

BACHELORS OF ARCHITECTURE
DESIGN THESIS 2019 -2020
(BATCH 2016-2021)

INTERPRETATION CENTER IN BHUVANAGIRI

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DESIGN THESIS 2019-2020

THESIS TITLE

Submitted for the Award of the Degree Of
BACHELOR OF ARCHITECTURE

AWARDED BY

Jawaharlal Nehru Architecture and Fine Arts University

For the year 2019- 2020

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CERTIFICATE

This is to certify that the Design Thesis entitled **INTERPRETATION CENTER IN BHUVANAGIRI** carried out by **CH. JESHWANTH SHIVA SAI**, bearing Hall Ticket No: **16271AA011**, currently in fourth year B.Arch., during the academic year 2020, in partial fulfillment for the award of the Degree of **BACHELOR OF ARCHITECTURE** from Jawaharlal Nehru Architecture and Fine Arts University is a record of bonafide work to be the best of our knowledge and may be placed before the examination board for their consideration.

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ACKNOWLEDGEMENT

The successful completion of this thesis has been one of the most challenging academic assignments faced by me which could not have been accomplished without the support of the following people.

Firstly, I thank my mother, father, sister and my grandparents for their support and standing by me in my tough times. And I also thank my thesis guide, Ms. Ar. Vasanta Sobha ma'am for her immense support and encouragement through my difficult stages. And I also thank my teacher's Ar. Pranati, Ar. Anusha, Ar. Goutami Krishna Satyavarapu, Ar. Lavanya Padala. I would also like to thank three special people who made time for me to share their knowledge and experience. Firstly Mr. Er. Venkata Dilip Kumar sir from Mahindra University for his immense generosity, kindness and also for helping me out with the structural doubts and helping me out throughout and also Ms. Ar. Sri Divya Adurthi ma'am from Aurora Design Academy for helping me out with my literature part and clearing my doubts in my report. And last but not the least I would like to thank Ms. Ar. Hari Priya ma'am for her intellectual contribution throughout the reviews and Mr. Er. Vinay Kumar sir for helping me out with the structural report.

Finally, I am deeply indebted to my grandfather for looking after my needs in Bhongir. And also, I would thank my two friends Nitish and Selwyn from the bottom of my heart for helping me out with the initial drawings and concepts and helping me out in tough times of my submissions and reviews. They were always been by my side and helping me with each and everything and pulled me out of my troubles. And last but not the least I'd also like to thank my friend's Akhila and Yashaswini for helping me meet the required standards of drawing's and for their liberality.

ABSTRACT

Yet Bhuvanagiri hill is the world's largest batholith rock, it isn't considered as a UNESCO world heritage site whereas Australia's Uluru which is the much smaller in every dimension when compared to the Bhuvanagiri hill. The main reason being the maintenance and lack of attention from the government. So, based on a study of the types of buildings in Bhuvanagiri, I thought interpretation of the Bhuvanagiri fort historic glory it has and to transform the image of the city.

So, this thesis project would aim at gaining tourism attraction and generating revenue for developing and maintaining the Bhongir fort and thereby regaining the lost identity of its historic glory. And also, the design aims at helping even the physically disabled people to experience the hill from the top and can reach the hill with the help of a ropeway.

This thesis project also helps in an educational perspective and also the local artists and craftsmen to showcase their works. The use of modern interactive multimedia interpretation devices, techniques and programs.

Table of Contents

1. INTRODUCTION TO INTERPRETATION	11
1.1 WHAT IS INTERPRETATION	11
1.1.1 MY DEFINITION FOR INTERPRETATION.....	11
1.2 WHY INTERPRET	11
1.3 HISTORY OF INTERPRETATION.....	12
1.4 TYPES OF INTERPRETATION	12
1.4.1 PERSONAL INTERPRETATION.....	12
1.4.2 SELF GUIDED INTERPRETATION.....	12
2. SYNOPSIS	13
2.1 AIM.....	13
2.2 OBJECTIVES.....	13
2.3 SCOPE.....	13
2.4 LIMITATIONS.....	14
2.5 METHODOLOGY	14
3. LITERATURE STUDY	15
3.1 INTRODUCTION	15
3.2 TYPES OF INTERPRETATION CENTERS	15
3.3 INDIAN LEGAL PROVISIONS.....	15
3.3.1 STATE LEVEL	16
3.4 WHAT AM I INTERPRETING	16
3.5 WHY AM I INTERPRETING	16
3.6 STANDARDS AND BYE-LAWS.....	16
3.6.1 ANTHROPOOMETRY	16
3.6.2 STUDY OF LIGHT	17
3.7 TYPES OF EXHIBITS	18
3.8 PARKING	19
3.8.1 TYPICAL PARKING LAYOUTS	19
3.8.2 G. O 168 NORMS FOR PARKING:	19
3.9 VERTICAL ACCESS	20
3.9.1 RAMP SLOPE RATIOS.....	20
4. DESKTOP STUDIES	21
4.1 MAPUNGUBWE INTERPRETATION CENTER	21

4.1.1 INTRODUCTION	21
4.1.2 BRIEF HISTORICAL BACKGROUND	21
4.1.3 CLIMATIC CONDITIONS.....	22
4.1.4 TOPOGRAPHY	22
4.1.5 OBJECTIVES.....	22
4.1.6 FUNCTIONAL REQUIREMENTS	22
4.1.7 PURELY FORMAL ASPECTS.....	23
4.1.8 MATERIAL'S USED.....	25
4.1.9 CONSTRUCTION TECHNOLOGY	25
4.2 NEW ACROPOLIS MUSEUM.....	26
4.2.1 INTRODUCTION	26
4.2.2 CONCEPT.....	26
4.2.3 SPACES.....	28
4.2.4 LAYOUT	29
4.2.5 SITE PLAN	30
4.2.6 LAYOUT	30
4.2.7 CIRCULATION AND ZONING:	31
4.2.8 MATERIAL'S USED.....	33
4.3 MUSEO PARC ALESIA INTERPRETATION CENTER.....	34
4.3.1 INTRODUCTION	34
4.3.2 CONCEPT.....	35
4.3.3 PLANNING LAYOUT & DESIGN	35
4.3.4 RAMP	35
4.3.5 PANORAMIC TERRACE	36
4.3.6 STRUCTURE	37
4.3.7 MATERIAL CONTEXT	37
4.3.8 FLOOR PLANS.....	38
4.4 HUMAYUN TOMB INTERPRETATION CENTER.....	41
4.4.1 INTRODUCTION	41
4.4.2 LAYOUT & DESIGN	42
4.4.3 CIRCULATION & PLANNING:	45
5. INFERENCES	47
5.1 DESKTOP STUDY – 1	47
5.2 DESKTOP STUDY – 2	47
5.3 DESKTOP STUDY – 3	47
5.4 DESKTOP STUDY – 4	47

6. SPATIAL REQUIREMENTS	48
6.1 ZONE'S	48
6.1.1 INTERPRETATION CENTER	48
6.1.2 ADMINISTRATION	48
6.1.3 RESTAURANT	49
6.1.4 MOTEL	49
6.1.5 VIEWING TOWER	49
6.2 COMPARATIVE ANALYSIS – AREA STATEMENTS	50
6.3 DESIGN AREA REQUIREMENTS – AREA STATEMENTS	54

List of Figures:

Figure 1 - Natural lighting.....	17
Figure 2 - Lighting from above.....	17
Figure 3 - Lateral lighting.....	17
Figure 4 - Hanging or Wall mounted	18
Figure 5 - Free standing and Open exhibits.....	18
Figure 6 - Contained Exhibits & Display Cases.....	18
Figure 7 - Space requirements for vehicles	19
Figure 8 - Types of Parking Layouts.....	19
Figure 9 - Mapungubwe Interpretation Center.....	21
Figure 10 - Site Topography.....	22
Figure 11 - Site Topography.....	22
Figure 12 - Exhibit room	23
Figure 13 - Open Air Theater	23
Figure 14 - Way to Facilties	23
Figure 15 - Cladding material's	23
Figure 16 - Aerial view of the site.....	23
Figure 17 - Internal view 1.....	24
Figure 18 - Internal view - 2.....	24
Figure 19 - Section 1	24
Figure 20 - Section 2	24
Figure 21 - Section 3	24
Figure 22 - Section 4	24
Figure 23 - New Acropolis Museum	26
Figure 24 - Conceptual schematic's.....	27
Figure 25 - Aerial view of the site.....	27
Figure 26 - Excavation view from entrance.....	28
Figure 27 - Gallery View.....	28
Figure 28 - Excavation View.....	28
Figure 29 - Restaurant View	28
Figure 30 - Museum view	29
Figure 31 - View from galleries.....	29
Figure 32 - Circulation layout diagram	29

Figure 33 - Section showing visual link between Parthenon and the museum	29
Figure 34 - Plan showing the visual link between Parthenon and museum	30
Figure 35 - Layout program diagram	31
Figure 36 - Section of the Museum	32
Figure 37 - Materials Used	33
Figure 38 - Front view of the center.....	34
Figure 39 - Schematic plans	34
Figure 40 - Central Atrium	36
Figure 41 - Exhibition space.....	36
Figure 42 - Façade	36
Figure 43 - Central Atrium	36
Figure 44 - Aerial View.....	36
Figure 45 - Garden Terrace.....	36
Figure 46 - View of the structural fabrication	37
Figure 47 - View of the concrete structure wall.....	37
Figure 48 - Ground floor plan	38
Figure 49 - Second floor plan.....	39
Figure 50 - Third floor plan	40
Figure 51 - Aerial view of the site.....	41
Figure 52 - Site plan	42
Figure 53 - Stairway into IC.....	43
Figure 54 - Exhibitions and Galleries	43
Figure 55 - Section BB'	43
Figure 56 - Section CC'	43
Figure 57 - Site plan	44
Figure 58 - Circulation of the Interpretation Center	45
Figure 59 - Interior Exhibit Halls	46
Figure 60 - Gallery Spaces.....	46

List of tables:

Table 1 - G.O norms for parking	19
Table 2 - Ramp slope, length and rise calculation.....	20
Table 3 - Comparative analysis chart of Mapungubwe Interpretation Center	50
Table 4 - Comparative analysis chart of New Acropolis Museum.....	51
Table 5 - Comparative analysi chart of Mueso Parc Alesia	52
Table 6 - Comparative analysis chart of Humayun Tomb Interpretation Center	53
Table 7 - Area requirements of Interpretation Center.....	54
Table 8 - Area requirements of Administration	54
Table 9 - Area requirements of Restaurant.....	55
Table 10 - Area Requirements of Motel	55

1. INTRODUCTION TO INTERPRETATION

1.1 WHAT IS INTERPRETATION

Interpretation communicates what is significant about places, people or events. The essence of interpretation provides insight for visitors about what's special and how and why it's valued. It's a celebration of place and things, of culture and nature, great successes and failures in our history.

Interpretation is connected to sites and objects, artwork or living things and it can happen anywhere; in parks, visitor centers, historic sites, city streets, museums, zoos or galleries, at special events or promotions, and in publications.

Techniques include displays, guiding, drama, audio-visual/multi-media and publications.

People generally experience interpretation in their leisure time, or as part of formal education activities

1.1.1 MY DEFINITION FOR INTERPRETATION

Interpretation is an explanation of the natural, cultural or historic values attached to places. It enables visitors to gain insight and understanding about the reasons for conservation and ongoing protection of our heritage.

1.2 WHY INTERPRET

1. Enrich the visitors experience, informing them about the how, what and why of protecting special places for this and future generations.
2. Raise awareness, understanding and support for conservation.
3. Promote a particular issue or message, and to foster desired visitor behavior.
4. Promote positive relations with the community, understanding about programs and facilitate volunteer involvement and engagement.

1.3 HISTORY OF INTERPRETATION

Story telling has been around for as long as we have. People have always yearned to understand and explain the world around them. All cultures have explained and celebrated the land they live in, its creatures and the stories of their people – through art, writing, dance and oral traditions. Interpretation is part of this tradition.

The phenomenon of tourism started the development of interpretation as we know it today. The evolution of interpretation is probably most apparent in museums. From the early days of museums when basic facts were all that explained the collections of treasures and oddities, plant, animal and geological specimens, museums now present the rich stories associated with their treasures in creative and innovative ways.

1.4 TYPES OF INTERPRETATION

1.4.1 PERSONAL INTERPRETATION

Personal interpretation is delivered face to face. It is usually delivered by staff, volunteers. Staff are perceived as a highly credible source of information, so personal interpretation can be a powerful and effective medium to influence visitor perceptions and behavior.

1.4.2 SELF GUIDED INTERPRETATION

Self-guided interpretation means non-personal delivery. Panels and displays, audio, audio-visual, multimedia, art and sculpture, and publications are used to deliver interpretation messages to visitors instead of people.

Self-guided interpretation is the most popular form of interpretation used in nature based and historic heritage settings.

It includes Panels, Audio, Static and interactive models, panels, displays, audio, audio-visual and multimedia, Publications, Art and sculpture.

2. SYNOPSIS

2.1 AIM

To develop a design solution of the project of interpretation center in the foothills of the bhuvanagiri fort there by developing an emotional connection to the lost heritage of the fort.

2.2 OBJECTIVES

1. To develop effective spaces in the center, so that people can easily relate themselves to the town and its historical significance with the bhuvanagiri fort.
2. Understand how an interpretation works compared to a museum in a historical context.

2.3 SCOPE

1. This thesis will aim at preserving the history of the town and the fort hill of bhuvanagiri.
2. This thesis will create employment opportunities for the local people.
3. To transform the image of bhuvanagiri with respect to the heritage and historical diversity.
4. It would be a center which would act as a venue for recreational, educational space.
5. This project would help in promote the tourists moving between Warangal and Hyderabad to visit the fort and would also help in relating the space with the heritage and history.
6. Sustaining interest in the heritage to the people visiting there would not only promote the culture of the town but would also give a globalized view to the town in the future.
7. To develop the facilities and the amenities at the center, so that the people can be served in most functional and aesthetical way and also to create a perfect mood for the visitors.
8. To generate more revenue from the tourists visiting the center and encouraging them to visit the bhuvanagiri fort.
9. This thesis aims at making the fort accessible to everyone with the help of cable car's or a tower bridge.

2.4 LIMITATIONS

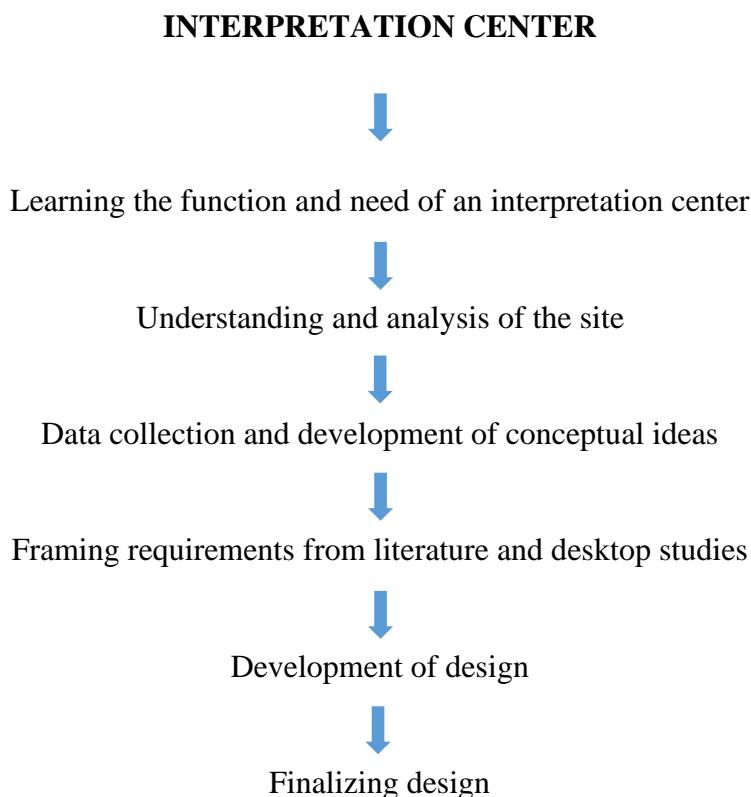
1. Preservation of heritage is limited to external factors.
2. Only primary buildings are designed apart from conventional buildings.
3. My design is limited only within the site and not to the fort hill.

2.5 METHODOLOGY

The methodology includes various steps which made the design reach to its final stage.

The methodology consists of the following steps:

1. Selection of the thesis topic and the site which is close to the fort hill.
2. Preliminary research on the topic should be included on the basis of initial study which is the aim, objectives and scope of the project.
3. The rest is shown in the flow diagram below:



3. LITERATURE STUDY

3.1 INTRODUCTION

An interpretation center, is an institution for dissemination of knowledge of cultural heritage. Hence an interpretation center can be a viable solution for effective communication of heritage information in municipalities and rural areas where resources may not exist to establish a traditional, full scale museum, and where heritage can be an important factor for tourism development.

3.2 TYPES OF INTERPRETATION CENTERS

1. Nature interpretation center
2. Heritage interpretation center
3. Archaeological interpretation center
4. Wildlife interpretation center

3.3 INDIAN LEGAL PROVISIONS

1. MINISTRY OF CULTURE: The mission of the department is to preserve, promote and disseminate all forms of art and culture.
2. ARCHAEOLOGICAL SURVEY OF INDIA: They preserve the ancient, historical monuments, archaeological sites and remains of national importance for the regulation of archaeological excavations and for the protection of sculptures, carvings and other objects.
3. INDIAN NATIONAL TRUST FOR ART AND CULTURAL HERITAGE: They work for development of sustainable tourism connected with heritage as an asset. A development of tourist facilities with the local eco-system and heritage architecture, and regulates sensitivity of design in architectural style of construction of any new tourist facilities.

3.3.1 STATE LEVEL

Department of Archaeology & Museums is responsible for the protection of all heritage sites in the respective state. It manages the cultural heritage of Telangana through conservation, restoration, research, publication, survey, documentation, excavation, exploration, acquisition, exposition and to promote cultural tourism.

3.4 WHAT AM I INTERPRETING

The study looks at the case of the heritage site in Bhuvanagiri, Telangana. The motive is to design the space with an educational, leisure, historical and a conservative approach. The ideal interpretation plan should give an input in achieving a holistic vision of integration of the two major issues related to heritage conservation and tourism.

3.5 WHY AM I INTERPRETING

The study is based on the significance of cultural and natural heritage which supports planned actions aiming to integrate heritage conservation. For this reason, interpretation is seen as one of the most adapt tool to carry out those purposes.

3.6 STANDARDS AND BYE-LAWS

3.6.1 ANTHROPOMETRY

HUMAN SCALE: The spaces are so designed that the visitors are completely absorbed in the exhibits and also the height of the ceiling should at least be 4.5 meters.

PASSAGE CLEARANCE: The passage should be so wide that it allows traffic to move without rubbing the shoulder with each other. It must have easy connecting and have a width allowing at least three passers to move comfortably.

3.6.2 STUDY OF LIGHT

Lighting is one of the most critical factors in the way a space should work and function. From the welcome porch to every task is defined by light. The quality of light, whether it is natural or artificial, has a critical impact on mood and atmosphere. Lighting design requires consideration of the amount of functional light provided, the energy consumed, as well as the aesthetic impact supplied by the lighting system.

Lighting can make a room seem smaller or larger, calming or agitating; it is important to consider the effects of each lighting decision because it has an immediate and tangible effect on the environment.

There are different ways to admit natural light:

1. Natural lighting
2. Lighting from above
3. Lateral lighting

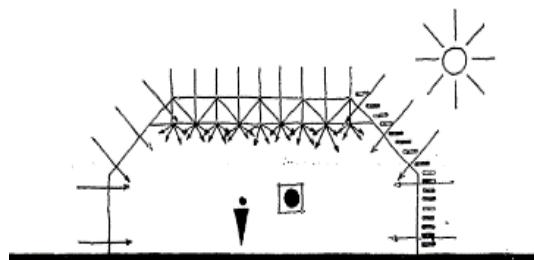


Figure 1 - Natural lighting

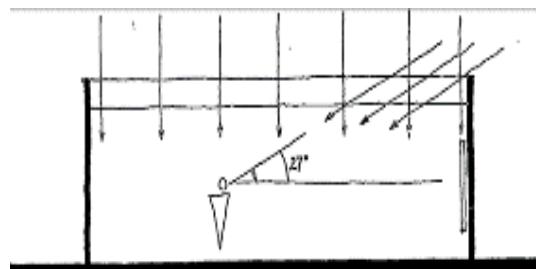


Figure 2 - Lighting from above

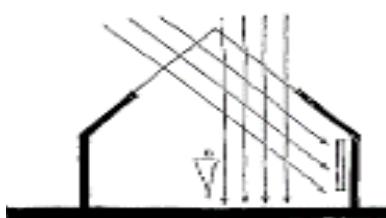


Figure 3 - Lateral lighting

Natural light not only improves the mood of workers in an office, but is more inexpensive. Placing skylights dramatically reducing energy bills and maintenance costs such as replacement light bulbs, and preserving natural resources.

3.7 TYPES OF EXHIBITS

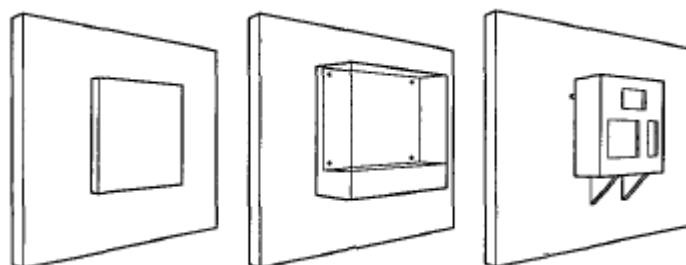


Figure 4 - Hanging or Wall mounted

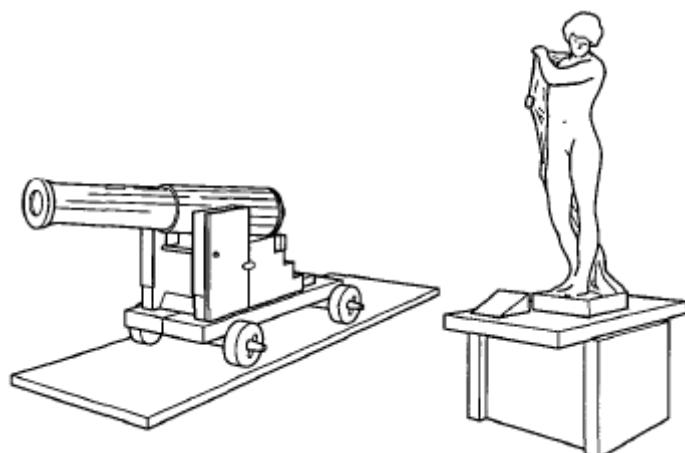


Figure 5 - Free standing and Open exhibits

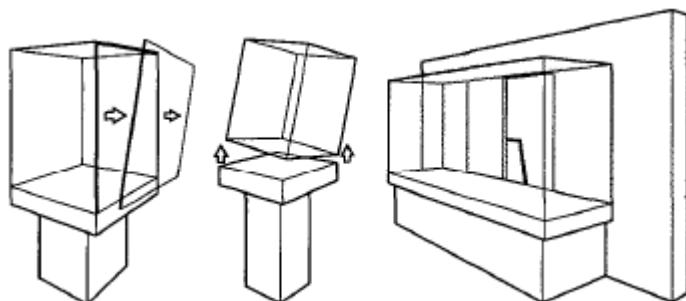


Figure 6 - Contained Exhibits & Display Cases

3.8 PARKING

1. Minimum space required for a parking is 20sq.m
2. Minimum space required for a two-wheeler is 1. 6sq.m
3. Minimum space for a bus parking is 16. 7sq.m

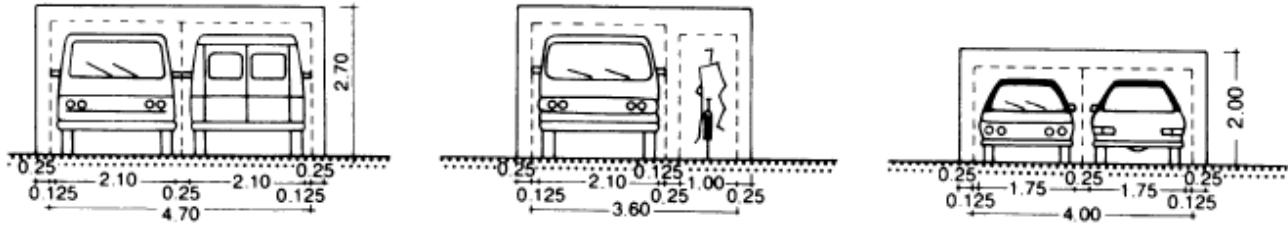


Figure 7 - Space requirements for vehicles

3.8.1 TYPICAL PARKING LAYOUTS

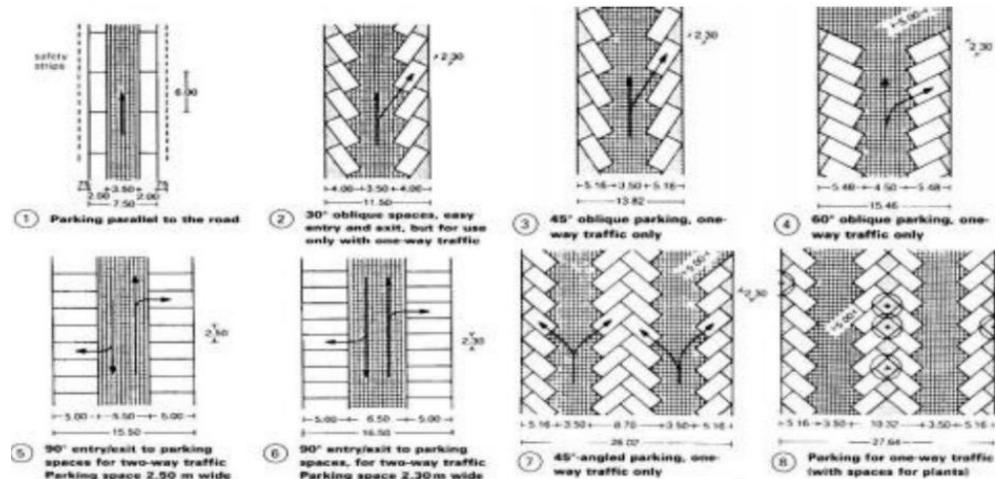


Figure 8 - Types of Parking Layouts

3.8.2 G. O 168 NORMS FOR PARKING:

TABLE		
Height of the Building (in m.)	Minimum front open space (in m.)	Minimum open space on remaining sides (in m.)
1	2	3
Up to 15		5
Above 15 & Upto 21 mt		7
Above 21mt & Upto 24 mt		8
Above 24 m & Upto 27 mt	12	9
Above 27 m & Upto 30 mt		10
Above 30 m & Upto 34 mt		11
Above 35 m & Upto 40 mt		12
Above 40 m & Upto 45 mt	13	13
Above 45 m & Upto 50 mt	14	14
Above 50 m	15	16

Table 1 - G.O norms for parking

3.9 VERTICAL ACCESS

3.9.1 RAMP SLOPE RATIOS

Ramp configuration:

Ramps can have any one of the following configurations:

1. Straight run
2. 90 turn
3. Switch back or 180 turn

Width:

1. Width varies according to use, configuration and slope.
2. The minimum width should be 0.90 m.

Slope:

The maximum recommended slope of ramps is 1:20. Steeper slopes may be allowed in special cases depending on the length to be covered.

Maximum slope	Maximum length	Maximum rise
1:20 i.e., 5%	-	-
1:16 i.e., 6%	8 m	0.50 m
1:14 i.e., 7%	5 m	0.35 m
1:12 i.e., 8%	2 m	0.15 m
1:10 i.e., 10%	1.25 m	0.12 m
1:08 i.e., 12%	0.5 m	0.06 m

Table 2 - Ramp slope, length and rise calculation

Landing:

1. Ramps should be provided with landings for resting and avoiding excessive speed.
2. Landings should be provided every 10m, at every change of direction and at the top and bottom of every ramp.
3. The landing should have a minimum length of 1.20 m and a minimum width equal to that of the ramp.

4. DESKTOP STUDIES

4.1 MAPUNGUBWE INTERPRETATION CENTER

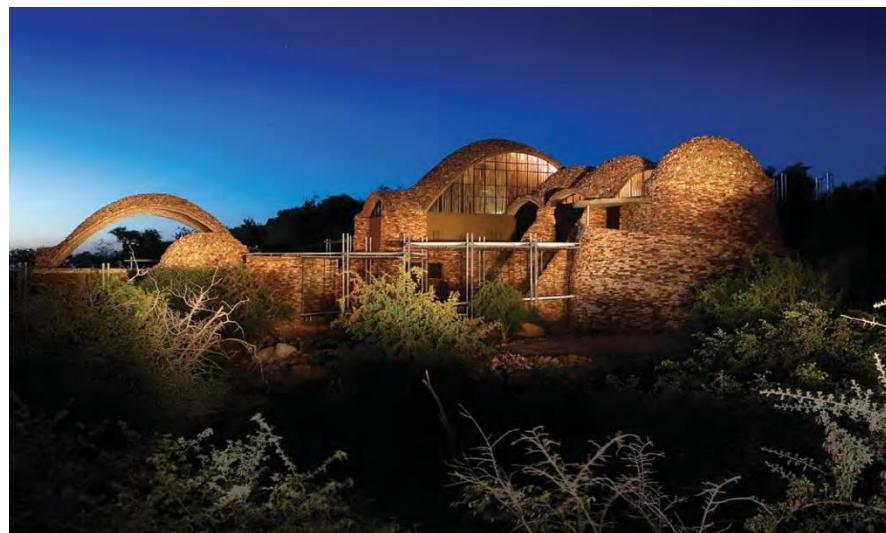


Figure 9 - Mapungubwe Interpretation Center

Location: Limpopo, South Africa

Area: 2,750 sq. m

Architect: Peter Rich Architects

4.1.1 INTRODUCTION

The huge Mapungubwe national park is located at the Limpopo and Shashi rivers. The interpretation center in the center of the Mapungubwe civilization. Understanding the landscape is essential to the Mapungubwe interpretation center as the whole design and architecture of this building is focused on its integration into the natural landscape of the park.

4.1.2 BRIEF HISTORICAL BACKGROUND

The Mapungubwe civilization is a kingdom dated between 1075 and 14th century. The Mapungubwe civilization produced historical artifacts that show the brilliance of this civilization and its commercial links to Egypt and Asia.

4.1.3 CLIMATIC CONDITIONS

1. The site is in a semi-arid climate.
2. Maximum temperatures - 25°C (June) and 32°C (January). Peak occur in summer (45°C).
3. Minimum temperatures - 9°C (June) and 21°C (January).

4.1.4 TOPOGRAPHY

Mapungubwe sits between 300 to 780 meters above sea level. The site is very rocky and hilly. The sandstone rocks are everywhere in the environment and form the specific nature of the area, together with the baobab and mopane trees.



Figure 11 - Site Topography



Figure 10 - Site Topography

4.1.5 OBJECTIVES

The objective was to provide the national park with an interpretation center that could give the visitor a very clear understanding of the importance of Mapungubwe in this region.

4.1.6 FUNCTIONAL REQUIREMENTS

1. The Interpretation Centre is composed of a museum, including an introduction hall different rooms hosting exhibits of the artifacts found in Mapungubwe.
2. Facilities were developed for the visitor (coffee bar, restaurant, shop, etc.) and OAT.



Figure 13 - Open Air Theater



Figure 14 - Way to Facilities



Figure 12 - Exhibit room

4.1.7 PURELY FORMAL ASPECTS

1. At no point does the Interpretation Centre look like a “building” in this context. It is basically designed like “another stone hill” within a context of stone hills.
2. The building is integrated in such a way that the lighting on the vaults also provides a very unique experience of the project. There is no prevalent façade for this project. Each point of view around the building gives the impression of integration into the site.
3. No traditional decorative motifs were used, due to the necessity of avoiding any local tribal reference and the choice of completely integrating the building into the natural environment.
4. However, it is important to mention the two huge decorative openings.
5. West side of the building bears recycled copper bars that glow a dramatic golden color at sundown.
6. Southern side of the main exhibition hall is decorated like a stained-glass window with simple techniques.



Figure 16 - Aerial view of the site



Figure 15 - Cladding material's

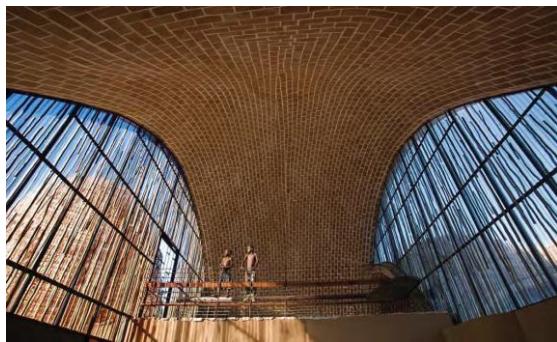


Figure 17 - Internal view 1



Figure 18 - Internal view - 2

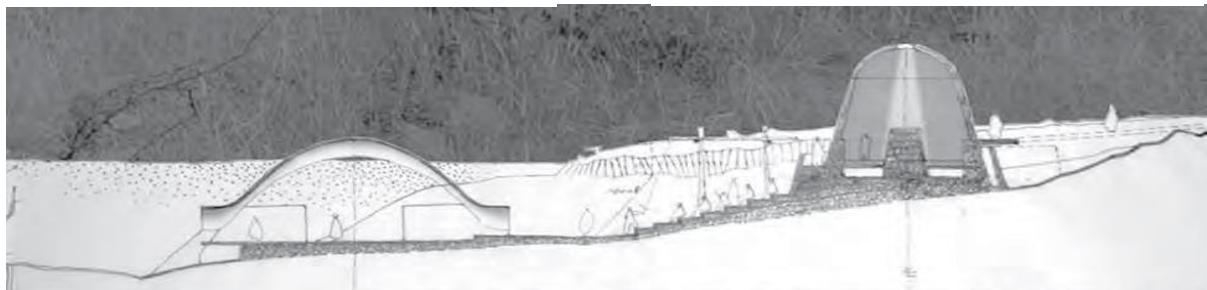


Figure 19 - Section 1

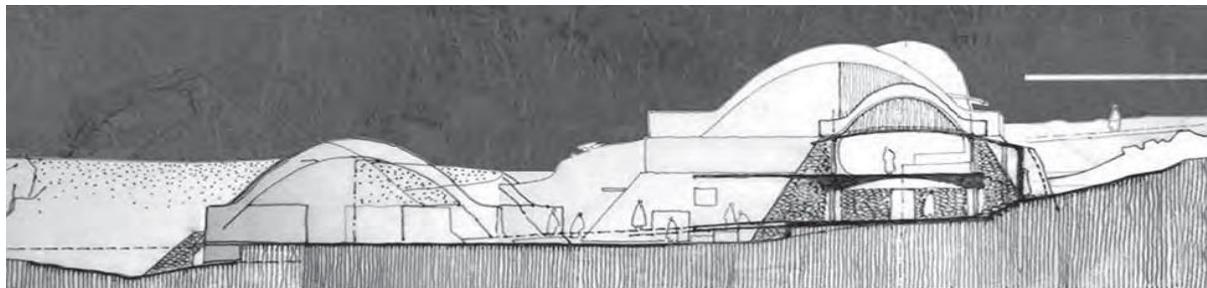


Figure 20 - Section 2

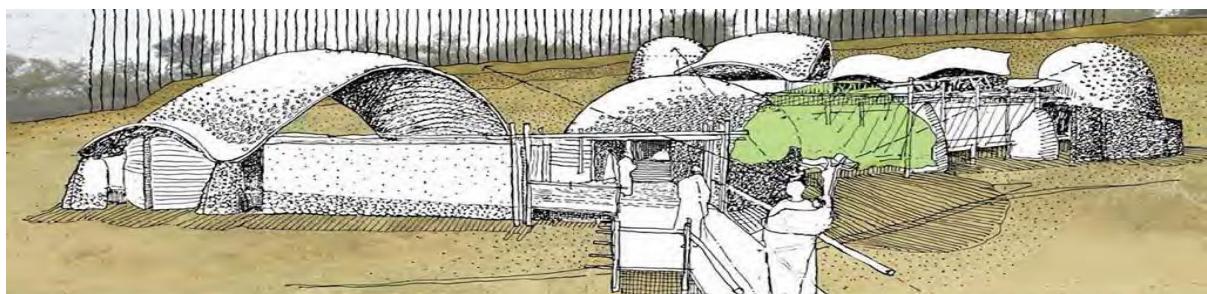


Figure 21 - Section 3

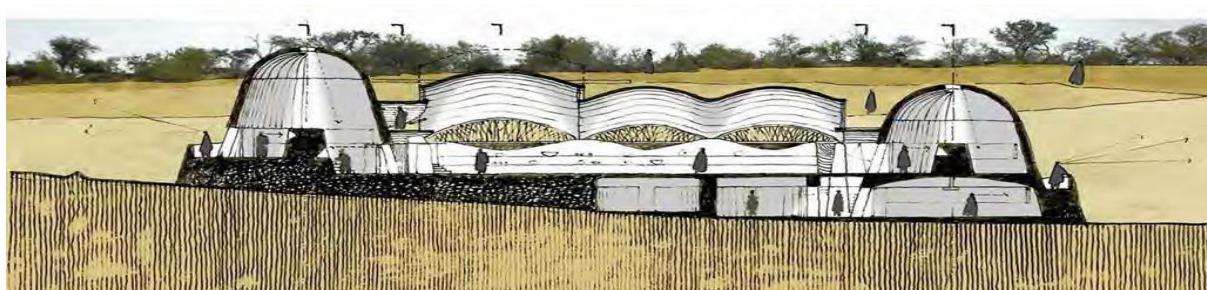


Figure 22 - Section 4

4.1.8 MATERIAL'S USED

➤ STRUCTURAL MEMBERS

1. Concrete structure and slabs
2. Sandstone walls
3. Stabilized earth bricks
4. Recycled materials (metal poles, etc.)

➤ INFILL MATERIAL'S

1. Brick walls with aluminum windows
2. Recycled plastic sheet's
3. Glazing

➤ RENDERINGS AND FINISHES

1. Earth tiles
2. Cement plastering
3. Recycled copper bars
4. Recycled plastic sheet's

4.1.9 CONSTRUCTION TECHNOLOGY

1. There is an extensive use of bamboo & recycled materials for other parts of the building.
2. The recessed vaults are used as a permanent formwork for the concrete slabs.
3. Walls are built in dry stone using the traditional techniques of the people of S.A

4.2 NEW ACROPOLIS MUSEUM



Figure 23 - New Acropolis Museum

Location: Athens, Greece

Built: 2001-2009

Architect: Bernard Tschumi

Local Architect: Michalis Photiadis

Size: 21, 000 Sq. m (5.1 acres)

4.2.1 INTRODUCTION

The New Acropolis Museum is located in the city of Athens in the historic area of Makrygianni. Located on the southeast side of the hill of the Acropolis. It is located 280 meters straight down the hill, the Parthenon. This location was carefully selected to allow a dialogue between the museum's exhibition spaces and buildings of the Acropolis. The visual impact of the building is huge to the point that has changed the face of an entire part of town. From distance it is seen like a geometric mass inserted near the foot of the rock of the Acropolis.

4.2.2 CONCEPT

The Museum of the Acropolis offers a simple and precise architecture with mathematical and conceptual clarity of ancient Greece.

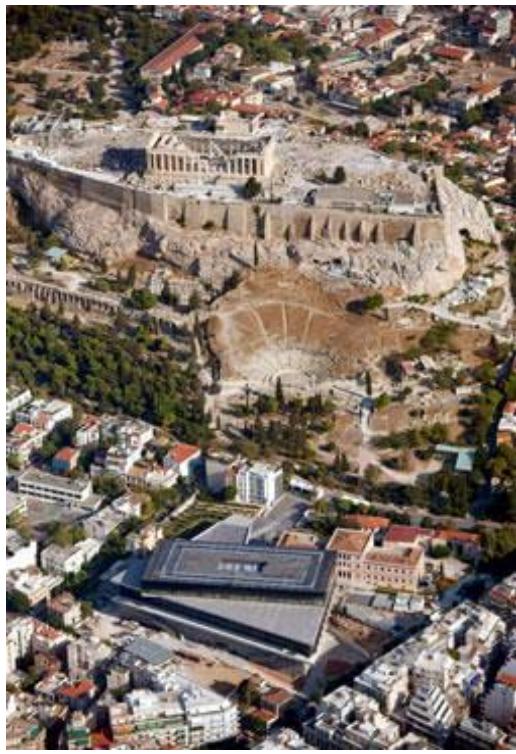


Figure 25 - Aerial view of the site

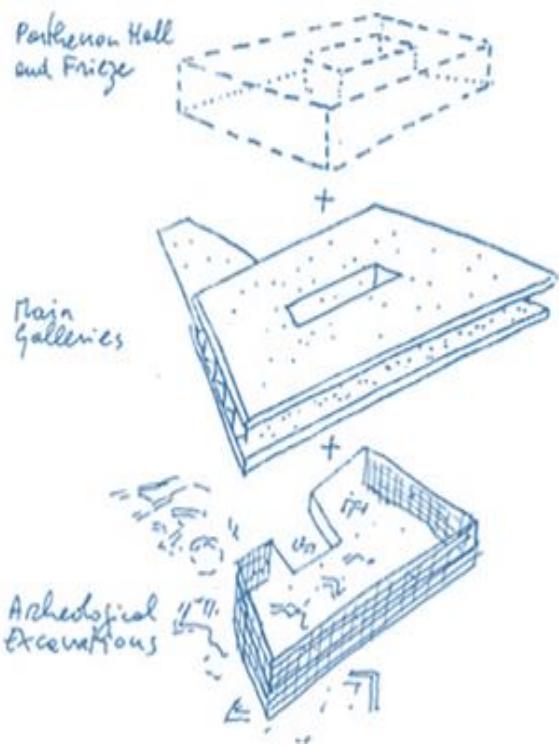


Figure 24 - Conceptual schematic's

Designed to accommodate the most spectacular sculptures of ancient Greece, located across from the Parthenon, one of the most influential buildings of western civilization, in a sensitive archaeological site, combined with a warm climate in a region of earthquakes.

The project is based on three concepts that transformed the potential limitations of the site:

LIGHT CONCEPT:

More than any other museum, the light was taken as a primary concept in design. As this exhibition of sculptures and presentation of sculptural objects relies more on natural light.

MOTION CONCEPT:

The tours offer visitors a rich sequence-based movement, both through time and spatiality.

TECTONIC AND PROGRAMMATIC CONCEPT:

It is structured and is designed around the specific needs of each part of the program.

4.2.3 SPACES

1. The building volume is articulated at the base, middle and upper level, designed around the specific needs of each part of the program. At the base lies the entrance hall overlooking the excavations, temporary exhibition spaces. Being implemented on stilts over an archaeological site. Clear glass was used through which the visitor can see the excavations.
2. The center is a large square of double-height trapezoidal shape which houses the galleries of the archaic period of the Roman Empire. A mezzanine houses a multimedia auditorium, a bar overlooking the archaeological excavation and a restaurant with a terrace and spectacular views of the Acropolis.
3. The upper part consists of the Parthenon Gallery, rectangular, arranged around a covered space transparent. The transparent cover provides ideal light for sculpture and a direct view to and from the Acropolis. One of the objectives of the main gallery is to bring the Parthenon Marbles, currently scattered in various museums.
4. The circulation in the museum is raised in chronological order, so that the visitor crosses an architectural and historical tour.



Figure 27 - Gallery View



Figure 26 - Excavation view from entrance

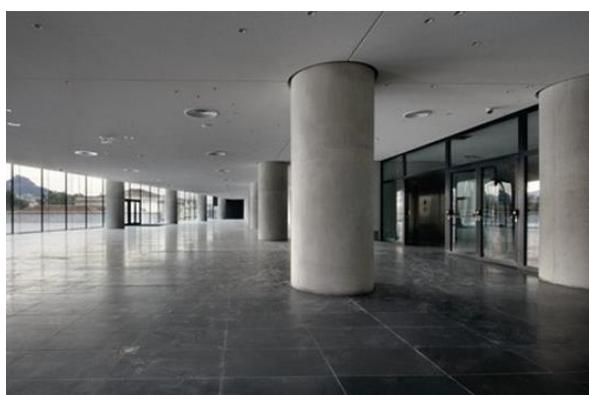


Figure 29 - Restaurant View



Figure 28 - Excavation View



Figure 31 - View from galleries



Figure 30 - Museum view

4.2.4 LAYOUT

The museum is articulated into three layers as opposed to distinct floors. Floor openings on the base level allow the visitors to view the remains beneath the museum. Double height ceilings in the middle layer accommodate a wide range of different places on permanent display.

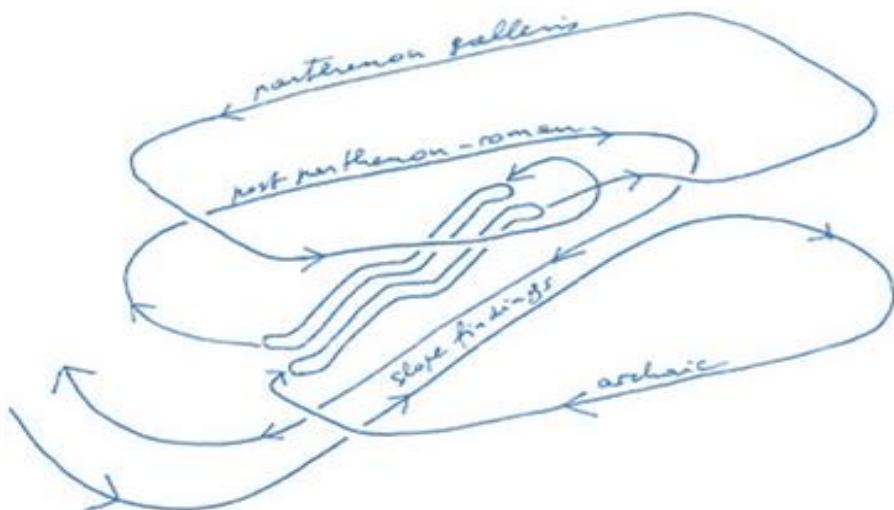


Figure 32 - Circulation layout diagram

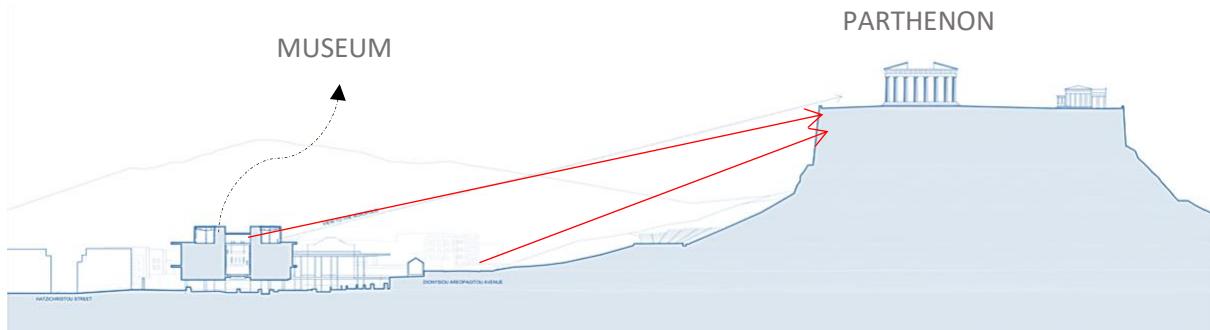


Figure 33 - Section showing visual link between Parthenon and the museum

4.2.5 SITE PLAN

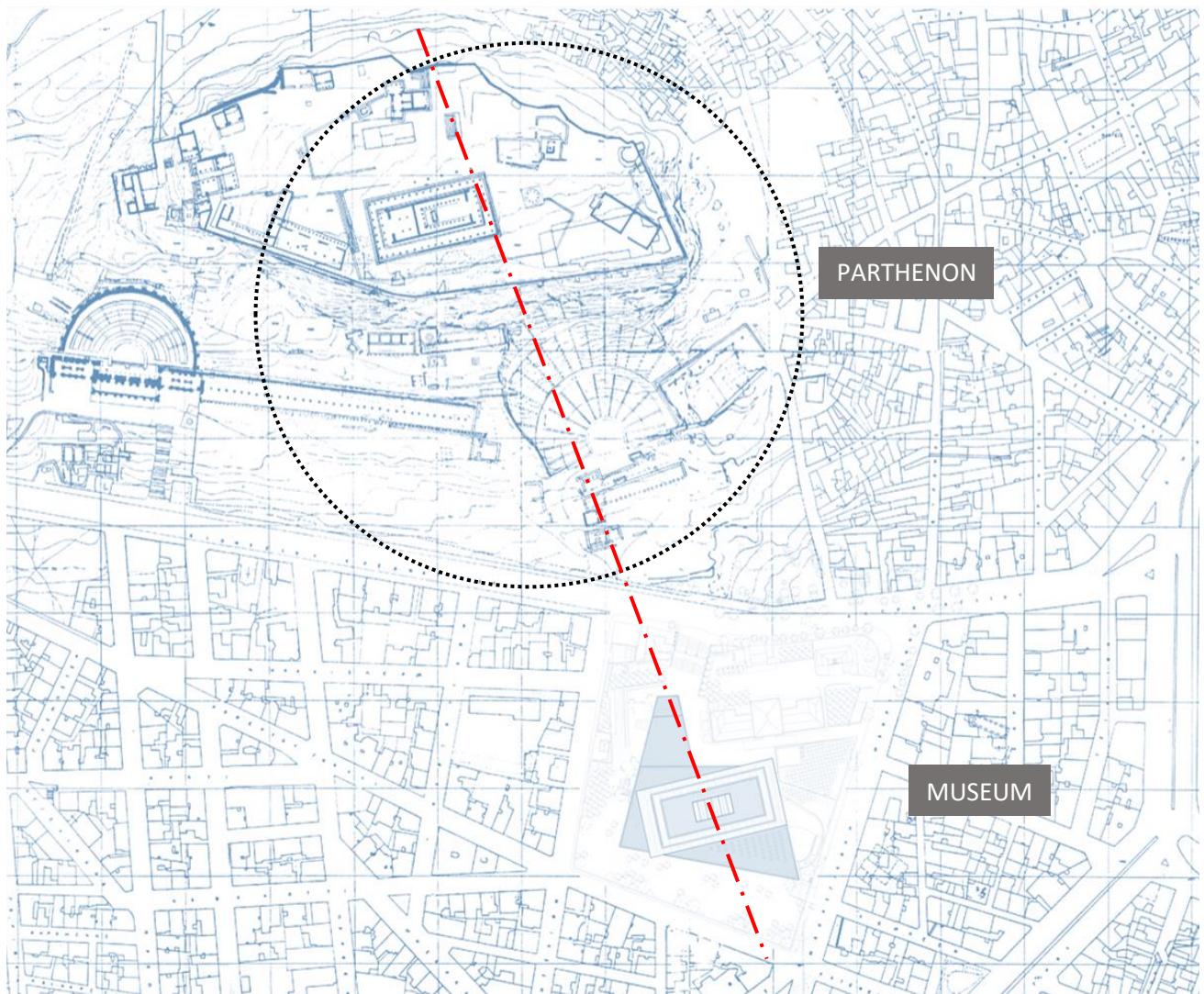


Figure 34 - Plan showing the visual link between Parthenon and museum

4.2.6 LAYOUT

➤ **BASEMENT:**

- Excavations

➤ **GROUND FLOOR:**

- Entrance
- Lobby

- Shop
- Cafeteria
- Auditorium
- Exhibition space

➤ FIRST FLOOR:

- Gallery

➤ SECOND FLOOR:

- Public terrace
- Shop
- Restaurant
- VIP area
- Balcony lounge

➤ THIRD FLOOR:

- Parthenon gallery

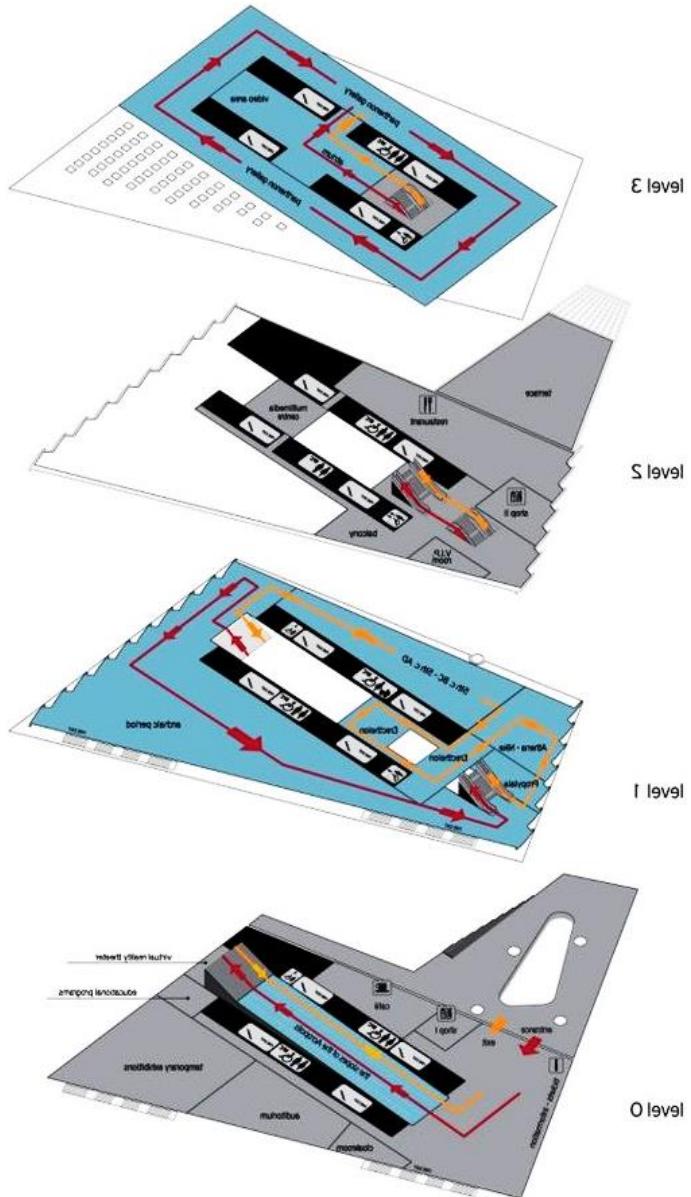


Figure 35 - Layout program diagram

4.2.7 CIRCULATION AND ZONING:

The circulation in the museum is raised in chronological order. It goes up from the lobby via escalator to the double height galleries (Archaic), upward again by escalator to the Parthenon gallery, then back down to the roman empire galleries and out to the acropolis itself. The Parthenon gallery is rotated to 23 degrees to align with the historic structure. Glass walls allowing seamless views are fixed on the outer façade of the building.

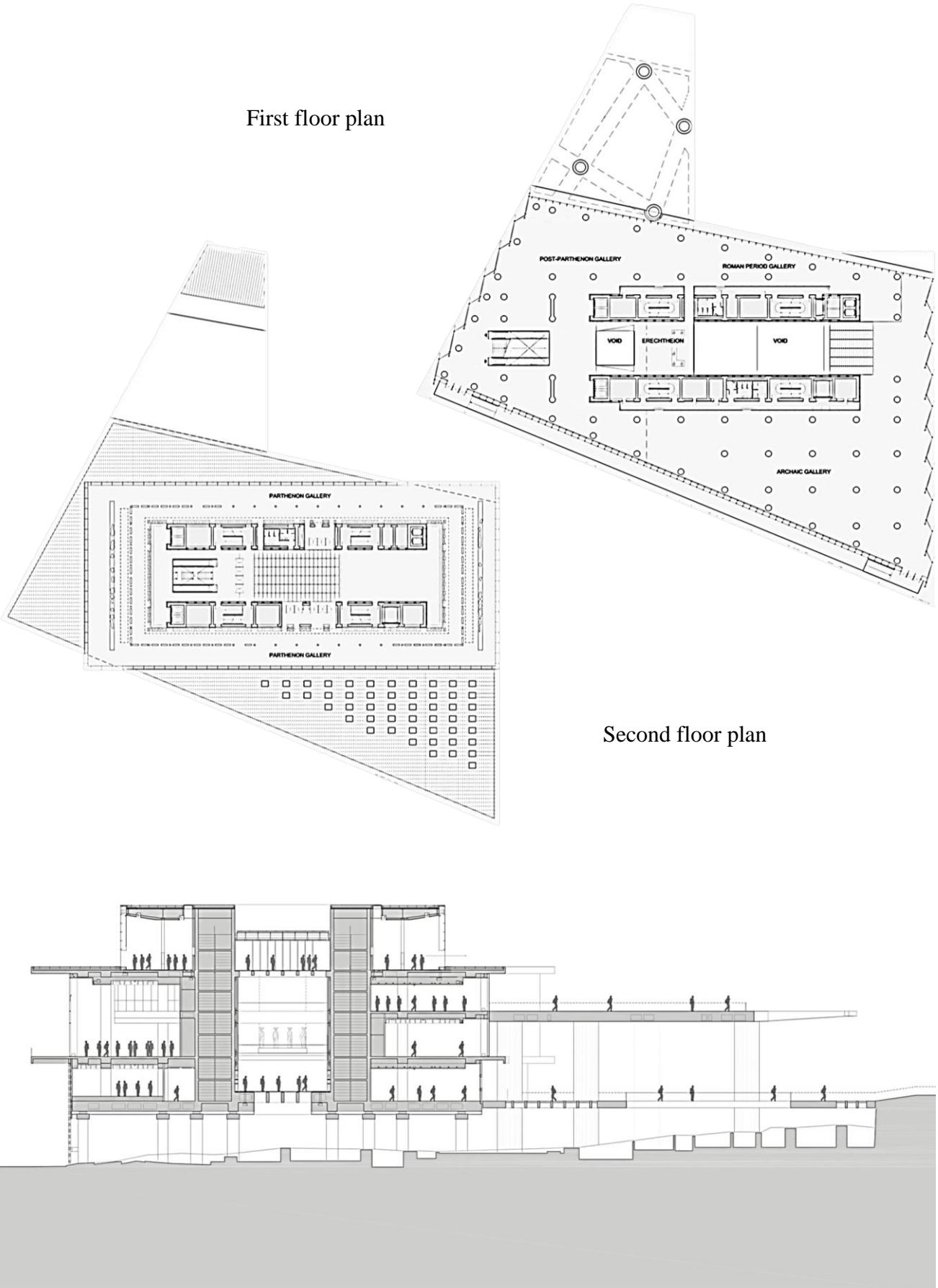


Figure 36 - Section of the Museum

4.2.8 MATERIAL'S USED

1. Frosted glass panels for skylight.
2. Precast and cast in place concrete with acoustical dampening perforations.
3. Reinforced concrete and steel for the structure.
4. Purified low icon glass with an invisible selective ultraviolet coating and printed font for the façade.
5. Marble and laminated safety glass with texture dots to prevent slippage for the floor.
6. Glass vitrines and steel niches for the displays.

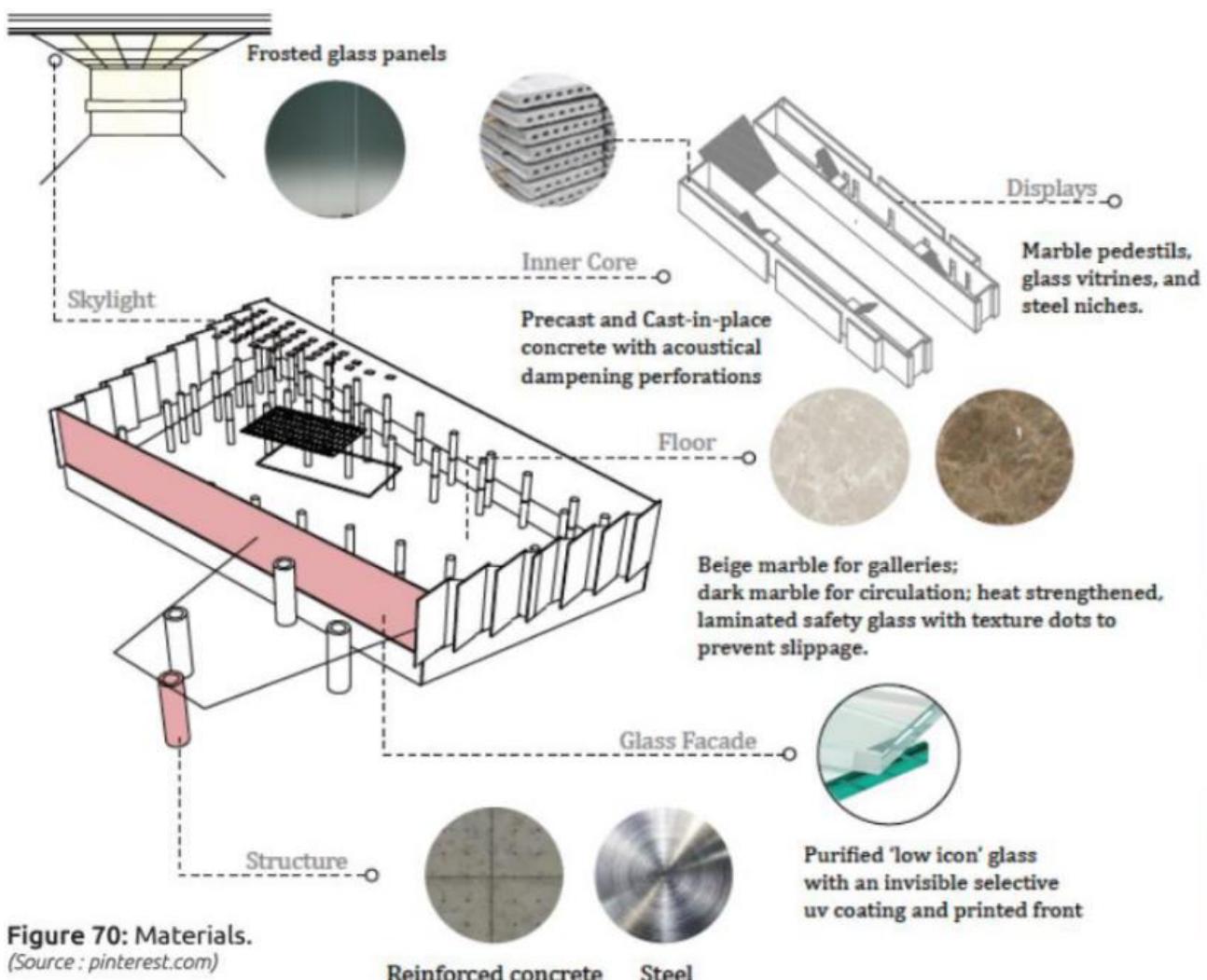


Figure 37 - Materials Used

4.3 MUSEO PARC ALESIA INTERPRETATION CENTER



Figure 38 - Front view of the center

Architect: Bernard Tschumi

Built: 2003 – 2012

Area: 8000 sq./m

Location: Borgon, France

4.3.1 INTRODUCTION

The project marks an archaeological site which commemorates the story of the battle between Julius Caesar & the Gaul's in 52 BC. Although all traces of the battle have been deleted, the new museum battlements & earthworks & provides interpretation services for the area.

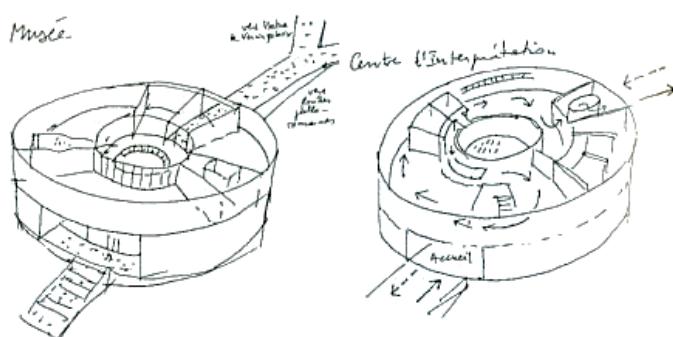


Figure 39 - Schematic plans

4.3.2 CONCEPT

The concept shows the reference of two buildings with a simple cylindrical shape. The housings are adapted to the surrounding materials, minimizing the form. The integration with the landscape and buildings using a simple round type, the buildings get closer to the battle site, bringing a sense of respect and admiration through a silent and formal presence.

A resounding cylinder whose geometry and shape symbolizing the siege of the Romans to the Gaul's in the legendary battle of Alesia.

4.3.3 PLANNING LAYOUT & DESIGN

The architect has created a circular concrete wrapped in a wooden lattice that evokes the Roman fortifications. The entrance to the building is oriented to the road but a secondary access can reach reconstructed fortifications and battlements also visible from the building.

Crossing the wooden facade, alternating inclined slats with different spacings and dimensions, is access to a large hall whose rotunda shaped roof, a concrete disk corresponds to the floor of the conference room. This central vacuum is a gray area, almost monolithic pierced by round columns and some of them a little bent.

Solid walls separate this space from the space program and any view of the outside grill, interior and exterior as if they were two sides of a coin, never to be experienced at the same time. The two plants that form the building spread over four floors around the central atrium and are connected by a smooth ramp up stairs, offering 1.200m² of exhibition space.

4.3.4 RAMP

The gentle slope, reminds of the Guggenheim Museum, leading the visitors to the exhibition and conference areas and ends at the roof terrace, where the auditorium, surrounded by oaks. Natural light is received from the glazing located on the sides and top of the building.



Figure 40 - Central Atrium

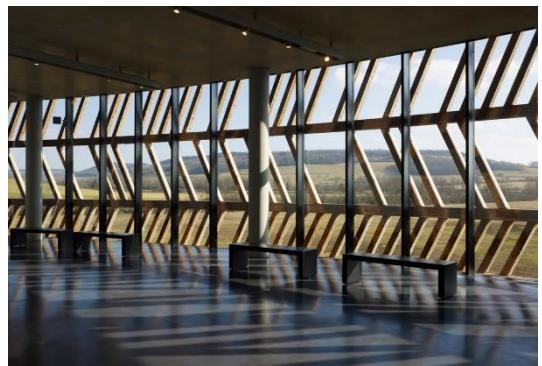


Figure 41 - Exhibition space

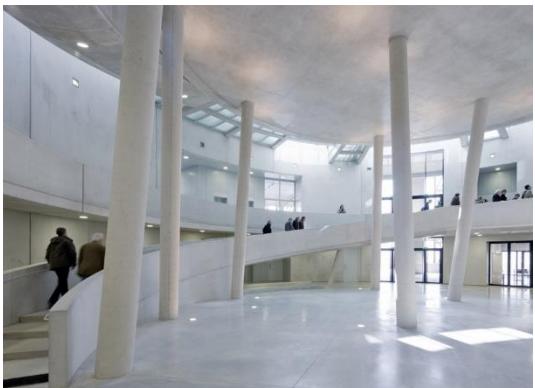


Figure 43 - Central Atrium



Figure 42 - Façade

4.3.5 PANORAMIC TERRACE

The garden terrace, with oak and birch, offers a panoramic view of 360° to Mount Auxo's and the surrounding hills, where the camps were located in the Roman army.



Figure 45 - Garden Terrace

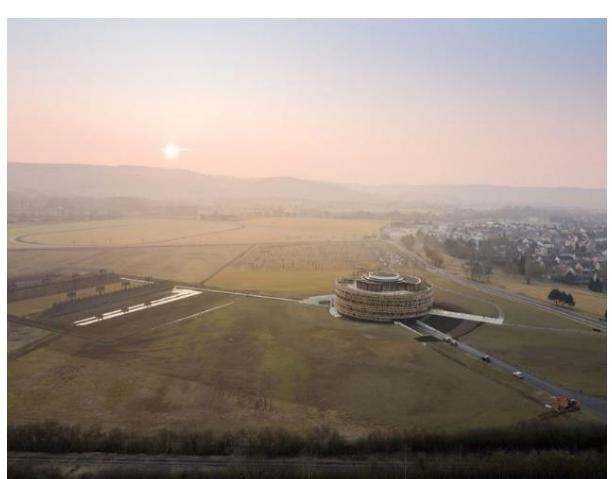


Figure 44 - Aerial View

4.3.6 STRUCTURE

To create the concrete structure wall ties were used in both the walls and the pillars, but the structure of the internal ramp was used to a much more traditional, a wooden form with a careful pouring concrete. The hard concrete that forms the roof of the hall is supported by pillars, also concrete, some to lead and other inclined.



Figure 46 - View of the structural fabrication



Figure 47 - View of the concrete structure wall

4.3.7 MATERIAL CONTEXT

The Interpretation Centre is constructed of wood, as the existing Roman fortifications at the time of the siege, and concrete. The facade was assembled on site using screws and galvanized steel pins. This lattice wraps the body solid concrete and glass with metal frames, giving some protection and camouflaging, in a sense, the strength of the concrete. Inside was used concrete mixed with white sand, using steel forms both the walls and pillars.

The roof of the building is a garden planted with trees and grass, camouflaging the presence of the building when viewed from the top. It has a system for collecting and filtering rainwater.

4.3.8 FLOOR PLANS

1. Ground floor plan
2. First floor plan
3. Second floor plan

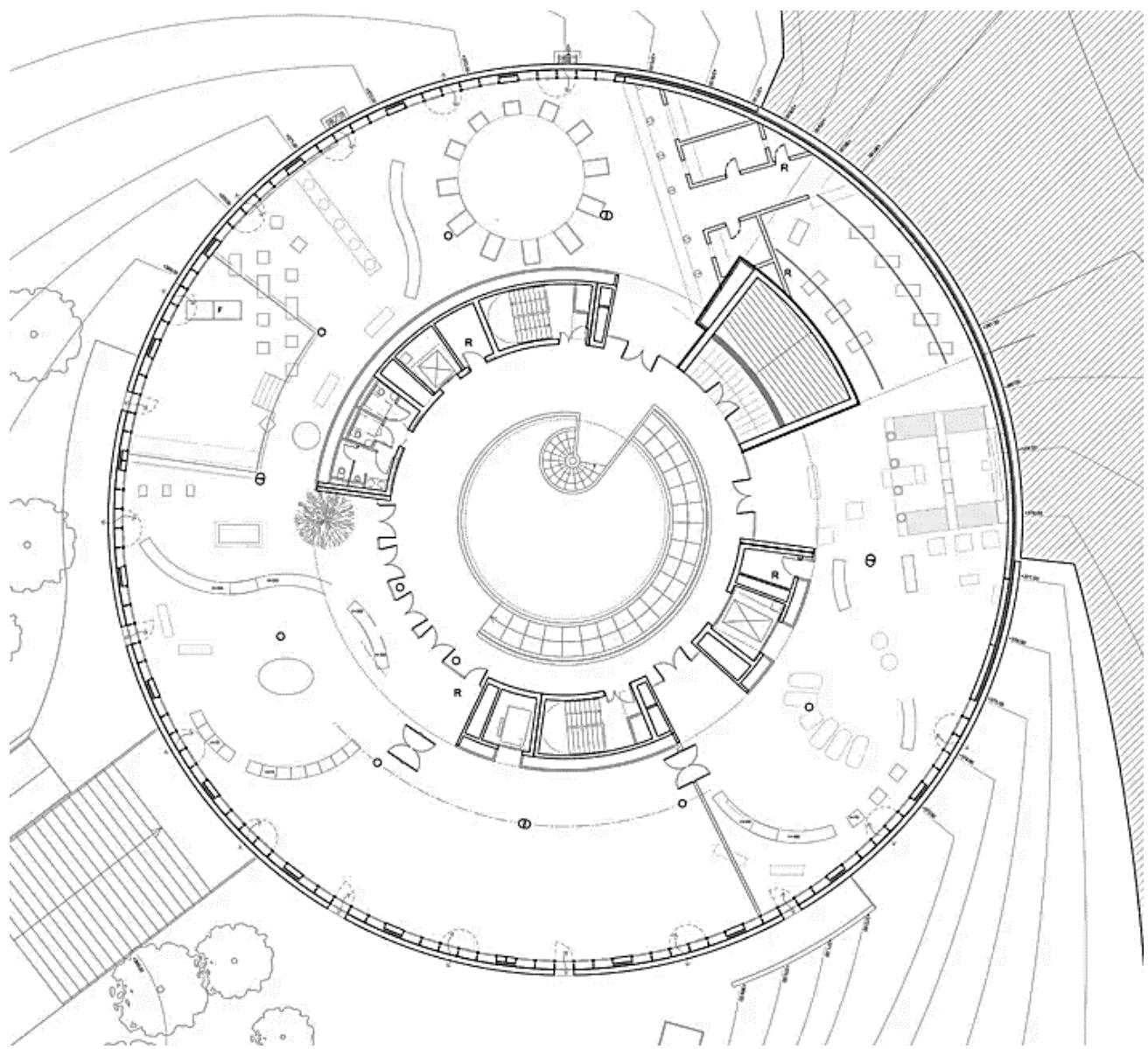


Figure 48 - Ground floor plan

SECOND FLOOR PLAN:

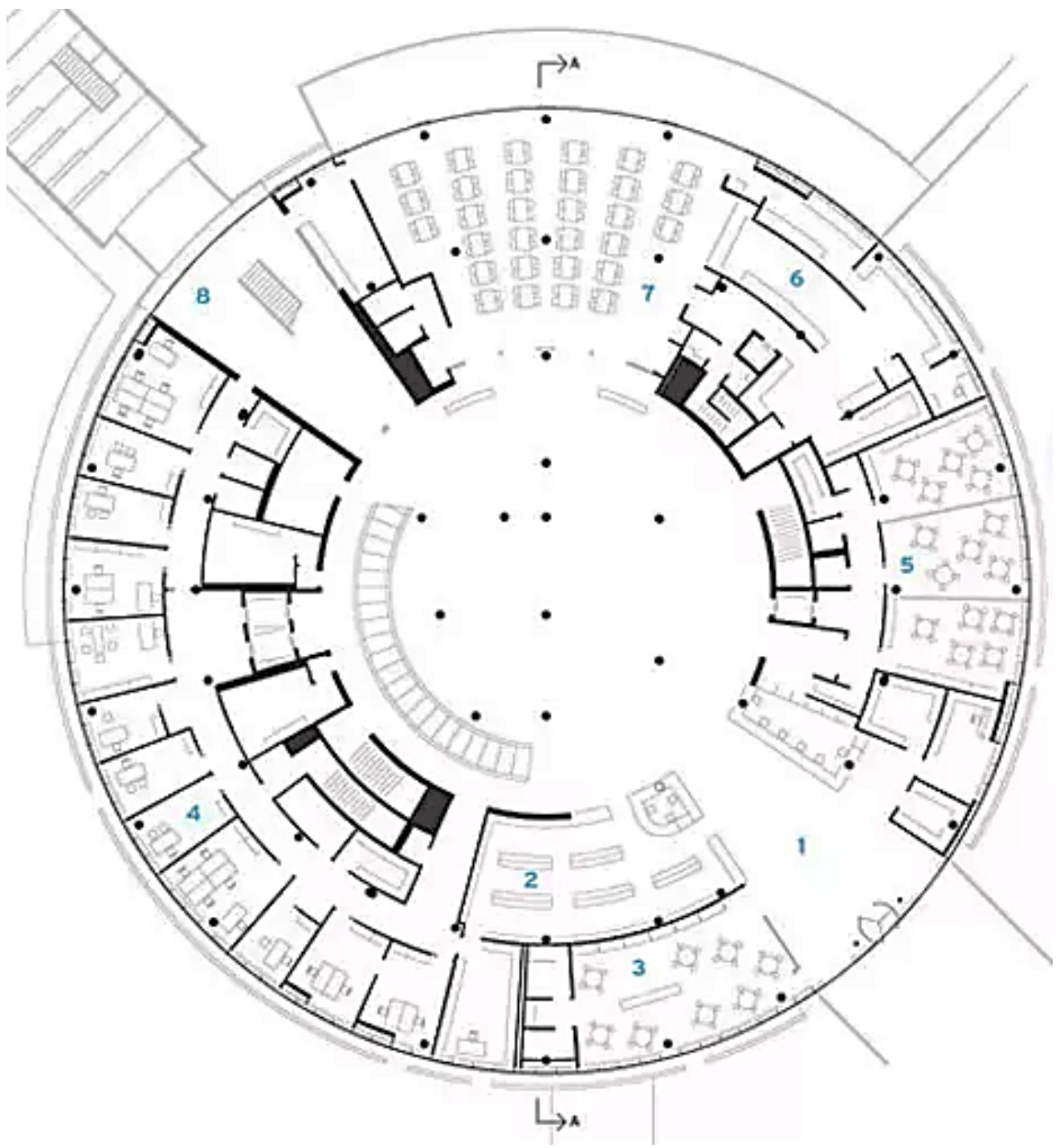


Figure 49 - Second floor plan

THIRD FLOOR PLAN:

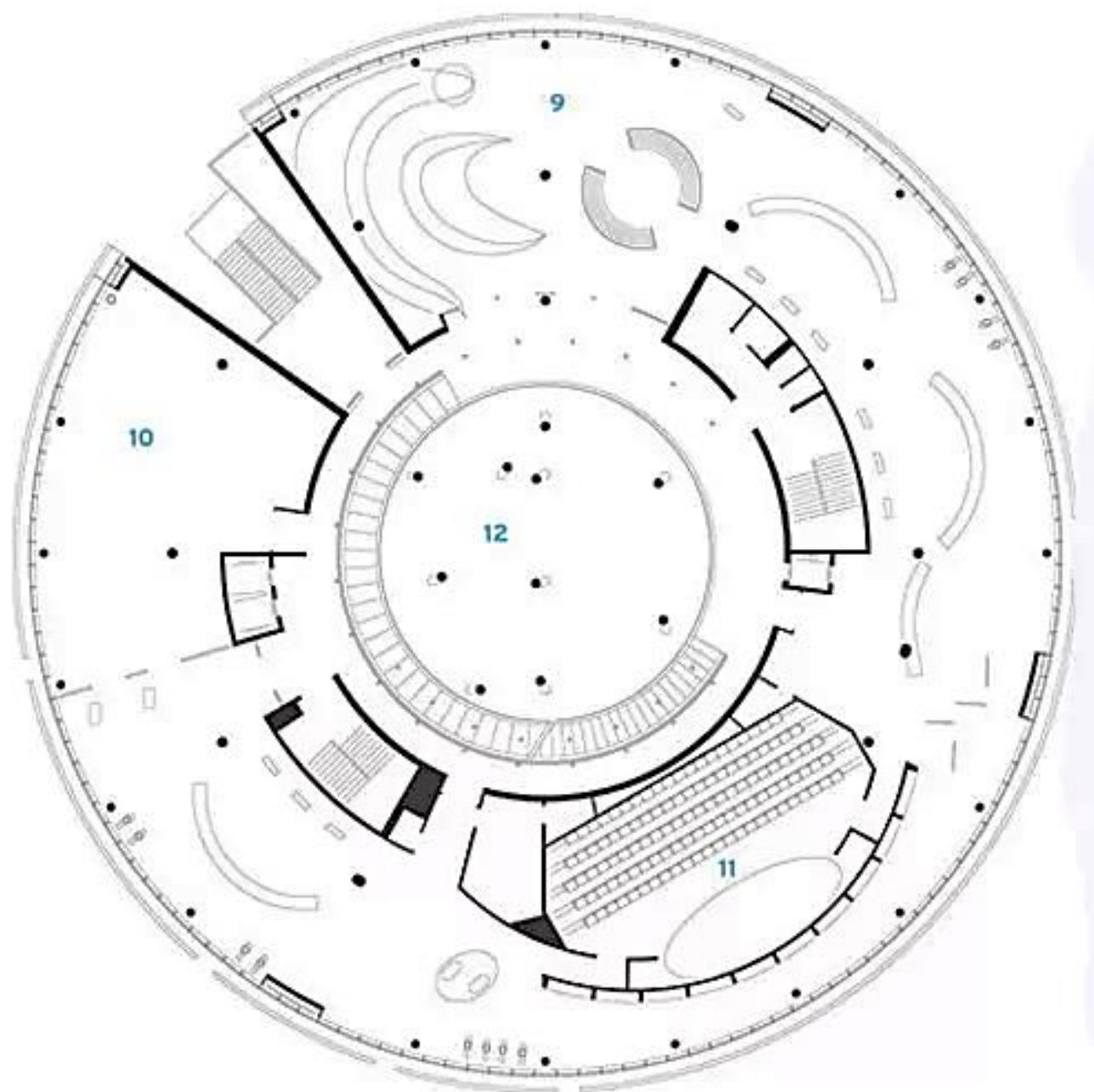


Figure 50 - Third floor plan

4.4 HUMAYUN TOMB INTERPRETATION CENTER



Figure 51 - Aerial view of the site

Location: Delhi, India

Built: 2014-Present

Architect: Vir Mueller architects

Client: Aga Khan Trust for Culture

Size: 9,815 Sq./m (2.42 acres)

Total Area: 250 acres.

4.4.1 INTRODUCTION

Located at the junction of three historically connected sites, the Humayun's tomb museum has been proposed as a means of enhancing the experience for the growing volume of visitors to this historic precinct. So thereby showcasing the art, architecture, culture and widening communication between tourist's, students and professionals.

4.4.2 LAYOUT & DESIGN

The museum is situated at the entrance to Sundar nursery and the Humayun's tomb sites. The entry plaza experience enables visitors to purchase tickets, orient themselves, and avail public amenities. An auditorium, library, crafts gallery, seminar rooms, and administrative offices are all located adjacent to the entry plaza then the visitors descend through a wide, ramped garden into the Humayun's tomb site museum, where they experience the magnificent craft traditions.

The illuminated plastered ceilings reflect the geometrical sophistication of the Mughal age. The architecture of the museum has been derived from this tradition of geometry. The gallery spaces are arranged in a sequence of intersecting squares, with wide column spans of eight meters. Given the high volume of visitors, the public circulation sequence has also been developed along a primary axis, spanning the entire length of the museum. Natural light, filtered through skylights as well as open courtyards, illuminates the gallery areas.

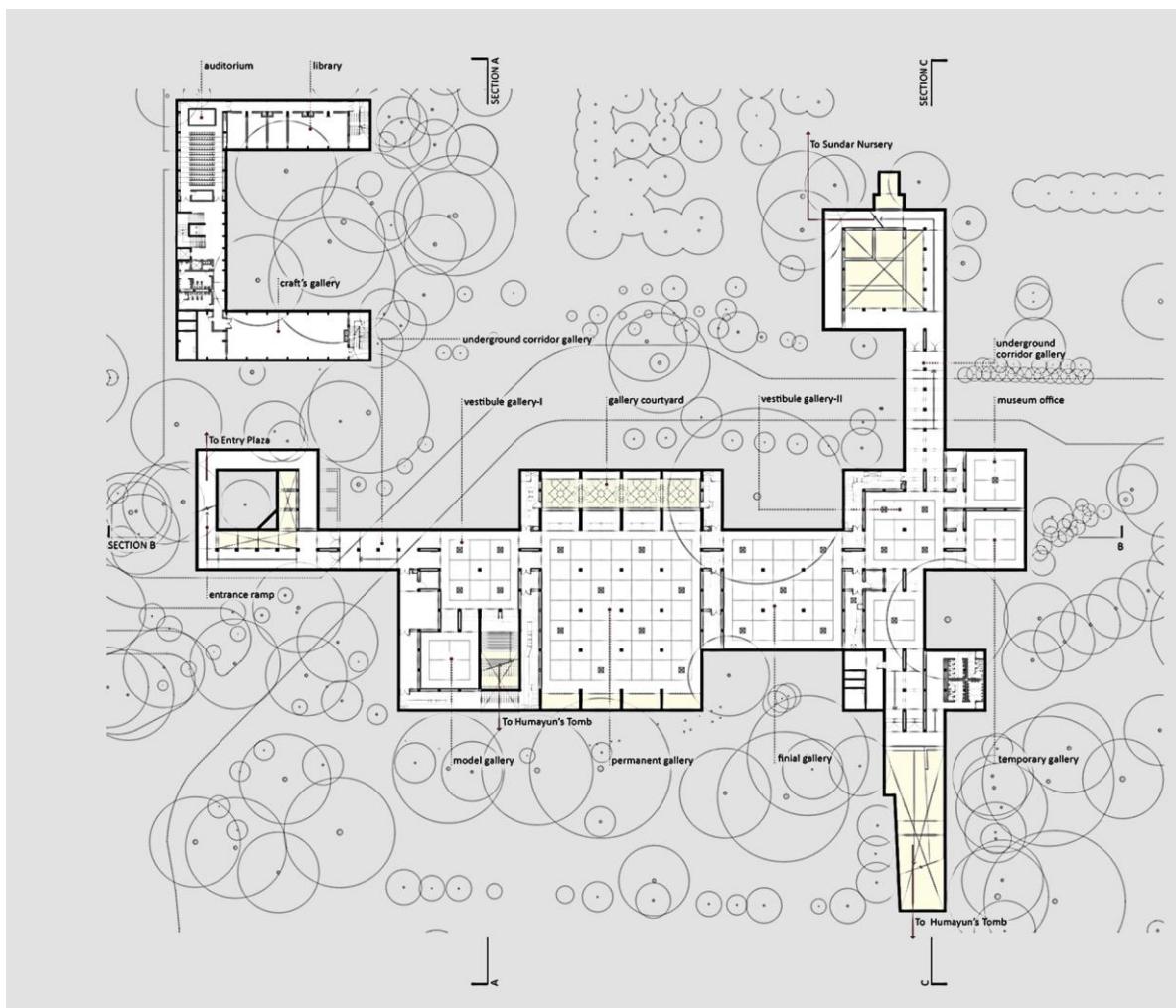


Figure 52 - Site plan

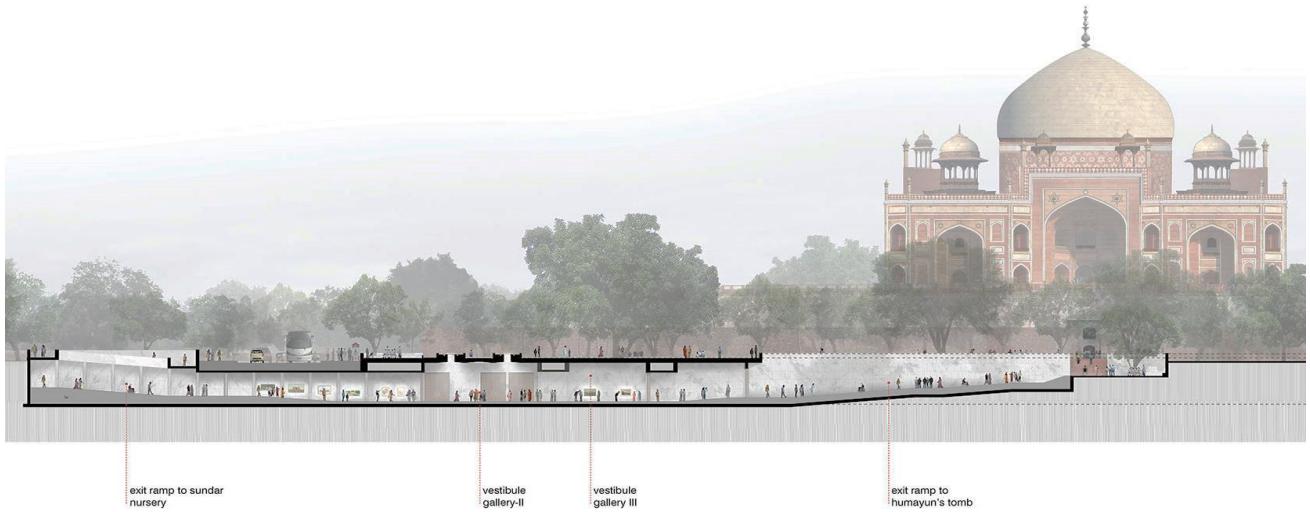


Figure 55 - Section BB'



Figure 53 - Stairway into IC



Figure 54 - Exhibitions and Galleries



Figure 56 - Section CC'

1

Humayun tomb interpretation center

2

The Humayun Tomb

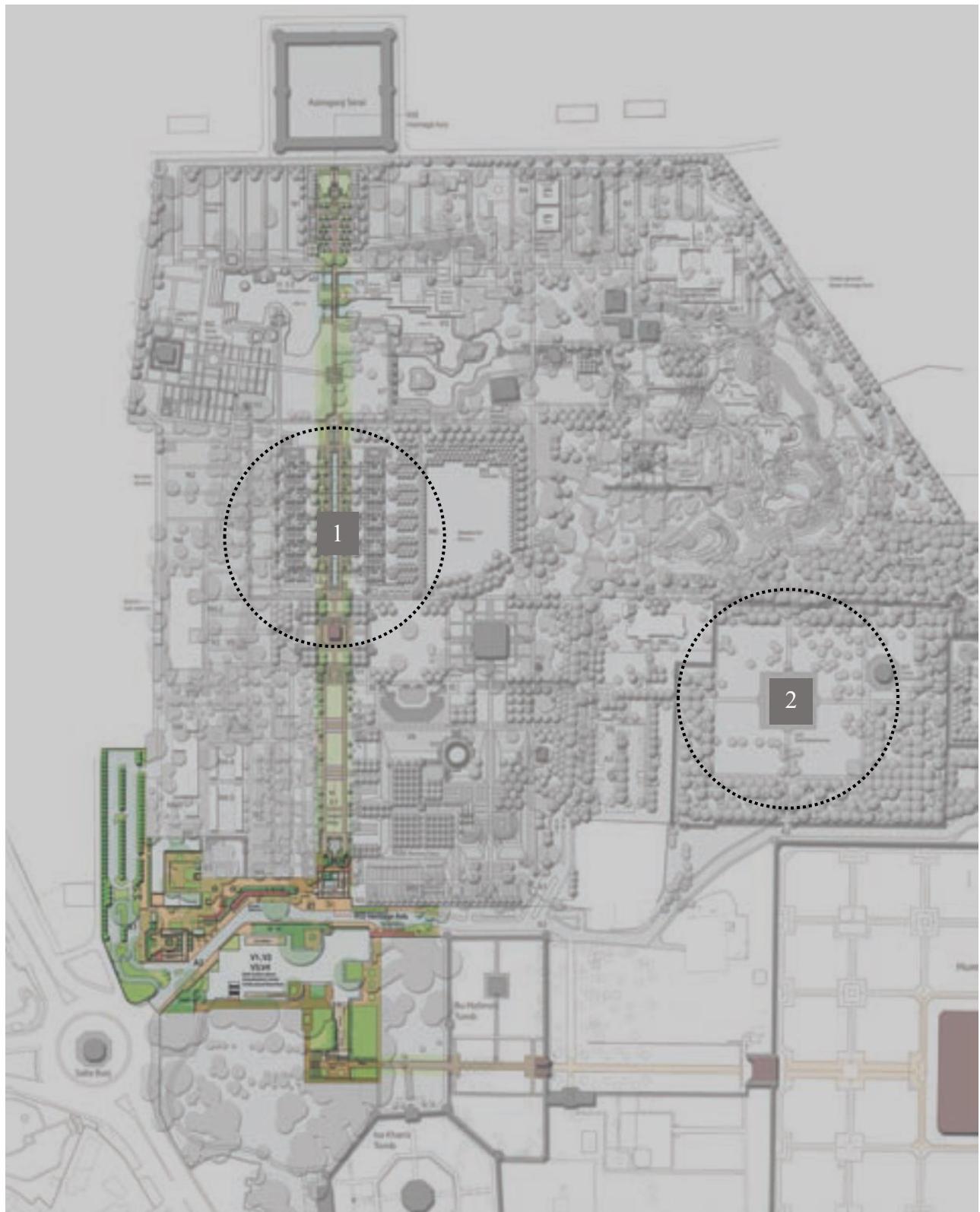


Figure 57 - Site plan

4.4.3 CIRCULATION & PLANNING:

The circulation axis is wheelchair accessible with wide ramps and ample amount of natural light, filtered through skylights and courtyards which illuminates the galleries, enabling displays of Mughal architecture, facade, landscape and the ornamental traditions.

The illuminated plastered ceilings in the galleries reflect the geometric sophistication of the Mughal age. Live demonstration of building crafts such as stonework, tilework, incised plaster work, as well as prominent Mughal crafts will be a permanent activity.

The museum aspires to promote an understanding of the cultural and aesthetic practices that flourished during the Mughal era, and to create a contemporary experience worthy of a 21st century addition to this extraordinary world heritage site.

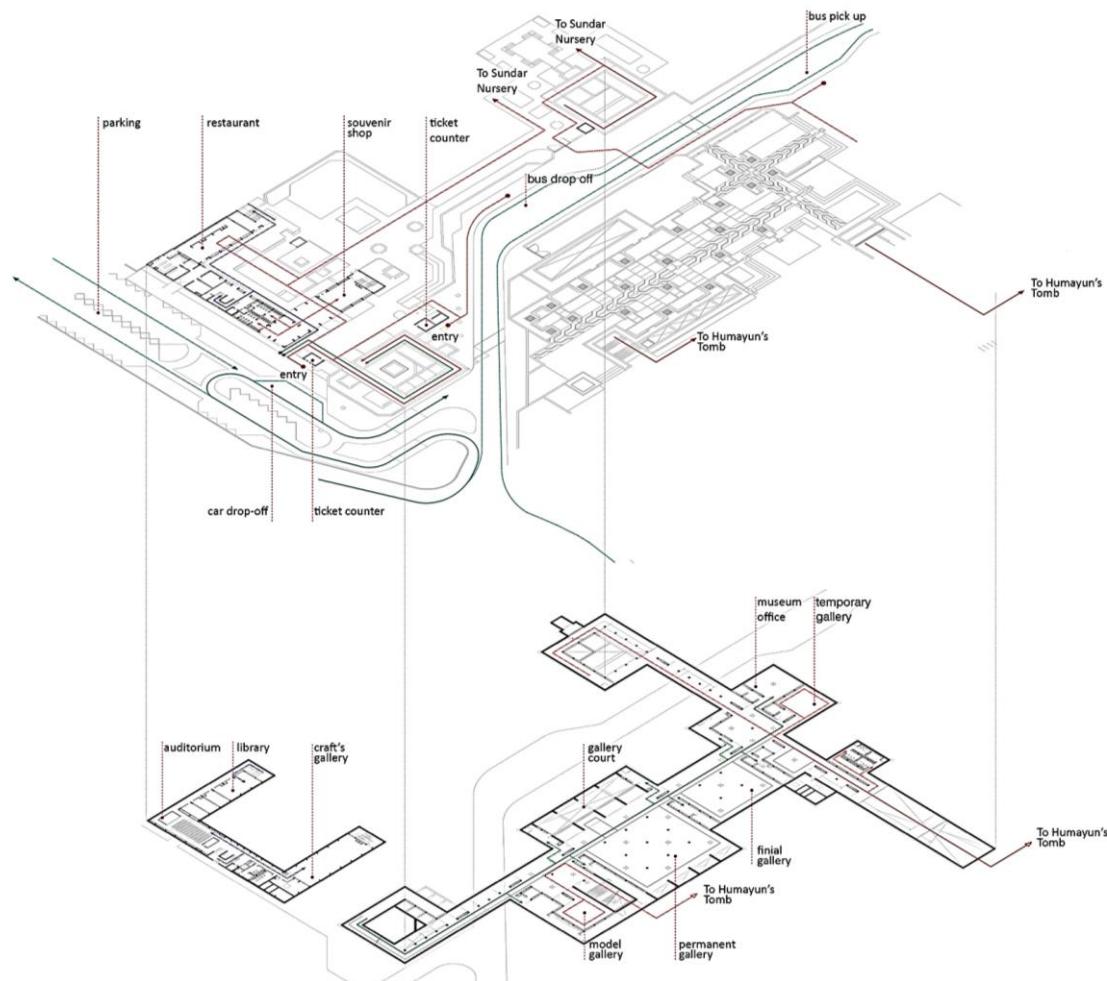


Figure 58 - Circulation of the Interpretation Center



Figure 59 - Interior Exhibit Halls

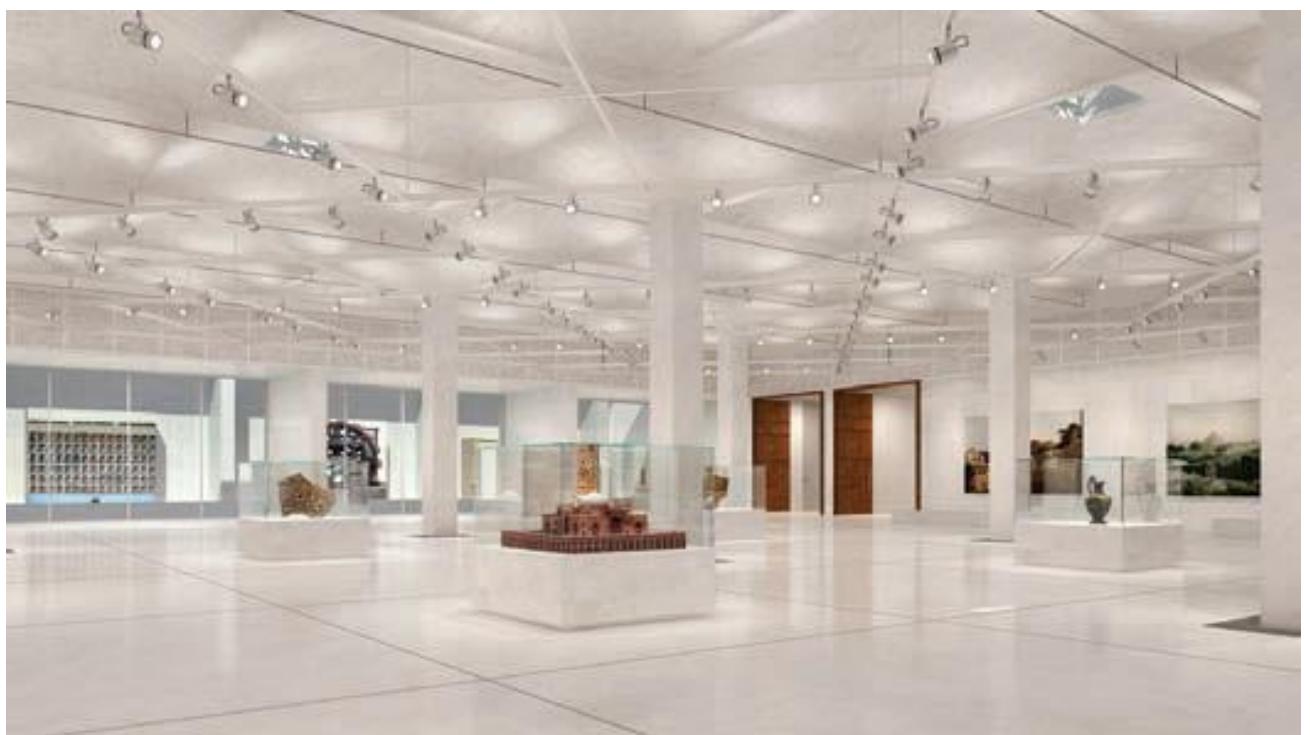


Figure 60 - Gallery Spaces

5. INFERENCES

5.1 DESKTOP STUDY – 1

1. Usage of traditional forms (vaults) and functional requirements.
2. Use of water ponds to diffuse light into the space.
3. Use of vernacular materials.
4. Use of natural elements. (light, sun, water and earth)
5. Use of geometrical shapes and patterns.

5.2 DESKTOP STUDY – 2

1. Use of natural light which is filtered through all of the building.
2. Location of the site.
3. Visual link between the museum and Parthenon which is located at the top of the hill.
4. Chronological order of circulation throughout the museum.
5. Simplicity in usage of materials like glass, concrete and marble.

5.3 DESKTOP STUDY – 3

1. Use of natural light through the glazing.
2. Depiction of Roman fortifications.
3. Visual link between the museum and the surroundings.
4. Usage of materials like glass, concrete and wood.

5.4 DESKTOP STUDY – 4

1. Use of natural light as skylights.
2. Sensitive arrangement of the building with respect to the landscape around.
3. Use of open courtyards for illuminating the galleries.
4. Use of wide ramps which allows the disabled to move freely.

6. SPATIAL REQUIREMENTS

6.1 ZONE'S

1. Interpretation Center
2. Administration
3. Restaurant
4. Motel
5. Viewing Tower
6. Formal outdoor sit out
7. Informal outdoor sit out
8. Formal outdoor sit out

6.1.1 INTERPRETATION CENTER

1. Storage room's
2. Souvenir shop's
3. Hospitality services
4. Staff dining room's
5. AR/VR Room's
6. Audio Visual room's
7. Cloak room
8. Curator's room
9. Galleries
10. Temporary / Permanent exhibition
11. Library / Reading area
12. Cafeteria

6.1.2 ADMINISTRATION

1. Logistics and operation's office
2. Personal assistant room
3. Waiting area

4. Director office
5. INTACH office
6. MS office
7. ASI office
8. Tourism office
9. Conference room

6.1.3 RESTAURANT

1. Reception
2. Waiting area
3. 3, 2 and 1 seater dining
4. Kitchen
5. Air handling unit

6.1.4 MOTEL

1. Reception and pantry
2. Waiting area
3. Single sharing room's
4. Double sharing room's
5. Medical room
6. Storage room
7. Staff dining room
8. Outdoor sit-out room

6.1.5 VIEWING TOWER

1. Main deck
2. Ropeway deck
3. Viewing tower deck

6.2 COMPARATIVE ANALYSIS – AREA STATEMENTS

NAME	MAPUNGUBWE INTERPRETATION CENTER
Year	2009
Architect	Peter Rich Architect's
Land Use	-
Site Area	2750 sq./m
Ground Floor Area	-
Ground Coverage	-
Total Built-up Area	-
F.A.R	-
Building Height	-
Functional Requirements	<ul style="list-style-type: none"> 1. Exhibition halls 2. Restaurant, café 3. Amphitheatre
Structural Systems	<ul style="list-style-type: none"> 1. Vaults 2. Earth tiles 3. Concrete
Materials	<ul style="list-style-type: none"> 1. Earth bricks 2. Earth tiles 3. Sandstone 4. Recycled materials 5. Glass

Table 3 - Comparative analysis chart of Mapungubwe Interpretation Center

NAME	NEW ACROPOLIS MUSEUM
Year	2009
Architect	Bernard Tschumi Architect's
Land Use	Recreational
Site Area	23, 000 sq./m
Ground Floor Area	6000sq./m
Ground Coverage	25% approx.
Total Built-up Area	21, 000sq./m
F.A.R	0.9
Building Height	15M
Functional Requirements	<ul style="list-style-type: none"> 1. Exhibition halls and galleries 2. Terrace, café, store 3. Theatre (180 seat)
Structural Systems	<ul style="list-style-type: none"> 1. Reinforced concrete 2. Steel
Materials	<ul style="list-style-type: none"> 1. Glass 2. Concrete 3. Marble

Table 4 - Comparative analysis chart of New Acropolis Museum

NAME	MUSEO PARC ALESIA
Year	2003 - 2012
Architect	Bernard Tschumi Architect's
Land Use	-
Site Area	91 acres
Ground Floor Area	-
Ground Coverage	-
Total Built-up Area	8000 sq./m
F.A.R	-
Building Height	15M
Functional Requirements	<ul style="list-style-type: none"> 1. Exhibition halls and galleries 2. Conference room's
Structural Systems	<ul style="list-style-type: none"> 1. Reinforced concrete 2. Steel
Materials	<ul style="list-style-type: none"> 1. Wood 2. White sand 3. Solid concrete 4. Glass 5. Metal frame's

Table 5 - Comparative analysi chart of Mueso Parc Alesia

NAME	HUMAYUN TOMB INTERPRETATION CENTER
Year	2015 – present
Architect	Vir Mueller Architect's
Land Use	Recreational
Site Area	-
Ground Floor Area	-
Ground Coverage	-
Total Built-up Area	9, 815sq./m
F.A.R	
Building Height	15M
Functional Requirements	Exhibition halls and galleries
Structural Systems	<ol style="list-style-type: none"> 1. Reinforced concrete 2. Steel
Materials	-

Table 6 - Comparative analysis chart of Humayun Tomb Interpretation Center

6.3 DESIGN AREA REQUIREMENTS – AREA STATEMENTS

S.NO	INTERPRETATION CENTER	FLOOR AREA (SQ. M)
1.	Security check with cloak room	11.0 sq. m
2.	Reception	25.3 sq. m
3.	Information center	18.9 sq. m
4.	Ticketing office	18.9 sq. m
5.	Emergency medical room	15.0sq. m
6.	Entrance foyer and seating	100.7 sq. m
7.	Curator's room with attached toilet	30.0 sq. m
8.	Staff dining area	91.5 sq. m
9.	Electrical board room	22.0 sq. m
10.	Storage room for galleries	112.0 sq. m
11.	Toilets	60.0 sq. m
12.	Galleries	3800.0 sq. m
13.	Exhibits	3800.0 sq. m
14.	Storage room for exhibit's	328.0 sq. m
15.	Augmented reality room	960.0 sq. m
16.	Virtual reality room	586.0 sq. m
17.	Souvenir shop	328.0 sq. m
18.	Audio visual room - 1	526.5 sq. m
19.	Audio visual room - 2	674.4 sq. m
20.	Audio visual room - 3	419.0 sq. m
21.	Storage room for cafeteria	180.0 sq. m
22.	Storage room for library	180.0 sq. m
23.	Cafeteria	2054. 0 sq. m
24.	Library	1139.0 sq. m
25.	Outdoor seating area	637.3 sq. m

Table 7 - Area requirements of Interpretation Center

S.NO	ADMINISTRATION	FLOOR AREA (SQ. M)
1.	Reception	11.0 sq. m
2.	P.A room	60.0 sq. m
3.	Directors office with pantry and attached toilet	115.0 sq. m
4.	Logistics and operations office	46.4 sq. m
5.	INTACH office	37.0 sq. m
6.	Municipal corporation office	37.0 sq. m
7.	ASI office	37.0 sq. m
8.	Tourism office	37.0 sq. m
9.	Toilet	60.0 sq. m
10.	Conference room	146.0 sq. m

Table 8 - Area requirements of Administration

S.NO	RESTAURANT	FLOOR AREA (SQ. M)
1.	Reception	55.0 sq. m
2.	Waiting area	53.0 sq. m
3.	4-seater table seating	320 .0 sq. m
4.	12-seater table seating	344.0 sq. m
5.	6-seater table seating	560.0 sq. m
6.	Kitchen	343.6 sq. m
7.	Storage rooms	40.0 sq. m
8.	Air handling unit room	25.0 sq. m
9.	Dish wash area room	25.0 sq. m
10.	Wash area	30.0 sq. m
11.	toilet	60.0 sq. m

Table 9 - Area requirements of Restaurant

S.NO	MOTEL	FLOOR AREA (SQ. M)
1.	Reception	98.0 sq. m
2.	Cafeteria	300.2 sq. m
3.	Single sharing room with attached toilet	35.0 sq. m
4.	Medical emergency room with attached toilets	50.0 sq.cm
5.	Store room	45.0 sq. m
6.	Double sharing room with attached toilet and balcony	40.0 sq. m
7.	Sit out area	120.0 sq. m
8.	Waiting area	95.0 sq. m
9.	Toilet	40.0 sq. m

Table 10 - Area Requirements of Motel

Total built-up area – 32, 445.95 sq. m (8.02 acre's) – 26.7% used

Total site area – 1, 21, 406 sq. m (30.0 acre's)

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7.2 BOOKS

1. The Hicira handbook
2. Metric handbook planning and design data
3. Heritage interpretation – Proposal's for the walled city of Jaipur
4. Tips and concepts for planning truly interpretive exhibit's
5. Interpretation handbook and standard
6. G. O. 168
7. Neufert 3rd edition
8. TSS building types