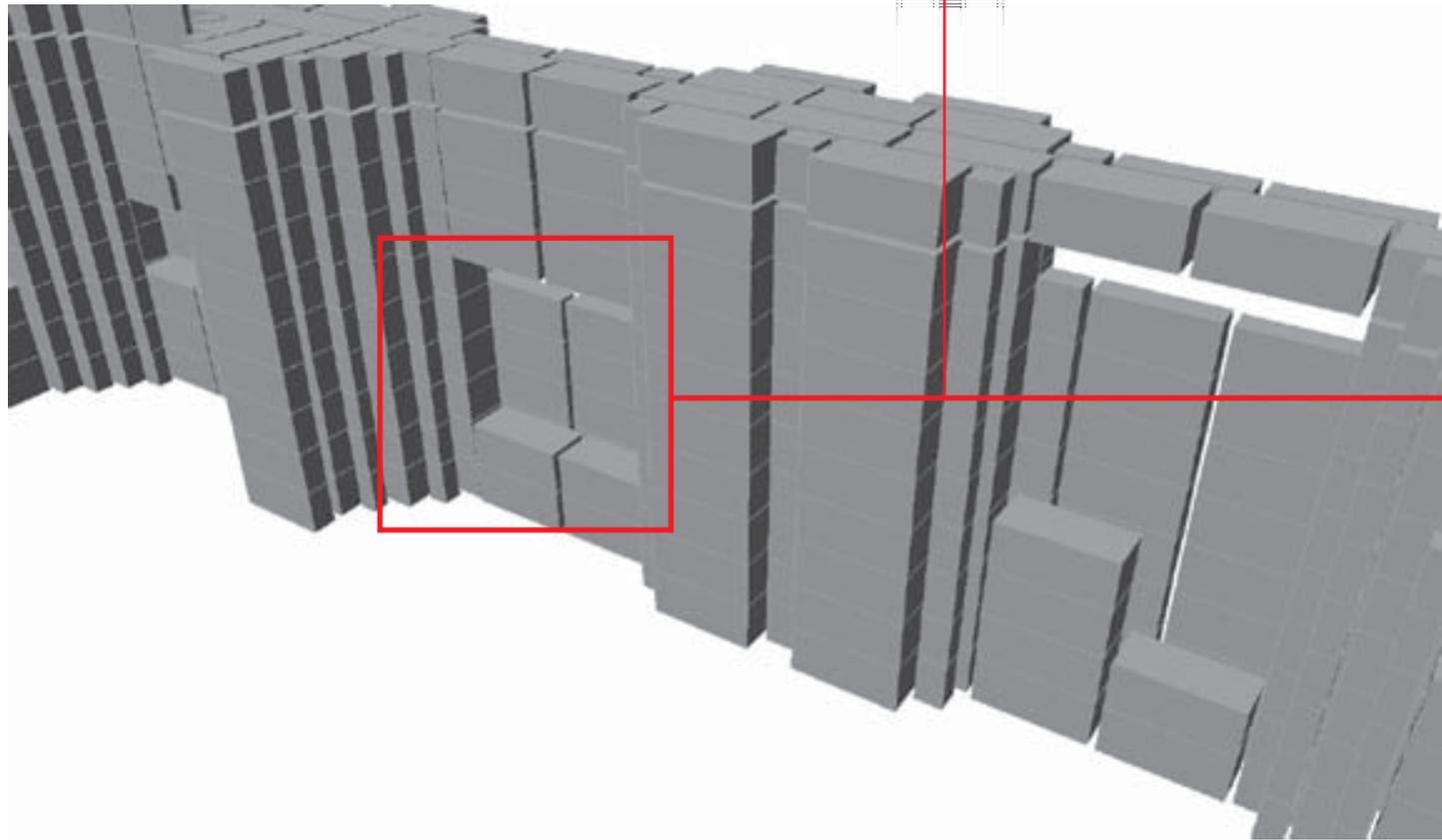
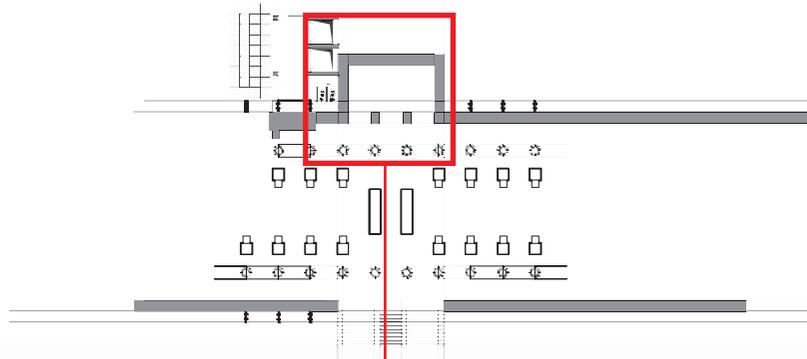
A huge part of the history of the Egyptian civilization came to us from reading the walls of the temples and tombs. Egyptians used to carve the granite and the stone with their stories of the daily life, war and all different aspects of life and afterlife.

The walls of the museum are acting in a the same way, but instead of carving the walls itself, the walls become a display case for the artifacts, with width varied from three feet to nine feet, the daylight penetrates the wall from the light wells, carving the wall niche and washes the wall, fills the display case with light.

With an eye on controlling the interior environment inside the museum, the integration of the daylight and the electrical light brings the artifacts to life.

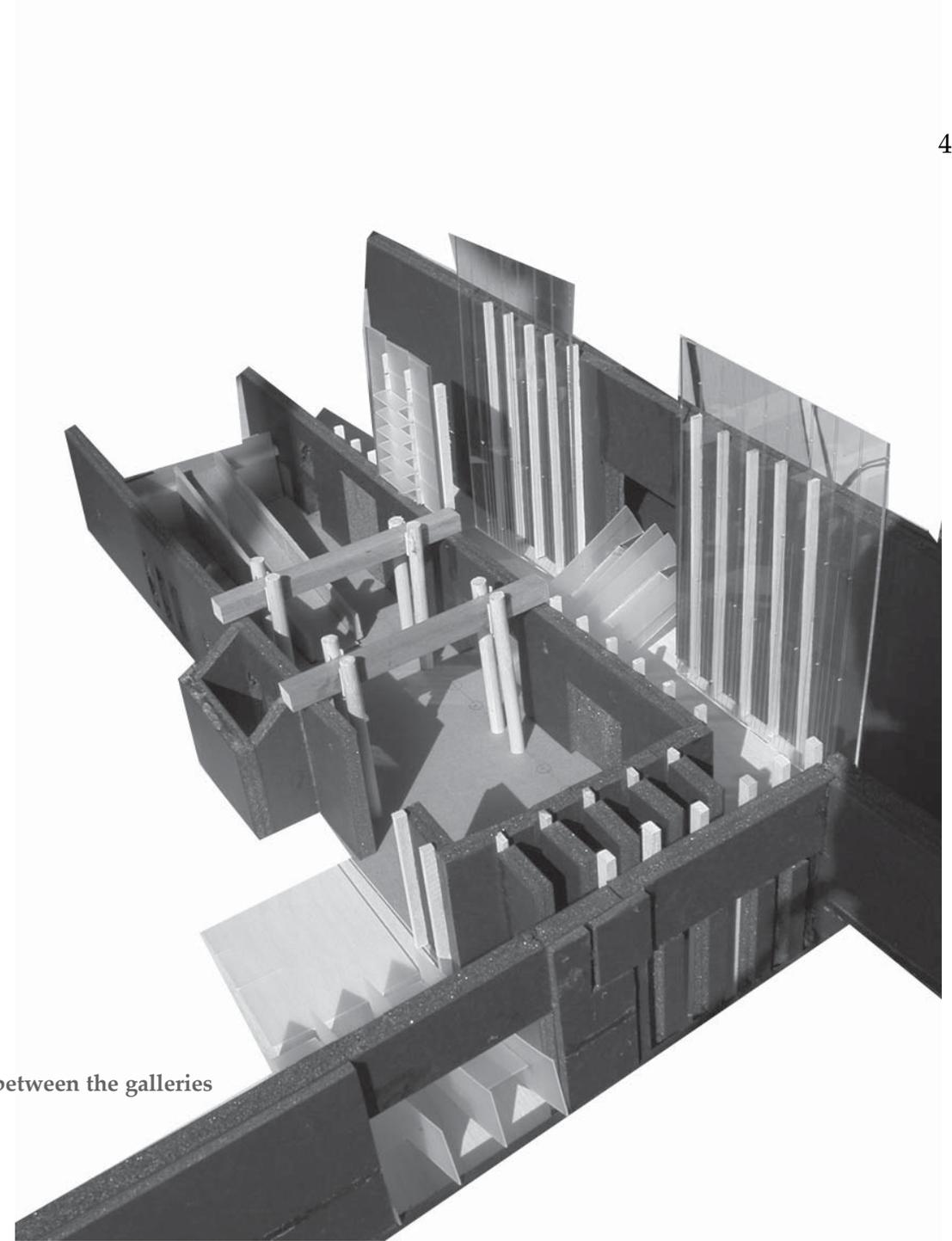


Making the Wall
Walls of light, walls tell stories

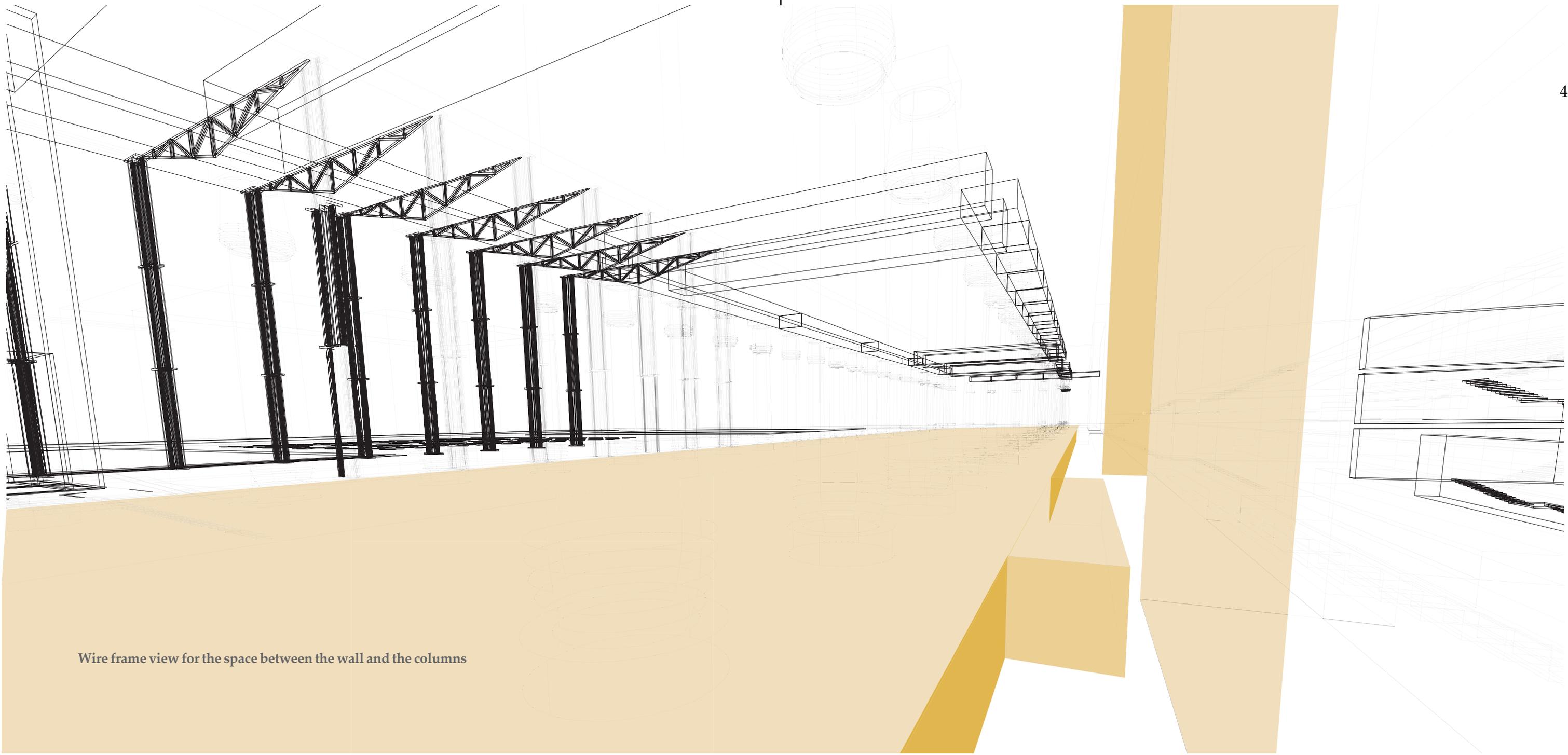




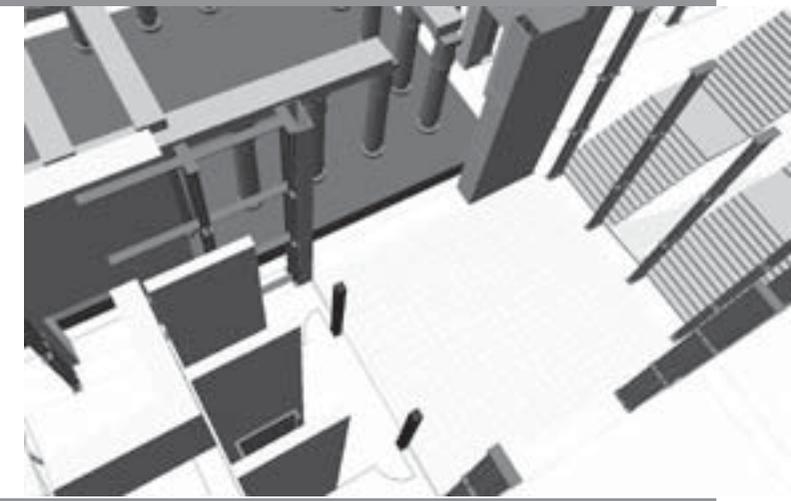
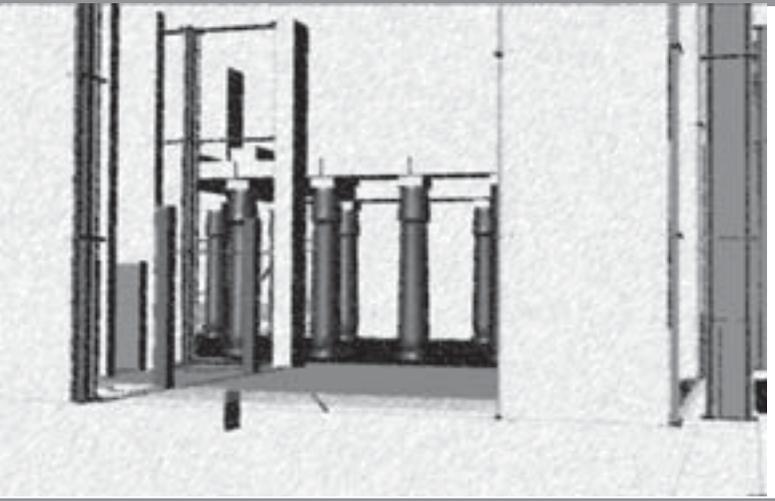
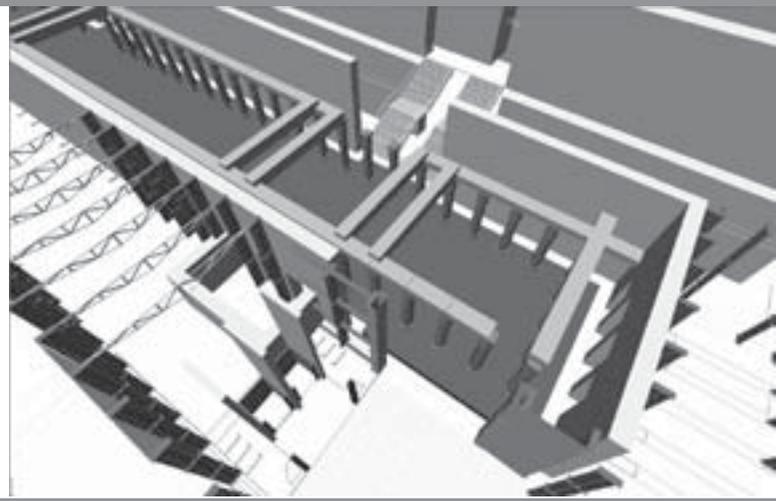
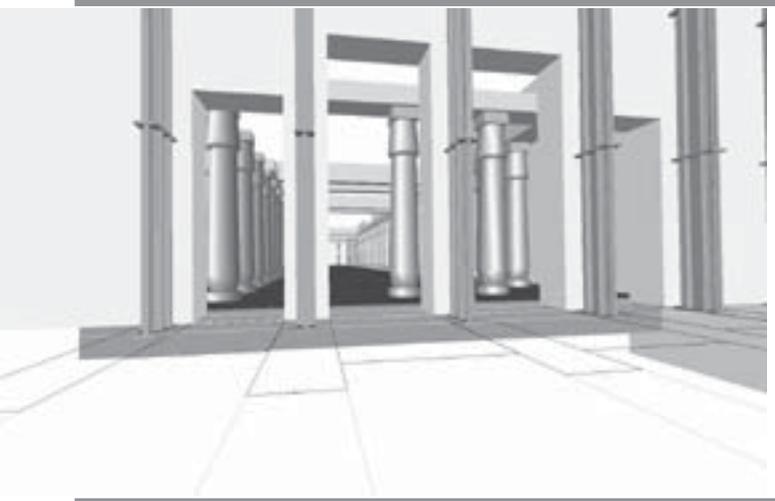
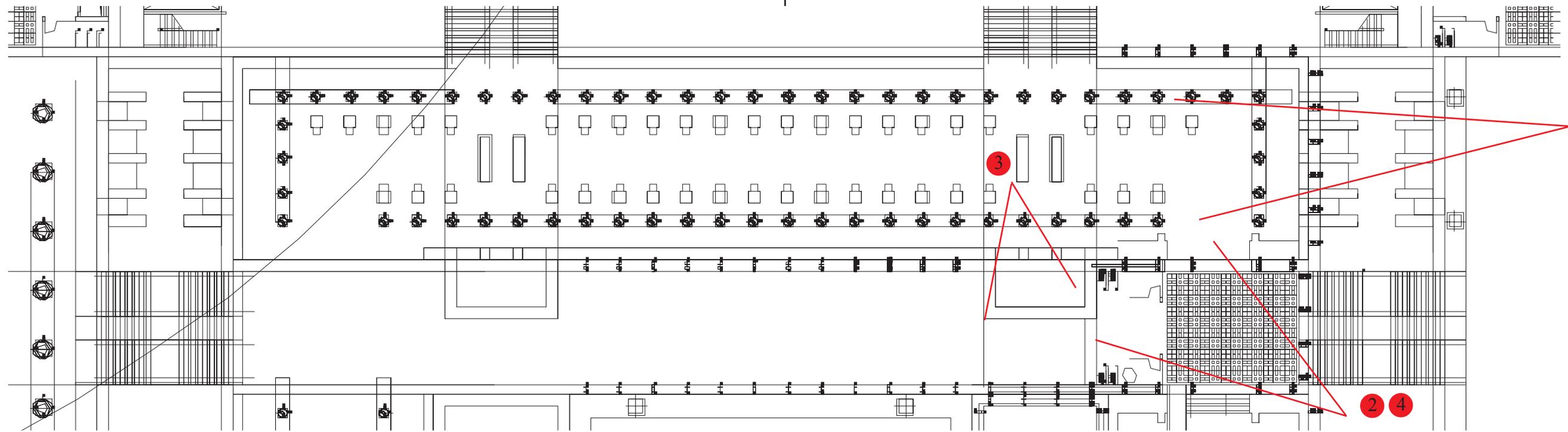
Wire frame view from inside a chronological gallery



Study of the relationship between the galleries



Wire frame view for the space between the wall and the columns

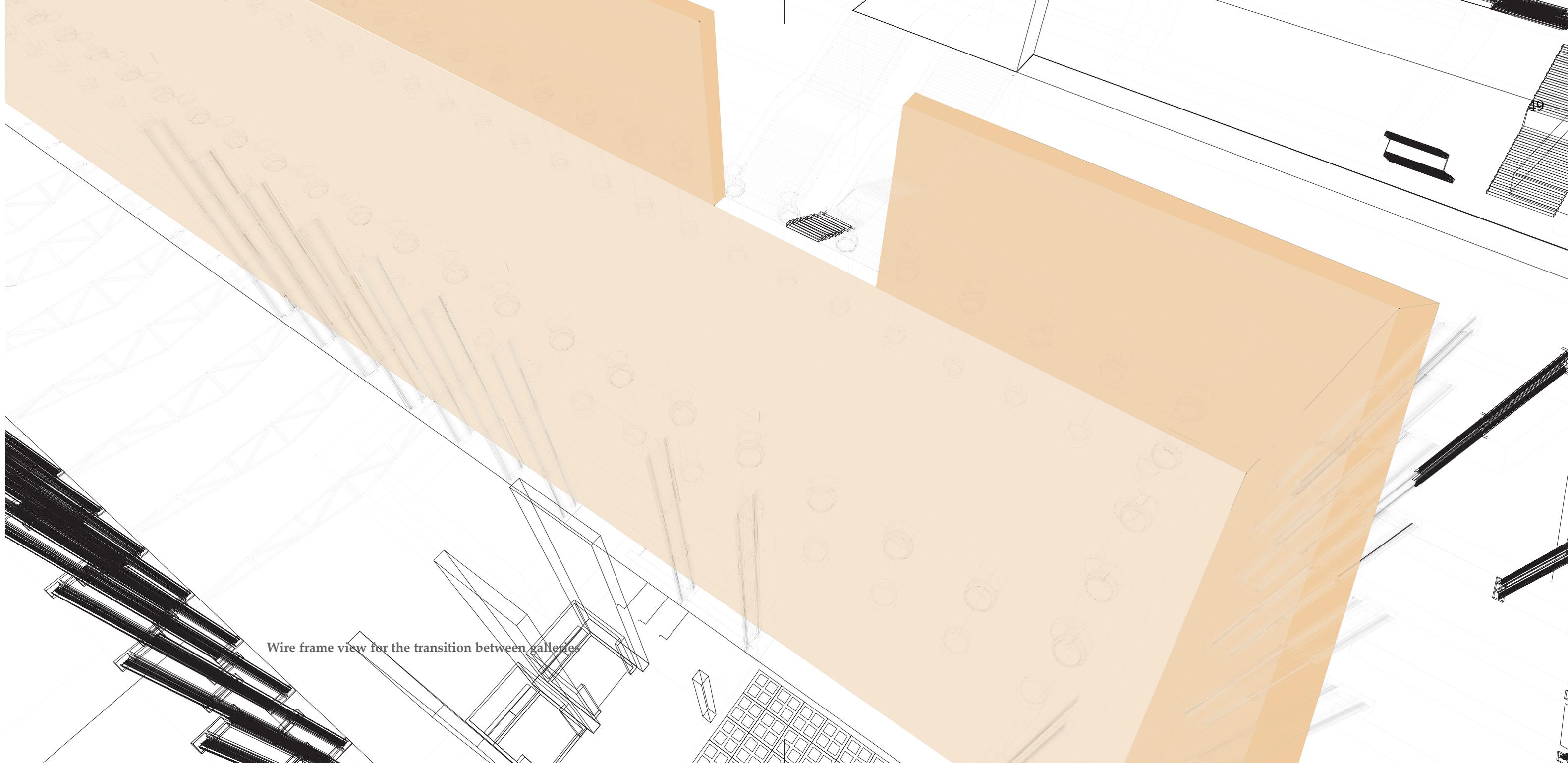


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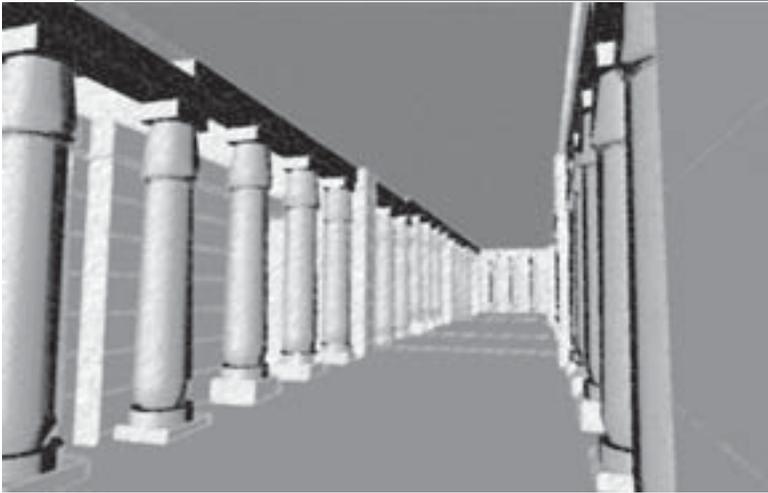
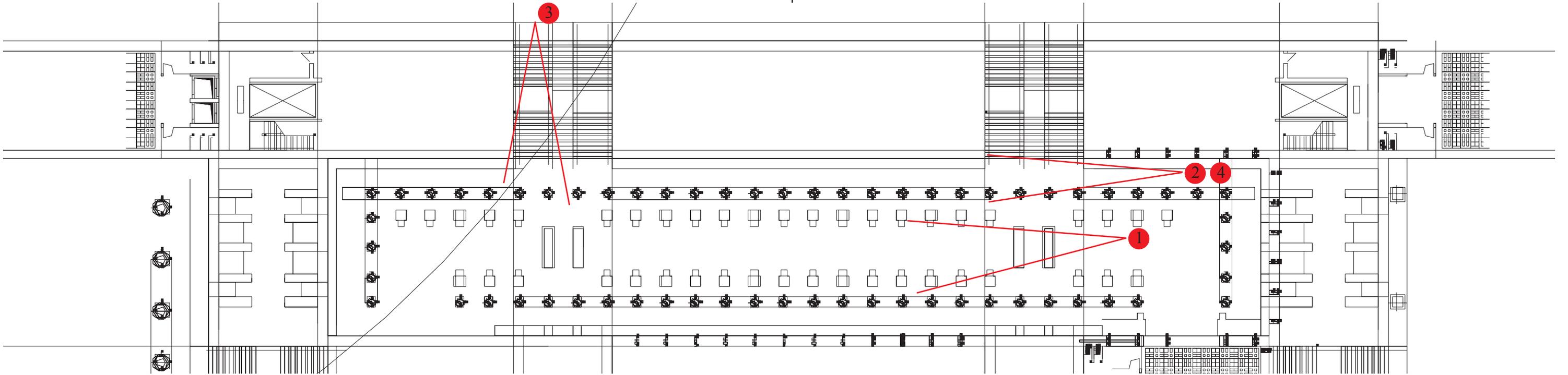
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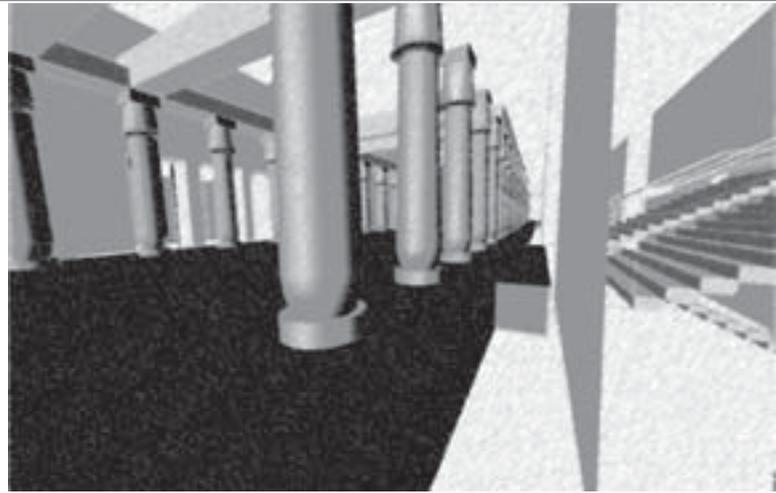
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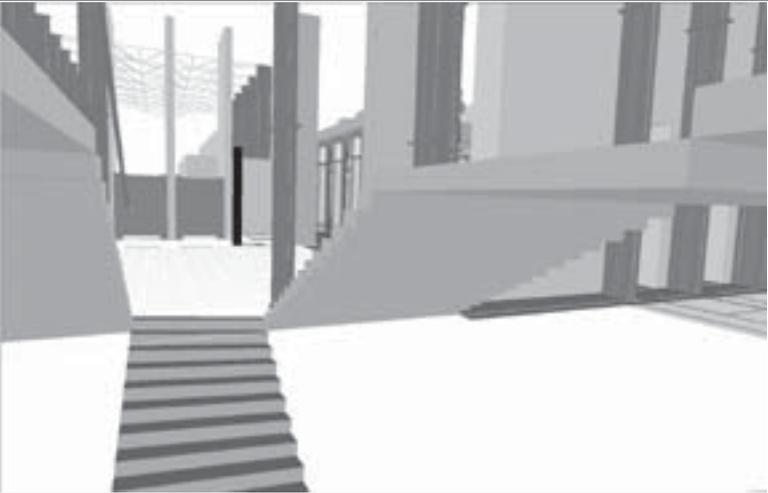
Wire frame view for the transition between galleries



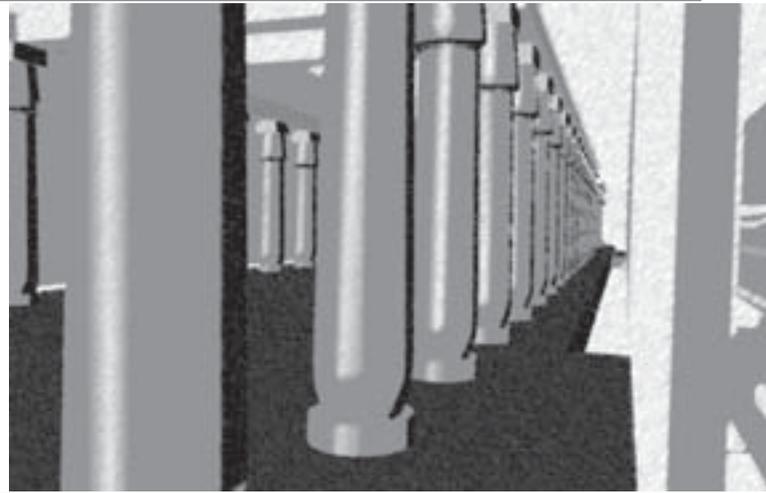
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4

Conclusion (*architecture and courage*)

It will never be too late to make a serious decision to shift your path. The development of this project had been carried out on three stages, the competition stage, the project development stage and the final stage while the final scheme is totally different from the previous schemes, it preserved the initial ideas that I started with, the Mirage, the Virtual Hypostyle Hall and the Sacred Geometry. The struggle to find the proper form for these ideas was hard and stressful, until I stepped out and went to Chicago and discussed my project with many professionals, visited the Tadao Ando Exhibit, and looked around the city.

As my professor Brown said it takes courage to take such a critical decision in such a critical time, but this is what an architect must do, this attitude is what you will carry with you along your professional life.

In the first day of the fall semester we gathered with our professors and they raised the question "What will we carry with us when we walk out of the school?" I think I answered that question for myself with "courage".

The museum also addresses a very important issue which is the awareness of the impact of the built environment on the globe, and its potential for damage. This raises the need for "green" or sustainable buildings, The name here is not as important as the message itself, although there is no LEED (Leadership in Energy and Environmental Design) council in Egypt yet. This building values the issue of saving our environment, as evidenced in the green roof, the use of the natural day lighting, the solar curtain walls, the parking area under the ground and the use of local materials.

Saving our planet is an idea that every living on this earth should be concerned about. The goal is not getting our building certified for LEED, it is not about filling a checklist, it is about our life, our children and our responsibility to this earth, the wave of the "green building" should not be another fashion, it should be a way of thinking architecture.

Although I did not start my design with an awareness of this issue but I believe now that this is the right thing to do, or perhaps another bag to carry with me out of school!

Architecture makes our culture. It educates us to appreciate the earth, the creation of God, as we are not on this earth to destroy it, we are here to think, care, develop and appreciate. all by glorifying him.

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Graphics

All graphics by Ahmed K. Ali except the following:

- 2. Mummy, Description of Egypt.
- 6. Great pyramid, Hooghe, Alain d'. , The great pyramids of Giza Paris: Vilo Publishing, c2000
- 11. Egypt map, site rendering, GEM Competition book.
- 13. Left, science of mirage.
- 14. Left, the Holy Ka'ba, right, Vitruvian man.
- 15. Left, Ziggurat, right Egyptian temple, Zoser pyramid, Brion cemetery, carlo scarpa.
- 19. up right, GEM Competition book.
- 20. up left, Le Corbusier, endless growth museum, mummy, Description of Egypt.
- 21. Right, Le Corbusier, endless growth museum, diagram, GEM Competition book.
- 30. left, Enric Miralles, Igualada Cemetery. Barcelona, 1990, Heathcote, Edwin Monument builders: Modern architecture and death, Chichester, West Sussex: Academy Editions, 1999.
- 37. Virtual Hypostyle hall, rendering by Mohamed K. Ali.
- 38. up right, site photo, GEM Competition book.
- 39. Site photos, GEM Competition book.
- 40. Tadao Ando gallery, the Art Institute of Chicago, 1992.
- 41. Left, wall and light, right, Karnak temple, the great hypostyle hall.
- 42. Left, temple wall and temple photos, Giedion, S. (Sigfried), the eternal present: a contribution on constancy and change, Princeton University 1981.

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