Redefining Museums

Final Year Thesis Report

In Partial Fulfillment of the Requirement for the Degree of

Bachelor of Architecture

Presented by:

Maham Atique

00000212384

S A D A school of art design & architecture

NUST

Redefining Museums

Thesis Report

Maham Atique

A thesis submitted for evaluation to School of Art, Design and Architecture on 27 May 2022, in partial fulfillment of the requirement for degree of B.Arch.

_____
(Signature)
Thesis Coordinator

_____
(Signature)
Deputy Director Examination (SADA)

2022

School of Art Design and Architecture
National University of Science and Technology

Declaration

This thesis is the result of my own investigations, except where otherwise stated. Other sources are acknowledged by giving references.

Signed _____ (candidate)

Date_____

Statement 1

I am familiar with the NUST Plagiarism Policy and I understand the potential consequences should my thesis be found to contain plagiarized content or violate this policy in any other way.

Signed _____ (candidate)

Date_____

Statement 2

I hereby give consent for my thesis, if accepted, to be available for photocopying and for inter-library loan and for the title and abstract to be made available to outside organization. I authorize the School digital copy of my thesis for the purposes of inter-library loan, the supply of copies and as the archival copy for permanent retention in substitution for the original copy.

Signed _____ (candidate)

Date_____

Abstract

For a long period, Museums in this country have been a visual presentation of space. They don't cater to audiences with different visual, hearing, or physical disabilities and are unable to generate meaningful experiences for the people. They lack inclusivity and accessibility. They are designed with a formal language and are famous for their 'Do not Touch' slogans. In this project, a new museum typology is being designed which will house interactive exhibits for people. Tactility is the main feature of this museum. People will be encouraged to touch and interact with the exhibits. People will experience art and history via immersive environments that stimulate the senses. Architecture will be used as a conceptually expressive tool in this project to create a narrative for the people. The research for this project will focus on sensory architecture to help understand how multisensory experiences can be generated via the architecture, phenomenological strategies for creating experience-centered spaces and how to engage the users through the design narrative. It will also focus on design strategies which help create spaces that are more inclusive and accessible. As a result, its users will be able to indulge in sensory learning by experiencing art like never before. They will be able to interact with the spaces and generate their own unique experiences.

Keywords: Museum, Sensory, inclusivity, accessibility

Table of Contents

List of Figures

Chapter 01

1.1 Introduction:

Art is the outcome of creative imagination manifested in different forms. It inherently aims to connect with our emotions and in a broad sense, is a form of communication. The artist expresses himself by materializing his thoughts, and the artwork produced, is appreciated for its emotional power.

Art is a powerful tool. It has the potential to influence the way we think and the way we function. It has an impact on our culture, society, politics, and economy and possesses the ability to influence, change minds and move people. It stands the test of time and passes down the concepts and ideas expressed through it to the audience. For years, museums and galleries have been the vessels which unveil and showcase significant art pieces.

These vessels are known to collect, preserve and exhibit both tangible and intangible patrimony of mankind. They are places where people come with the yearning to learn and engage with the fragments of their culture and history but, over the years, they have failed to capture the attention of people. People walk through these spaces without forming any sort of connection to the artworks. These vessels have created an environment that is dull and fails to connect the audience with the art piece. They have become coffins where people can't relate to the display at all. Furthermore, these places have made art exclusive to a certain type of audience. They do not cater to people who are differently abled.

This thesis project aims at creating an interactive museum where people can engage with the artwork via the use of various senses. A new museum typology is being introduced which will have tactile exhibits. Visitors will be free to touch the art pieces and to interact with them. Architecture will not only form a narrative but will also act as a piece of art itself. The museum will be different from typical museums in the sense that it will provide. Its objective is to enhance the engagement of the user by creating a multi-sensory experience.

1.2 Thesis Statement:

Designing an interactive art museum which will focus on hands on learning through the interaction and engagement of users with the exhibits**.** Art will be experienced via immersive environments that stimulate multiple senses.

1.3 Objectives:

- To enhance the experience of the built environment by stimulating multiple senses

- To design spaces that are accessible and inclusive

- To design spaces that form a narrative

- To implement strategies that aid in making exhibits more interactive and engaging

1.4 Methodology

1.4.1 Theoretical Research

Experiencing art should not be limited to one sense: sight. It should be experienced via multiple senses. Research has shown that engaging multiple senses in a learning environment can improve the overall cognitive ability by retaining the information for a longer period. It also has a positive influence on mental health and improves the overall wellbeing of individuals. The Research for this project will focus on sensory art and architecture and their role in creating more meaningful spaces which benefit the user. It will also focus on strategies for making Museums more experiential and interactive to target a larger number of people to come and benefit from these spaces.

Art is being used as a therapy and studies have proved that exposure to art improves the person in the knowledge of other fields. Research papers on art, it's impact on our minds will be read. Precedents in which different methods and techniques have been applied to make exhibits more interactive will be

analyzed. Research on making places more inclusive and accessible to physically impaired people will also be examined.

1.4.2 Design Articulation:

The built area will comprise different art zones i.e. Literature, Performing Arts, Visual Arts, Graphic Arts, Plastic Arts, Decorative Arts, Music, etc. These art zones will be configured in a manner which will form the narrative of the space. Different sensory experiences will be generated in different art zones. Tactile, olfactory, visual, auditory methods will be incorporated to increase the overall experience of the place.

1.5 Design aspirations:

- Social magnet:

The Museum will be an iconic building which will serve as a social magnet. It will act as a fulcrum where immersive art experiences will take place on its grounds.

- Interactive exhibits:

The museum will dispense engaging exhibits which will be experienced by people with and without physical impairments.

- Sensory architecture:

Five senses in architecture: olfaction, tactility, taste, aural and vision will be juggled to create an environment which will guide the user to experience the spaces in an enhanced manner by bringing into use their senses.

- Wellbeing

Art helps us grow and evolve. It also helps us understand ourselves and the world that surrounds us. It helps us appreciate small things, promotes self-growth and has a positive impact on our wellbeing.

1.6 Conclusion:

In conclusion, this project will aim to create spaces where art will be experienced via the use of multiple

senses. Different strategies and techniques will be implemented to make the spaces more experiential,

interactive, and inclusive.

Chapter 02

In this chapter, the case studies selected for this project will be discussed. The main intent of this thesis project is to create an interactive art museum where people can experience art through multiple senses. Ergo, the precedents selected for this project focus on user engagement and the generation of multi-sensory experience in spaces. They also help understand how designers initiate this experience via different branching strategies.

2.1 Literature Review:
2.1.1 Eyes of the Skin: Architecture and the Senses
Juhani Pallasmaa

"The gradually growing hegemony of the eye seems to be parallel with the development of Western ego-consciousness and the gradually increasing separation of the self and the world; vision separates us from the world whereas the other senses unite us with it."

— Juhani Pallasmaa

In this book, the author talks about the importance of experiences and the role of all the senses in stemming those experiences. Pallasmaa talks about the dominance of visual sense in our world and the consequential suppression of the sensory realm. The book sheds light on the role of the other senses in generating genuine architectural experiences and talks about multi-sensory architecture which paves way for a sense of belonging and integration. Pallasmaa also discusses the role of subconscious experiences, memory, imagination, daydreaming and how these facets build and influence our experiences.

2.1.2 Sensory Architecture: Redefining How One Interprets Space
Heather Holz

In this Thesis Research report, Heather Holz talks about how art museums are a visual presentation of space and asks the question, "Can we improve the awareness of our other senses with better sensory design within Architecture?" The author also discusses how the experience of a built environment can be enhanced through the exposure and interactions with sounds, color, lighting, textures, air quality, etc. She argues that people come with an open mind and an expectation to learn, and designers should create a built environment by using more than just visual cues.

2.1.3 Museums should activate multiple senses, not just the eyeballs
TED Talk

Ellen Lupton

Ellen Lupton, a museum curator, talked about the formal nature of museum spaces and their badgering 'Do not Touch' slogans. She stressed that designers should 'go beyond the eyeball'. The spaces we inhabit give us information: Where to go? What to feel? Spaces don't solely target our sight. She elaborated on how when designers try to activate multiple senses, we create a world that is more interesting to everyone. We create spaces that are more accessible to everyone.

2.2 Synthesis:

Eyes of the Skin helps understand the significance of the sensory realm in prompting experiences and the concept of informal learning generated through those experiences. The Thesis research report by Holz aids in comprehending how museum spaces can be more than just visual presentations and how different strategies can be applied to enhance the space. The TED Talk helps apprehend how spaces should be designed in a manner that increases their accessibility.

2.3 Precedents

2.3.1 Solomon R. Guggenheim Museum
Architect: Frank Lloyd Wright

Location: New York

Figure 1 Front facade of the Guggenheim Museum

Solomon R. Guggenheim Museum was one of the last projects designed by the architect, Frank Lloyd

Wright. The building creates a striking contrast with the grid geometry of the city. Its fluid curved form

has established itself as a well-known landmark for the people. The museum houses a 92 feet high

atrium with a swirling ramp. Guggenheim was built on the concept of "one great space on a continuous

floor" and to achieve this, Wright designed a ramp which spirals upwards into six stories. The ramp

creates a journey for the visitors. As they travel skywards, art is displayed alongside the walls for them
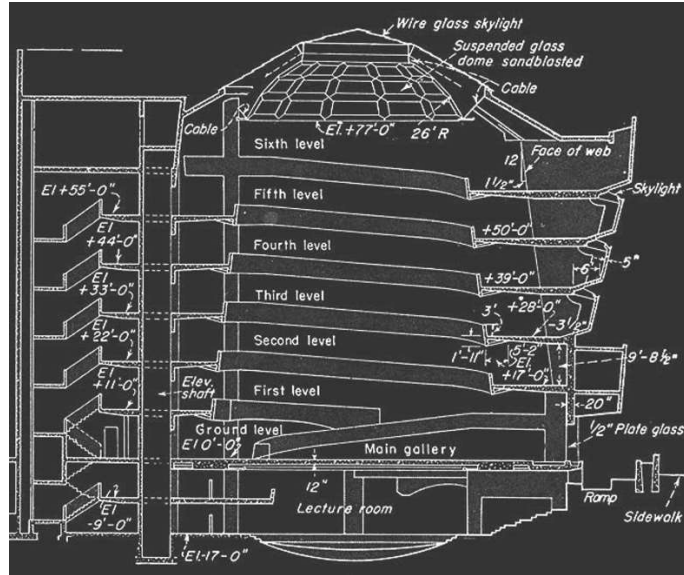
to experience.

Figure 2 Section of the Guggenheim Museum

The atrium along with the coiling ramp on its sides enhances the experience of the space by allowing people to interact on different levels.
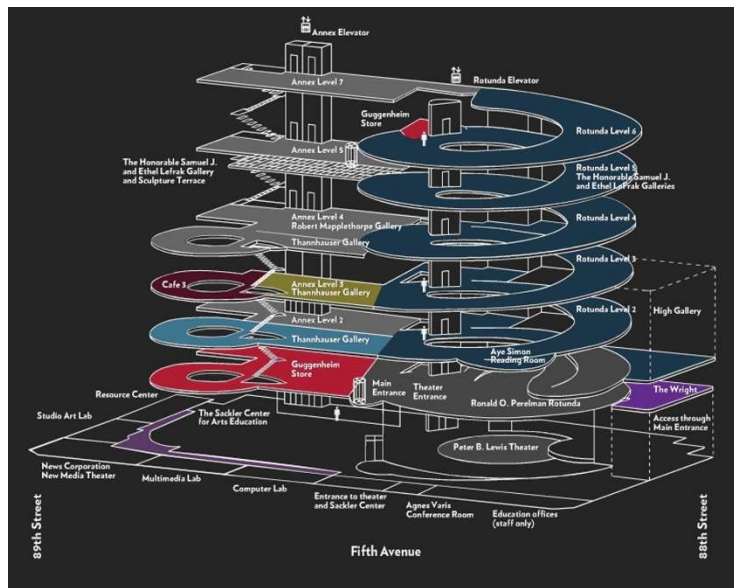

Figure 3 Illustration showing the placement of different activities within the building

While working on the plans of the museum, Wright's childhood influence of geometric shapes can be seen.

"That early kindergarten experience with the straight line; the flat plane; the square; the triangle; the circle! If I wanted more, the square modified by the triangle gave the hexagon, the circle modified by the straight line would give the octagon. Adding thickness, getting "sculpture" thereby, the square became the cube, the triangle the tetrahedron, the circle the sphere."

—Frank Lloyd Wright

He has incorporated different shapes throughout the plans. His use of shapes can also be observed not only in the form of the building but in interior spaces too. Wright strongly believed that the use of these shapes gave his work a structured quality. He was also of the opinion that geometric shapes had emblematic importance. He has stated that the circle indicated infinity, the square suggested integrity, triangle indicated structural unity and the spiral depicted the organic process.
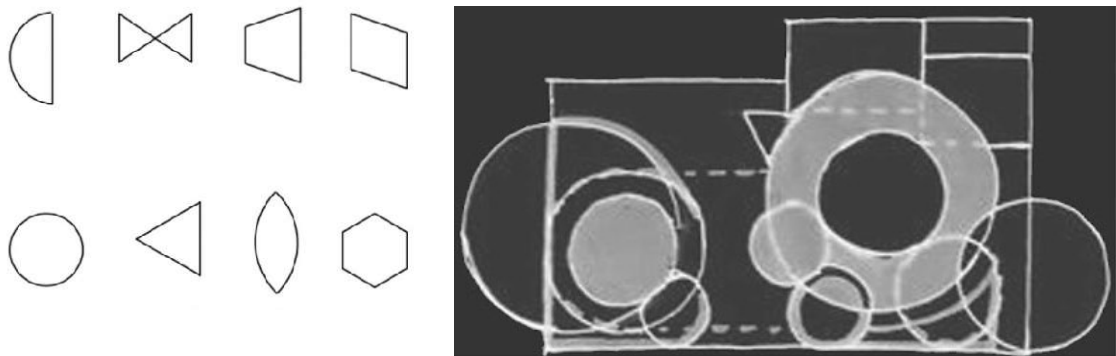

Figure 4 Geometric shapes used in the Plans

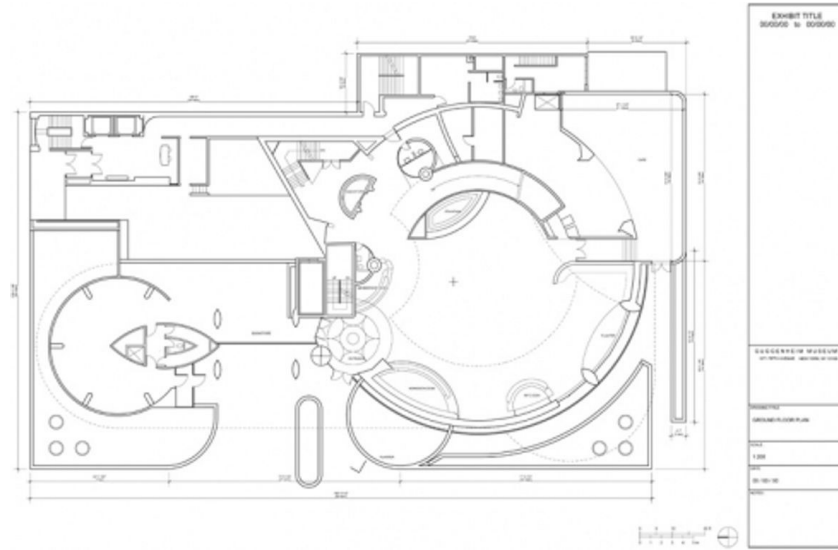All these forms can be perceived in the plans of the Guggenheim Museum.

Figure 5 Floor plan of Guggenheim Museum

The museum also provides tours and guides for people who are blind or have low vision and people who are deaf or hard of hearing. They also give out a sensory map for people on the Autism spectrum so that they can navigate the museum with ease.
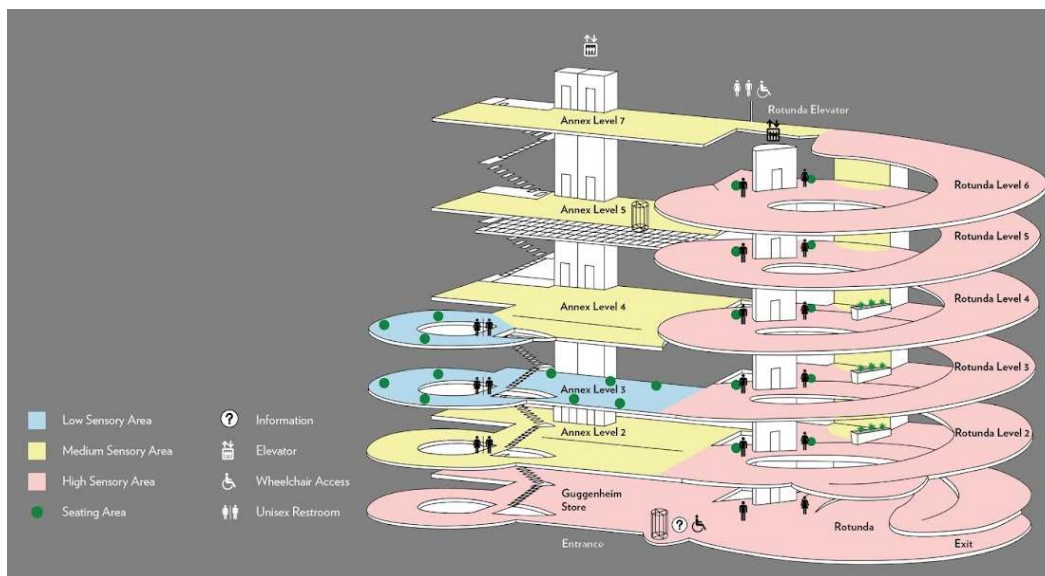

Figure 6 Sensory Map of Guggenheim Museum

The Jewish Museum

Architect: Daniel Libeskind

Location: Berlin, Germany

Figure 7 Image showing front Facade of the old and new building

The intent of the Jewish Museum was to bring back and commemorate the history of Jews in Berlin.

Daniel Libeskind's entry in the competition for the expansion of the Jewish Museum won in 1988. His

design used architecture as a tool to conceptualize and narrate the Jewish chronicle. It tells the tale of

jewish life before, during and subsequent to the Holocaust. The museum aims at restoring the lost

identity of jews in Berlin. The new building creates a stark contrast with the old building.
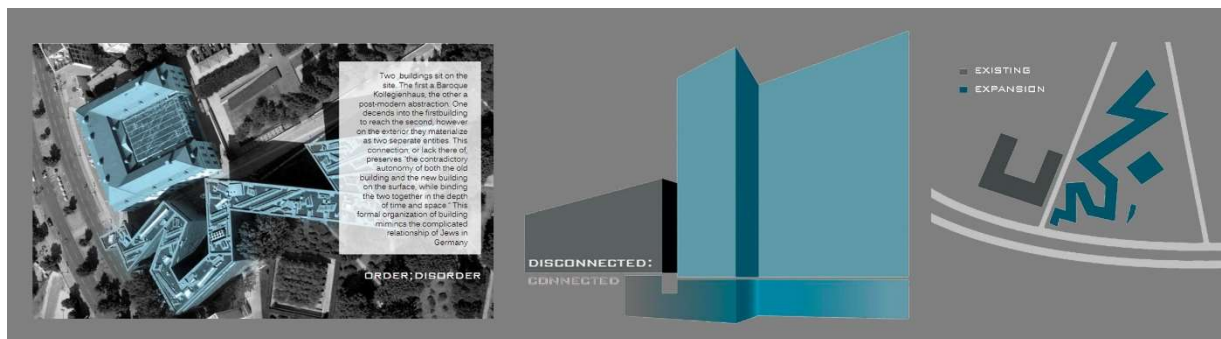
Figure 8 Illustrations showing different qualities of the building

Outwardly, they appear as two separate buildings but hold a very close and symbolic connection. A contrast between the old and new, connection and disconnection and existing and expansion can be seen. The zigzag form of the new building and the rectilinear form of the old building also create a striking contrast. Libeskind derived the form of the building by connecting different points on the map where important historical events took place and from the Star of David.
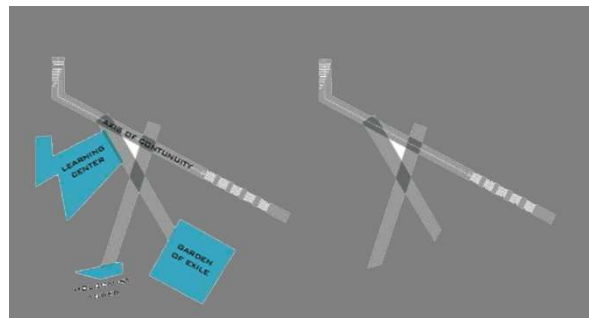

Figure 9 Illustration showing the three axis

He came us with three axis which were based on the Jewish journey. The axis of continuity, the axis of exile and the axis of Holocaust were formed. He has created sharp voids throughout the form where the axis cuts the zigzag form. Through the use of light, materiality, and architecture he enables the user to go through an array of emotions. As the visitor journeys through the museum, he experiences different events experienced by the Jews. Every detail in the building has a story to tell.
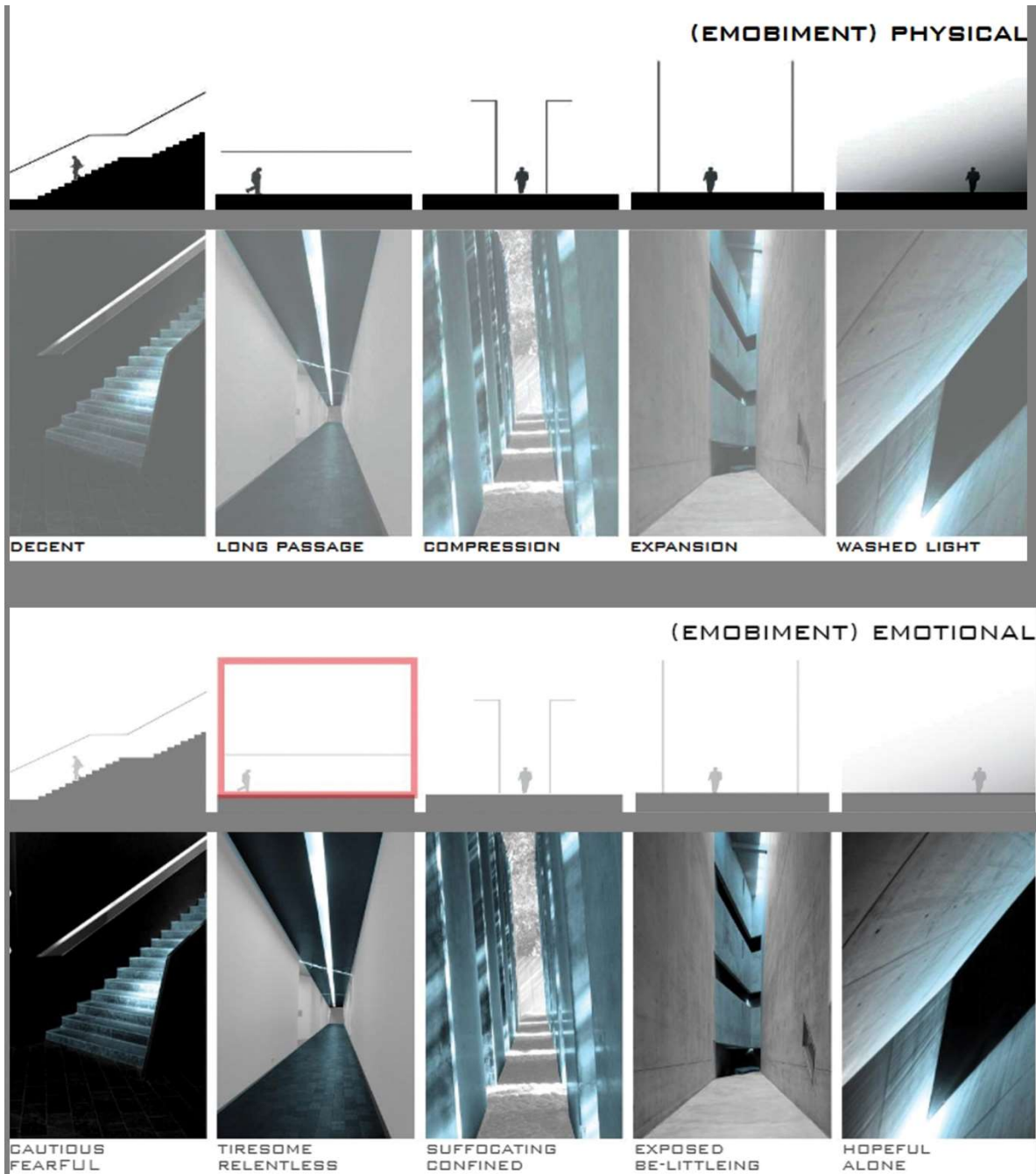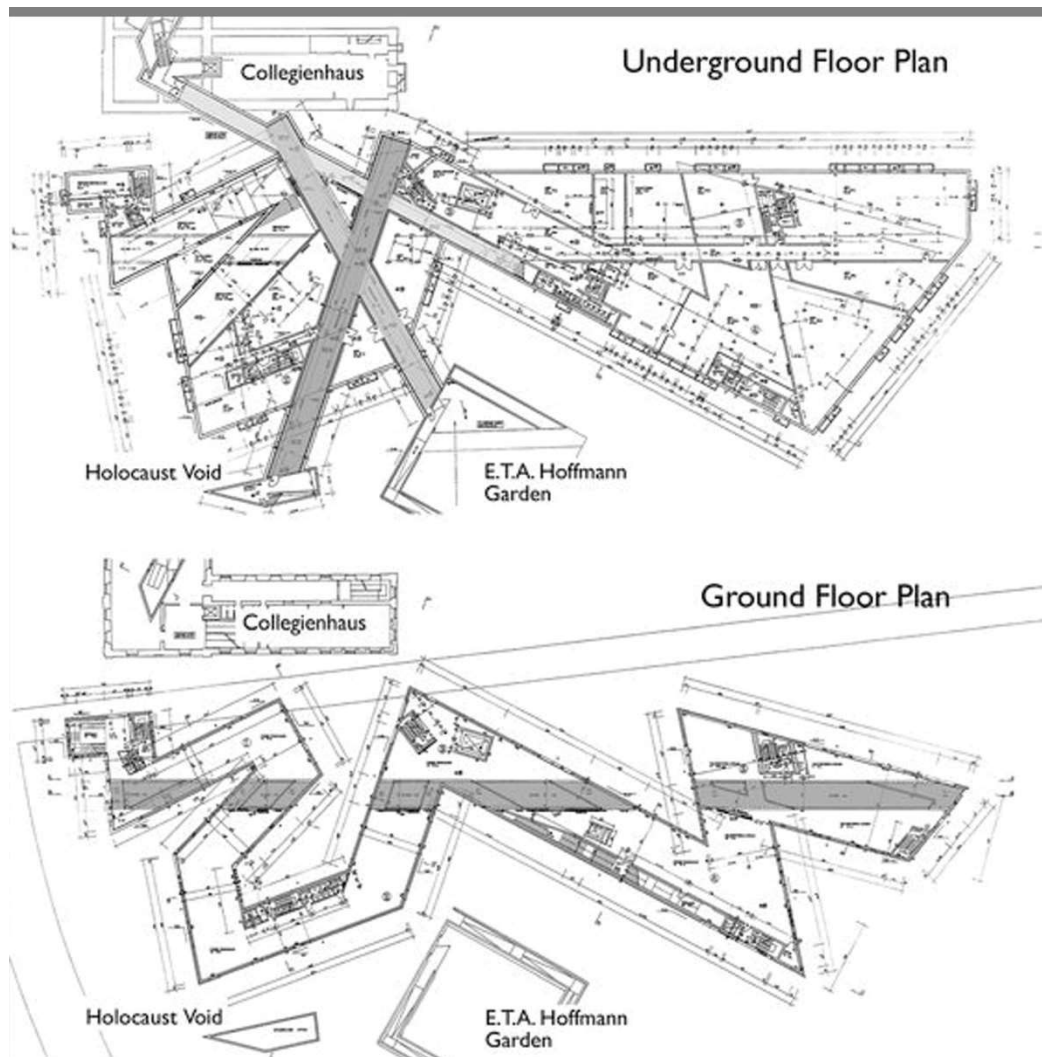
Figure 10 Physical and Emotional embodiment

Figure 11 Floor plans of the Jewish Museum

Chapter 03

3.1 Introduction:

In this chapter, the programs of the museum will be discussed. The essence of places and the

relationship between programs will be discussed.

3.2 Architectural typology:

The architectural typology is of a Museum. But a new type of a museum is being introduced where the

exhibits will be tactile.

3.3 The Programs:

Since the museum is a contemporary "art" museum. Art has been categorized into different parts and

based on those parts different zones were created.

The Categories are as follows::

- Performative Arts

(theater, dance, music)

- Decorative Arts

(enamel work, furniture design, mosaic, etc)

- Plastic Arts

(sculpture, modeling)

- Music

(as composition)

- Visual Arts

(painting, drawing, sculpture, etc)

- Literature

(poetry, drama, story, etc)

- Graphic Arts

(painting, drawing, design & other forms expressed on flat surfaces)

- Architecture

The programs selected for the museum are such which promote user engagement.

3.4 Perceived Spatial Nature

Figure 12 Inspirational Sketches for interior and exterior spaces

3.5 Conclusions

Programs which will stimulate multiple senses and will enhance user interaction have been selected. Spaces of similar nature have been sketched out.

Chapter 04

4.1 Introduction:

In this chapter, the site chosen for this project will be discussed. Features of the site, its historical and

political importance, it's context and analysis will be reviewed.
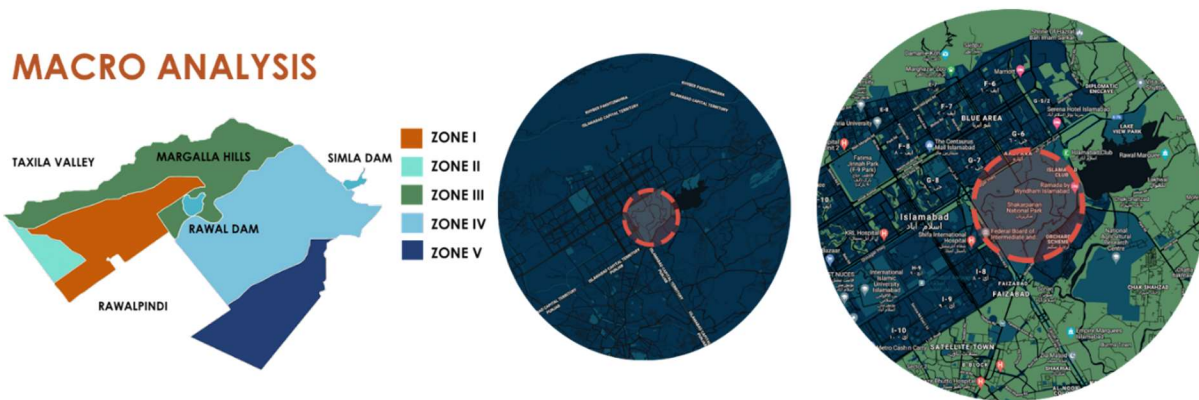
4.2 Site and its Location:

Figure 13 Macro Analysis of the site

The site chosen for this project is located in Shakarparian National Park. The site is situated near the

Zero Point Interchange in Islamabad, which makes it accessible by both Srinagar Highway and Islamabad

Expressway. It hosts quite a few recreational facilities and provides a panoramic view of the whole city

at a height of 609 meters. Shakarparian National Park is dense with vegetation. It is home to a diversity

of wildlife and has a demarcated area where foreign dignitaries come and plant 'trees of friendship'. The

site has several museums too, which hold significant cultural and historic importance.

Since the project is a Sensory Art Museum, this site is deemed the most appropriate. The area already

has well known heritage museums and a Museum of Natural history which focuses on the biodiversity of

Pakistan. Introducing a new Museum to the area, won't cast a shadow on the existing Museums for the reason that this Museum will focus on Art which stimulates the senses.

4.3 Site and Thesis Statement:

The site hosts a variety of programs and fosters great potential to create connections to those programs. It is home to three museums: two heritage museums and one Natural Science Museum. It already has an influx of the targeted audience required for the introduced program.

"Designing an interactive art museum for people of all ages which will focus on **Sensory Experience.** Art will be experienced via immersive environments that stimulate the senses."

4.4 Site and Program:

CDA BYE-LAWS

1. In this zone, no change in land use is permissible except preservation, afforestation, and recreation, because this is supposed to be a covered area.

2. No sale/purchase of land, which entails change in some of the existing rural settlements, is allowed.

3. The existing rural settlements aren't allowed to expand.

4. No residential scheme can be floated in this zone.

5. All the buildings to be constructed in this zone would have to follow Islamabad Building Regulation, 1963: and the Islamabad Residential Sectors Zoning Regulation,1985.

The site is rich in recreational programs. It serves as a large leisure zone for the entirety of Islamabad and Rawalpindi; within a half mile radius of the site are several museums, parks, auditoriums, lake viewpoint, Sports stadiums, etc.
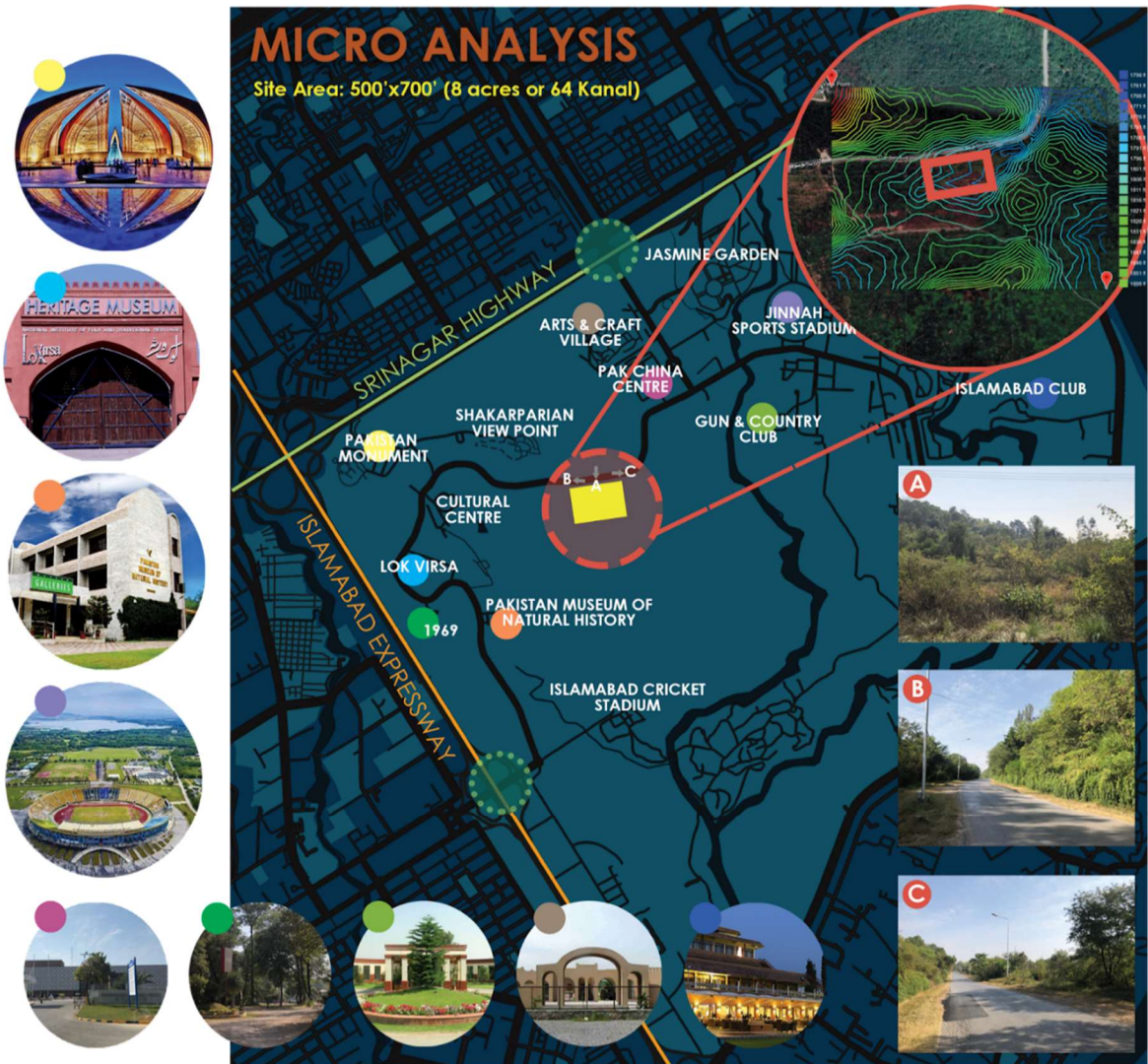
Figure 14 Micro Analysis of the Site

4.4.1 History and Background:

The site holds significant historical and political importance. In the pre-partition time period, the area

was occupied by Ghakkar tribe. The area was also known as the home of Shah Abdul Latif Kazmi Bari

Imam's father, who moved to what is now known as Aabpara.

On May 24th 1960, President Ayyub Khan approved the master plan for Islamabad during a federal

cabinet meeting in Shakarparian. During the same year, the Capital Development Authority was formed

and took possession of the park from the federal government. International Friendship Park was set up,

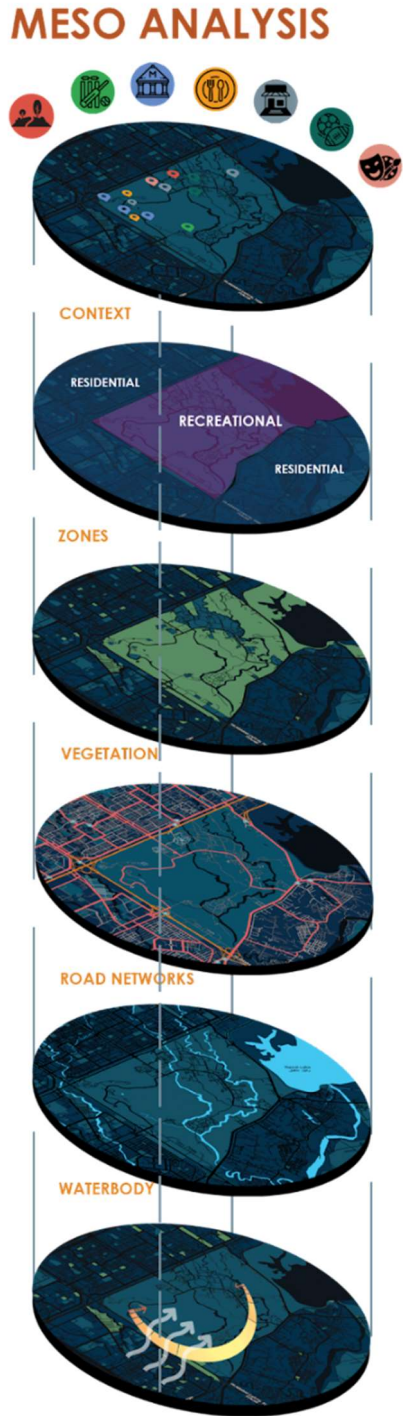where prime ministers and presidents of various countries planted plants symbolizing their friendship.

Figure 15 Meso Analysis of Shakarparian

4.5 Site study and Analysis:

The site is sandwiched between residential zones. It has a variety of different recreational programs

ranging from parks, museums, eateries to sports stadiums and clubs.

Strengths:

- Accessibility

- Rich urban context

- Views

- Near Zero Point Interchange

- Vegetation

- Located between the two cities

- Will promote user interaction due to the pre-existing programs

- Offers a catchment area

- The site is rich in historical, political, and recreational importance.

- It has a vast user influx coming from different parts of the city and from abroad

- It is heavily vegetated and provides scenic views

- Since the area is at a high altitude, the height can be used as an advantage to provide views of

  the city

Weaknesses:

- Security constraints

- Not pedestrian friendly

Opportunities:

- Program rich site

- Natural vegetation

- Public influx

Threats:

- Noise

- Not pedestrian friendly

- Wildlife

- Poisonous Plants

4.6 Conclusion:

The site is contextually rich and provides great opportunities for the project. It is densely vegetated and has many contours which will help design spaces in different levels.

Chapter 05

5.1 Introduction

In this chapter, the design process for the project will be discussed. The design decisions and

formation of these decisions will be talked through.

5.2 Design translation

Since the museum is a contemporary "art" museum. Art has been categorized into different

parts and based on those parts, the decision of creating different zones in the orthographic

drawings took place.

The Categories are as follows:

- Performative Arts

(Theater, dance, music)

- Decorative Arts

(Enamel work, furniture design, mosaic, etc)

- Plastic Arts

(Sculpture, modeling)

- Music

(As composition)

- Visual Arts

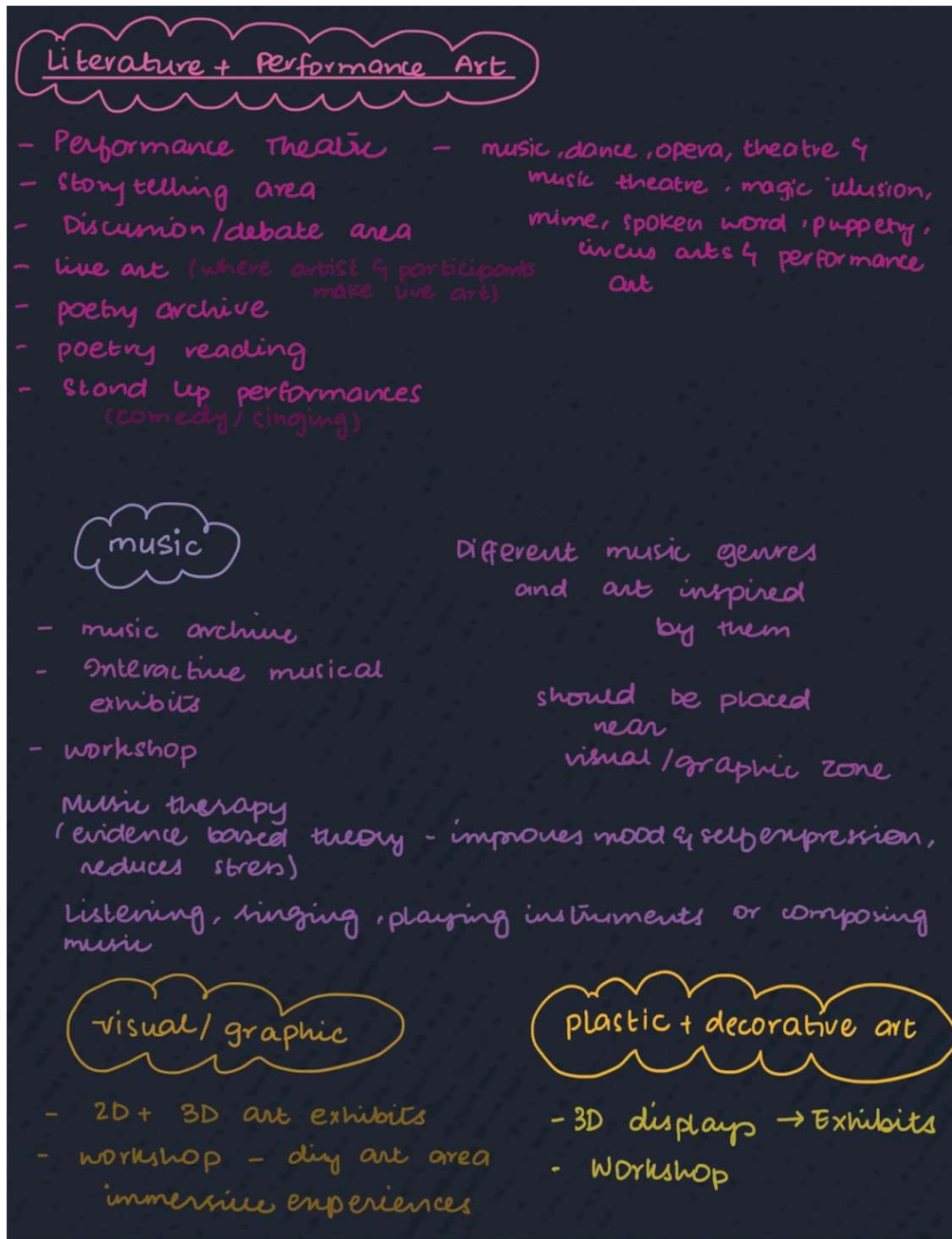(Painting, drawing, sculpture, etc)

- Literature

(Poetry, drama, story, etc)

- Graphic Arts

(Painting, drawing, design & other forms expressed on flat surfaces)

- Architecture

These zones further inculcate different programs. Zones containing similar programs were placed in close proximity to one another and so in translating this proximity to the drawings, these similar zones were merged under one roof. The zones of literature and performing arts were amalgamated. Programs such as performance theater, storytelling-area, discussion/debate area, live art exhibit, poetry archive and poetry reading area were incorporated in this zone. Plastic and decorative art zones were also coalesced where three-dimensional displays and workshops are materialized. Similarly, visual and graphic zones were blended, under which both two dimensional and three-dimensional art exhibits along with DIY art areas are created. Music isn't merged with any other zone but in programmatic zoning, it is kept close to the literature and performance art zone and contains programs like music archive, interactive musical exhibit, and a musical instrument workshop.

Literature + Performance Art

- Performance Theatre — music, dance, opera, theatre &
- Story telling area   music theatre, magic illusion,
- Discussion/debate area   mime, spoken word, puppetry,
- live art (where artist & participants   circus arts & performance
            make live art)   art
- poetry archive
- poetry reading
- Stand up performances
    (comedy/singing)

music   Different music genres
                                    and   art inspired
                                         by them
- music archive
- Interactive musical
    exhibits   should be placed
                                        near
- workshop   visual/graphic zone

Music therapy
(evidence based theory - improves mood & self expression,
reduces stress)

Listening, singing, playing instruments or composing
music

visual/graphic   **plastic + decorative art**

- 2D + 3D art exhibits   - 3D displays → Exhibits
- workshop - diy art area   - Workshop
  immersive experiences

5.2.1 Design development process

During the design development process a number of things were taken into consideration. The

site was carefully analyzed. Many key features of the site shaped the decisions. The user influx,

historical significance, topography, vegetation, pre-existing buildings, their geometry and

functions were all anatomized. Three axes were plotted on the site which originated from the

already present museums on the site.
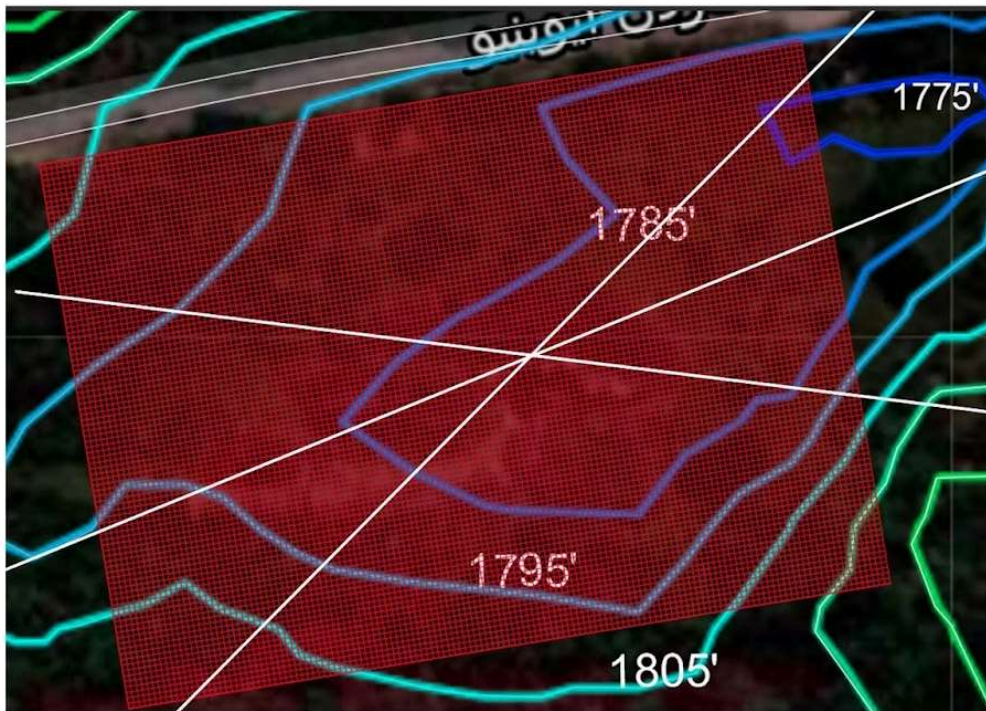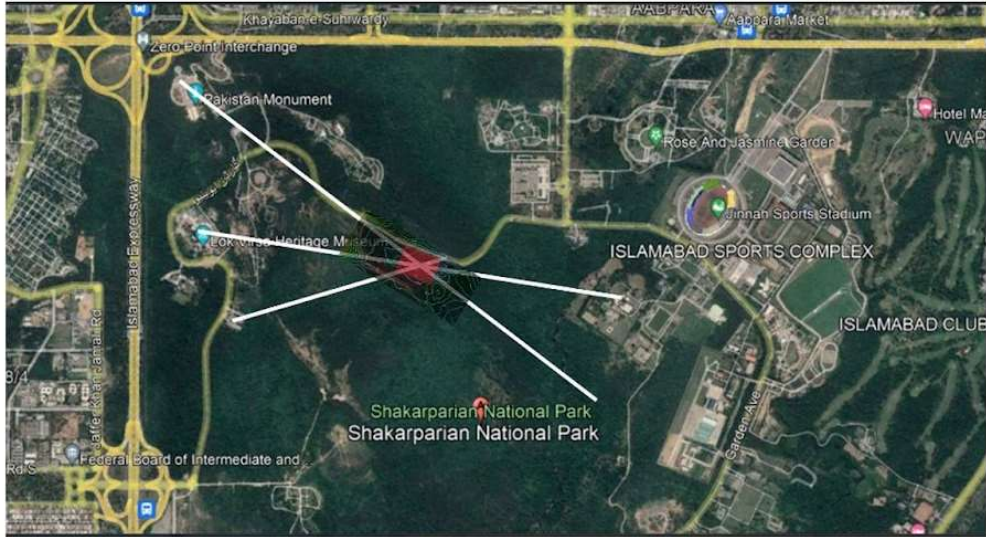
These axes served as a foundation for configuring the geometry. The planar geometry of the

pre-existing museums were also studied and based on that the geometry of the museum was

established.
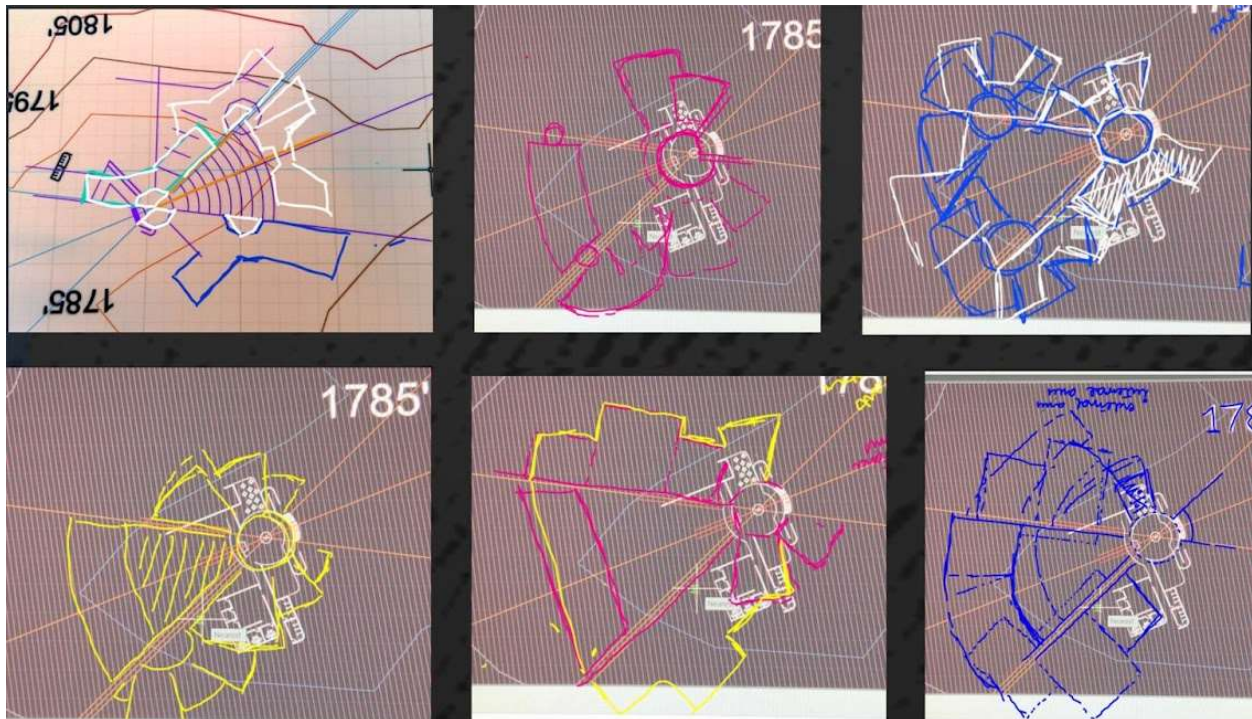
Since the museum was to be designed in a way that people with all kinds of disabilities can

experience it too, for that reason some strategies were studied which would help make spaces

more inclusive and accessible. These strategies focus on creating comfortable and more

experiential spaces for people with hearing or visual disabilities.

A case-study of Tactile City was studied and strategies from the project were extracted.

STRATEGIES

TACTILE CITY
NAVIGATION STRATEGIES FOR VISUALLY IMPAIRED

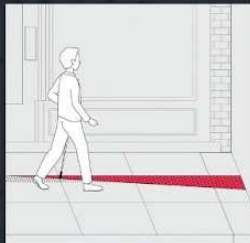### CREATING A STANDARD TACTILE LANGUAGE
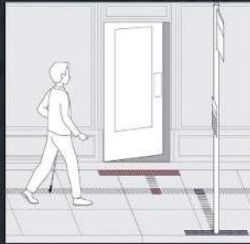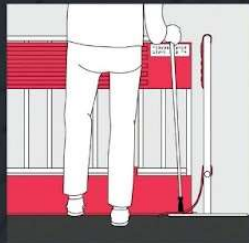

TACTILE PATH
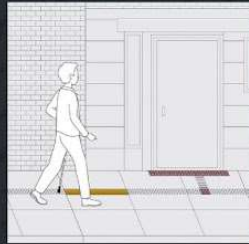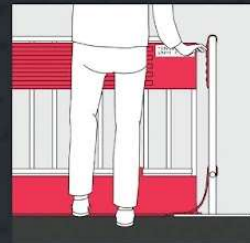
TACTILE ADDRESSES
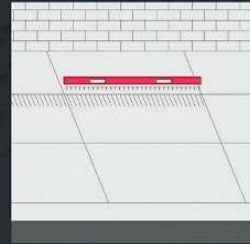
IMPLMENTATION

INTERRUPTION STRATEGIES

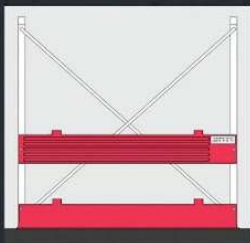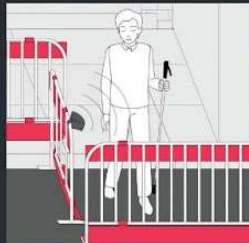TEXTURED SURFACE

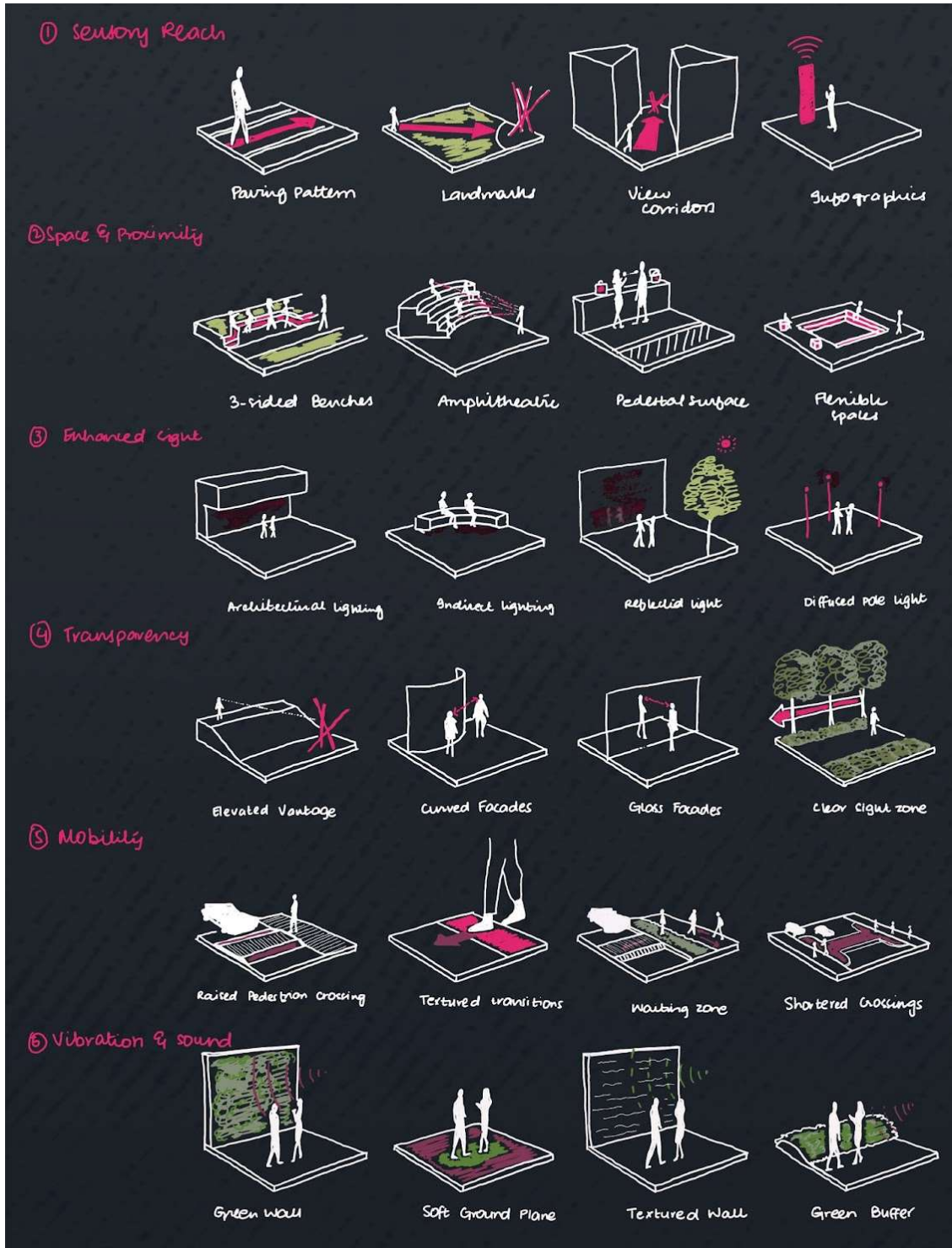TOP GUIDING EDGE

BOTTOM GUIDING EDGE
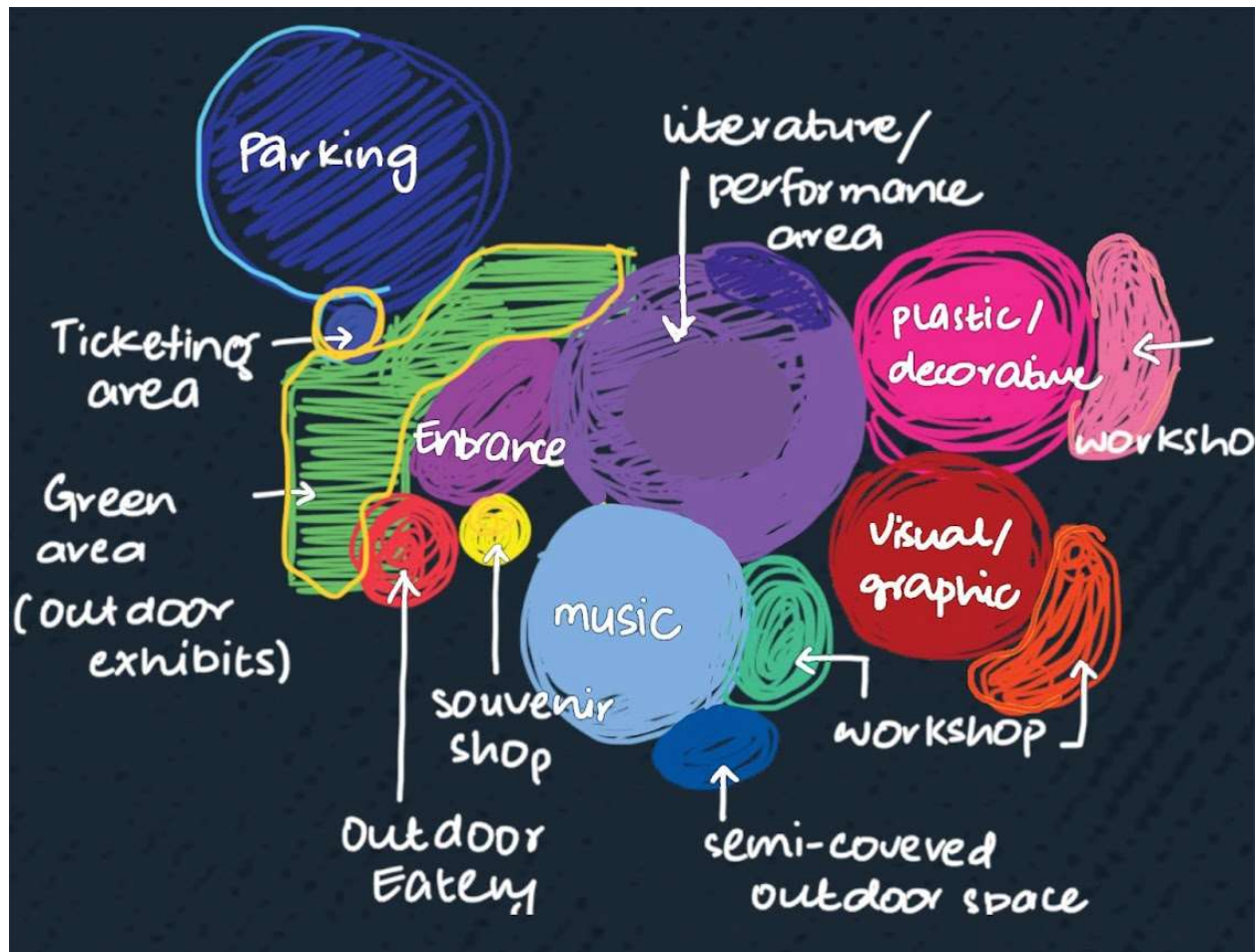

SCAFFOLDING

SPEAKER/ MICROPHONE DEVICE

ELEVATED PLATFORMS

Strategies for creating spaces that are more user-friendly for visually impaired people were also investigated. DeafSpace guidelines have been carefully studied for this purpose.

5.3 Spatial connections:

All the art zones were analytically placed in the bubble diagram. Zones sharing similar programs were placed near each other. Adjacency matrix was also made to study and understand the relationship of spaces with each other.
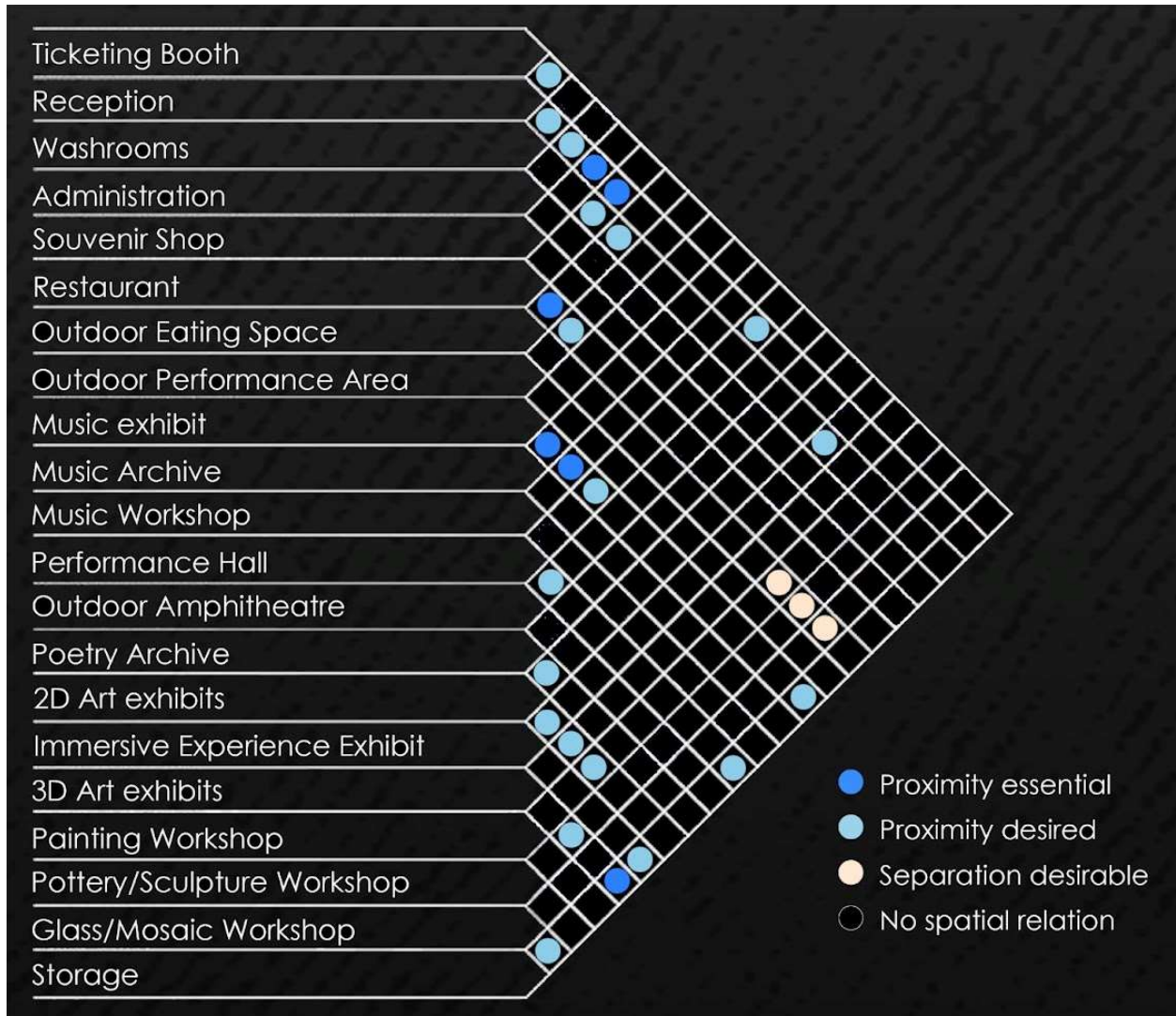
Figure 16 Adjacency Matrix

Different sketches were made to capture the essence of spaces and to understand the different

possibilities of the forms these spaces will materialize.

An initial plan was drafted after assimilating all of the key aspects, strategies and objectives.

5.4 Conclusion:

In conclusion, different things come into consideration when making design decisions. The site plays a key role in shaping those decisions. The concept and idea also play a vital role in forming the objectives the final product must encompass.

Chapter 06

6.1 Introduction

In this chapter, the design outcome for the project will be discussed. The key aspects of the developed design will be talked through.

6.2 Design description

The design for this museum requires spaces where art can manifest in different forms. The geometry of the building is an amalgamation of the different shapes used in the orthographic drawings of the pre-existing museums. The arrangement of the building blocks is based on the axes derived from the museums which are taken as nodes.

6.2.1 Thesis statement justified

"Designing an interactive art museum which will focus on hands on learning through the interaction and engagement of users with the exhibits. Art will be experienced via immersive environments that stimulate multiple senses."

Redefining the museum experience by incorporating interactive and immersive exhibits which enwreathe the user and improve their understanding and connection with art. This statement is justified by designing spaces which demand user interaction. By carefully incorporating programs which are a source of both education and entertainment.

6.3 Conclusion:

In conclusion, different things come into consideration when making design decisions. The site plays a key role in shaping those decisions. The concept and idea also play a vital role in forming the objectives the final product must encompass.

Works Cited

Emotional Responses." *Museum Management and Curatorship*, 2021, pp. 1–18.,

doi:10.1080/09647775.2021.1954985.

"Geometric Shapes." *The Guggenheim Museums and Foundation*,

https://www.guggenheim.org/teaching-materials/the-architecture-of-the-solomon-r-

guggenheim-museum/geometric-shapes.

Jelinčić, Daniela Angelina, et al. "Designing Sensory Museum Experiences for Visitors'

Pallasmaa, Juhani. *The Eyes of the Skin*. Wiley.

Perez, Adelyn. "Ad Classics: Solomon R. Guggenheim Museum / Frank Lloyd Wright."

ArchDaily, ArchDaily, 18 May 2010, https://www.archdaily.com/60392/ad-classics-

solomon-r-guggenheim-museum-frank-lloyd-wright.

"TDF Magnifiscience Centre." *MagnifiScience Centre*, 17 May 2022,

https://magnifiscience.org/tdf-magnifiscience-centre/.

http://www.tactilecity.org/

https://infoguides.rit.edu/c.php?g=545353&p=6922725

https://www.eden-gallery.com/news/7-different-forms-of-art