

an Architecture of Absence  
a study on silence in architecture

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MASTER OF ARCHITECTURE  
IN ARCHITECTURE

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rotunda, non-denominational, Peace

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### ABSTRACT

This thesis documents an inquiry into the architecture of contemplative spaces and the process and evolution of the design of such a place. Man has often sought a place of solitude, a shelter, where the diversities diminish and differences become insignificant. In the recent decades many non-denominational temples and chapels, such as the MIT peace chapel, were built around the world by seekers of 'unity in diversity'. This study explores the design of such a place and inquires into how the subtle architectural aspects contribute to the quality of solitude and tranquility of that place. These aspects are further explored in the design of a rotunda which becomes the heart of the thesis.

## DEDICATION

THIS BOOK IS DEDICATED TO ALL MY TEACHERS  
who perform the noblest act of sharing and spreading knowledge.

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## Introduction

# Architecture of Absence

reflections on silence

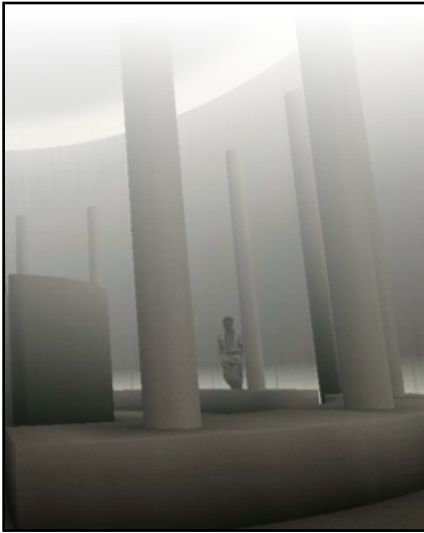


Figure 1. Architecture of Absence

Being the subject of every perception, The indwelling conscious principle can never be the object of perception and hence it is often sought in the silent reflections of the inner.

“He who pursues learning will increase every day;  
He who pursues Tao will decrease every day.”  
— Lao Tzu

## Part-1

### conception

GROSS TO THE SUBTLE: Before and after a form manifests, the space in which it appears remains pure and unaffected. The superimposed sensory qualifications give the enclosed space a temporary character which individuals find pleasant or unpleasant according to one's conditioning. Space being the subtlest of the perceivable world, the concept of 'a walk from the gross to the subtle' was conceived.

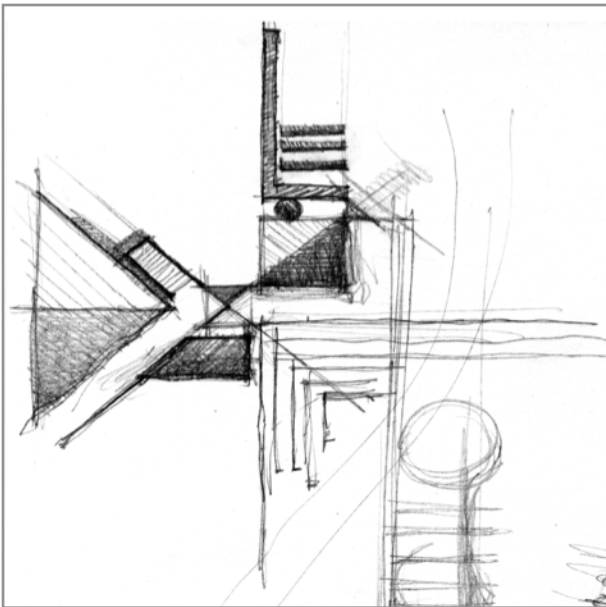


Figure 2. Concept Sketch 1

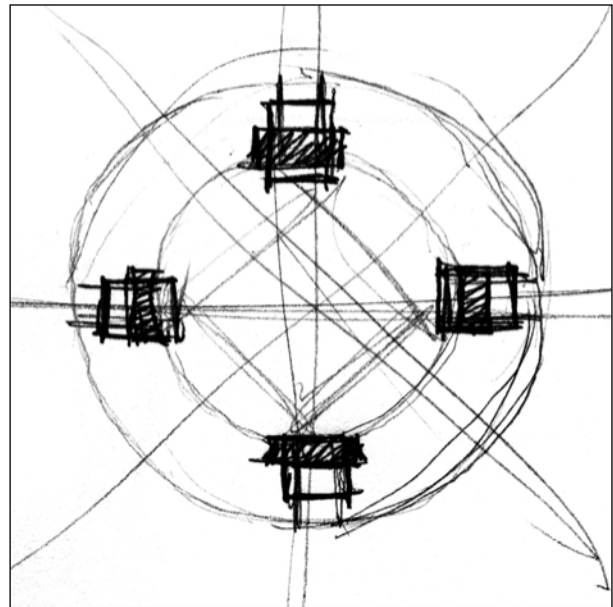


Figure 3. Concept Sketch 2

Circles and spears, triangles and prisms spontaneously started the drama. A pyramid and a rotunda were conceived and compared. They competed with each other for the center stage.



The pyramid took the place of the heart of the temple for the initial studies. Indirect light through narrow openings on the top was desired. A library, common facilities, a few meeting halls etc found their place around it.

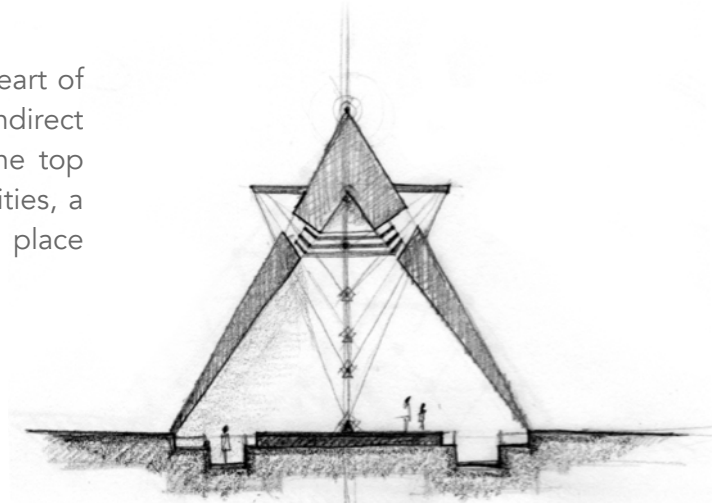


Figure 4. Pyramidal Sanctuary-concept Section

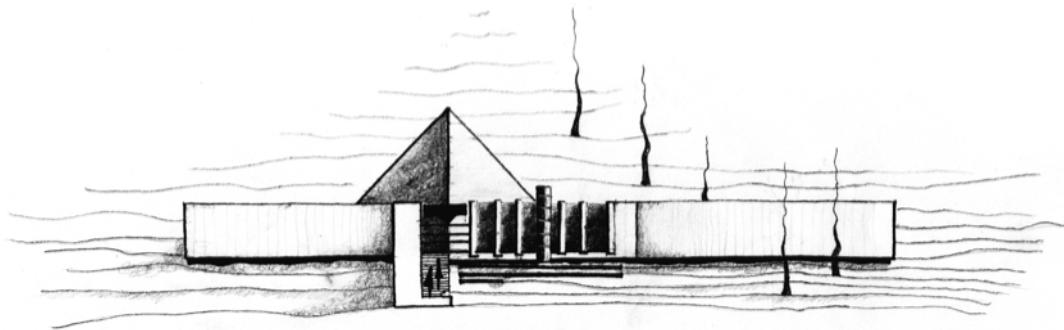


Figure 5. Sanctuary-concept N Elevation

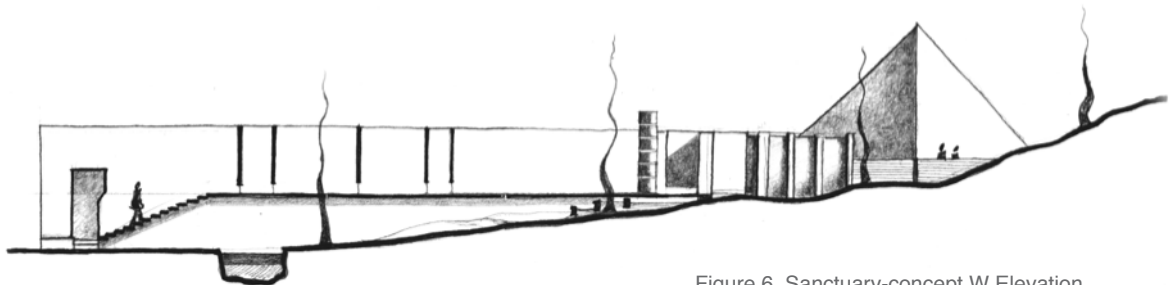


Figure 6. Sanctuary-concept W Elevation

A long walkway, Colonnaded court, Library, Exhibition halls etc surround the sanctuary.

walkway

sanctuary

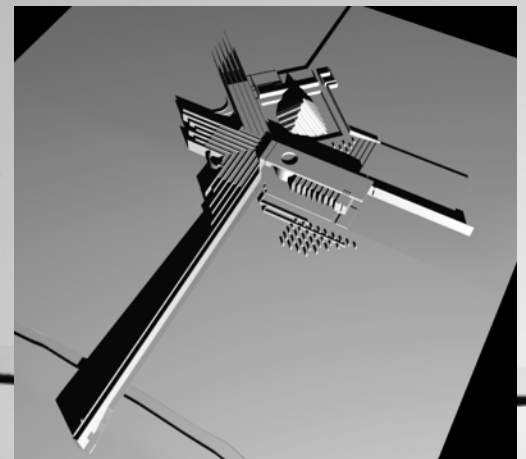


Figure 8. Conceptual 3D view of the Layout

Figure 7. Conceptual 3D of the Layout plan

**END OF PART-1**  
conception

## Part-2

### Inspiration- The three Views

#### 1. AN ANCIENT VIEW

“From Consciousness, space (*akasha*) is born, From space, air is born. From air, fire is born. From fire, water is born. From water, the earth is born.”

“Among these five elements, from the *subtle* aspect of space evolved the inner organ of hearing. From the subtle aspect of air evolved the inner organ of touch, from fire the organ of seeing, from water the organ of taste and from earth is born the inner organ of smell”

— ‘*Tattva-Bodhah*’, the ancient sanskrit text

## 2. THE METAPHYSICAL VIEW

"The general notions about human understanding . . . which are illustrated by discoveries in atomic physics are not in the nature of things wholly unfamiliar, wholly unheard of, or new. Even in our own culture they have a history, and in Buddhist and Hindu thought a more considerable and central place. What we shall find is an exemplification, an encouragement, and a refinement of old wisdom."

— *Julius Robert Oppenheimer*

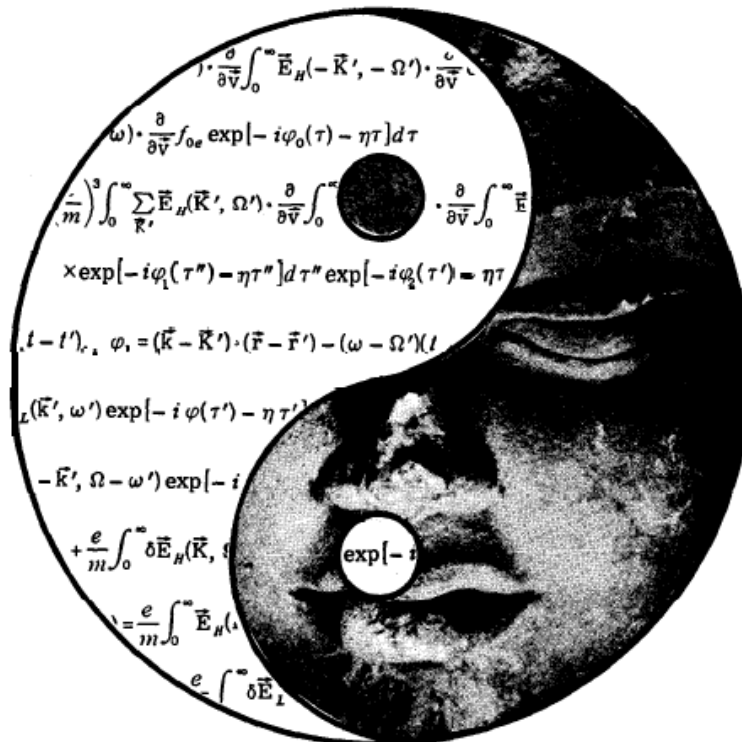


Figure 9. Yin-Yang Parallels (fair use)

"For a parallel to the lesson of atomic theory . . . we must turn to those kinds of epistemological problems with which already thinkers like the Buddha and Lao Tzu have been confronted, when trying to harmonize our **position as spectators and actors** in the great drama of existence."

— *Neils Bohr*

"Quantum theory thus reveals a basic oneness of the universe. It shows that we cannot decompose the world into independently existing smallest units. As we penetrate into matter, nature does not show us any isolated "building blocks," but rather appears as a complicated web of relations between the various parts of the whole. These relations always include **the observer** in an essential way. The human observer constitutes the final link in the chain of observational processes, and the properties of any atomic object can be understood only in terms of the object's interaction with the observer."

— *Fritjof Capra, Physicist*

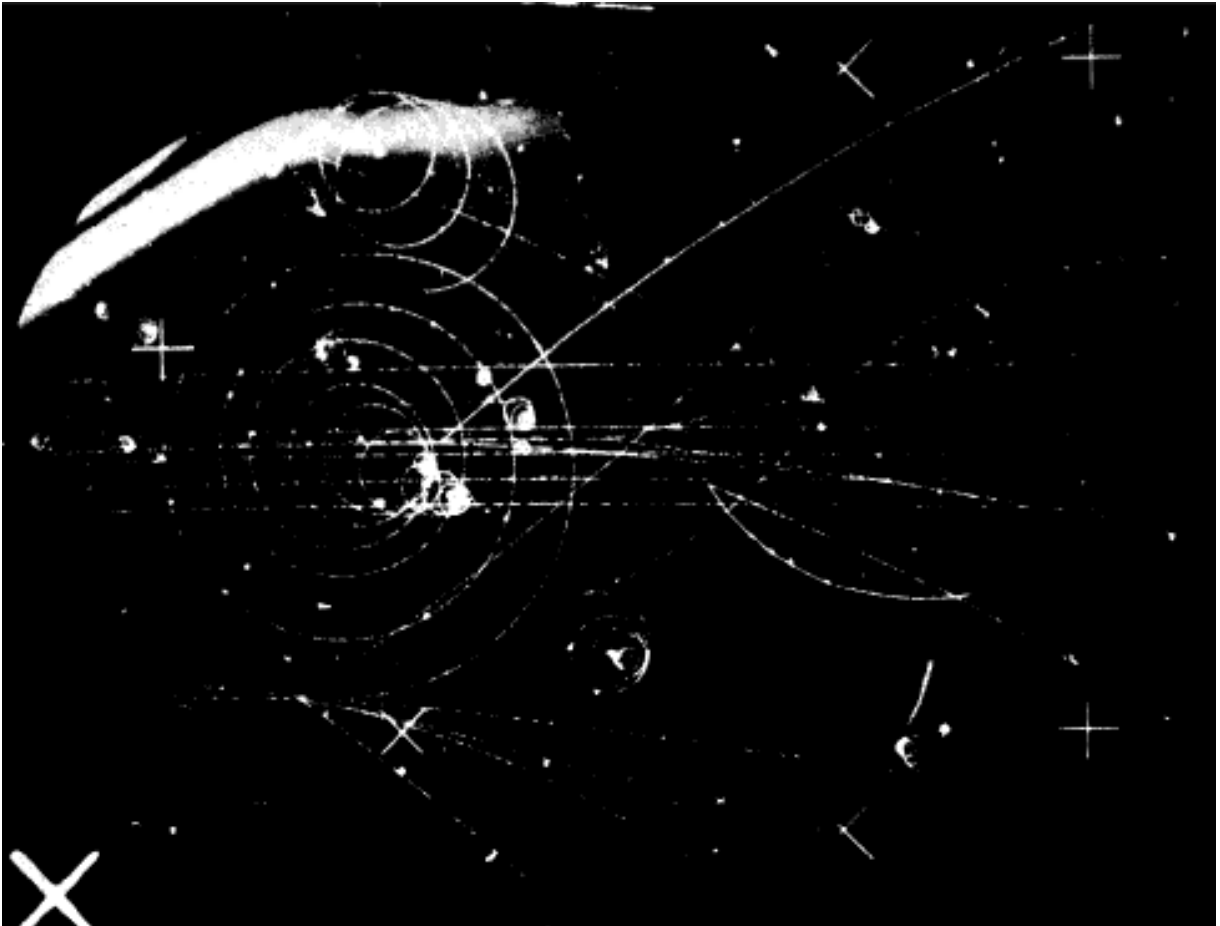


Figure 10. The Cosmic Dance (fair use)

### 3. THE ARTIST'S VIEW

"Through the sheer manipulation of light and its focus on a blazingly white marble altar block, Saarinen created a place of **mystic quiet.**"

— Leland M. Roth,  
On MIT Chapel by Eero Saarinen



Figure 11. MIT Chapel Undulating wall (fair use)

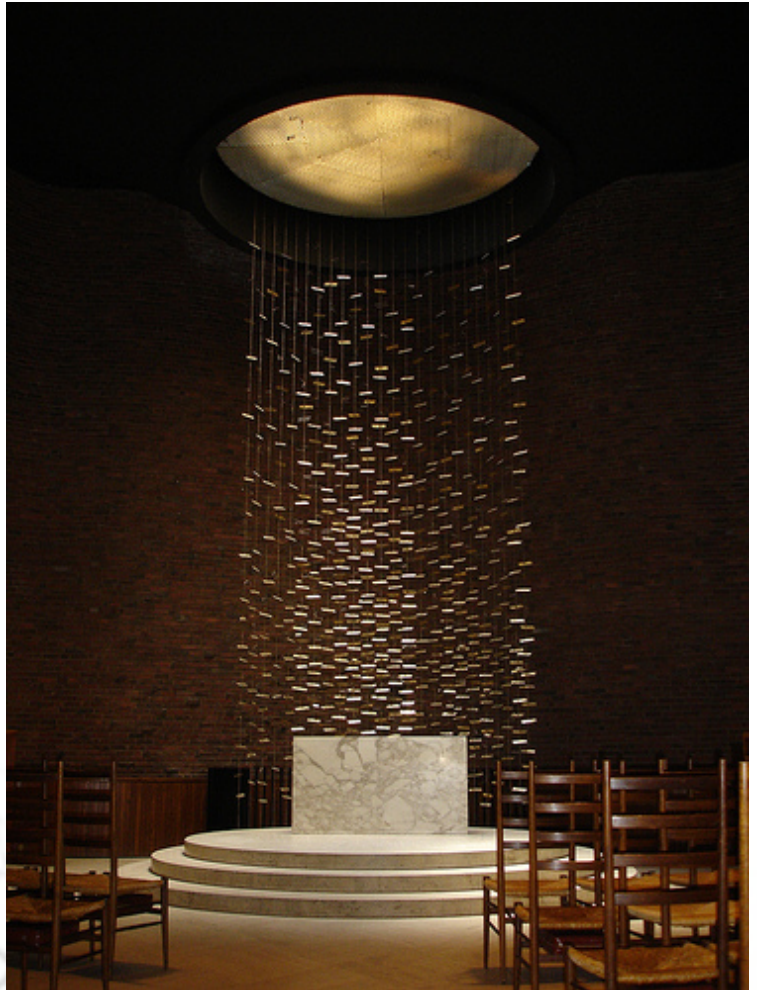


Figure 12. MIT Chapel Mystic Light (fair use)

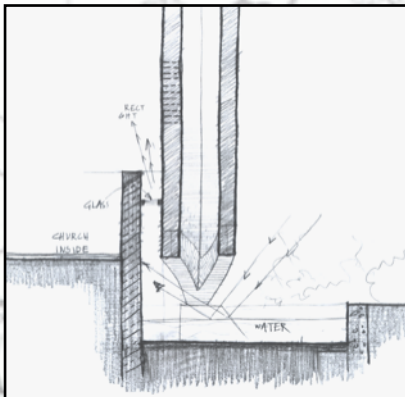
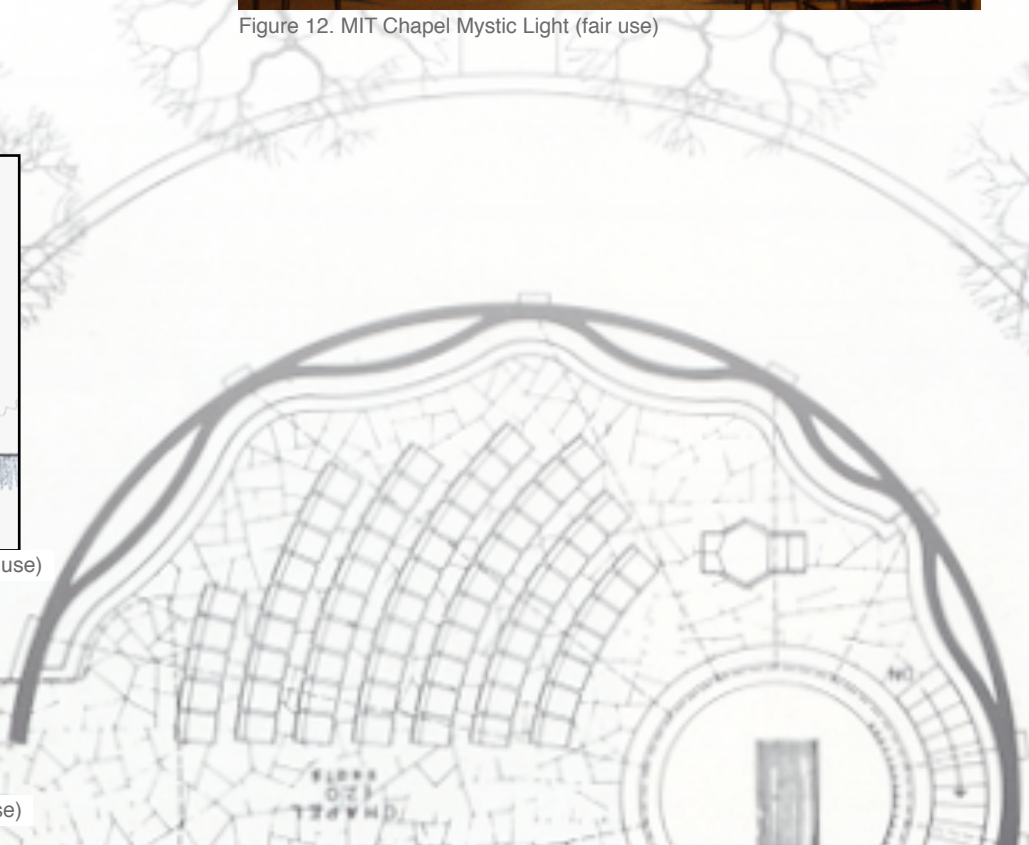


Figure 13. MIT Chapel Wall Section (fair use)

Figure 14. MIT Chapel Floor Plan (fair use)



"Typical of Asplund was his unusual capacity for empathy and psychological fantasy. He did not create buildings, rooms and things for the sake of beauty alone. In his mind, he experienced these buildings, rooms and things with **all his senses.** "

— Carl-Axel Acking  
on Stockholm Public Library by Gunnar Asplund

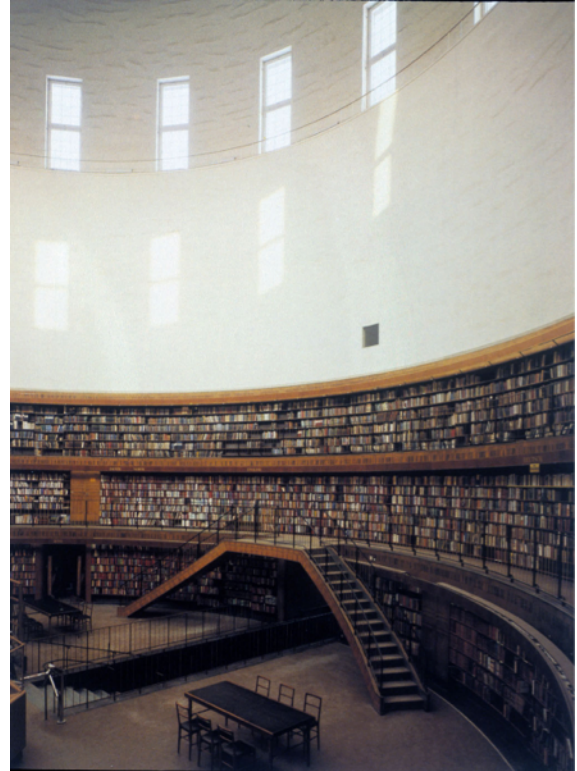


Figure 15. Stockholm Public Library Rotunda (fair use)

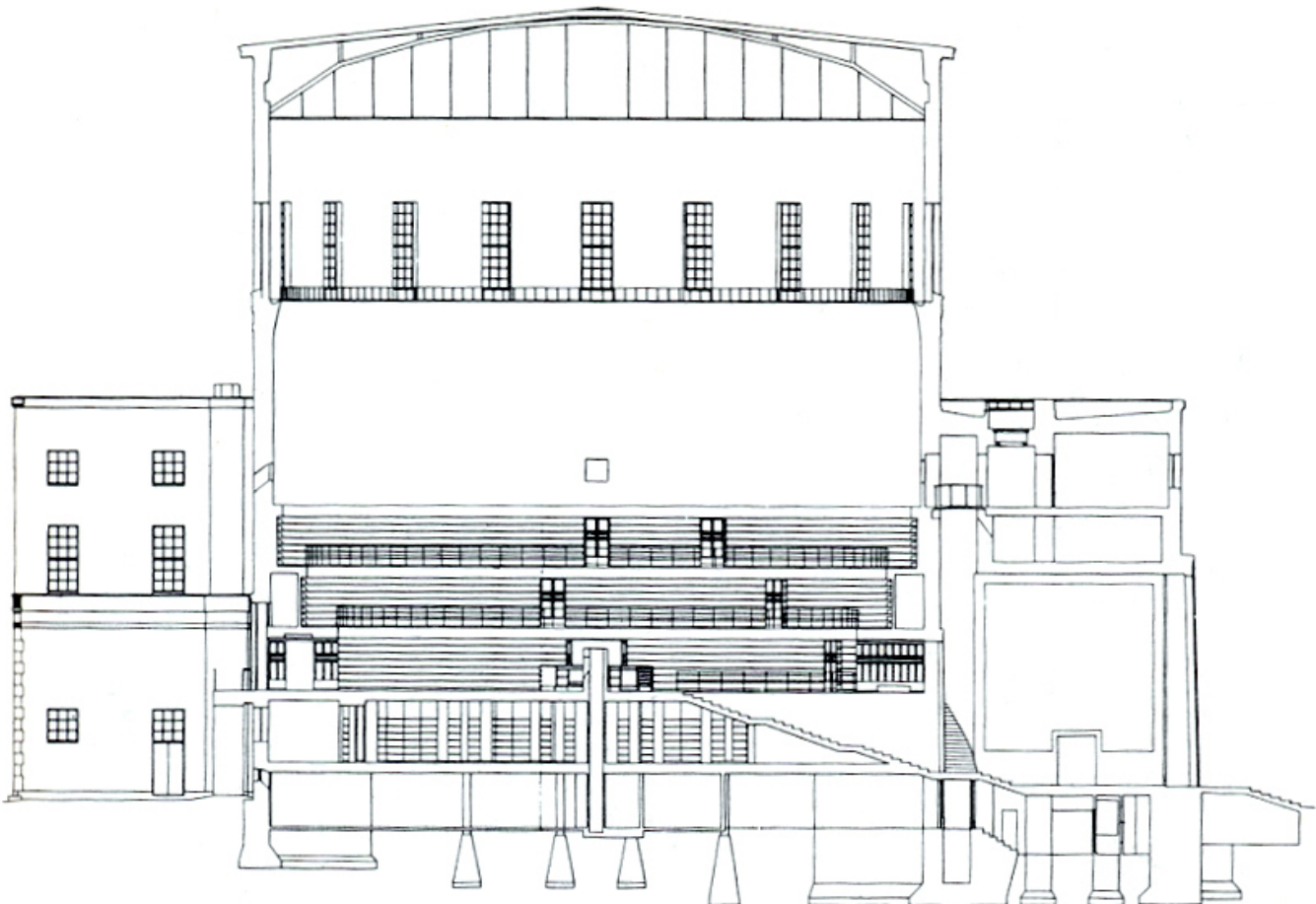


Figure 16. Stockholm Public Library Section (fair use)

“And if there were a word of truth in Ludwig Wittgenstein’s claim that architecture ‘compels and glorifies; that where there is nothing to glorify there can be no architecture’, then this structure glorifies the quintessence of architecture, celebrates space, the **silence of walls in light.**”

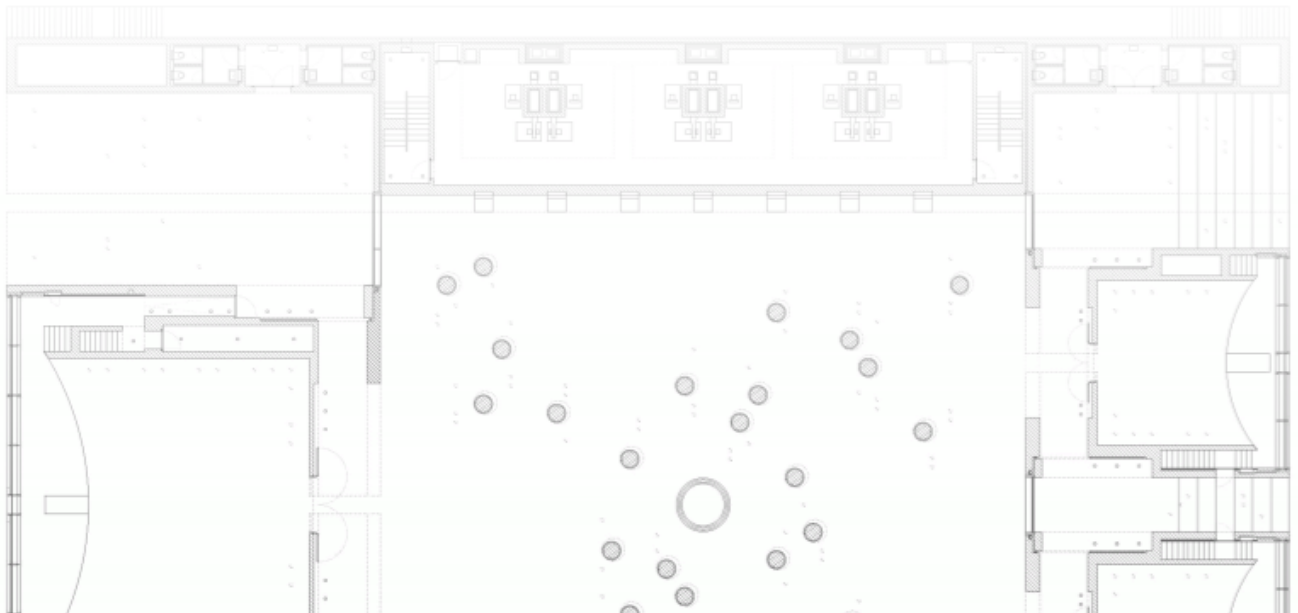
— Archdaily

on Crematorium Baumschulenweg  
by Shultes Frank Architekten



Figure 17. Columns of Crematorium Baumschulenweg (fair use)

Figure 18. Plan of Crematorium Baumschulenweg (fair use)





"I would not put a tree or blade of grass in this space. This should be a plaza of stone, not a garden. If you make this a plaza, you will gain a facade--a facade to the sky."  
— Luis Barragan

"and it may be that Kahn himself had recognized the power of the **bare space**.... The courtyard was thus **designed in the negative**."  
— Thomas Leslie on Salk Institute plaza



Figure 19. Salk Institute Sketch by Barragan (fair use)

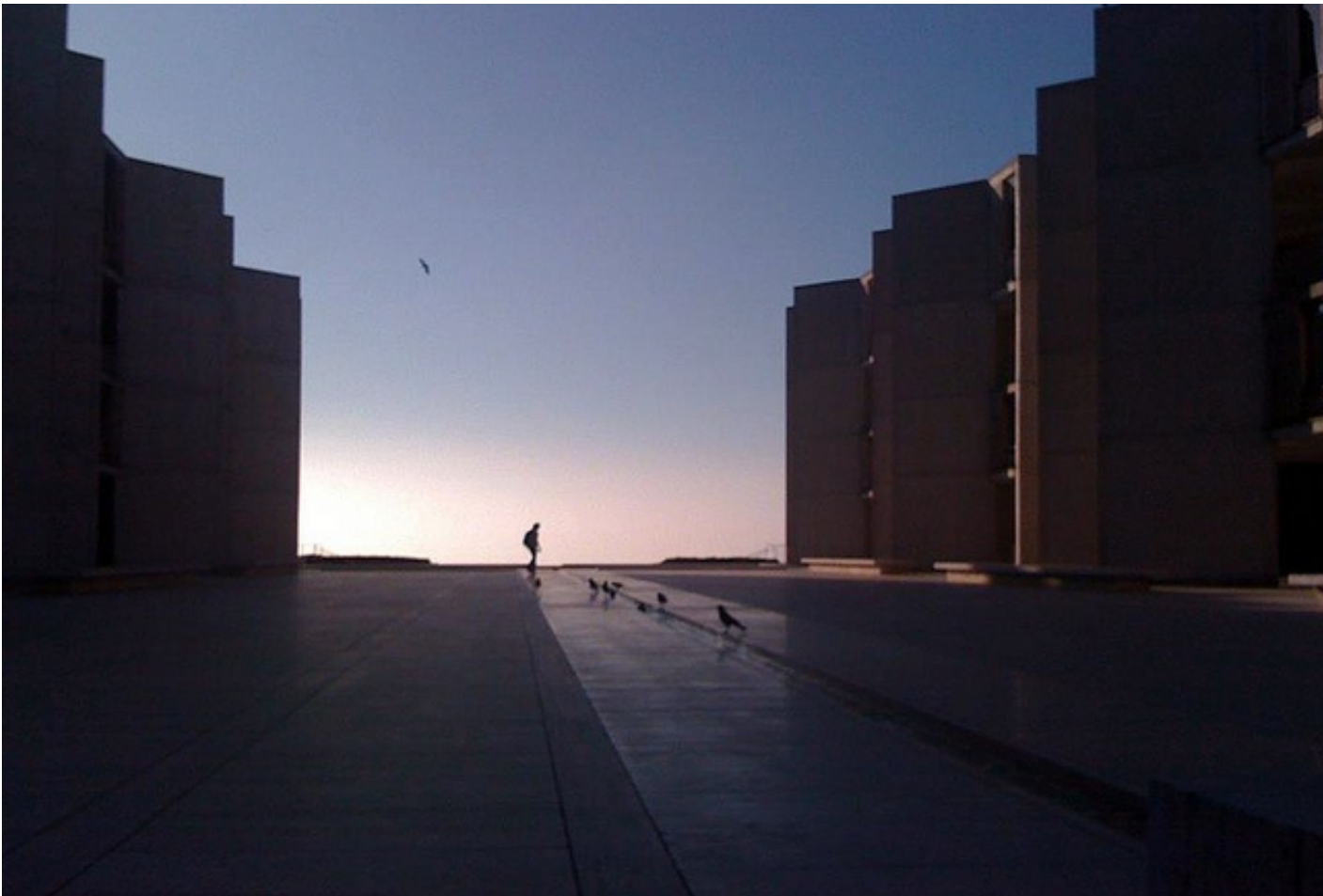


Figure 20. Salk Institute Facade to the Sky (fair use)

"I realized then that only in dim half-light is the true beauty of Japanese lacquerware revealed....But in the still dimmer light of the candle stand, as I gazed at the trays and bowls standing in the shadows cast by that flickering point of flame, I discovered in the gloss of this lacquerware a depth and richness like that of a **still, dark pond, a beauty that I had not before seen**. It had not been mere chance, I realized, that our ancestors, having discovered lacquer, had conceived such a fondness for objects finished in it."

*Junichiro Tanizaki, In Praise of Shadows*

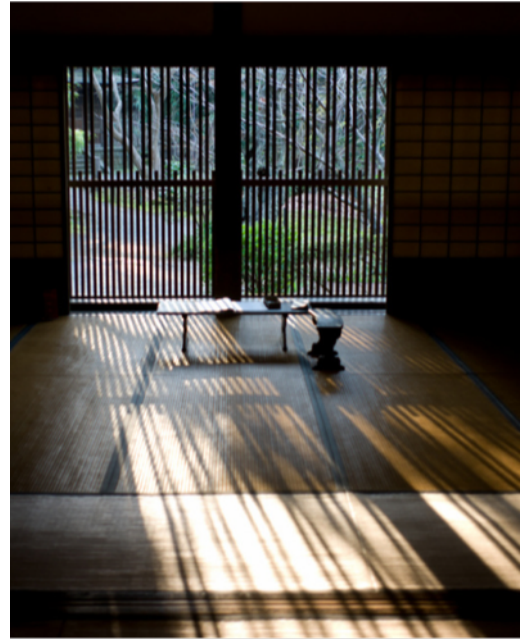


Figure 21. Japanese Interior of Kyoto (fair use)



Figure 22. Japanese Interior Lighting (fair use)

## Part-3

### dissolution and re-generation

The preliminary scheme from Part-1 went through a dissolution and curvilinear forms were generated in to the scene. An interplay of circular and rectilinear forms were studied. A rotunda took the centre stage and became the heart of the temple. The pyramid became an inverted one forming the function of an amphitheater.

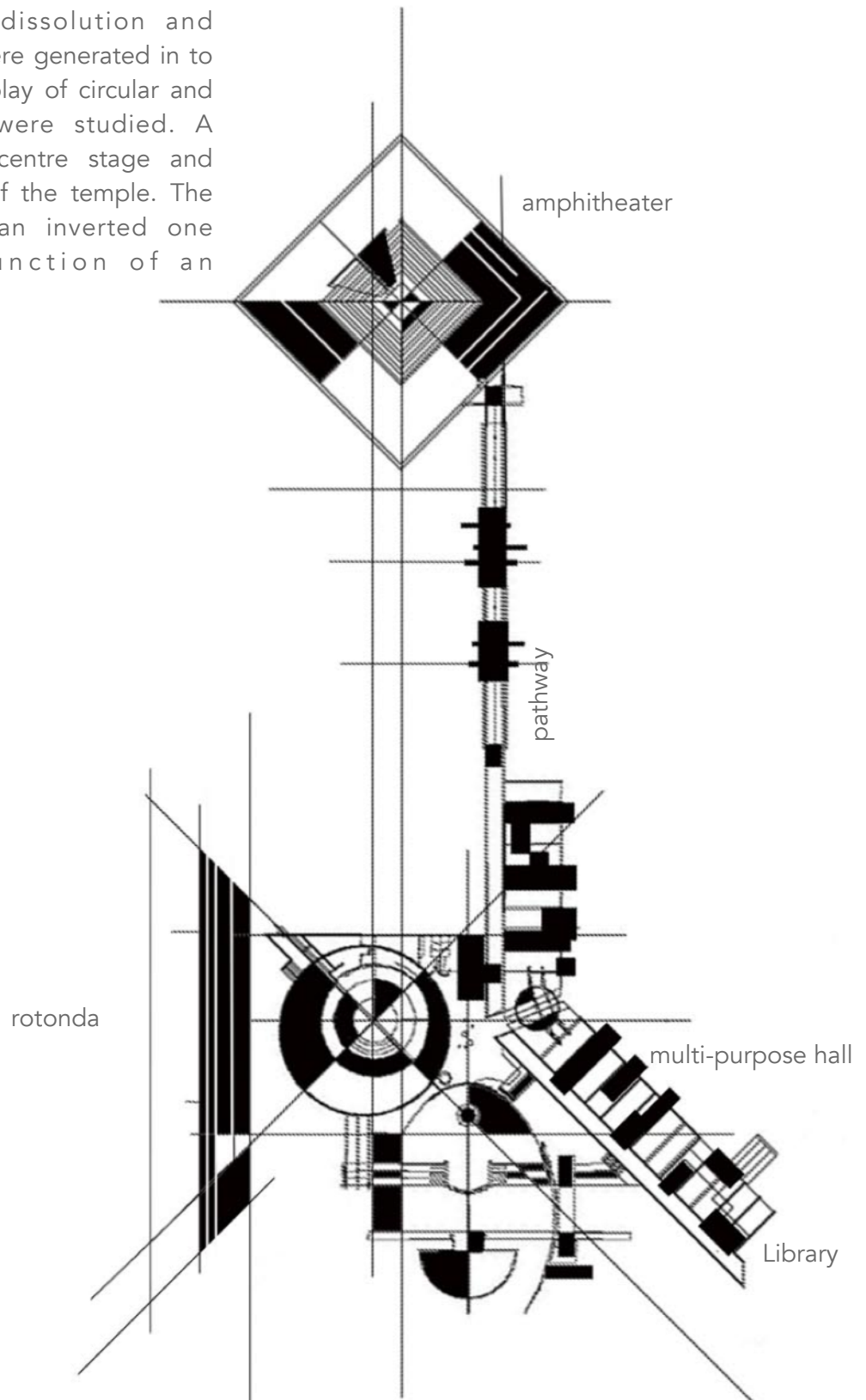


Figure 23. Dissolution and Re-generation sketch

The movement through a fluid pathway, a bridge crossing the chattering stream, the entrance lobby and finally reaching the rotunda creates a little journey from movement to stillness..... from Gross to the subtle, from apparent to the profound, from superficial to the inner.

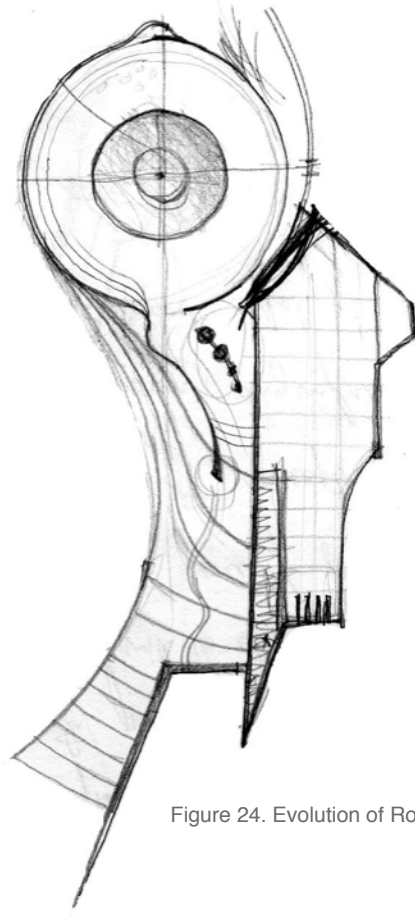


Figure 24. Evolution of Rotunda: sketch

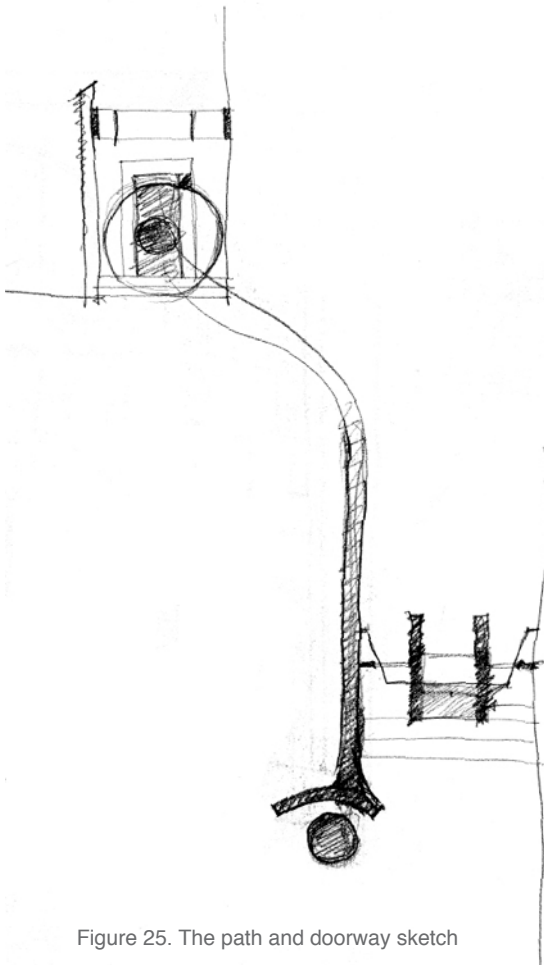


Figure 25. The path and doorway sketch

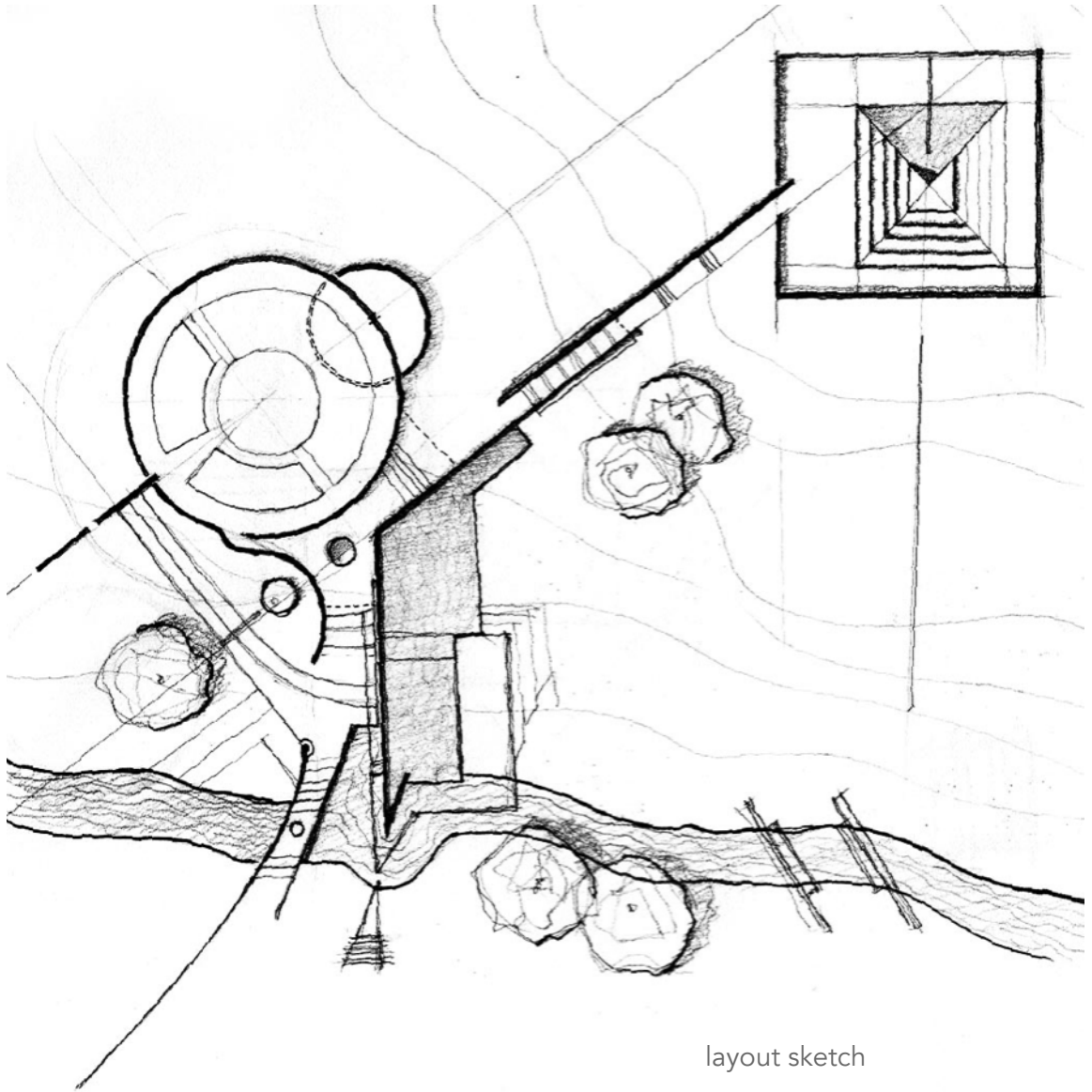


Figure 26. The revised layout sketch

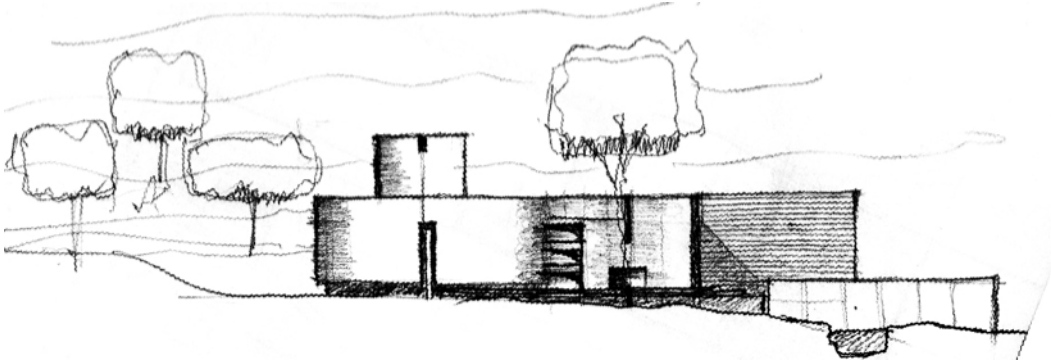


Figure 27. Elevation Sketch of Rotunda

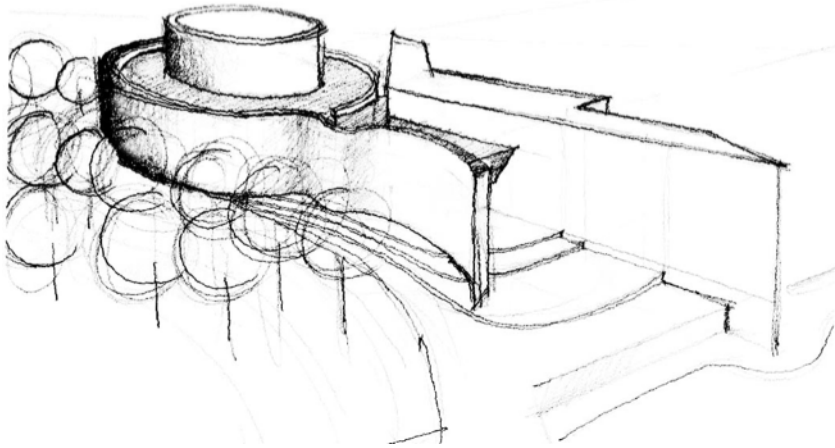


Figure 28. Aerial Perspective Sketch of Rotunda

initial sketches of the Rotunda/Sanctuary

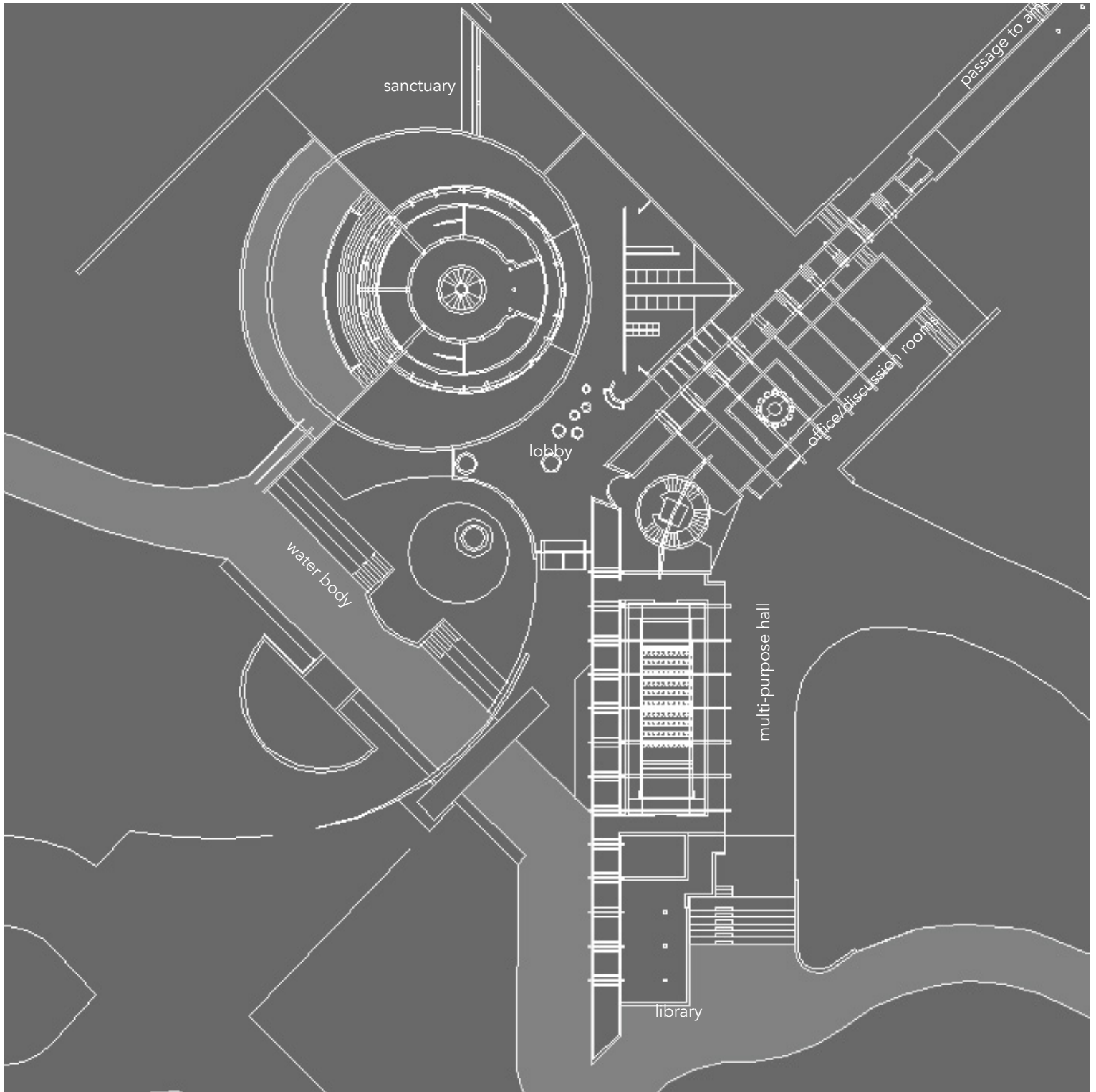


Figure 29. Final Layout with Rotunda

layout- Final

Bridge across the stream to the  
main entrance



Figure 30. Lightscape Rendering of the bridge

Entrance Court

19



Figure 31. Lightscape Rendering of the doorway

Lobby: Where curved and rectilinear  
walls meet up.

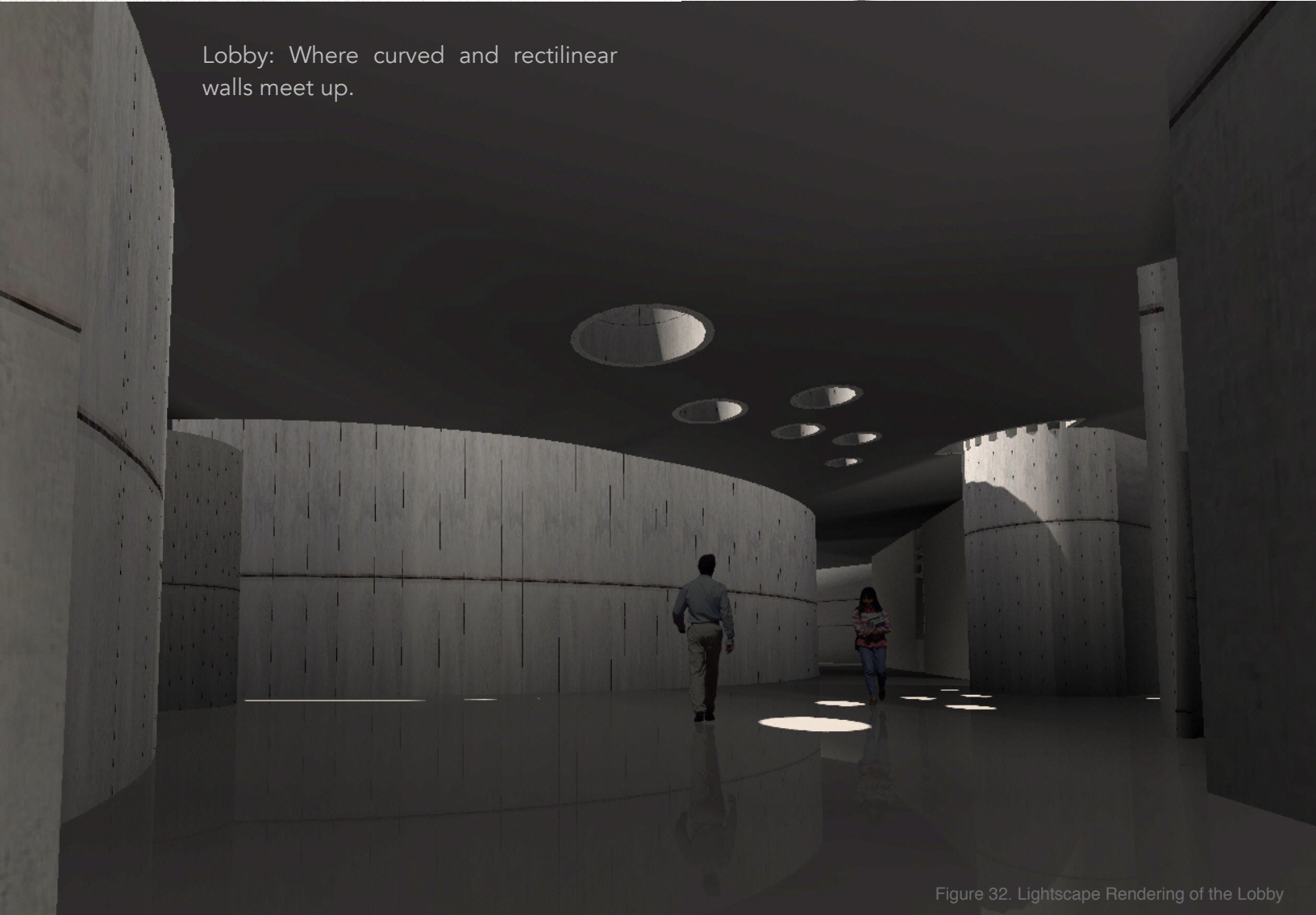


Figure 32. Lightscape Rendering of the Lobby



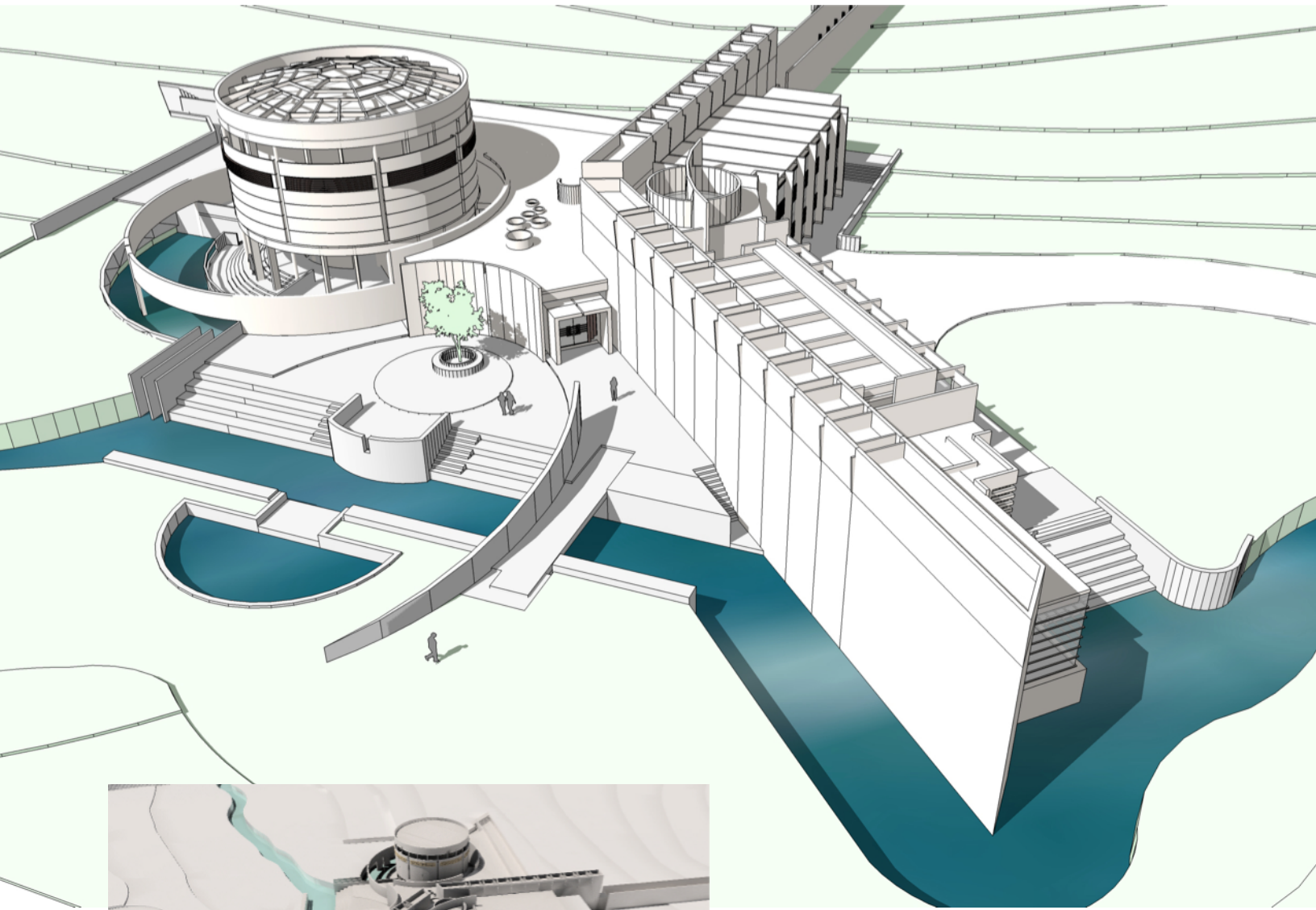


Figure 33. Bird's-eye view of the complex

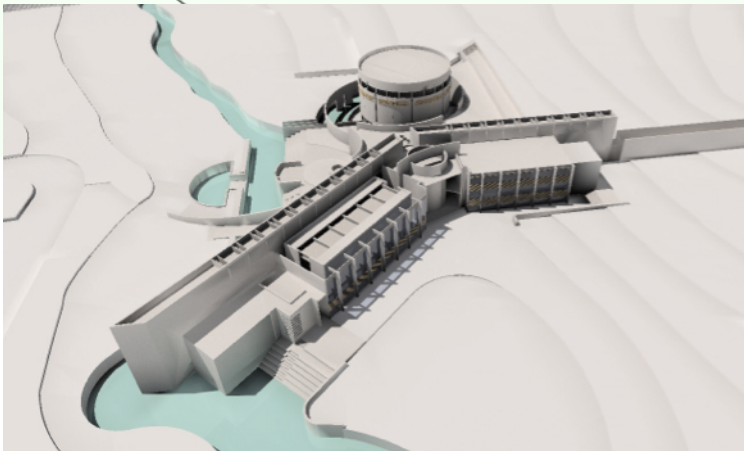


Figure 34. Lightscape rendering of the Aerial view

Bird's-eye view

The tall concrete walls and the enclosed hallway with the utility and service areas become the barrier zone between the active areas of the complex and the quiet sanctuary area. Most of the vehicular and service access is limited to the active zone.

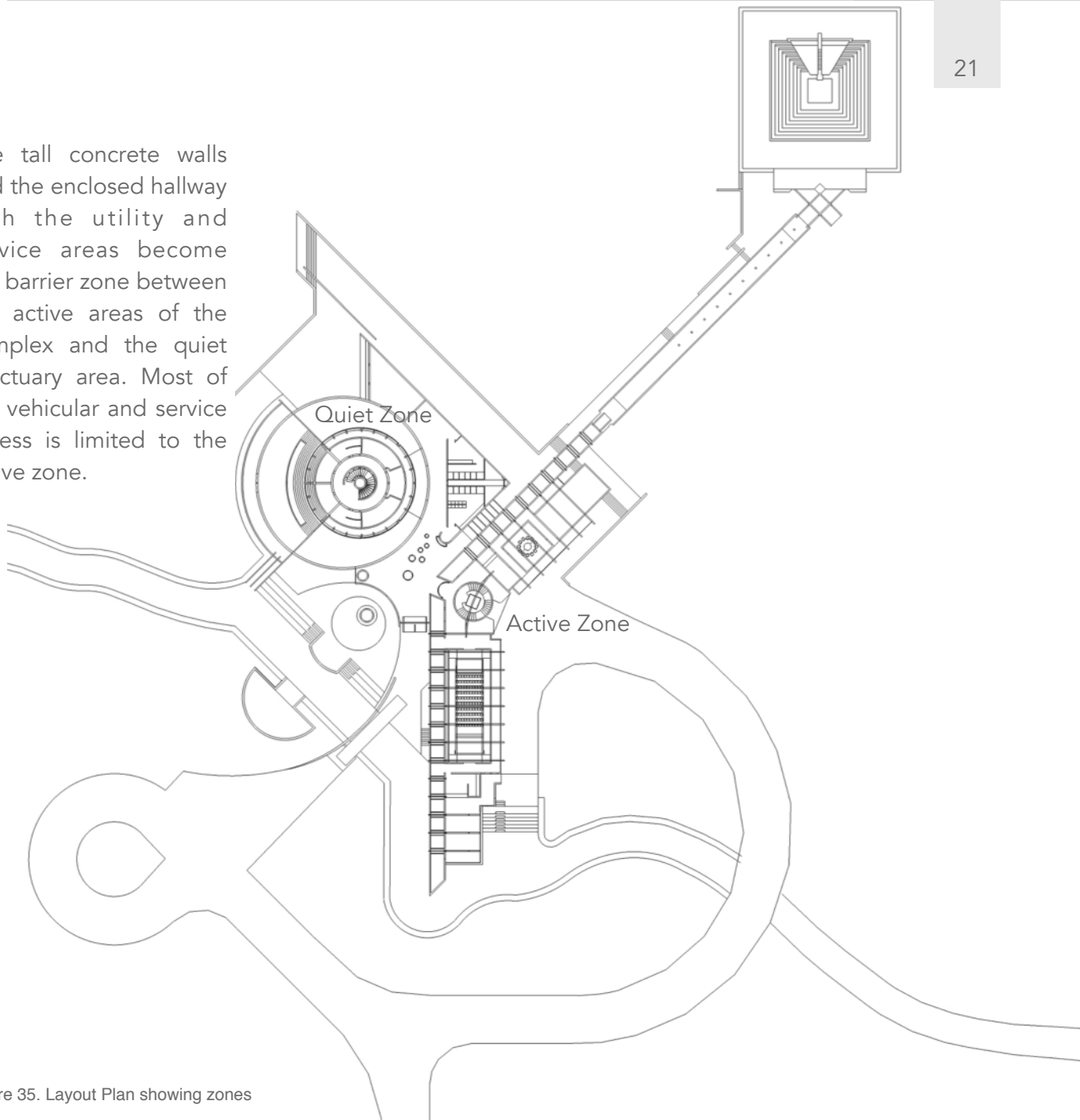


Figure 35. Layout Plan showing zones

Axial View from the approach road

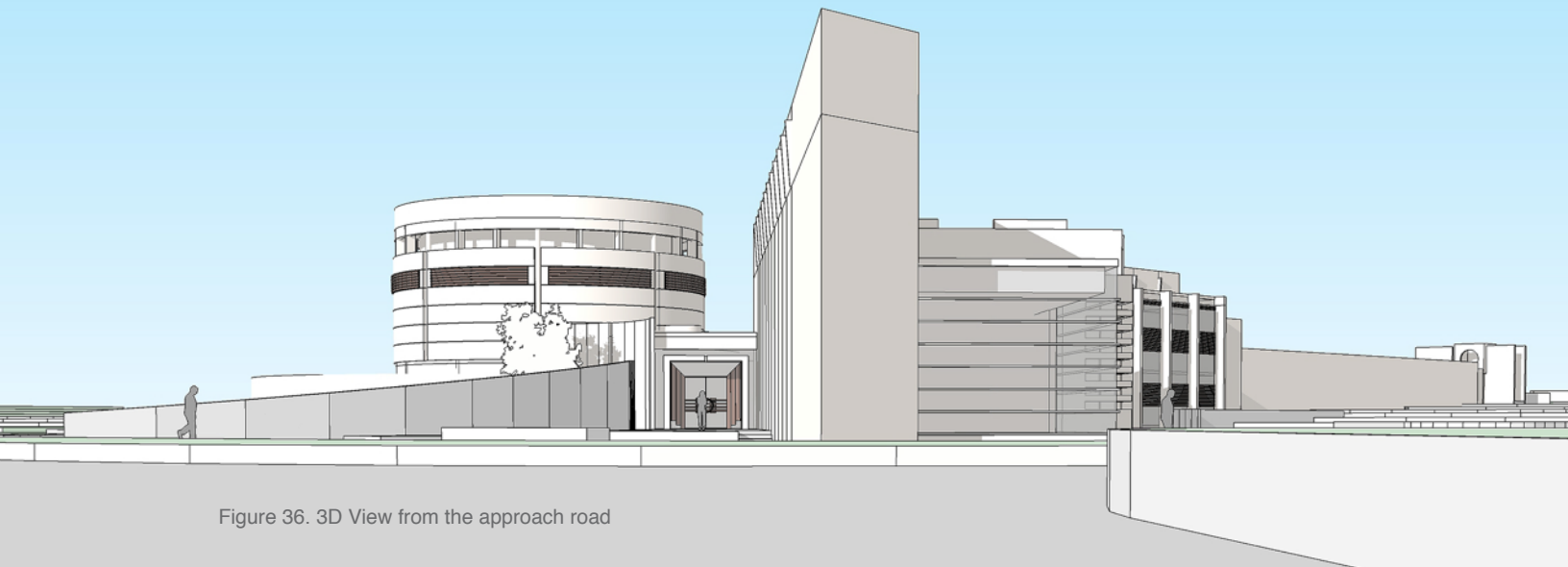


Figure 36. 3D View from the approach road

## MULTI-PURPOSE HALL

This room is designed for informal and semi-formal gatherings, classes, meditation sessions etc. A hanging acoustic panel ceiling with clear-story lighting on the roof behind brings in filtered dim light.

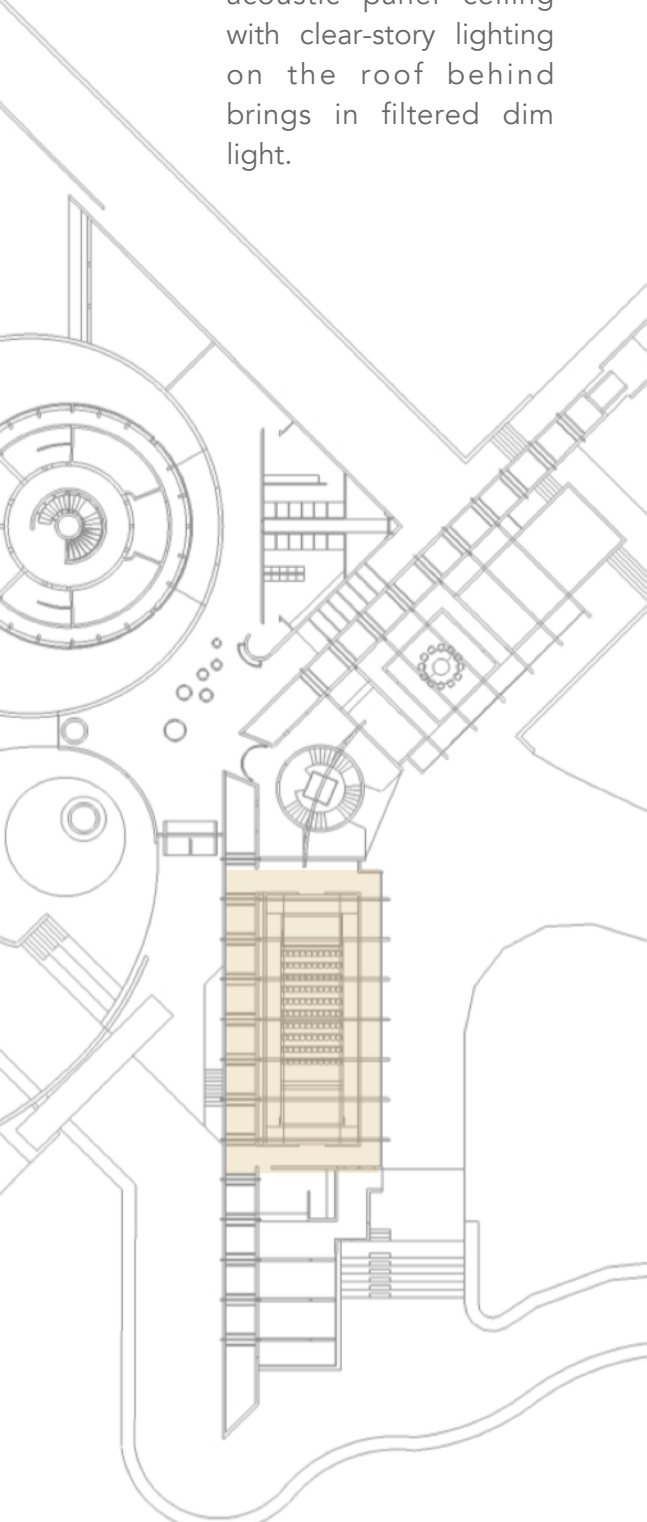


Figure 37. Plan of the Multi-Purpose hall

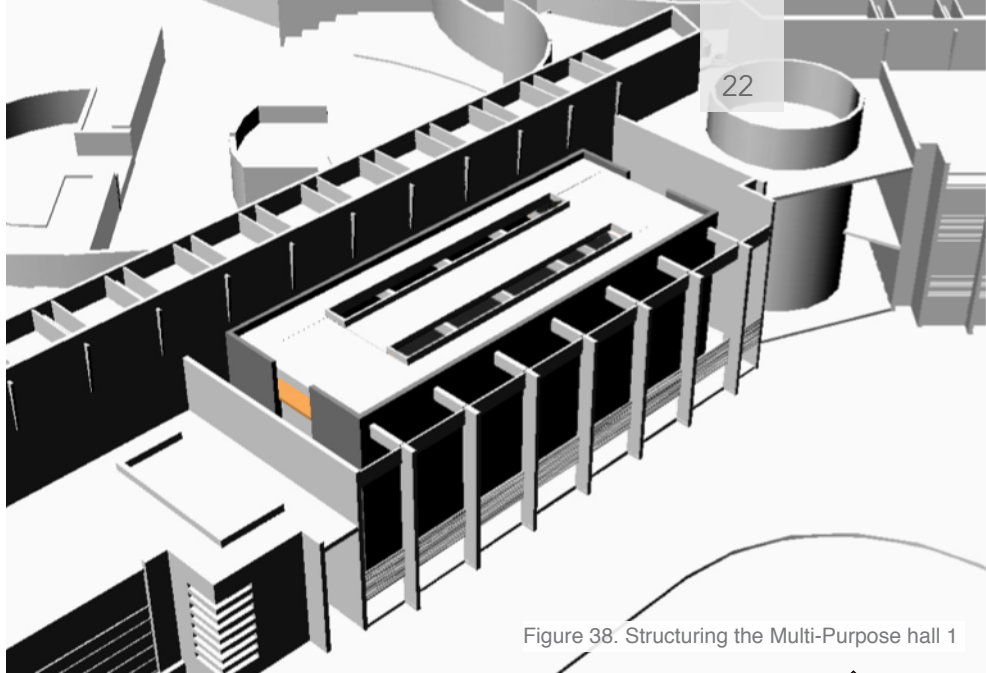


Figure 38. Structuring the Multi-Purpose hall 1

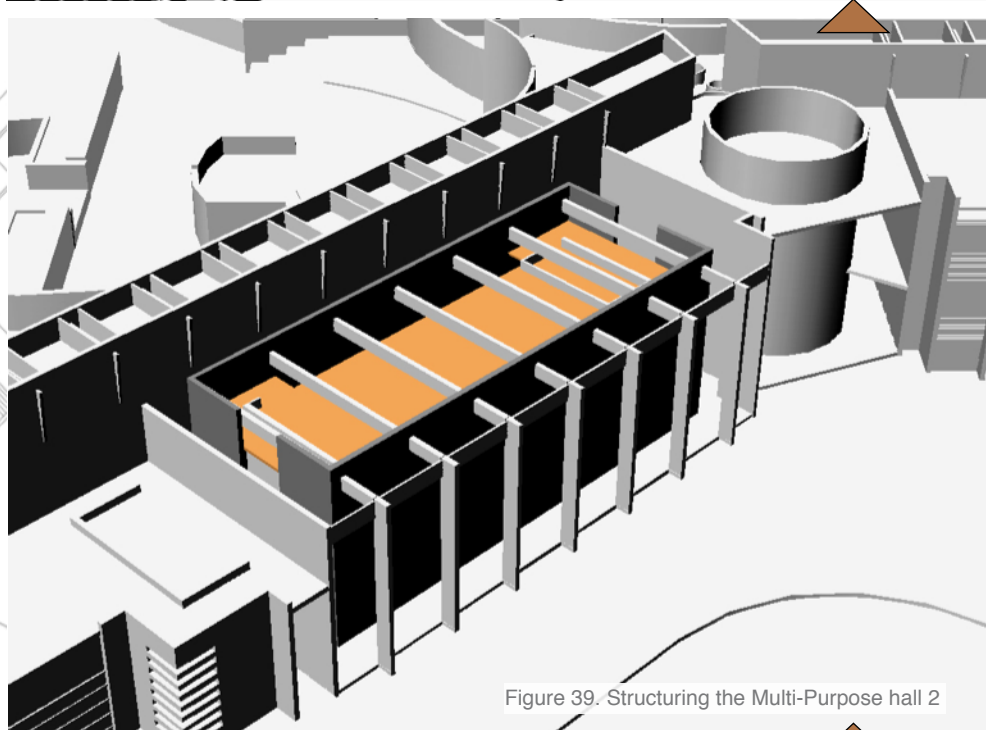


Figure 39. Structuring the Multi-Purpose hall 2

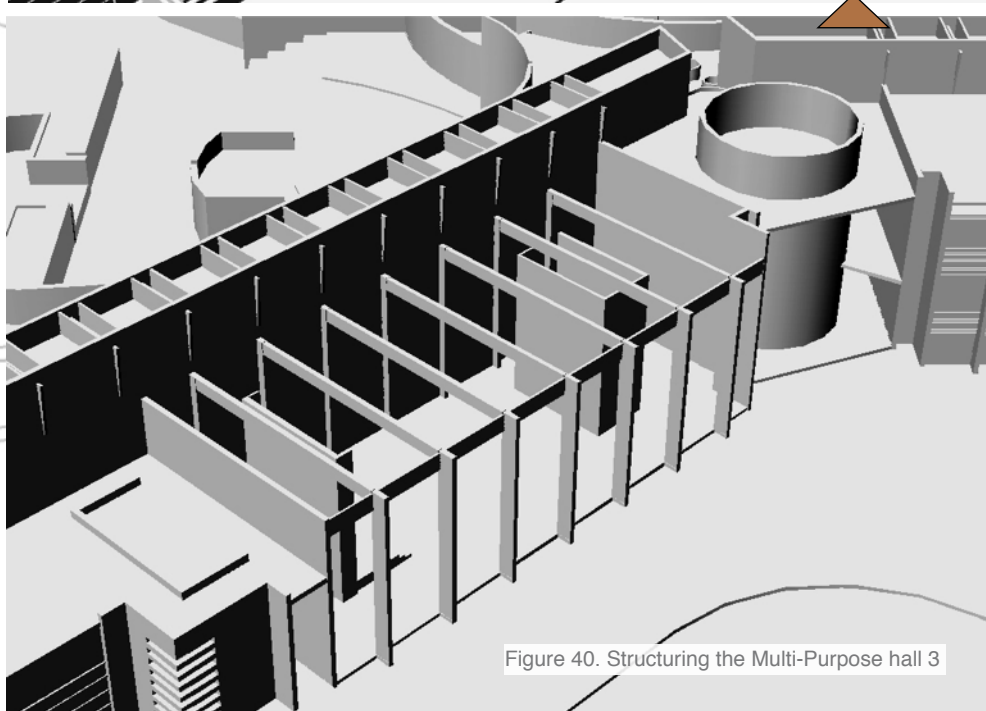


Figure 40. Structuring the Multi-Purpose hall 3

multi purpose hall: view of the inside



Figure 41. Lightscape rendering of Multi-Purpose hall

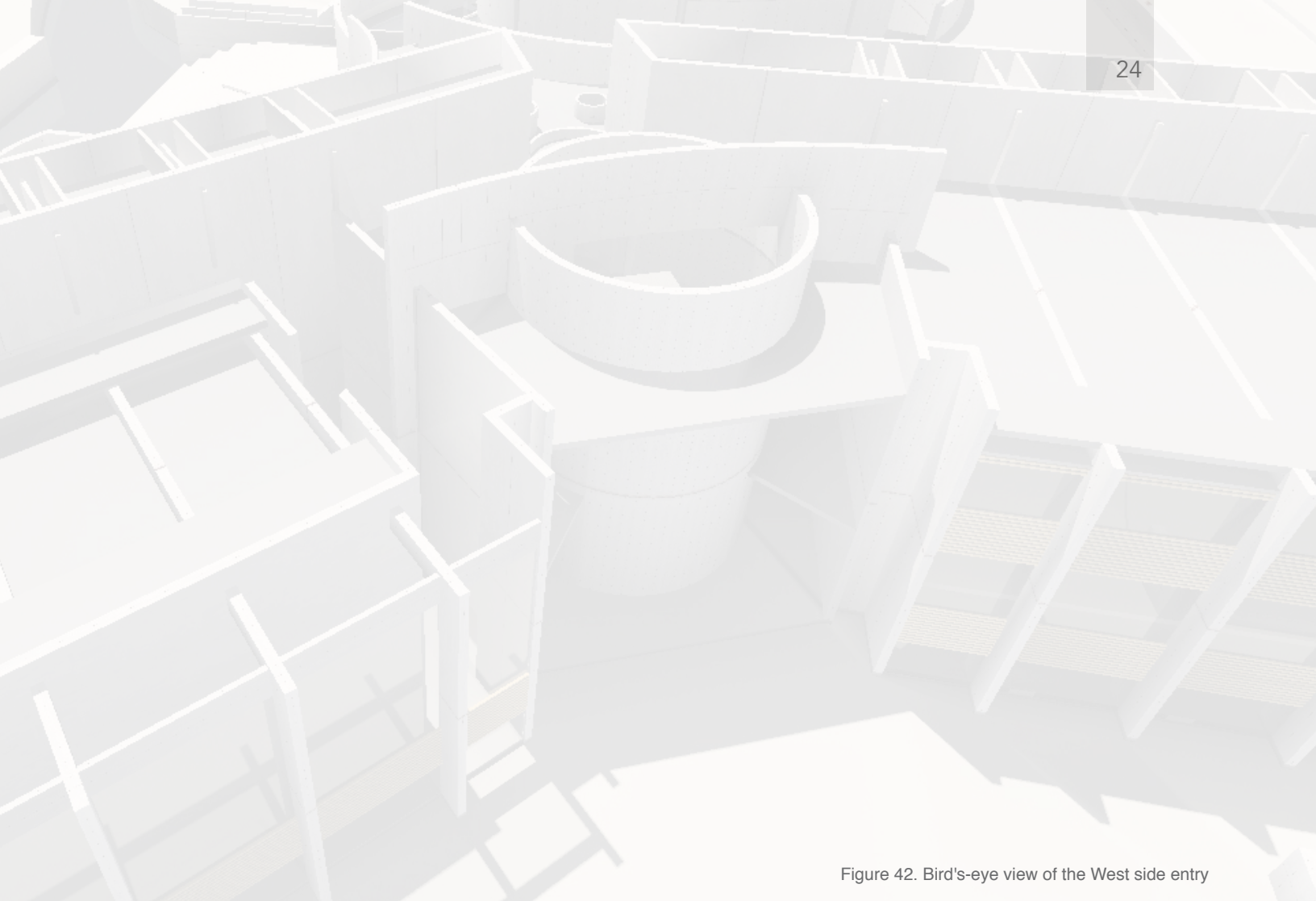


Figure 42. Bird's-eye view of the West side entry



Figure 43. View of the Library and Meeting halls

Library and Multipurpose hall  
Active Zone



Figure 44. View of the Amphitheater

## THE AMPHITHEATER

A stepped well/inverted truncated pyramid serves as an amphitheater.

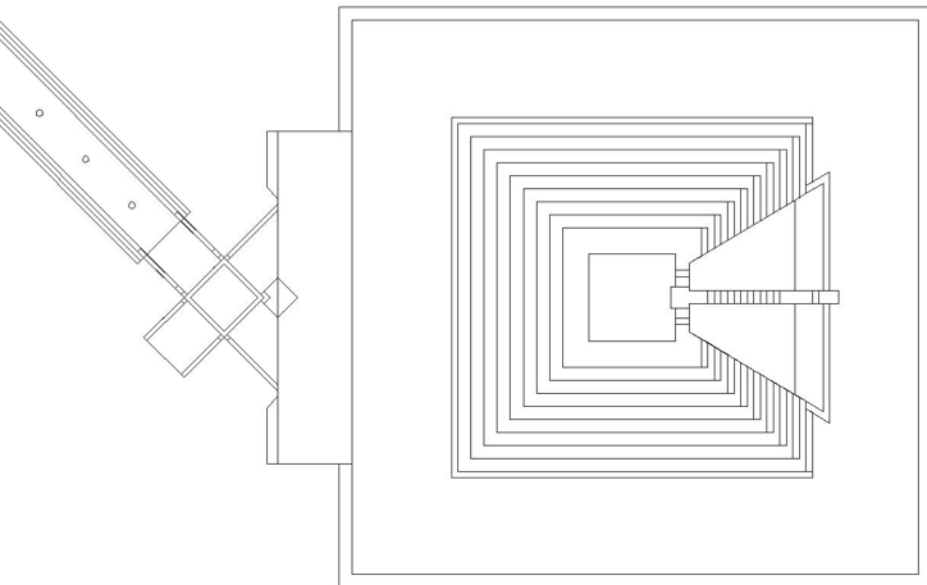


Figure 45. Plan Showing the Amphitheater

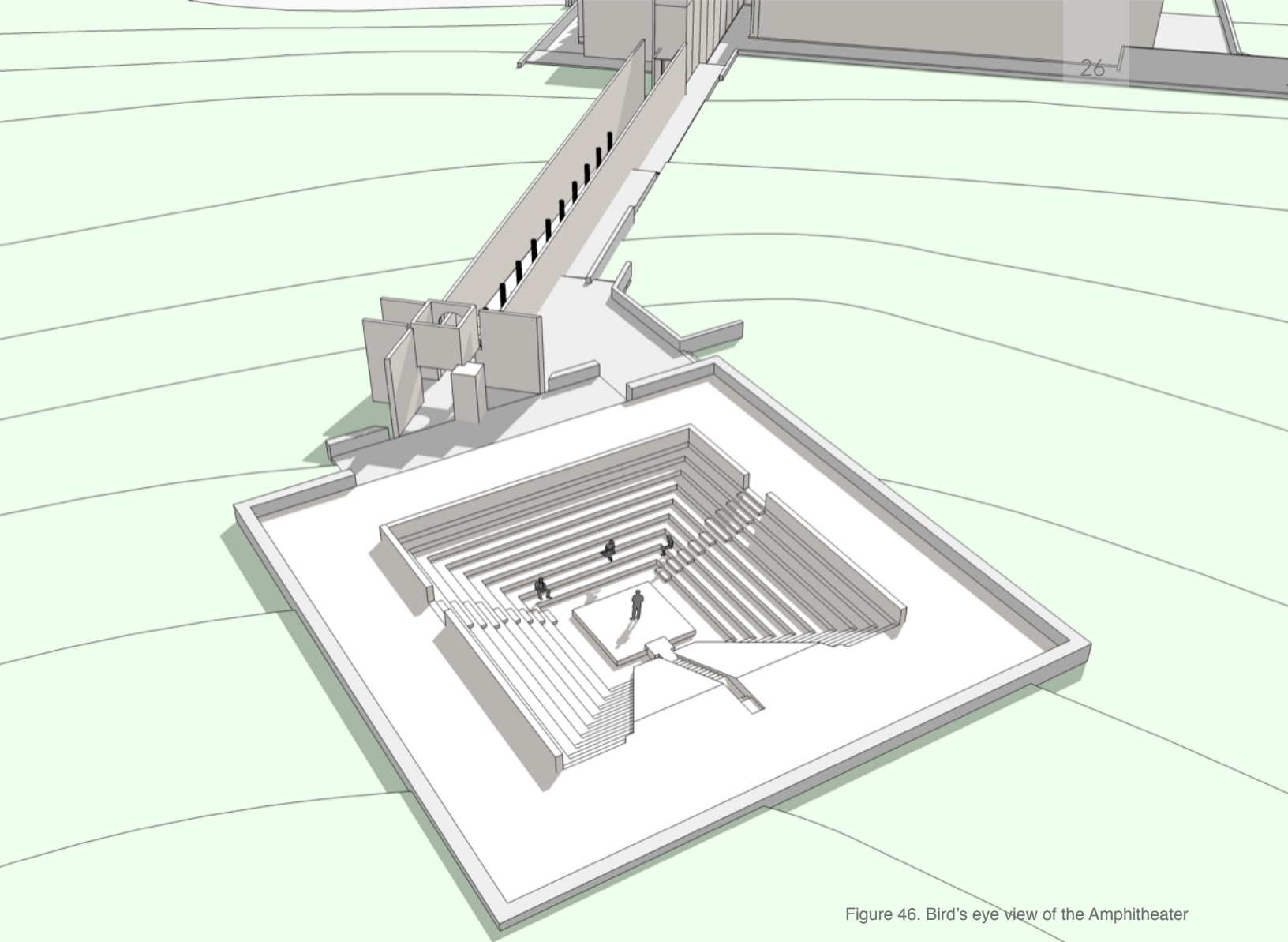
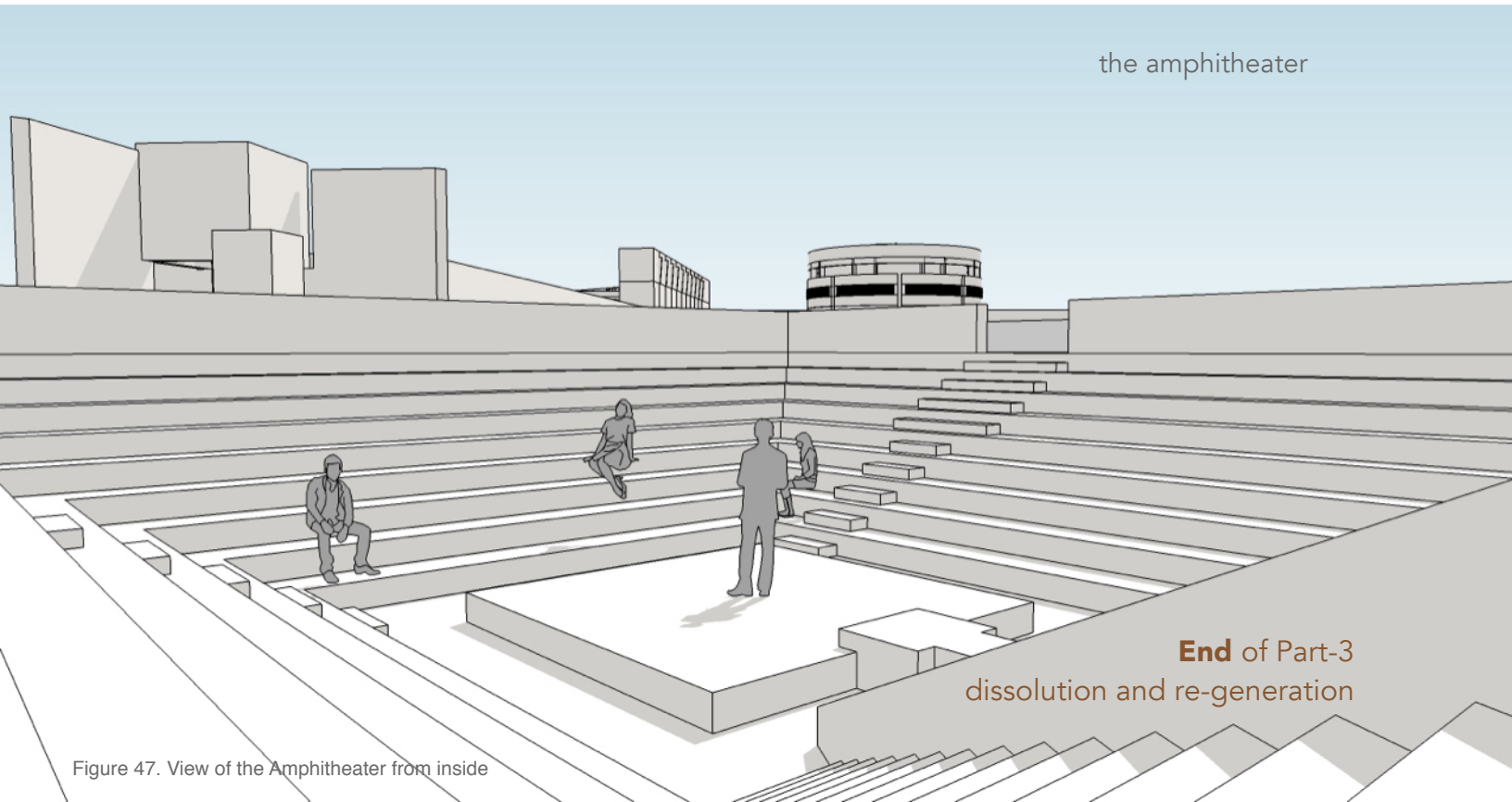


Figure 46. Bird's eye view of the Amphitheater



the amphitheater

**End of Part-3**  
dissolution and re-generation

Figure 47. View of the Amphitheater from inside

## Part-4

### the Rotunda

The rotunda being the heart of the complex evolved as a response to thoughts on;

a mystic ring of light  
a floating sky-like roof and  
a timeless ruin enclosed

A gradual and slow withdrawal to subtler levels of visual, tactile and aural characteristics of the built environment was intended to achieve. Diminishing tactile qualities, dim lighting and an increased quietitude became desirable.



Figure 48. Solar Eclipse of 2002 (fair use)



Figure 49. The halo inside the Rotunda



## THE STAIR TO THE ROTUNDA

Access to the rotunda was designed as a helical stair at the centre of the rotunda. This was initially compared against a ramp going around the floor of the rotunda. The helical stair at the centre of the room gave the access a mystical quality and it supported the design of an unobstructed and unbroken periphery wall.

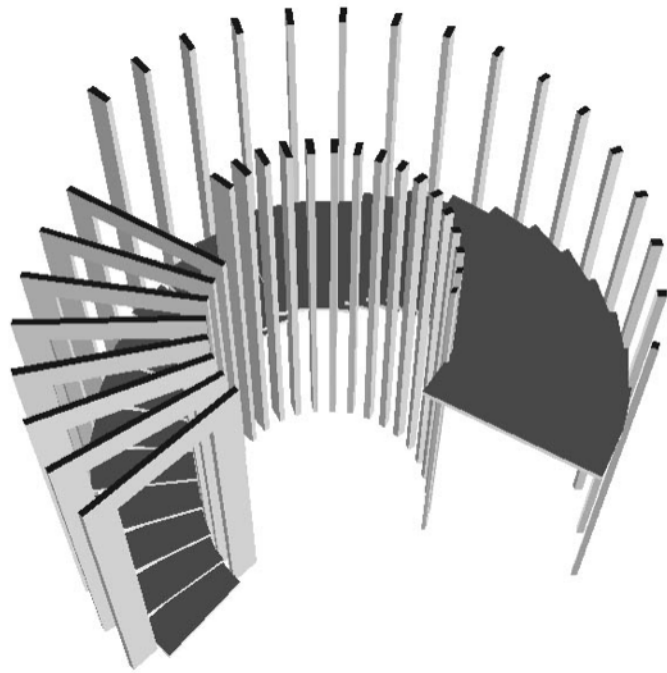


Figure 50. Helical stair to the Rotonda

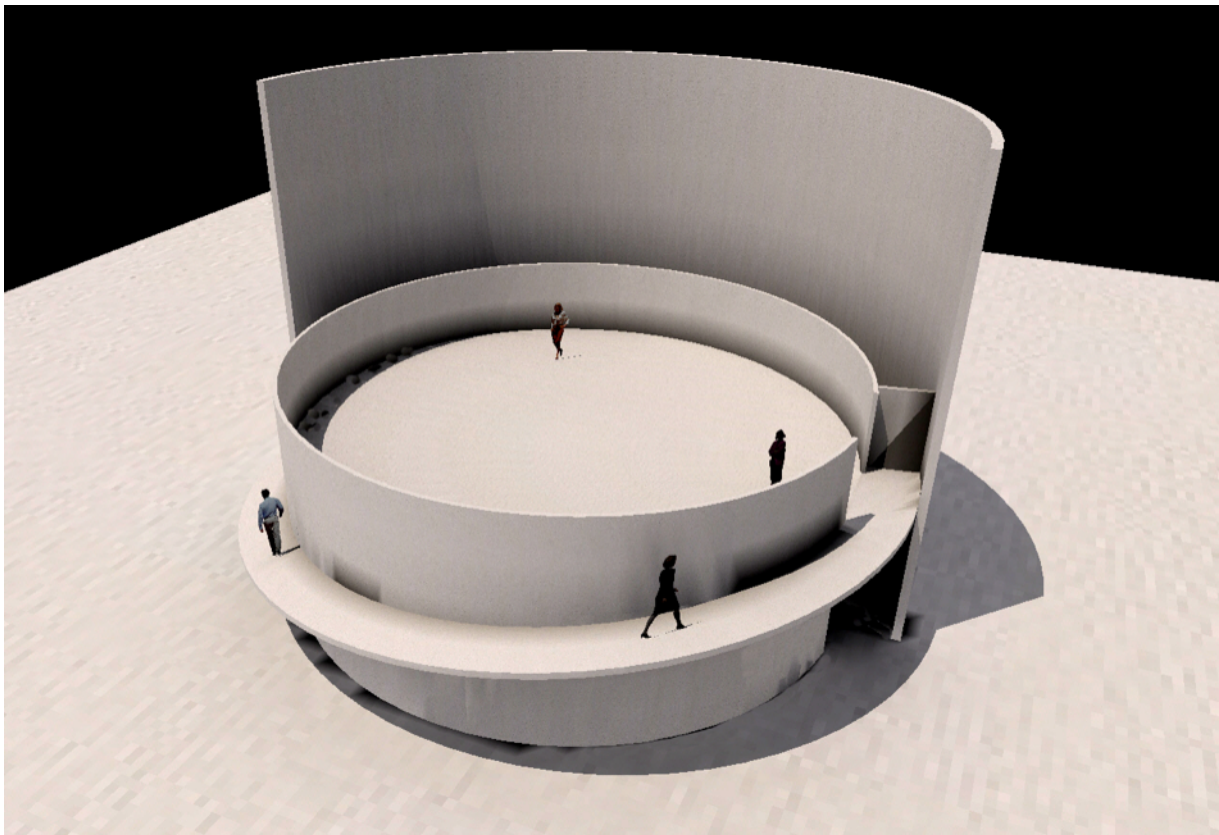


Figure 51. Ramp to the Rotonda

## HALO - LIGHT SIMULATION STUDIES

A few options on the ceiling shape and the size of the opening were compared in lightscape using natural light simulation. This process helped to choose the desired optimal lighting in the rotunda

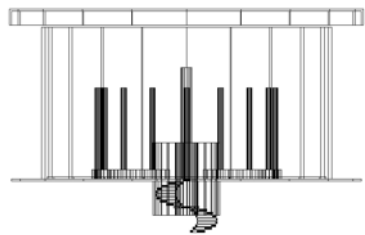
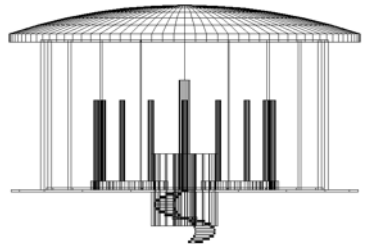
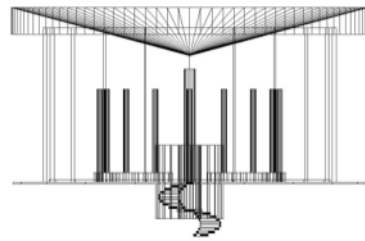
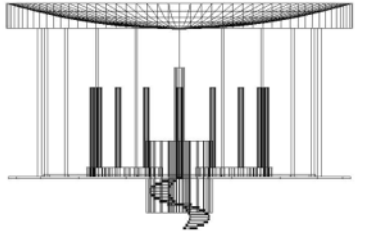


Figure 52. Ceiling shapes for Lightscape study

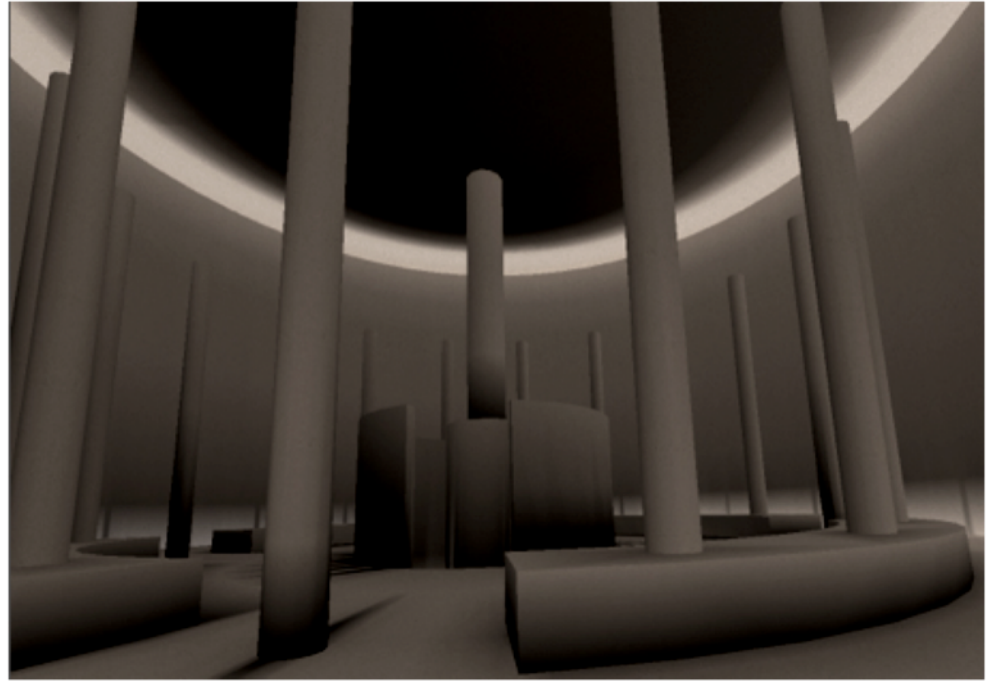


Figure 53. Lightscape study - Ceiling shape 1

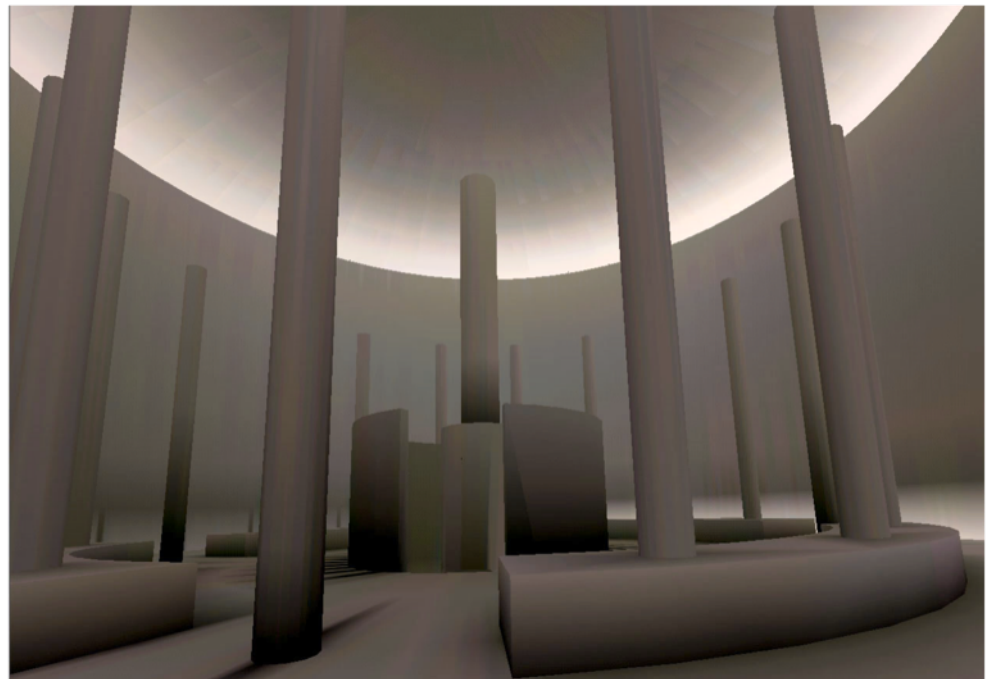


Figure 54. Lightscape study - Ceiling shape 2

## ROOFING THE ROTUNDA

From the lightscape studies, a flat or slightly dome shaped ceiling produced the desired lighting effect in the rotunda. Three roofing options are compared here to study this further.

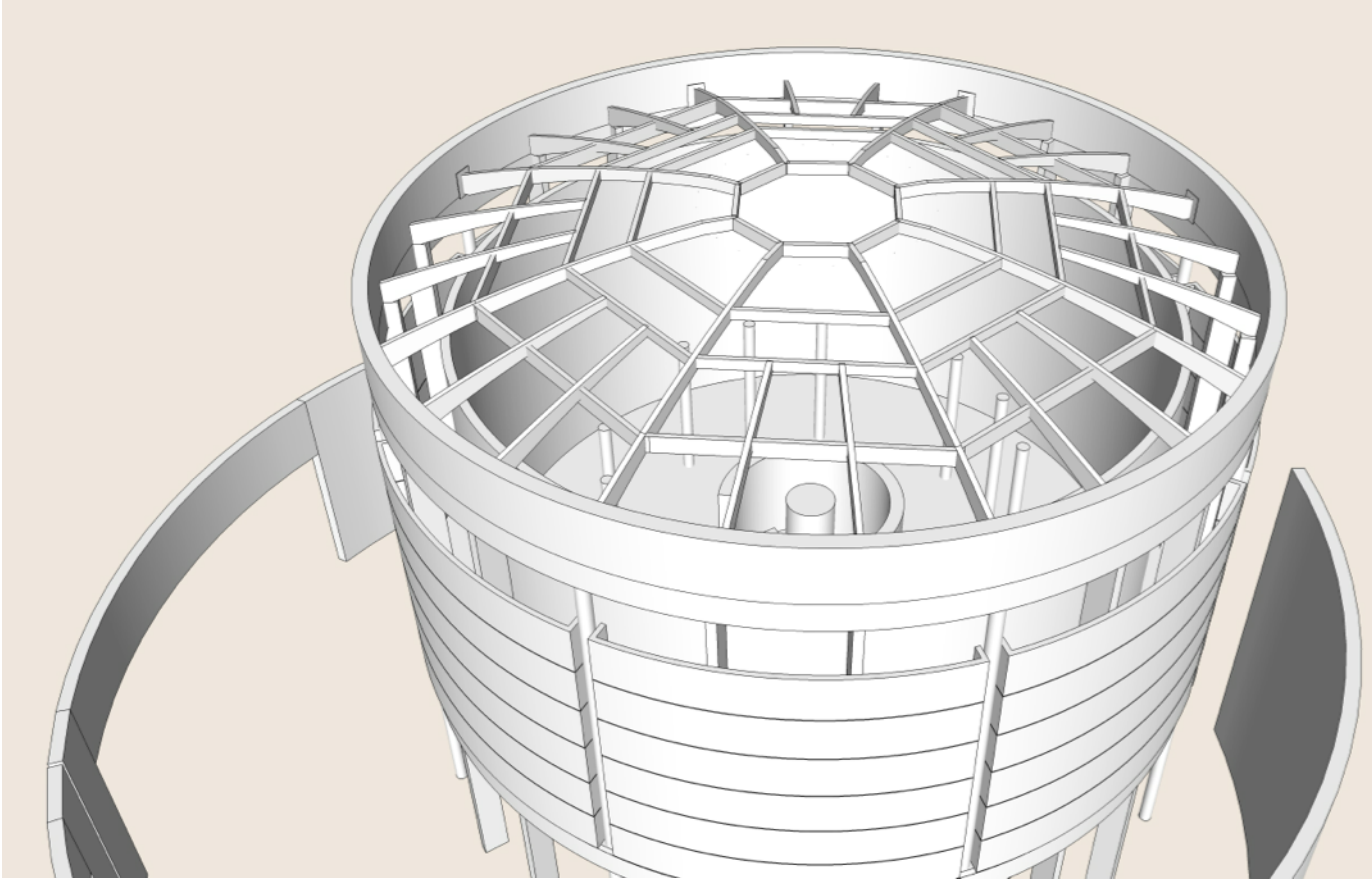


Figure 55. Roof option 1: the spider web

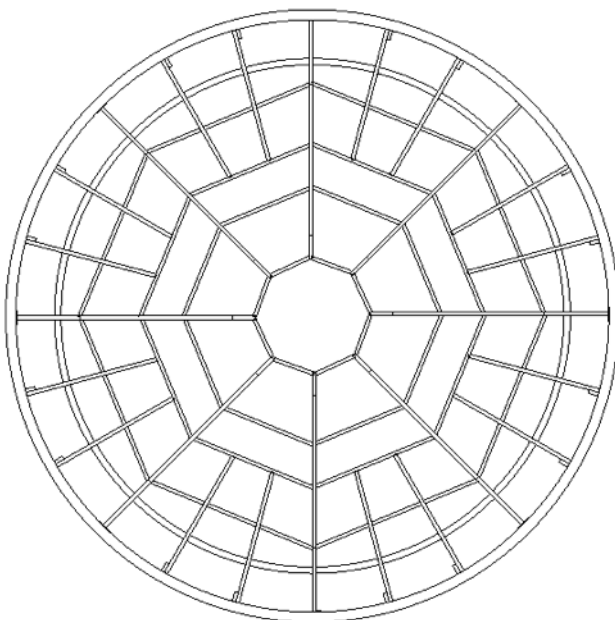


Figure 56. Plan of Roof option 1

### 1. The spider web

This dome-shaped roof is made of custom fabricated curved steel joists connected with rectangular steel sections forming concentric octagons. This can accommodate a flat or dome-shaped suspended ceiling inside.

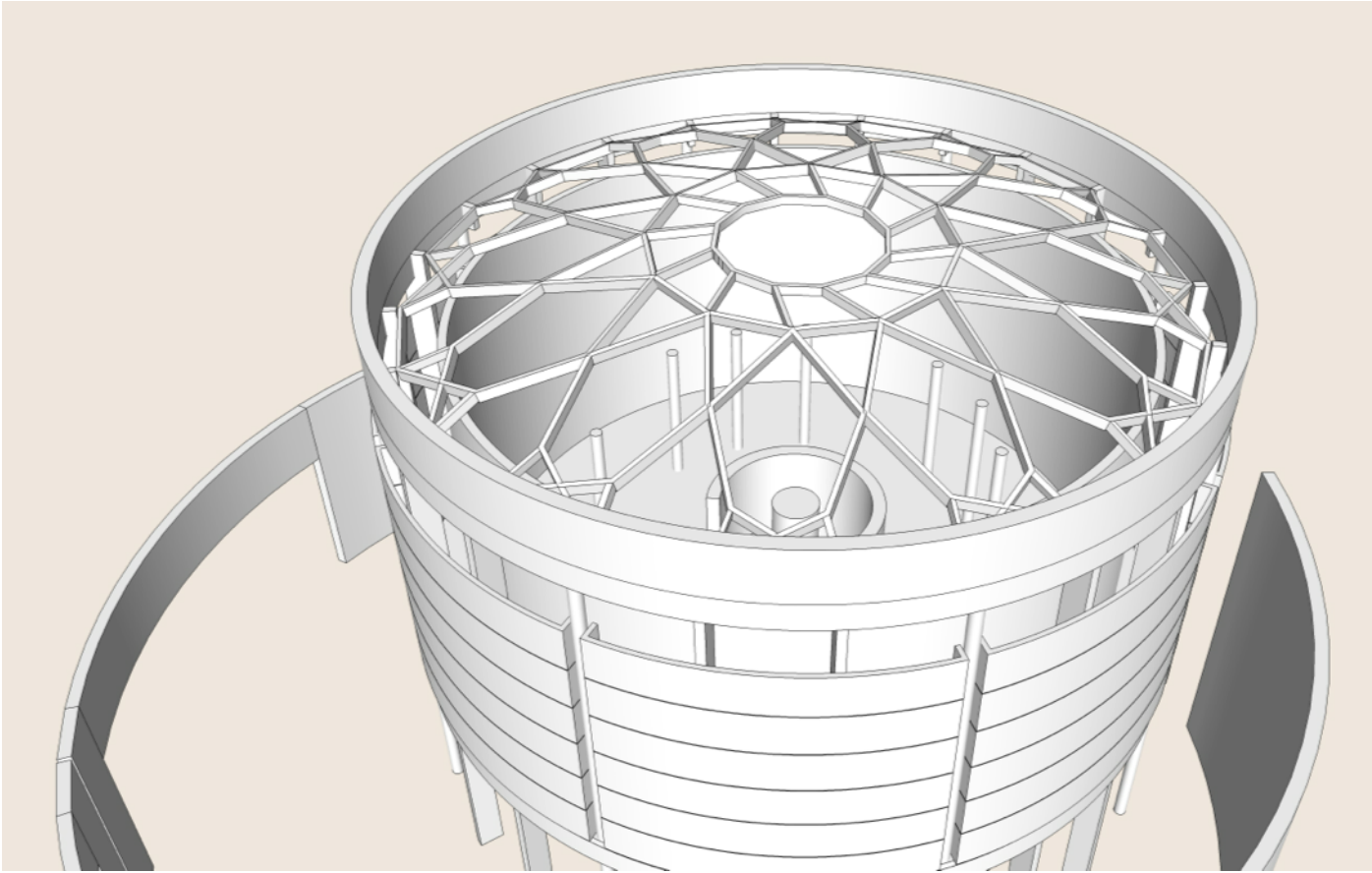


Figure 57. Roof option 2: the octagonal web

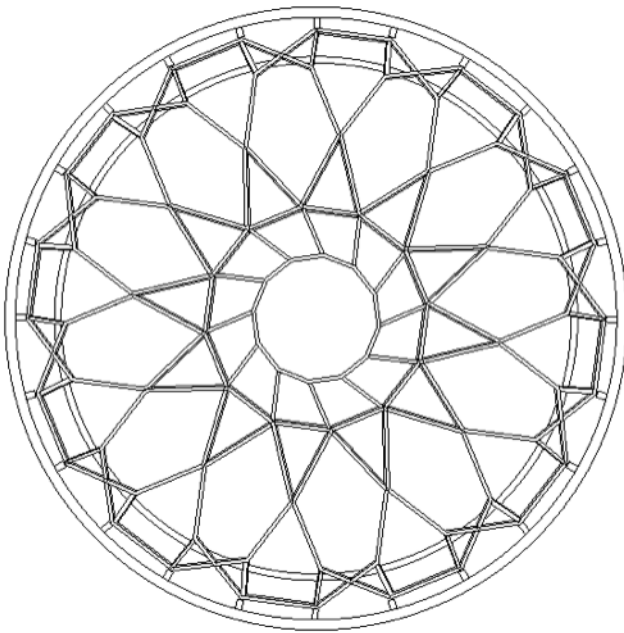


Figure 58. Plan of Roof option 2

## 2. The octagonal web:

This is structured out of overlapping octagonal forms with a few modified vertices. translucent roofing sheets and ceiling panels attached directly to the frame can create intricate shadow-rib lines on the ceiling of the rotunda.

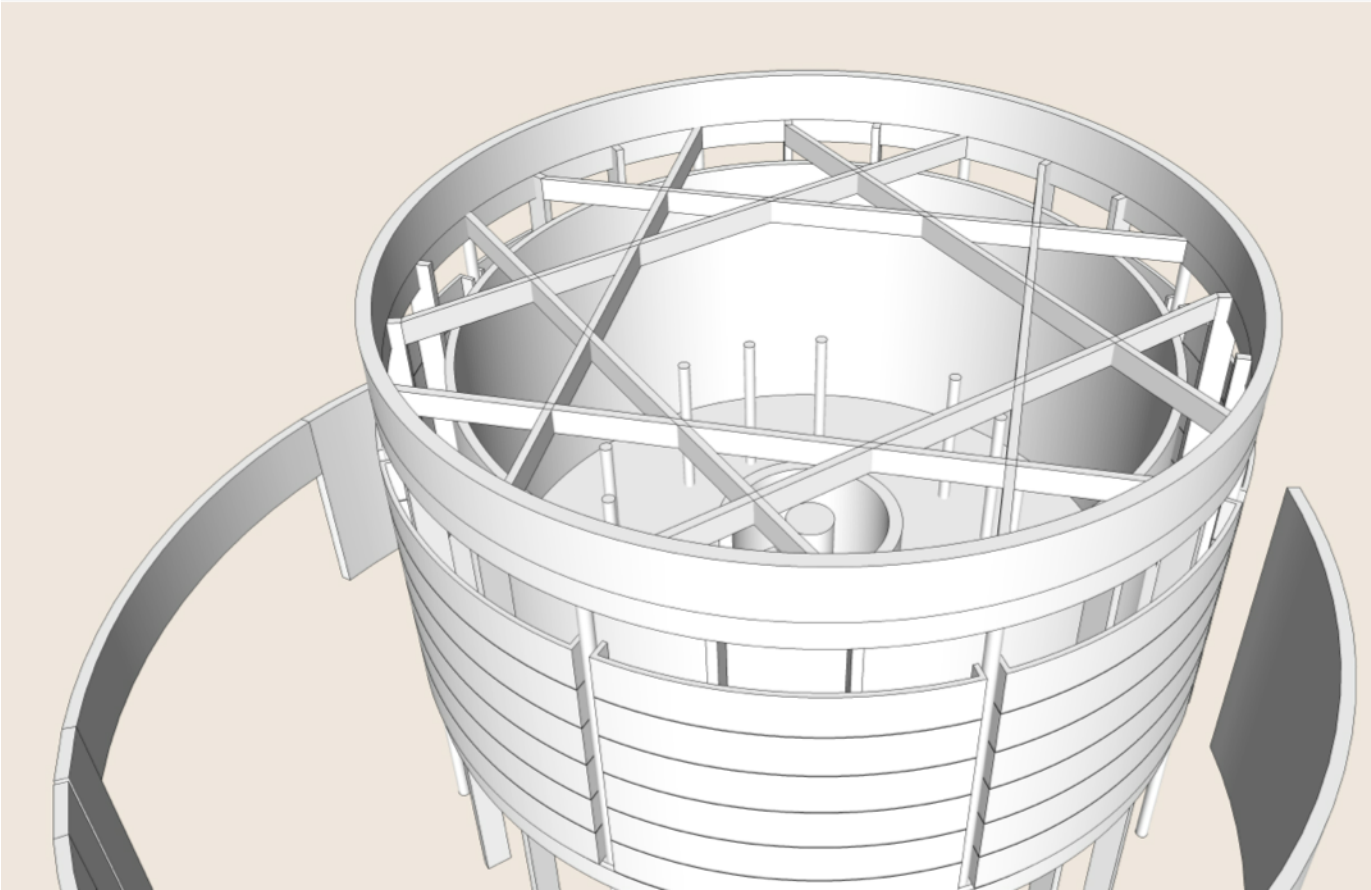


Figure 59. Roof option 3: the RCC flat

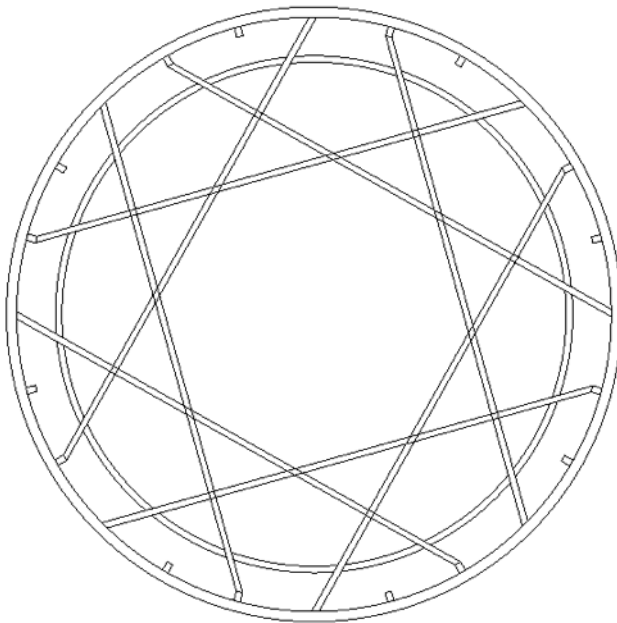


Figure 60. Plan of Roof option 3

### 3. The RCC flat

Reinforced Concrete slab with interconnected beams spanning between every eighth column. The slab sits on top of the beams and a ceiling hangs at the bottom.

## THE MAIN STRUCTURE

The main structure of the rotunda is built predominantly of cast-in-situ concrete giving it a character of solidity and stillness. A frame of concrete columns, beams, slabs and stair is cast in stages. Later, Custom pre-cast curved concrete panels are attached to the frame as the skin.

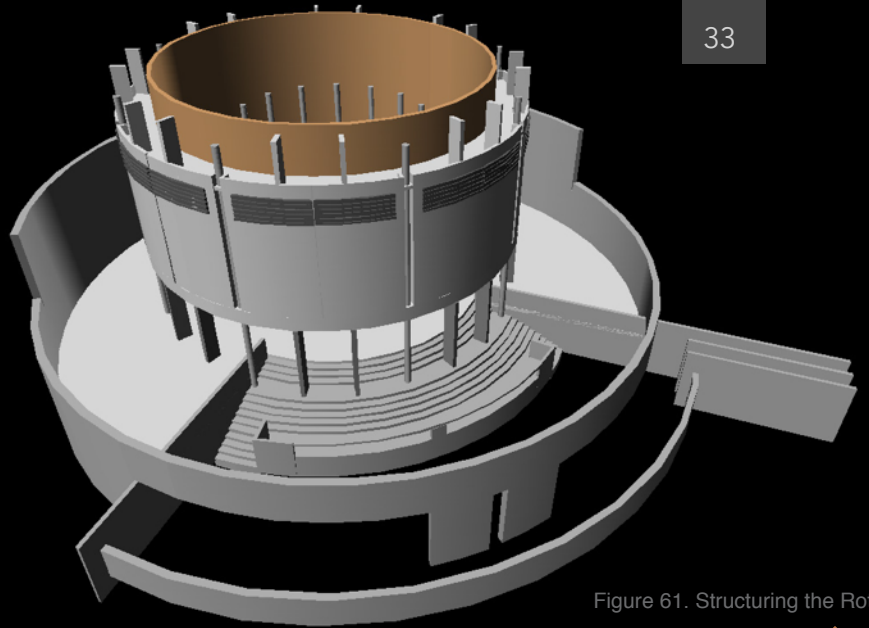


Figure 61. Structuring the Rotunda 1

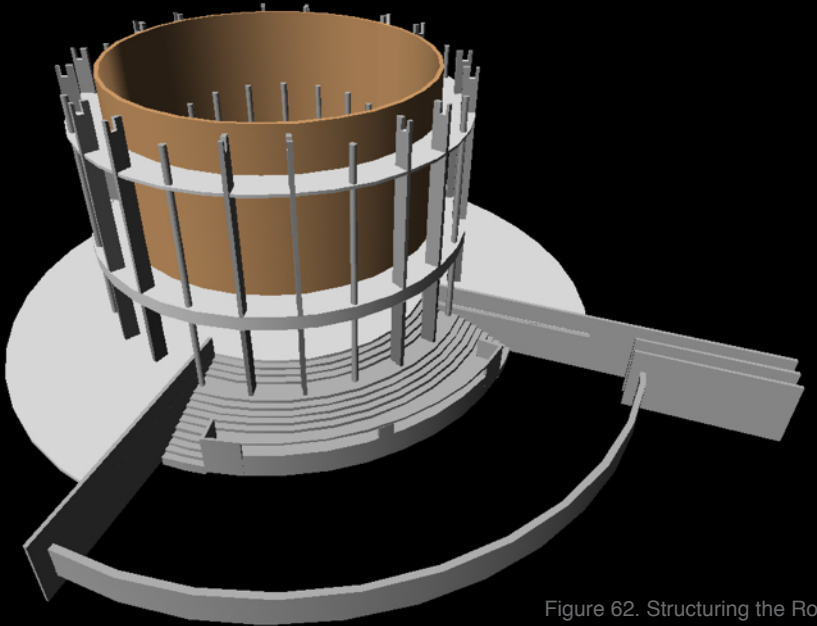


Figure 62. Structuring the Rotunda 2

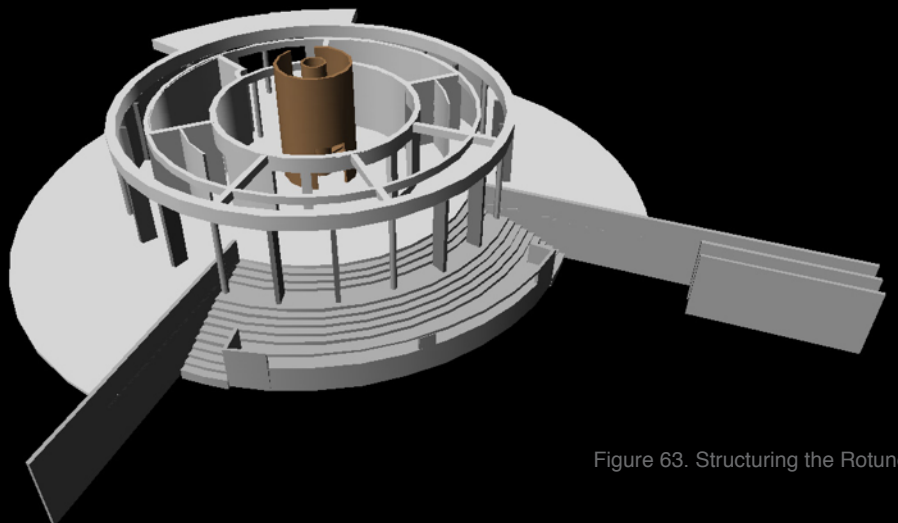


Figure 63. Structuring the Rotunda 3

The precast panel skin is anchored to the RCC columns and to the steel framing between them. The space in between the inner and outer skins performs as a good insulator of heat and sound. It is ventilated in the summer to help with cooling and kept closed in the winter to maintain heat. This space also functions as the host of mechanical and electrical infrastructure of the rotunda.

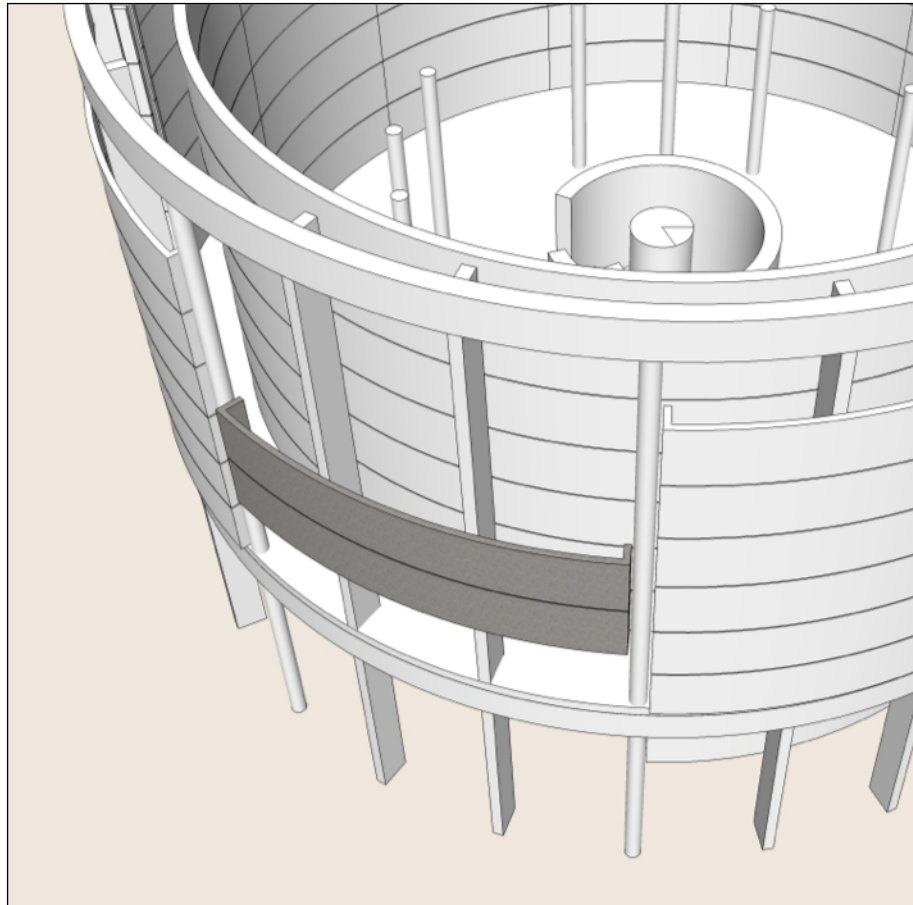


Figure 64. 3D view showing Skin of the Rotunda

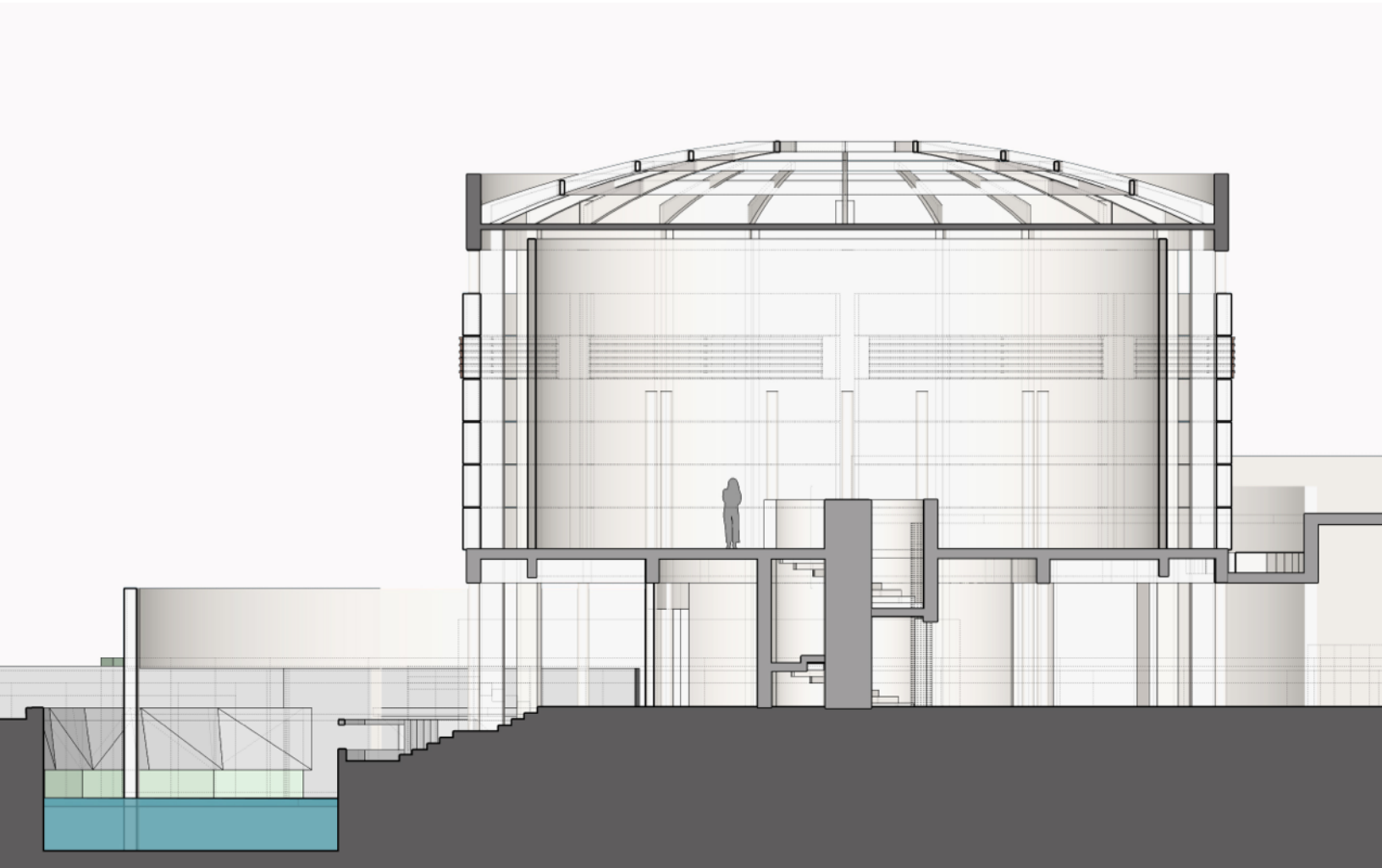


Figure 65. Cross Section of the Rotunda

Cross section of Rotunda



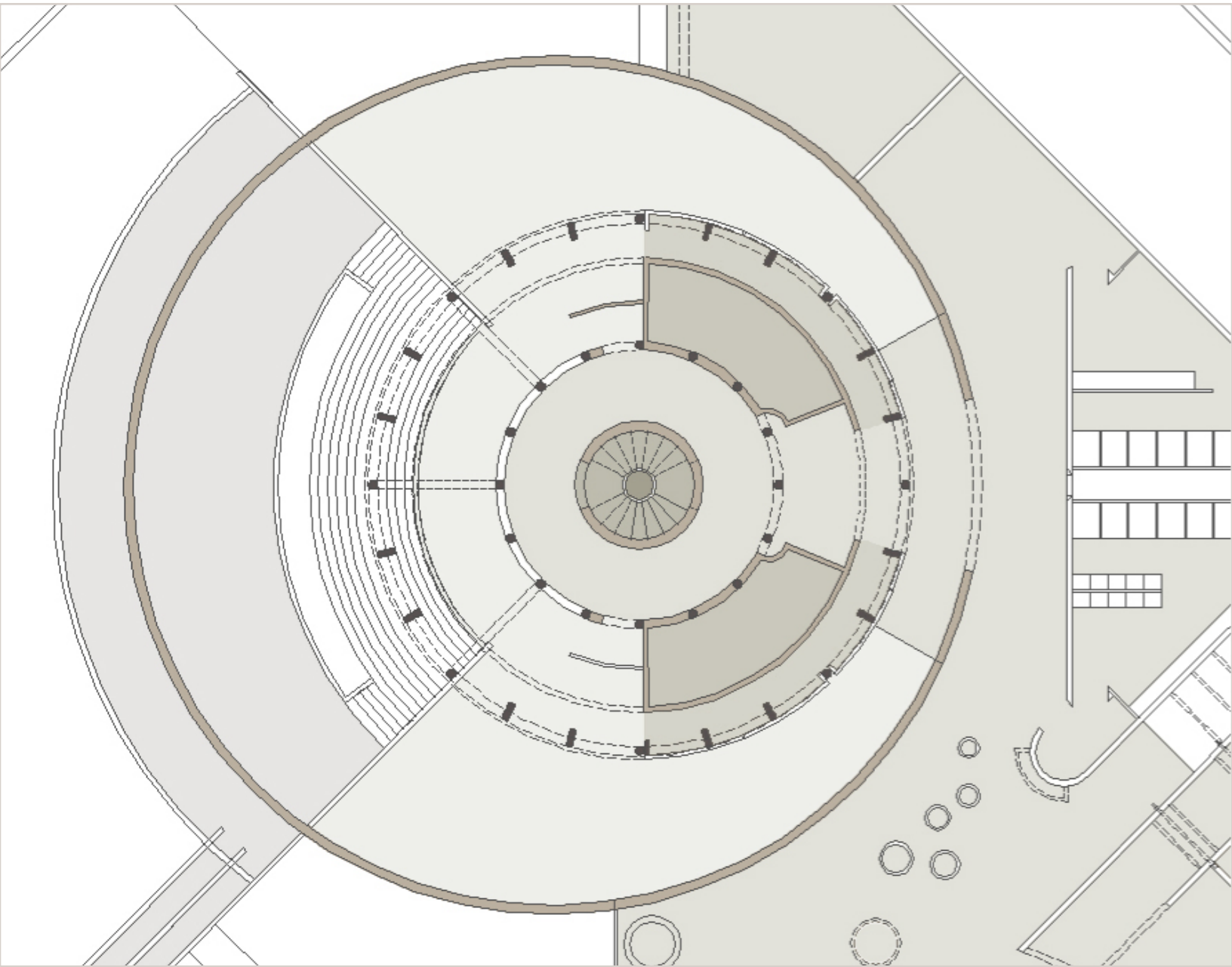


Figure 66. Lower Level plan of the Rotonda

Lower Level plan

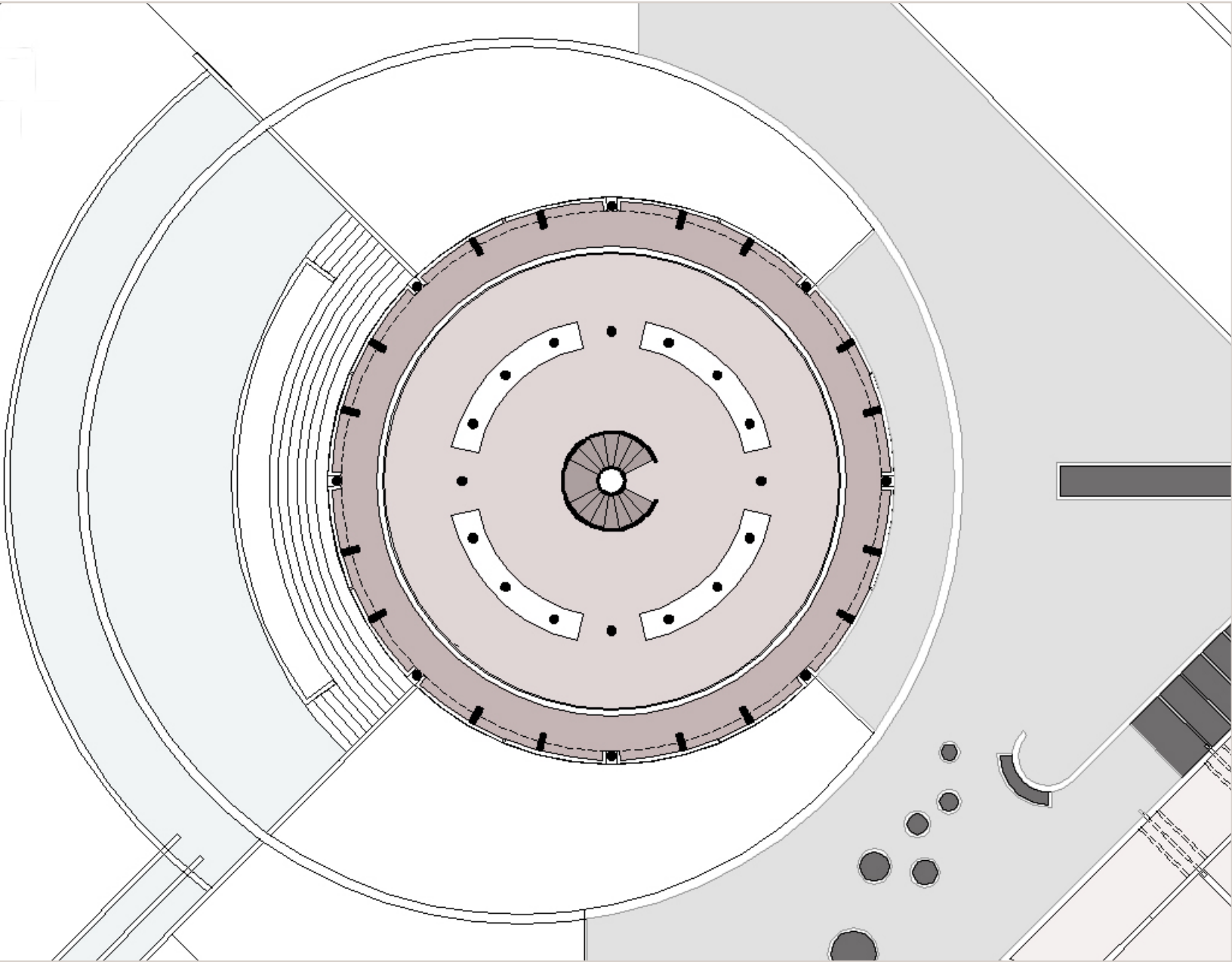


Figure 67. Upper Level plan of the Rotonda

Upper Level plan

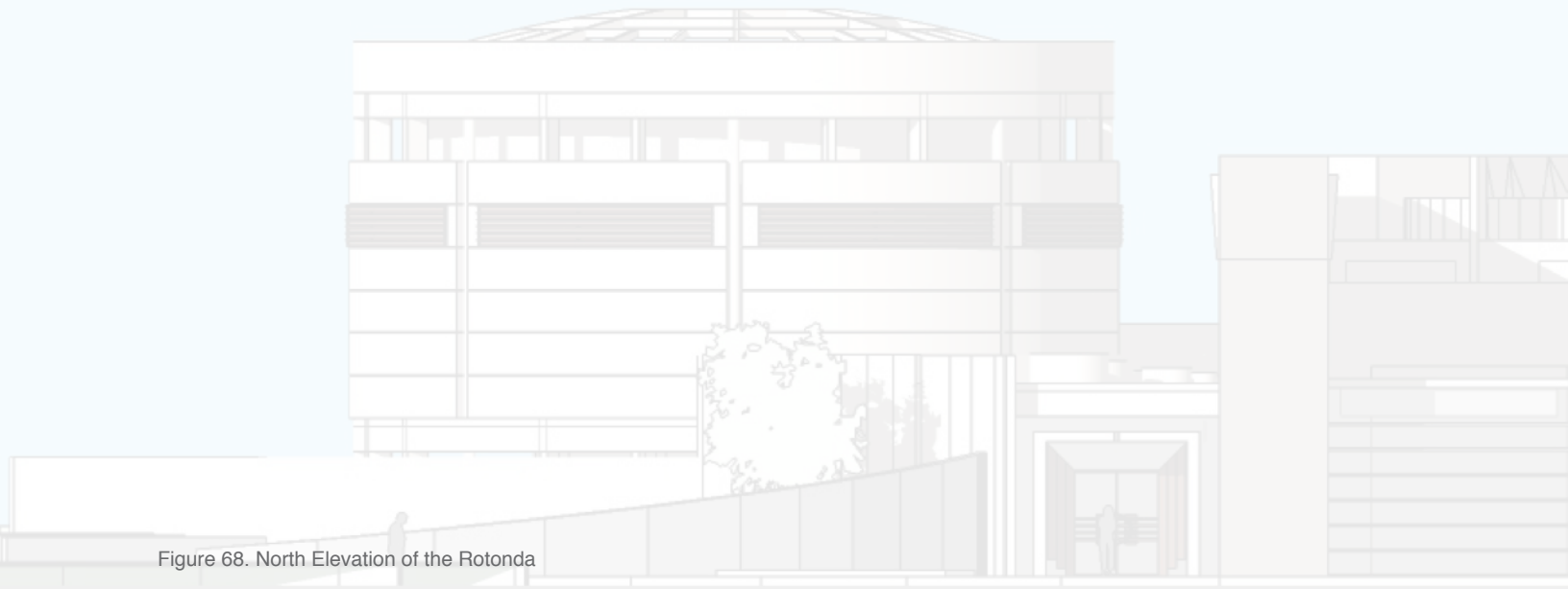


Figure 68. North Elevation of the Rotonda

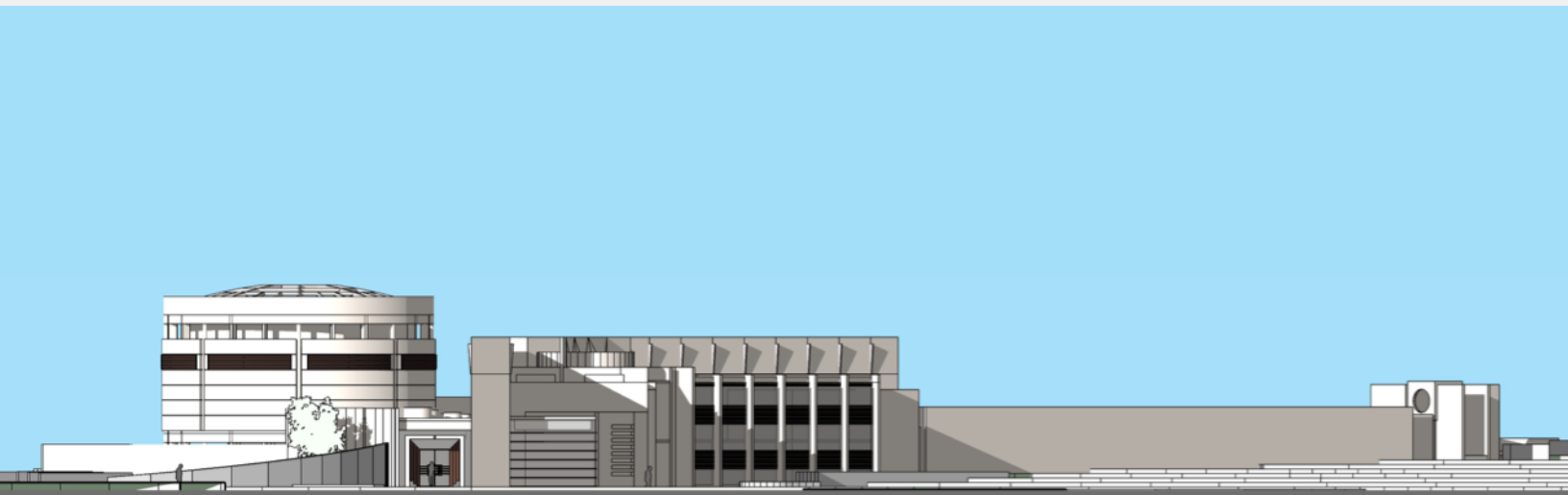


Figure 69. North Elevation

Elevation-North

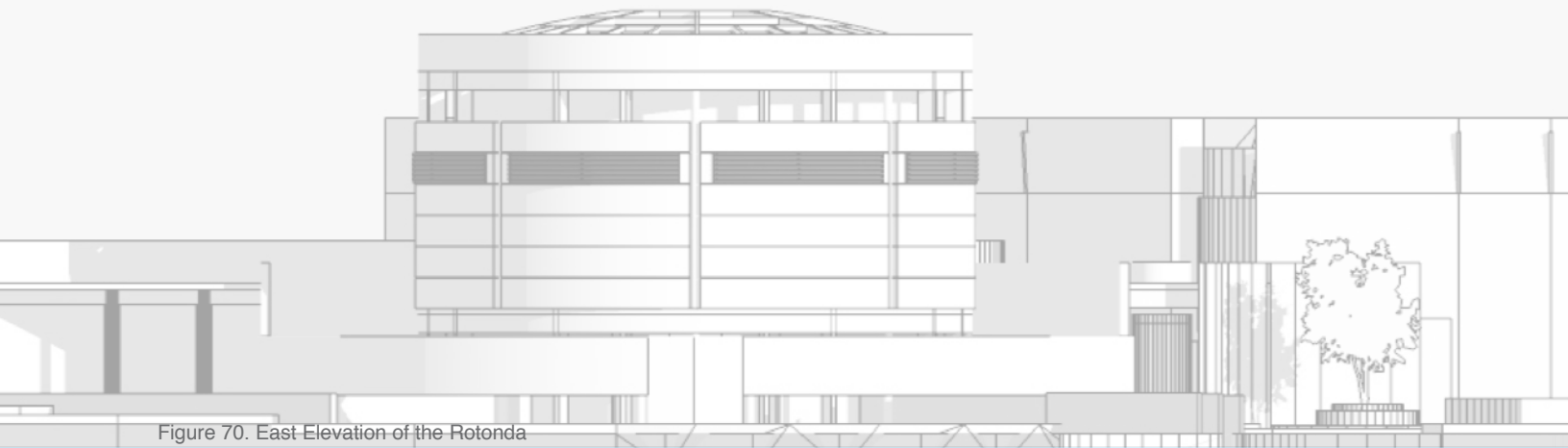


Figure 70. East Elevation of the Rotonda

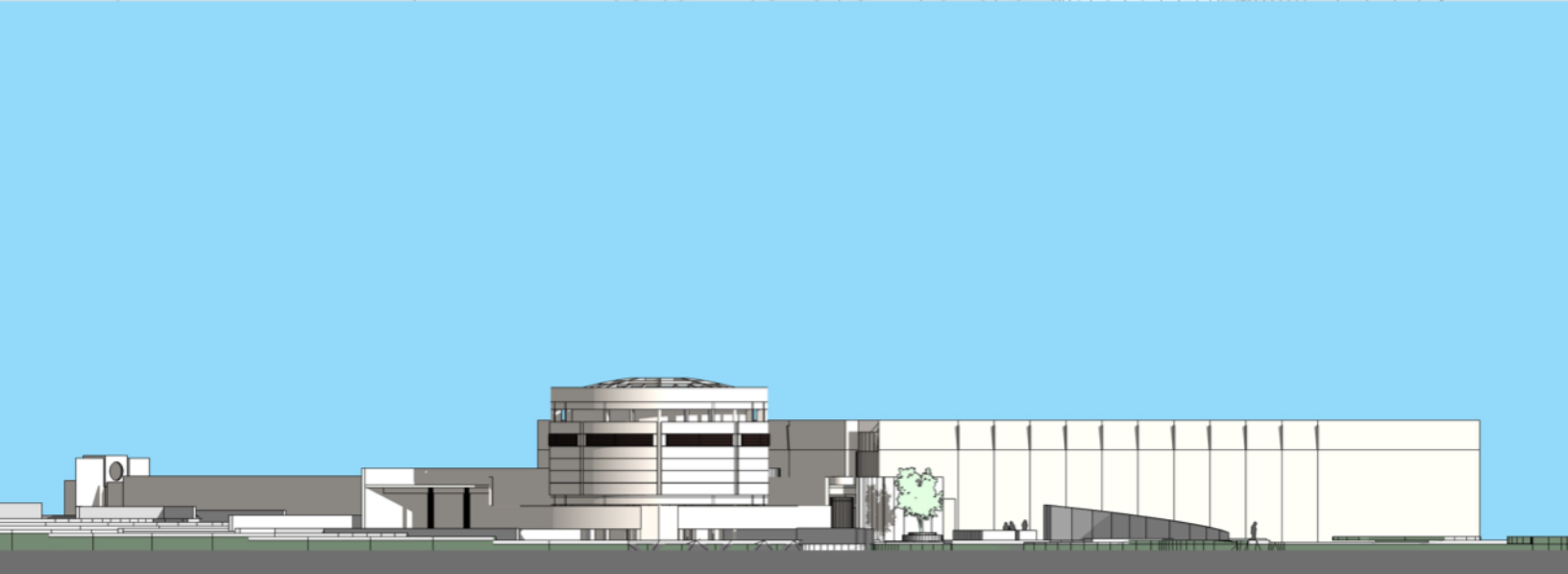


Figure 71. East Elevation

Elevation-East



Figure 72. 3D view of the Entrance court

View of the entrance court  
with the 'tree of life'



Figure 73. Lightscape Rendering of the Rotonda 1

Fish Eye view-1  
from the water body

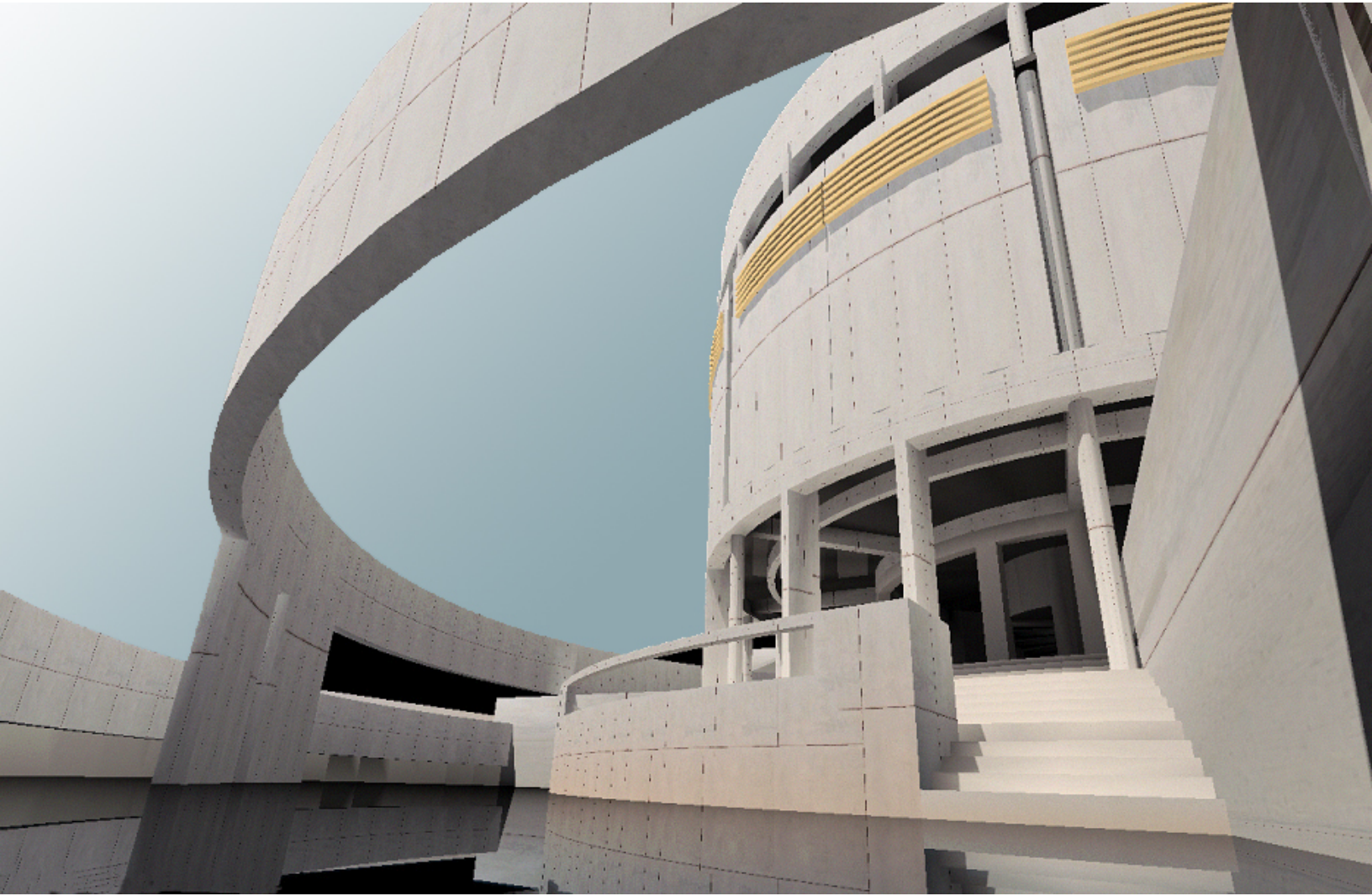


Figure 74. Lightscape Rendering of the Rotonda 2

Fish eye view -2

## INSIDE THE ROTUNDA

And He said to them, "Come away by yourselves to a secluded place and rest a while."

*Mark 6:31, The Holy Bible*

Inside the sanctuary, one is left alone to oneself and to a faint presence of the surrounding. One could sit on the column pedestals and lean against the free-standing columns or sit on the bench attached to the curved wall all around.

The halo is created of indirect natural light supplemented by indirectly placed electrical lamps. The intensity of these lamps are computer controlled to maintain the luminosity of the halo somewhat constant.

Figure 75. Inside the Rotonda: Lightscape Rendering 1



Inside the sanctuary



“There is an ancient peace you carry in your heart and have not lost ”  
— a Zen quote

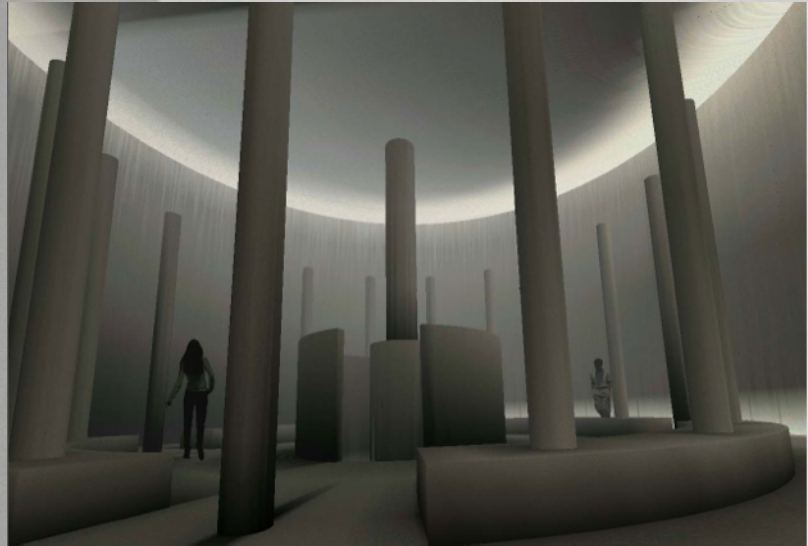


Figure 77. Inside the Rotonda: Lightscape Rendering 3

Figure 76. Inside the Rotonda: Lightscape Rendering 2

**End** of Part-4  
The rotunda

## Part-5

### The Stage and the final act

#### THE STAGE

The site is located in a small educational town where people of different cultural, linguistic, religious and non-religious backgrounds have assembled together. A school brings them together from various parts of the globe. The site lies where one of the straight roads after crossing a stream takes a bold turn to a new direction.

The temple of peace is a non-denominational resting place for individuals and small groups of diverse cultural background wanting to spend time in contemplation or in meditation on their choice of philosophical pursuit. The temple also welcomes small discussion groups and seekers of philosophical and religious books.

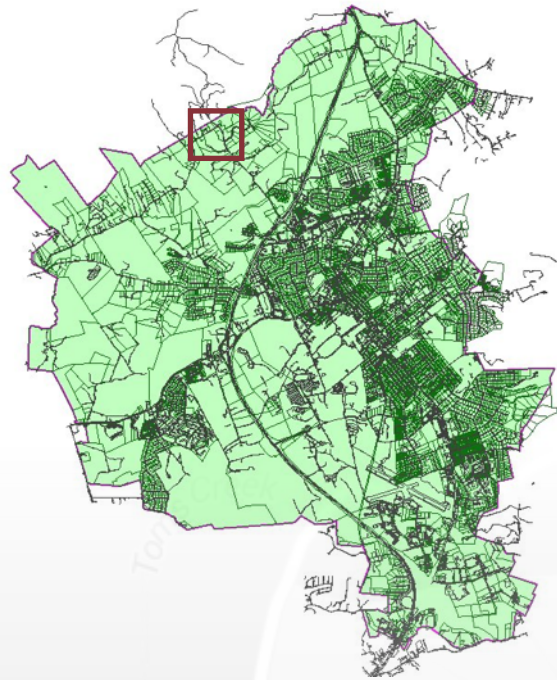


Figure 78. Map of Blacksburg 1 (fair use)

Mountain View  
Wesleyan Church

Figure 79. Map of Blacksburg 2 (fair use)

Deerfield Dr

Doe Run

Toms Creek Rd

Hidden Valley Rd

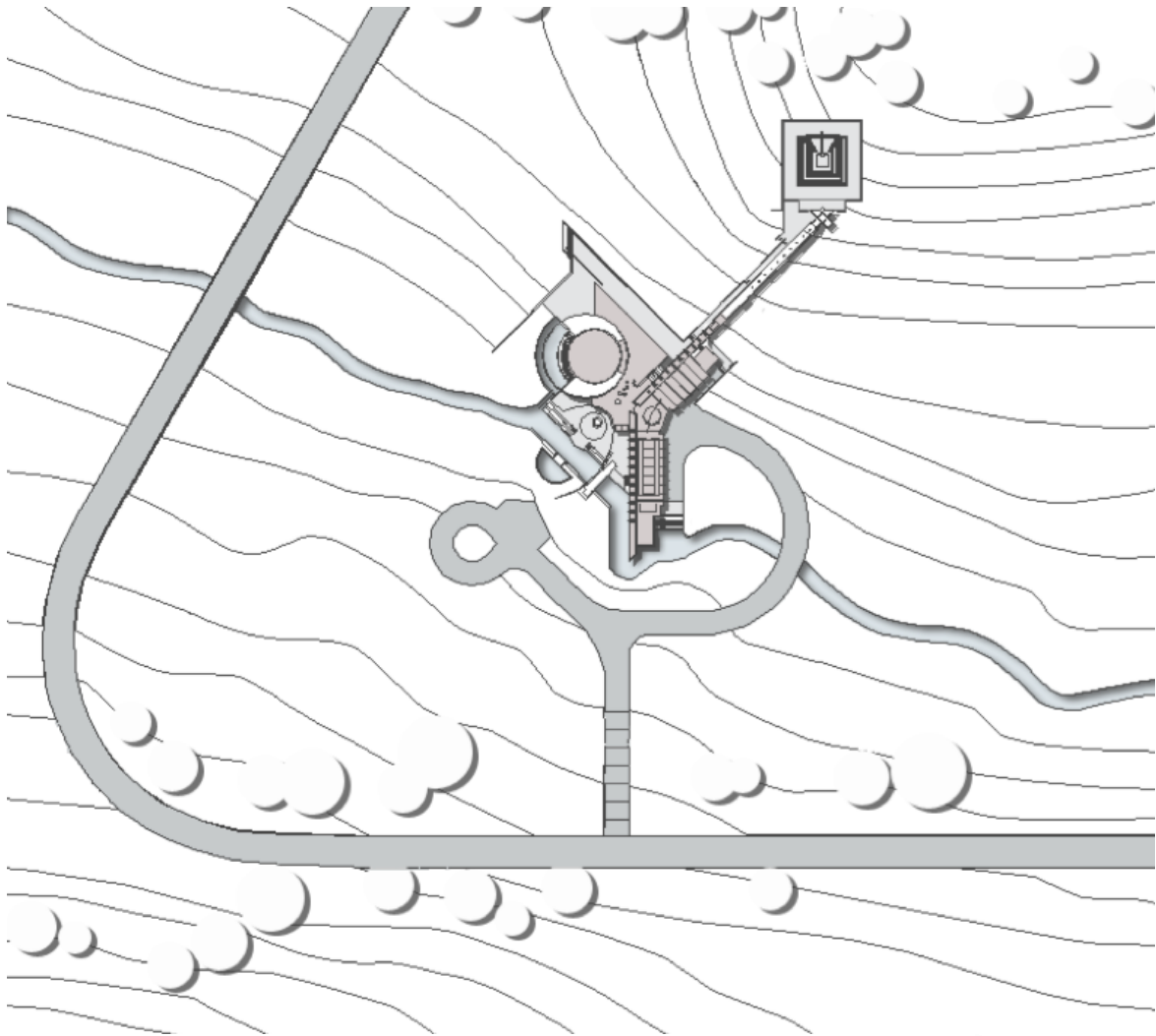


Figure 80. Site plan

SITE PLAN



## THE FINAL ACT

The seldom heard story of the underlying unity-principle in which all dualities and differences rise and fall, has been a thing of joy to human intellect from time to time. The intellect enjoys it like a child enjoying the complexity of a kaleidoscope. To see presence in the absence and to see absence in the presence the seer must stand beyond the two. Beyond the drama of the dualities, beyond the beautiful movie of light and no-light, the observer stands in solitude and cries out in joy..... "I SIMPLY EXIST".

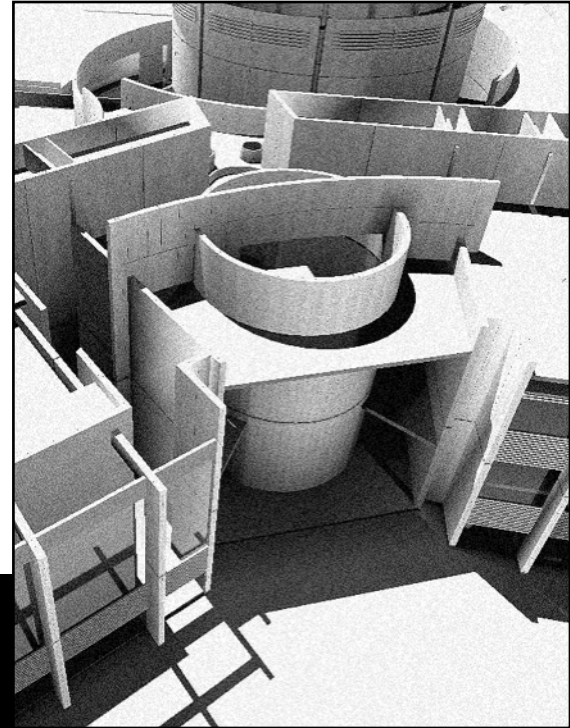


Figure 81. Lightscape rendering of the West side entry



Figure 82. Lightscape Rendering of the Library Block

**The end**  
architecture of absence

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