An-Najah National University
Faculty of Engineering
and Information Technology

WORLD WITHOUT WALLS

-Storytelling Museum-

By
Majd Odeh

Supervisor
Dr. Sameh Monna
Dr. Hassan Al-Qadi
Dr. Khaled Qamhieh
Dr. Waseem Salameh
Eng. Duaa' Mallah
Eng. Ahmad Al-Hajji

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الإقرار

أنا الموقع أدناه، مقدم الرسالة التي تحمل العنوان:

World without wall - Storytelling Museum -

أقر بأن ما شملته هذه الرسالة إنّما هو نتاج جهدي الخاص، باستثناء ما تمّت الإشارة إليه حيثما ورد، وأنّ هذه الرسالة ككل، أو أيّ جزء منها لم يقدّم من قبل لنيل أيّ درجة أو لقب علميّ لدى أيّ مؤسسة تعليمية أو بحثية أخرى.

Declaration

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

Student's Name: **اسم الطالب: مجد ياسر سليم عودة**

Signature: **التوقيع:** 

Date: **التاريخ: 5 / 1 / 2023**

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Abstract

A Palestinian Storytelling Museum on a part of the apartheid wall - after the liberation -, as the wall is an intensification of the substitutionary settlement project based mainly on the policy of ethnic cleansing carried out by Israel (the occupying power) in the occupied Palestine.

The idea of this research stemmed from the reality experienced by the Palestinian people from fragmentation, difficulty of movement, land confiscation, killing and displacement as a result of the occupation policies. All these crimes have to be documented in a museum directed to all people from all over the world.

This research includes a general explanation about the project starting from talking about the history of the wall, then the importance and need of the project. Then we moved on to analyze similar case studies. After that we analyzed the project program, and we came out with approximate areas and functional relations. Finally, we chose a site for the project and analyzed it from all climatic, historical and other aspects.

The final chapter shows the final architectural result which includes the concept, 2D architectural drawings and 3D rendering shots.

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Chapter 1

Introduction

1. Chapter one: Introduction

A Palestinian Storytelling museum on a part of the apartheid wall - after the liberation -, as the wall is an intensification of the substitutionary settlement project based mainly on the policy of ethnic cleansing carried out by Israel (the occupying power) in the occupied Palestinian territories, including Jerusalem and its environs, where several examples and issues on the ground will be addressed and reversed in an architectural way to facilitate the access of the image to future visitors to the museum.

1.1. Historical background

1.1.1. What is the apartheid wall

In the beginning of April of the year 2002 AD, Israel (the occupying power) invaded the entire West Bank with the so-called “Protective fence Operation” , whereby all the cities, villages and camps of the West Bank were subjected to a comprehensive curfew that lasted 17 days, and Palestinian President Yasser Arafat was besieged at his residence in the Muqata’a. At this time, and while the world was preoccupied with what was happening in the region, Israel (the occupying power) began constructing the first phase of the apartheid wall in the village of Phar’on, south of Tulkarm, before the Zionist parliament decided to start construction in June of the same year.

In August of the same year, the occupation forces began completing the first phase of the wall, with a length of 145 km (including 20 km in Jerusalem), starting from the village of Zabouba in the north of Jenin and ending in the village of Masha in Salfit, passing through both Tulkarm and Qalqilya governorates. The completion of the construction of the first phase of the wall was announced in early August 2003.

At this stage, 167,000 dunams between the wall and the Green Line were confiscated and isolated, which is equivalent to 2.9% of the total area of the West Bank. In sum, the first phase of construction affected the lives of 210,000 Palestinians in all aspects, agricultural, social, health and educational. (PENGON,2003)

The apartheid wall extends approximately 810 km in length, where it systematically destroys the Palestinian road network and imposes a new road network for the Israelis so that the Palestinians of the West Bank are not allowed to use it.

We note here that the length of the apartheid wall triples the actual length of the West Bank, which is 311 km, this due to the meandering of the path of this wall, which the US Prime Minister described as "coiling like a snake". This is evident in Jerusalem, where the wall is wrapped around the three large settlement blocks, as shown in Figure 1.2.

Figure 1.1: The Apartheid wall - Palestine
(The Palestinian information center)

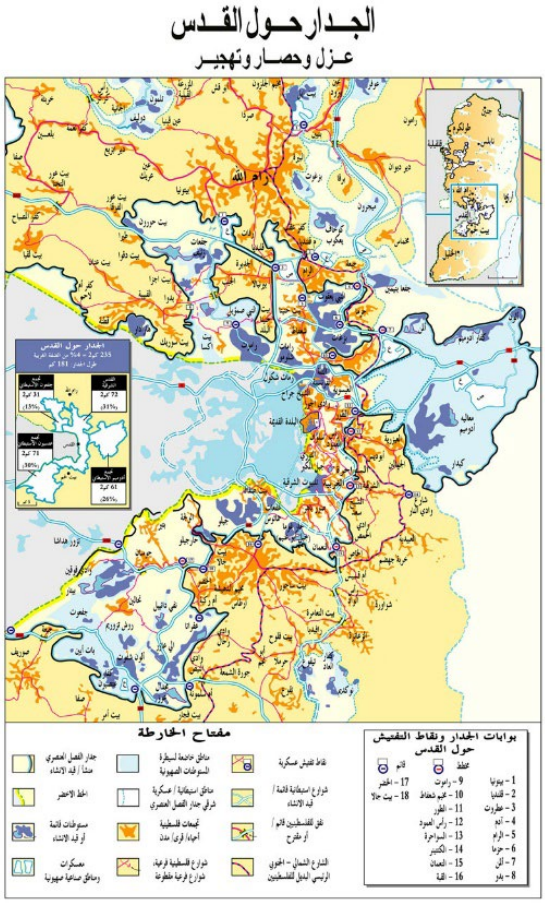


Figure 1.2: The wall around Jerusalem.
(Palestinian Grassroots Anti-Apartheid Wall Campaign)

As a result, we can understand that the objectives of Israel (the occupying power) from building the wall is to reinforce the policy of annexation and looting of Palestinian lands. The wall is set to annex about 46% of the West Bank (Figure 1.2), thus crowding the Palestinian population into narrow population centers that are not capable of future expansion because they are surrounded from all directions by military points, settlements and bypass roads. Noting that the International Court of Justice in 2004 recognized the illegality of this wall.

Therefore, the main objective of erecting this wall is to reinforce the policy of annexation that will sooner or later force the Palestinian population to leave Palestine by creating a suitable environment for this migration.

This saying was made after Israeli Prime Minister Sharon's visit to South Africa, which largely reflects the current Palestinian reality:

"You can't load people in trucks nowadays and through them outside the borders, you create positive conditions to convince them to leave".

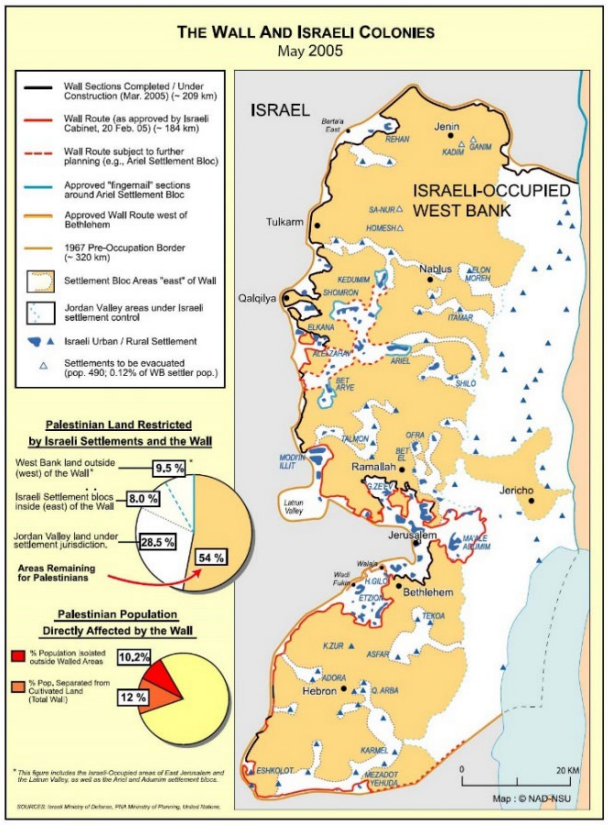


Figure 1.3: The Wall and Israeli Colonies.

(PENGON)

Concerning the structure of the wall, this wall was built of concrete on 20% of its length, mainly in some areas of Bethlehem, Ramallah, Tulkarm, Qalqilya and the vicinity of Jerusalem. The wall is 8 meters high (twice the Berlin Wall) and is dotted with a large number of watchtowers and gates. (Stop the wall)

The width of the wall ranges from 30-100 m due to the so-called "buffer zone", which paves the way for large-scale demolitions and evictions of the residents of these areas (Figure 1.3).

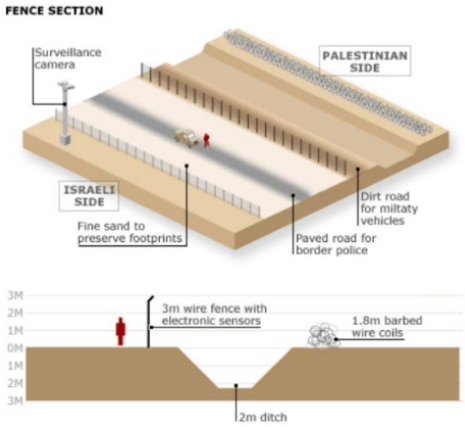


Figure 1.4: The wall buffer zone.

(Palestinian Grassroots Anti-Apartheid Wall Campaign)

1.1.2. Museum terminology

According to the International Council of Museums (ICOM): “A museum is a not-for-profit, permanent institution in the service of society that researches, collects, conserves, interprets and exhibits tangible and intangible heritage. Open to the public, accessible and inclusive, museums foster diversity and sustainability. They operate and communicate ethically, professionally and with the participation of communities, offering varied experiences for education, enjoyment, reflection and knowledge sharing.”. (International Council of Museums).

1.1.3. The birth of museums

Civilizations over time left many material remnants that were used in different areas of life, so these remnants differed according to the time, place and culture associated with them. These remains are subject to loss, destruction and disappearance due to human interventions or natural factors over time, hence the need for a place to preserve human history.

The word museum did not have the same meaning we mean today. In its Greek origin, it was meant (seat of mesus), which is the god of arts in Greece, and was considered a place for meditation or a philosophical complex.

As for the Latin derivation of the word museum, in the days of the Romans, it was limited to places of philosophical discussion.

In the early third century BC, Ptolemy I founded the Great Museum in Alexandria, which contained a scientific college and a large library. It was considered a prototype for a university rather than a place for preserving historical and heritage assets.

(Figure 1.4)

The word museum was revived again in Europe in the fifteenth century to be used to describe the collection of "Lorenzo de' Medici", the ruler of Florence, who was interested in the arts. But the word museum was referring to the place contents more than the place itself.

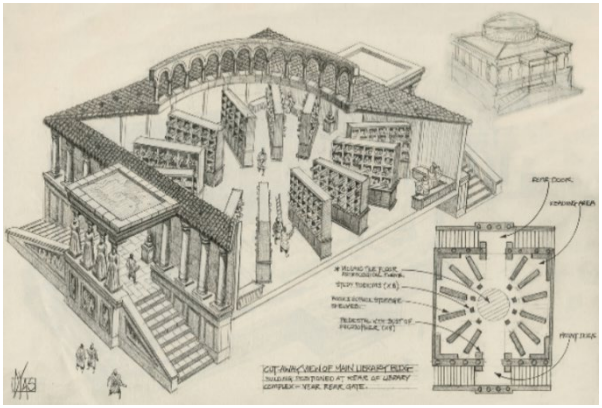


Figure 1.5: The Great Library of Alexandria

1.1.4. Museum types

Due to the diversity and differences in the origins of museums, and the different goals for which museums are built, there is no strict division of the types of museums. But it can be divided according to several aspects, the first of which is the **Purpose of the museum:**

- History and Archeology Museums.
- Natural history and natural science museums.
- Art museums.
- Science and technology museums.

(Lewis, 2021& Hayati, 2022)

Museums are also divided in terms of geographical distribution into:

- International museums, ex: The British Museum – London.
- Reginal museums, ex: National Archaeological Museum – Naples.
- Local museums, ex: The Egyptian Museum – Cairo.
- Site museums, ex: Site Museum of Paracas Culture – Peru.

(Hayati, 2022)

1.1.5. The Roles and Aims of the Museums

Museums are scientific centers that provide knowledge to researchers and visitors. They address all segments of society and convey facts in a simple and effective manner. Therefore; It plays an important role in spreading education in the shortest time. Museums provide opportunities to learn about the heritage of man throughout his history, and thus cultivate in people the love of the homeland and implant in society the idea of pride in identity and belonging to the homeland, and this results in a moral responsibility towards the homeland.

We can summarize some of the most important points :

1. Feature and protect Cultural and scientific heritage.
2. Maintain and preserve artifacts.
3. Act as a learning resource for students.
4. Bring tourism to the area.
5. Increasing community and national belonging.

(Hayati, 2022)

1.2. The importance of the project

A world free of walls, conflicts, wars and barriers, a world dominated by human values, love and peace. This is what every Palestinian desires after the series of occupations and wars that Palestine has lived through history. The Palestinian people do not wish for any people in the world to go through an experience similar to their suffering over the years. Therefore, the importance of the project lies in conveying this message to the people of the world, in a region where great suffering has been embodied by apartheid and ethnic cleansing in its worst forms, it is the apartheid wall in Palestine.

The apartheid wall is a clear physical example of ethnic cleansing and racial discrimination. Globally, there are many people who have also been subjected to this over time, starting with the Native Americans in the Americas, passing through the people of South Africa, and ending with the Palestinians.

This project sheds light on all the oppressed people that the world has forgotten, with the aim of looking with an optimistic eye towards a future free of such crimes by increasing societal and global awareness of the tragedies of these people, taking the Palestinian cause as a clear and explicit example of this. Therefore, the importance of this project is not limited to the Palestinian people but goes beyond it to the whole world.

Shedding light on the apartheid wall built on Palestinian lands helps draw attention to other walls that are being built around the world and aim to isolate people and perpetuate discrimination and racism, such as the wall that the United States built on the border with Mexico after indigenous lands were confiscated. These walls were not built to protect the borders of states, but embody forms of discrimination, oppression and exploitation in their worst forms.

The importance of this project lies in raising awareness about the danger of this model's dominance in the world under security pretexts, and to create a wide network of solidarity groups with the aim of pushing for the removal of all walls and the cessation of all forms of discrimination, racial segregation, expulsion, persecution and exploitation.

If we want to go back a little to prove how difficult it is to convince people of what is really happening on the ground, when Israel (the occupying power) began building the apartheid wall, the Palestinians had great difficulty convincing the world that Israel (the occupying power) was actually building an 8-meter-high wall with a length of 810 kilometers across the West Bank. It was unbelievable. (Stop the wall)

1.3. The need for the project

1.3.1. Current need

The need for such a project is a purely Palestinian need to end the occupation and the injustice that has been on the Palestinian people for many years, and is linked to the hope to live in freedom that the Palestinian people have been deprived of for centuries. "It is time to stop the repeated occupations of Palestinian land."

The honorable history of the Palestinian people, full of struggles and sacrifices, needs someone to document it and reflect it to the world, not with the aim of gaining their sympathy, but to push them to take their moral responsibilities firstly towards their people, and secondly towards the Palestinian people. Since they are bound by the Geneva Conventions [(1)], especially the first common article in the four Geneva Conventions which states *"**The High Contracting Parties undertake to respect and to ensure respect for the present Convention in all circumstances**"* obliging these states to fulfill their obligations towards the Palestinian people, and empowering them in their right to self-determination. (International Committee of the Red Cross)

1.3.2. Future need

Since this project is closely related to the liberation, it will necessarily meet the future needs and will have extended dimensions. Therefore, such projects increase the people's clinging to the land to prevent a repetition of what the Palestinian people have lived through over the past decades and centuries of successive occupations and colonization on their land, and this can only be achieved by investing in the human being as well as land investment.

Therefore, the mind and the human being must be liberated along with the liberation of the land by unleashing thinking and creativity, so future generations must be linked to the sacrifices of their ancestors to increase their adherence to the land and to make Palestine an oasis of peace and love.

[(1)] Geneva Conventions: It is a set of 4 international conventions concerned with the protection of basic human rights in wars, and this means the protection of civilians on the battlefield. The first was stipulated in 1864 and the last in 1949. In 2005, 190 countries joined the agreement.

(ICRC). https://www.icrc.org

1.3.3. The project needs regarding the site

Currently, Jerusalem is the best model that embodies the ethnic cleansing pursued by Israel (the occupying power), including land confiscation, eviction of residents, house demolitions, and a change in the demographics of the land.

The route of the apartheid wall which encircles the three big settlement blocks aims to annex these settlements to Jerusalem area and in return expel the Palestinian communities in the vicinity of Jerusalem outside the wall.

For example, the areas of Al-Eizariya and Abu Dis, which are only 5 km from Jerusalem, were removed outside the wall. On the other hand, some settlement blocks, 40 km away from Jerusalem, were included within the wall. As a result, 4 settlement blocks were entered into Jerusalem, with 200,000 settlers, and they expelled. 22 Palestinian villages, amounting to 215,000 Palestinians. (Figure 1.1) (Juma', 2022)

On the other hand, the strong historical religious link between Bethlehem and Jerusalem - due to the presence of the Church of the Nativity in Bethlehem and the Church of the Holy Sepulcher in Jerusalem – was broken. Bethlehem has been always part of Jerusalem but it was separated from the Capital only by Israel (the occupying power). (Figure 1.4)

So, choosing Jerusalem as a site for the museum embodies the effects of the wall and the effects of ethnic cleansing resulting from the wall in order to let the visitor live the same feelings experienced by the residents of these areas and realize the grave effects on the ground.

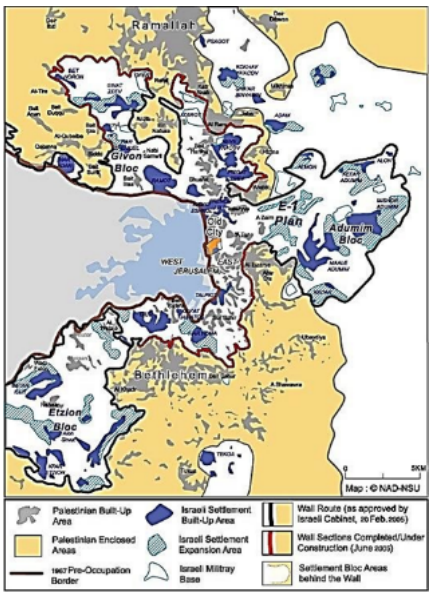


Figure 1.6: The separation between Jerusalem and Bethlehem.
(Palestinian Grassroots Anti-Apartheid Wall Campaign)

1.4. The main functions

The museum aims to serve as a captivating storytelling experience, showcasing the rich history of the Palestinian cause from 1917 to the moment of liberation. Its primary focus lies in the exhibition rooms, thoughtfully divided into distinct phases, each representing a significant period in the Palestinian narrative. These are the main functions :

a. The reception & lobby

b. Permanent main exhibitions

The museum's exhibition rooms are divided into three phases. The first phase focuses on the period from 1917 to the apartheid wall, highlighting the suffering endured. The second phase covers the uprising and turning point, showcasing the struggle towards liberation. The final phase explores the moment of liberation itself. These phases provide a concise yet immersive journey through the Palestinian cause.

c. Temporary exhibitions.

Areas for displaying artworks, which will be renewed periodically.

d. Café and Restaurant

e. Administrative area.

f. Services area.

Chapter 2

Case Studies

2. Chapter two: Case studies.

2.1.Jewish Museum Berline / Studio Libeskind

2.1.1. The Description of the museum

Location: Berline/ Germany.
Architect: Daniale Libeskind.

In 1987, a competition was announced to expand the old Berlin Museum, in addition to designing a new museum dedicated to revive the presence of jews in Berlin after the end of the world war II. In 1988, Daniel Libeskind won the competition. His design was different and distinctive, embodying Jewish life before and after the Holocaust. (Bianchini, 2022 & Pavka, 2010)

The museum was not a traditional museum, but rather a memorial museum in its new form, based on placing people in a specific environment that brings back their memory of what happened in a certain period of time (the Holocaust), and trying to connect them with the same feelings that people felt at that period, and this is the best way to make people remember specific event. (Tanović, 2021)

The museum was designed based on a background of meanings and concepts, first: we cannot talk about the history of Berlin in isolation from the contribution of German Jews to it, second: the Holocaust is one of the stages that the city of Berlin went through in the twentieth century.

Libeskind gave the museum a name “between the lines”, and in architecture, the lines do not mean the walls, but rather the spaces and the voids that form between those walls, and that, from his point of view, it expresses the Jewish void in Berlin after the Holocaust. (Arnold-de Simine, 2012)

2.1.2. The Site context

The museum was built next to an old Baroque building called The Kollegienhaus and it is " A Berlin history museum", where it was supposed, based on the architectural competition that was put forward in 1988, that two-thirds of the new building would talk about the history of Berlin and only one-third as a Museum of the Jews, but after Libeskind won the architectural competition, he convinced the organizers that The whole new museum will be a new Jewish Museum, and the old Baroque building (Berlin History Museum) will be used as an entrance to the new Jewish Museum, in addition to displaying the museum's holdings, and other functions. (Bekiers,1999)

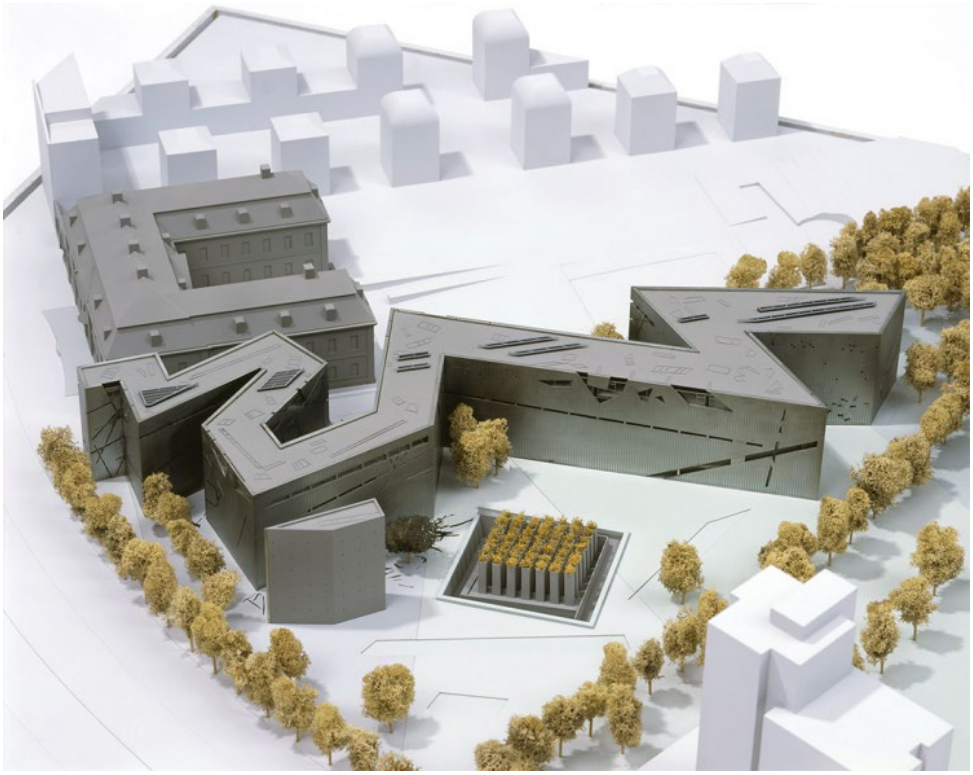


Figure 2.1: Architectural model of the design for the Jewish Museum Berlin
(Berlin Senate Department for Urban Development; Jewish Museum Berlin; photo: Jens Ziehe)

2.1.3. The relation between the museum and the berlin wall

"Drawing the Wall in February 1989 felt like demolishing it." Daniel Libeskind.
Libeskind says that he deliberately orientated the building (east-west). In Libeskind's suggestion, the building could be accessed from the east and from the west, even though the wall was still present when he designed the museum. Libeskind answered people's questions about his design by saying that, in his point of view, the wall would not always exist.

From another point of view, the zigzag shape of the museum also stems from the zigzag shape of the wall, which cannot be denied that it is part of the history of Berlin, although there is no connection between the Berlin Wall and the Jewish Museum.

Libeskind aimed to show the difference of lifestyle between the eastern and western side of the wall, also that the effect of this wall could not be erased one day, and this is clearly evident on the urban fabric of the city.
Libeskind viewed buildings as a tool for preserving the past. He expressed that we cannot go back to 1933, erase the past and move on as if nothing had happened.

(Libeskind,2018)

"You can pretend to have reconnected the city by demolishing old walls and building new ones. But you cannot erase the walls that remain in people's minds."

- Daniel Libeskind

2.1.4. The design concept

The project concept is closely related to the name that Libeskind gave to the project (between the lines). The name refers to two lines, one of those lines zigzag to infinity, and the other is straight, but divided into a lot of segments.

Libeskind says, there are some main elements that inspired him, namely:

One of these inspirations was from the music, where a piece of music about the Jews, consisting of 3 parts, but the third part was not completed due to the restrictions that were imposed on the Jews, Libeskind has reversed this void on the design as shown in Figure 2.3 & Figure 2.4 (Tanović, 2021).

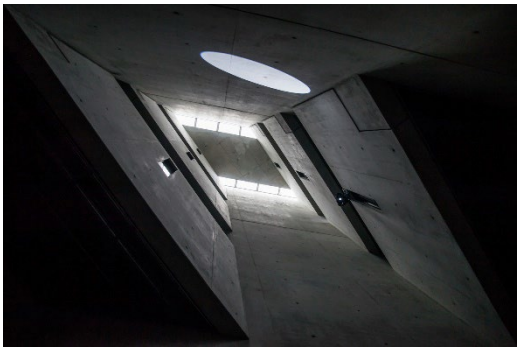


Figure2.2: The Void
(Esakov, 2010)

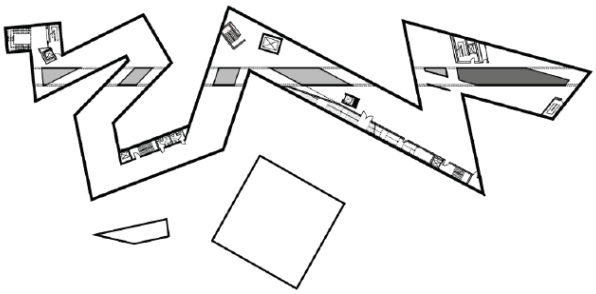


Figure 2.3: Location of the Voids
(First Floor plan, 2015)

As for the another inspiration, the murdered and expelled Jews, were represented as concrete blocks in "The garden of Exile". See Figure 2.5.

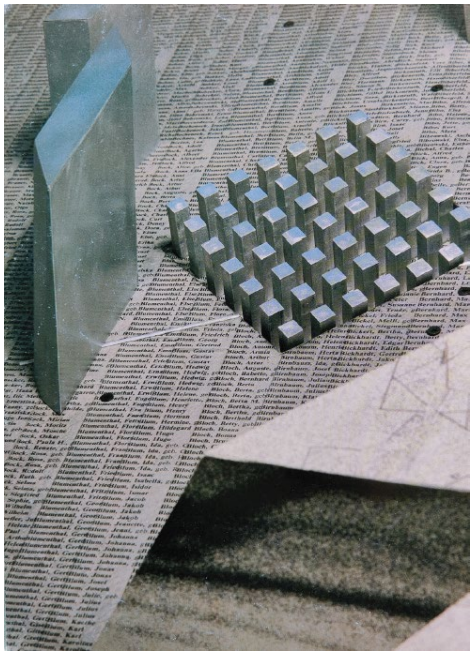


Figure 2.4: The garden of Exile
(Tanović, 2021)

One of the requirements of the competition was that there should be a close connection between the new building and the old Baroque building, so Libeskind reversed this connection, but did not make it visible from the outside. The connection between them was from underground, so the entrance from the old building led from the underground to the new building.

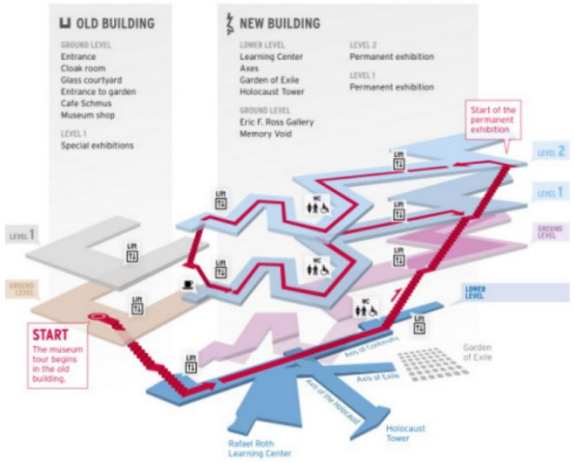


Figure 2.5: The relation between the old and the new building
(Yerer,2018)

2.1.5. The Functional Analysis

There are 4 important spaces in the building, the 3 main axes in addition to the memory void. On the upper floors there is a gallery in addition to other functions that will be mentioned later.

First, we will analyze **The Basement Floor**, as it is the most important floor in Libeskind's design because it contains the most important elements in the design

The entrance

The entrance to the building was designed in an unusual way. In order for the visitor to access the new museum, he must enter from the old Baroque building through an underground corridor by stairs that goes down to reach the basement floor of the new building.

The purpose of this is to make the visitor feel anxious, lose a sense of direction and feel disconnected from the outside world, in order for people to emotionally connect with the stories of the Holocaust victims presented on that floor (Pavka, 2010 & Tanović, 2021).

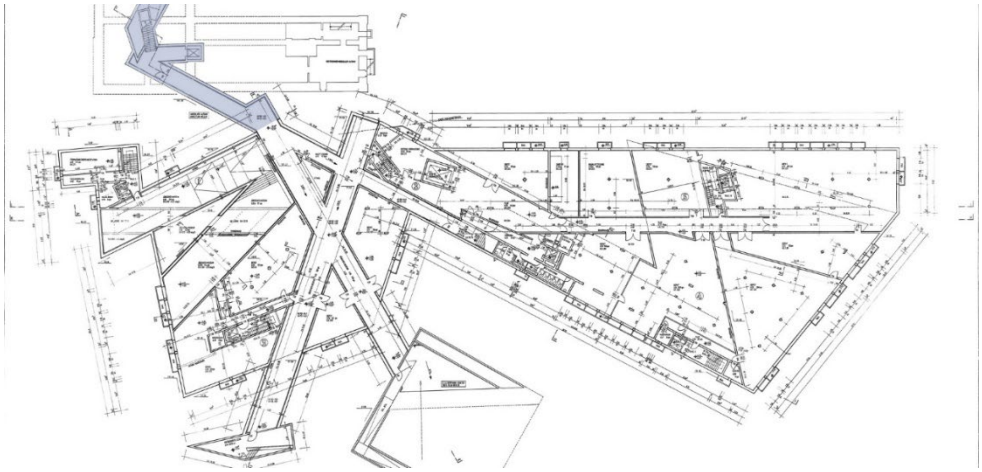


Figure 2.6: The Basement plan shows the entrance to the museum
(Dezeen,2022)

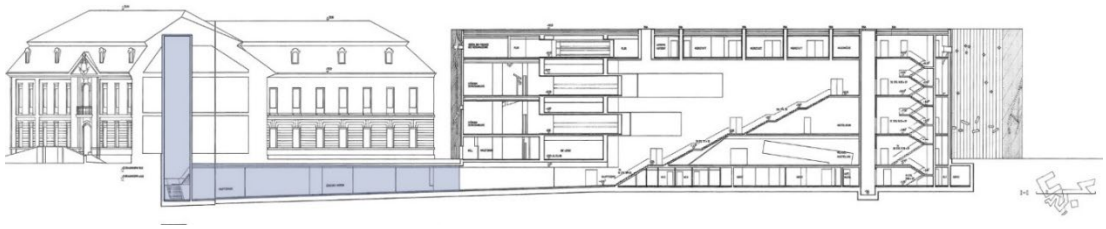


Figure 2.7: Section shows the entrance to the museum
(Dezeen,2022)

The three axes

The entrance leads to a crossroads of three axes, the visitor stands confused which of them he has to go through. the presence of a central island means that only two axes can be viewed at a time, it's impossible to have an overall vision.

The first is the axis of continuity that leads the visitor to the exit staircase again to the ground floor and the upper floors where the gallery is located. The second is the axis of exile, which leads the visitor to the garden of exile that was previously talked about. As for the third axis is the axis of the Holocaust, which leads to the voids inside the building (Tanović, 2021).

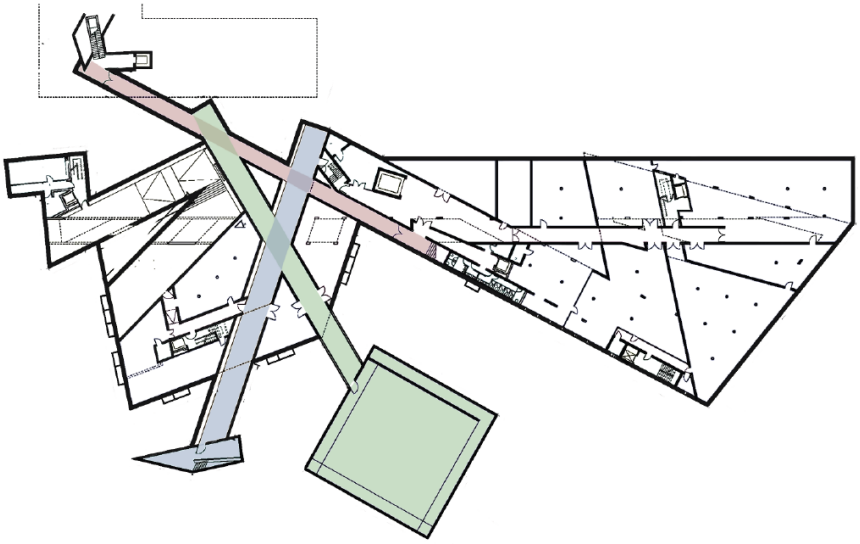


Figure 2.8: The Basement plan shows the three axes
(Tanović, 2021)

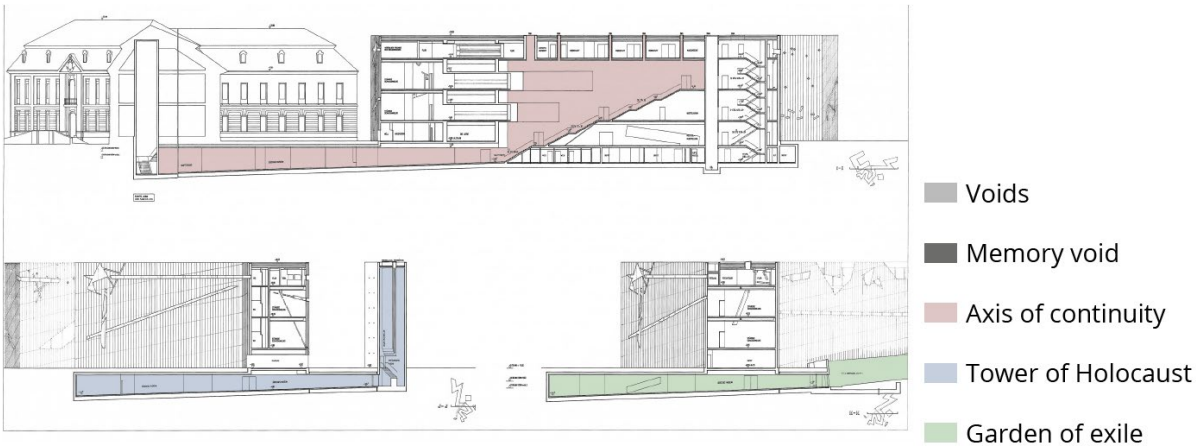


Figure 2.9: Sections show the three axes
(Tanović, 2021)

The axis of continuity

The axis of continuity is the way to reach the exit and the upper floors through a long staircase lit with natural light, so that it is the only way to escape the darkness below, Figure 2.11, the architect in this design shows hope despite the darkness that the target group suffered from one day.

Continuity means the continuity of history, as the stairs lead to the museum, where exhibits, sculptures and pictures are located, in addition to the visitor's ability to see the entire city of Berlin from the windows of the upper floors.

The concrete beams indicate the difficulties in climbing, and the difficulties in connecting the two walls together (Dezeen,2022 & Tanović, 2021).

Figure 2.10: The Axis of continuity
(Dezeen, 2022)

The axis of Exil

The axis refers to those forced to leave Germany, and leads to the concrete pillars of the Garden of Exile.

Libeskind put the columns at an angle of 12 degrees, which gives a sense of dizziness, unease and confusion to the visitors. These columns are topped with plants that indicate hope and optimism (Hany,2022 & Tanović, 2021).

The Axis of the Holocaust

The axis of the Holocaust leads to the Holocaust Tower. There are many collectibles of Holocaust victims along the path leading to the tower.

The Holocaust Tower is a dark, high tower with gray concrete walls, it's cold, dark and completely empty, with dim light coming from a hole in the top of the ceiling .The visitor enters this void through a heavy iron door which closes the void. It is a silent experience that gives a feeling of isolation and unease (Hany,2022 & Tanović, 2021).

Figure 2.11: Tower of Holocaust
(Tanović, 2021)

The memory void

The floor of this void is covered with miserable metal faces dedicated to the victims of the Holocaust and World War II. It's a three-story-high space, was built of cold concrete with a dim natural light sneak in from the ceiling and the walls.

When visitors walk over those metal faces, a disturbing sound echoes from those tall concrete walls, a sound which makes visitors feel guilty, this design refers not only to the people who erase the faces, stories and history of other people, but the people who see this and remain silent (Tanović, 2021).

Figure 2.12: The memory void
(Esakov, 2010)

The Basement Floor - Analyzed plan -

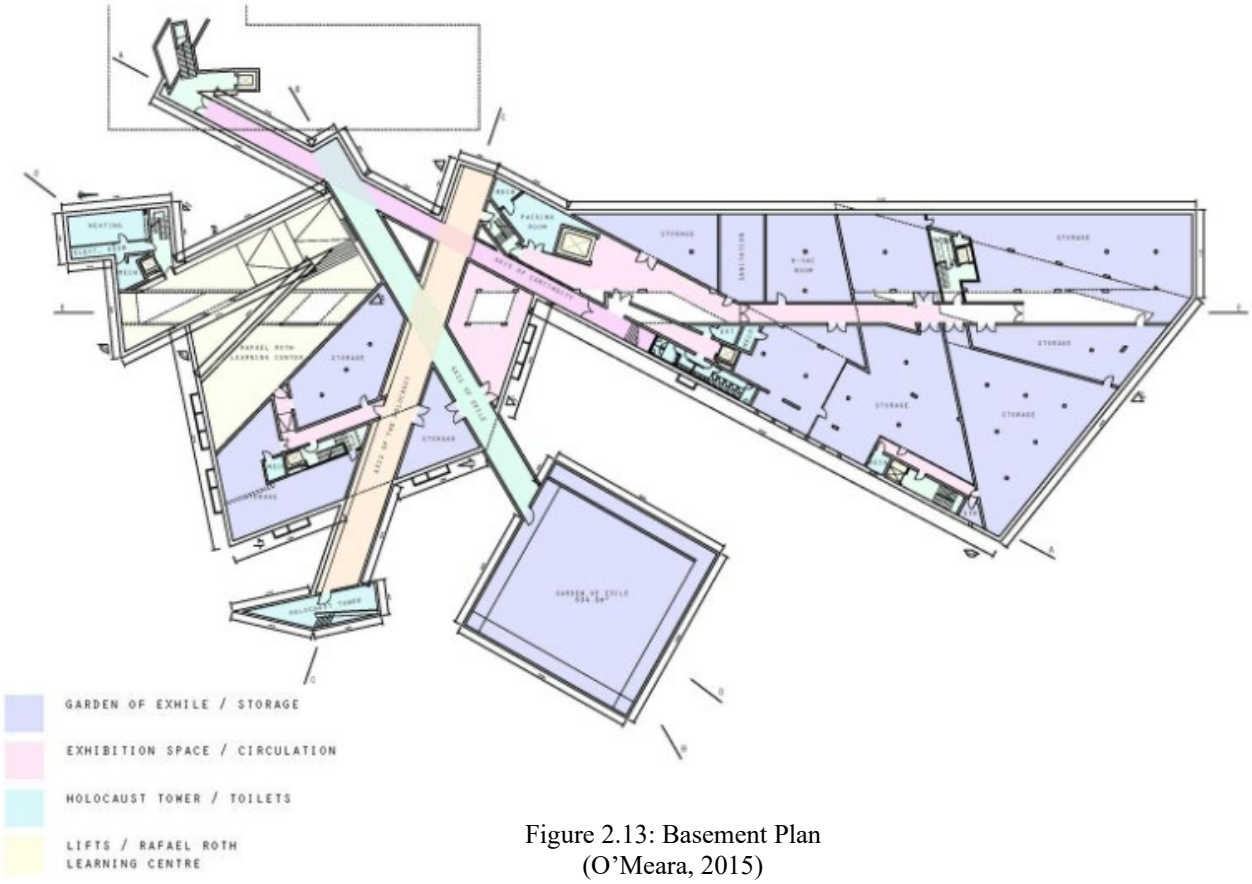


Figure 2.13: Basement Plan
(O'Meara, 2015)

The Upper floors

The zigzag shape of the building gives a sense of a maze to the visitor, so some visitors complained of the difficulty of understanding the movement in these floors, because these floors display a sequential series of events that passed through the city of Berlin, so there must be a sequence of movement to understand the content, because of that the museum directors set out explanatory signs on the ground to facilitate movement for visitors, but Libeskind refused to do so, arguing that it underestimated the design, so they removed them again (Tanović, 2021).

The upper floors generally contain the main permanent and temporary exhibition area, in addition to workshops, staff areas and service rooms (bathrooms and ventilation), as shown in the following plans.

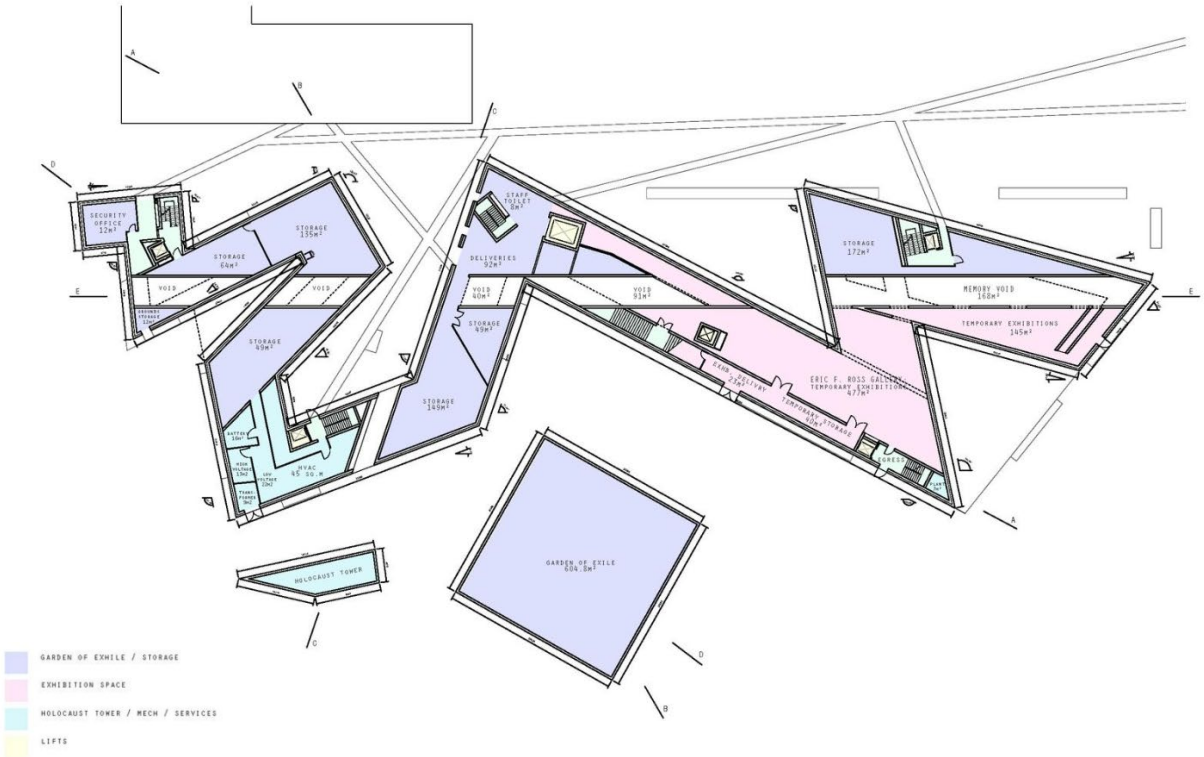


Figure 2.14: Ground Floor Plan
(O'Meara, 2015)

The temporary exhibition area on the ground floor is accessed through a staircase on the Continuity axis.

The area that visitors can access on this floor is limited, because the rest of the floor contains the mechanical and service rooms in addition to staff and storage rooms (Tanović, 2021).

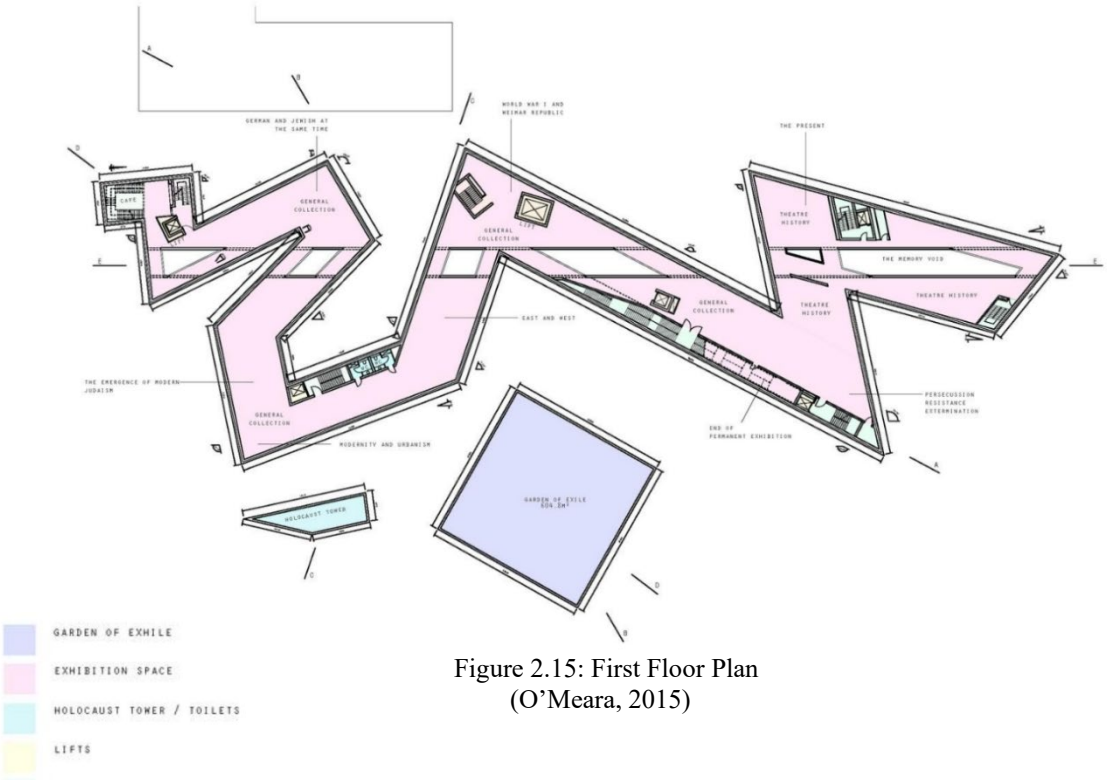


Figure 2.15: First Floor Plan
(O'Meara, 2015)

The first floor is the beginning of the main exhibition area, which talks about successive events and eras in the history of Berlin.

It is accessed through a staircase on the Continuity axis, in addition to elevators for people with special needs, and Services staircases.

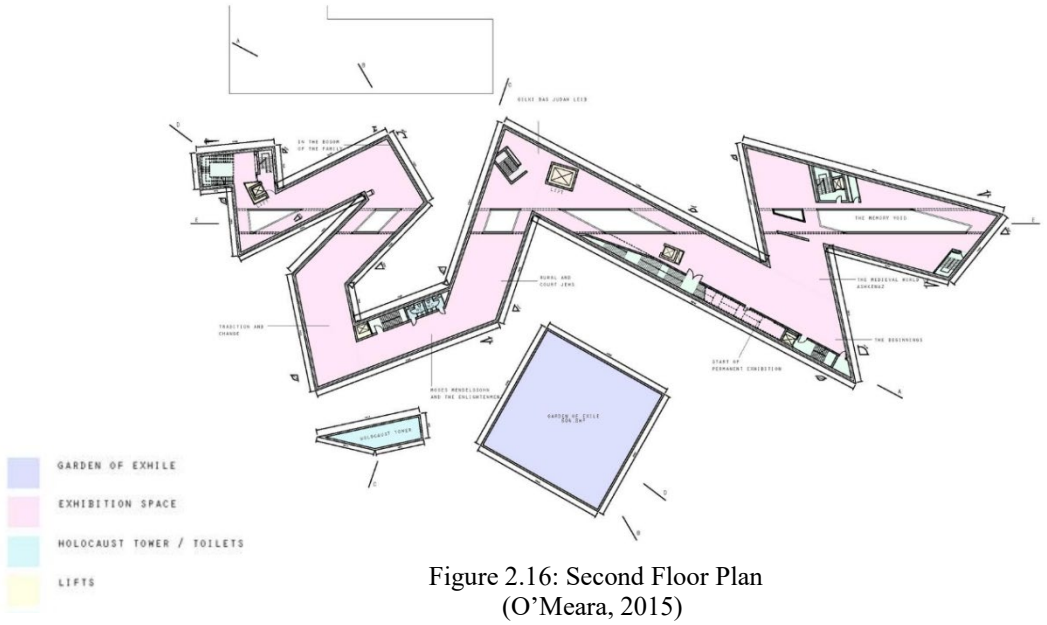


Figure 2.16: Second Floor Plan
(O'Meara, 2015)

The second floor is completely similar to the first floor as it is a continuation of the events presented on the first floor, and is accessed in the same way as well.

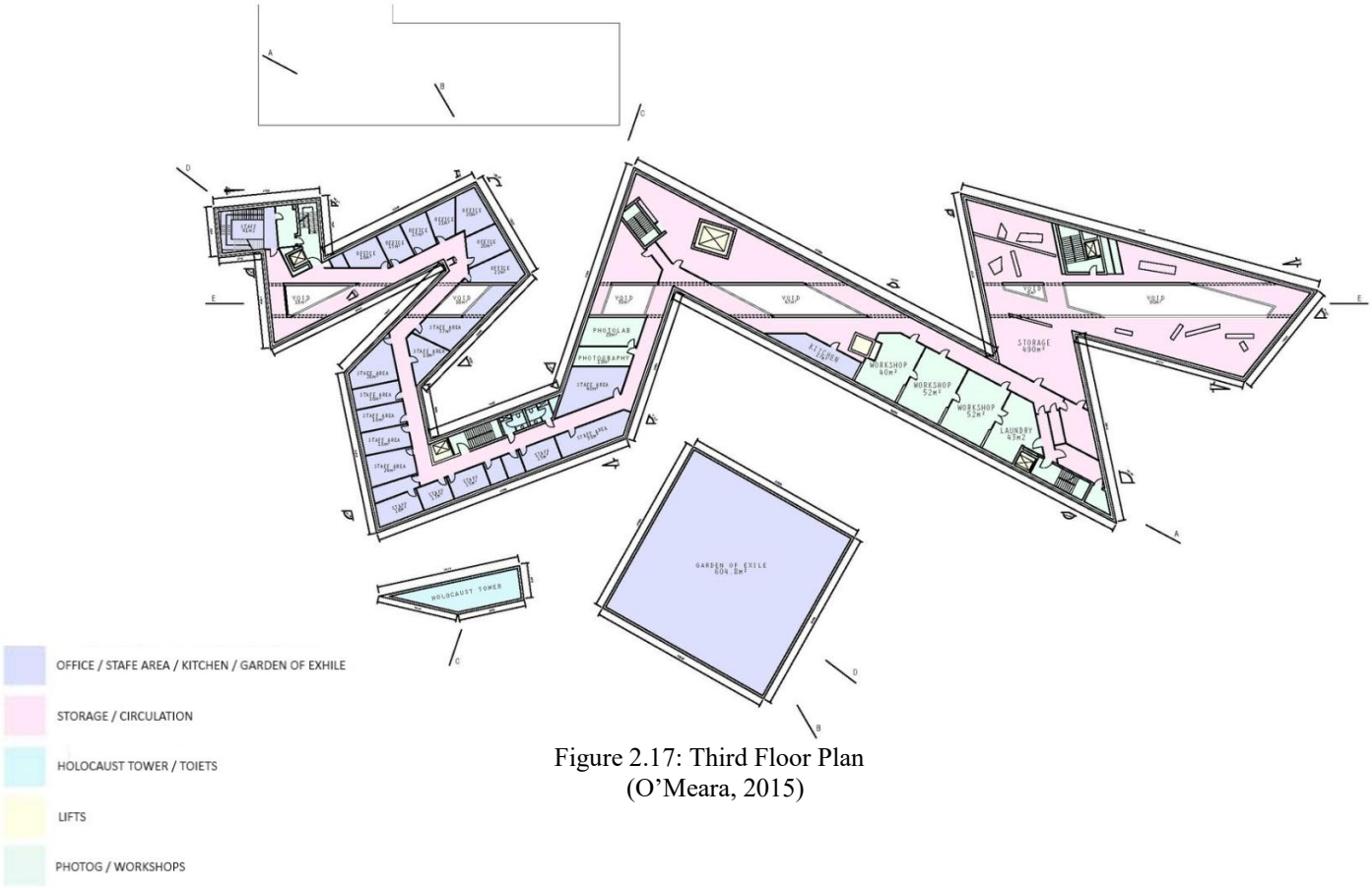


Figure 2.17: Third Floor Plan
(O'Meara, 2015)

The third floor is completely different from the floors that precede it, there are no exhibition areas on this floor, but there are staff offices in addition to workshops and rooms for photography.

We note that there is no access to the third floor from the continuity staircase, because this floor is not intended to be used for museum visitors but for the staff and the museum friends.

2.1.6. Sections, elevations and structure

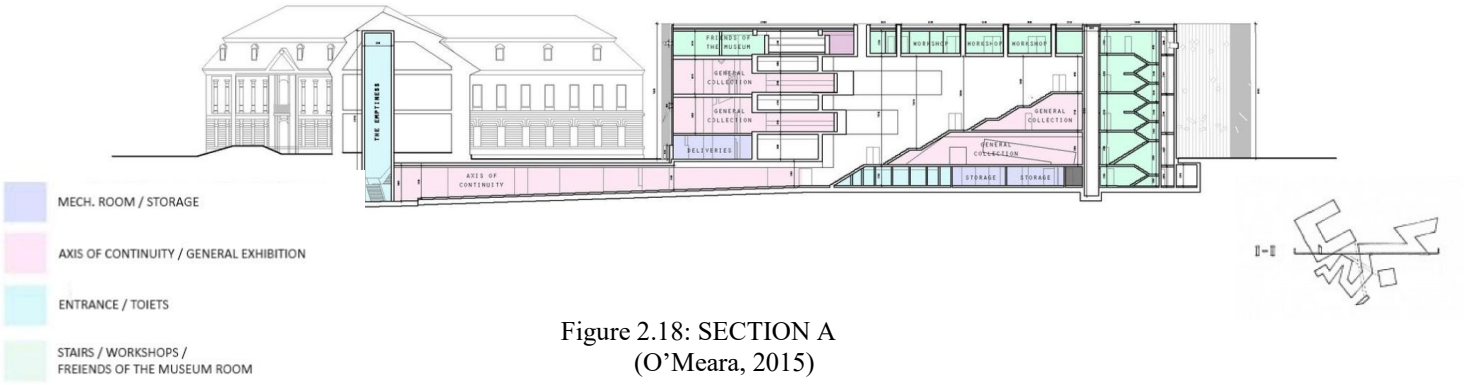


Figure 2.18: SECTION A
(O'Meara, 2015)

The first section passes through the old and the new buildings, where the entrance to the museum appears and its connection with the Baroque building from the underground, and also shows the axis of continuity, and the staircase that reaches to the second floor where the public exhibition area is located.

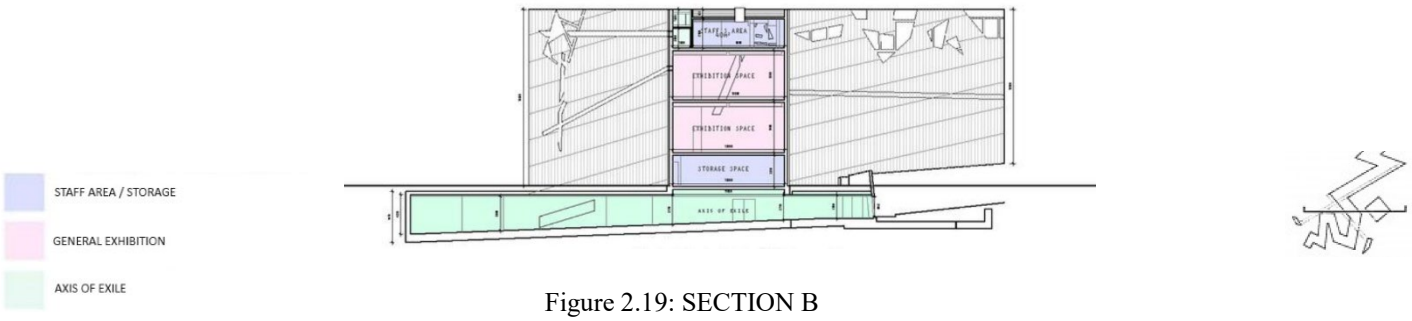


Figure 2.19: SECTION B
(O'Meara, 2015)

The second section passes through the axis of Exile that leads to the exile garden as shown in Figure 2.20.

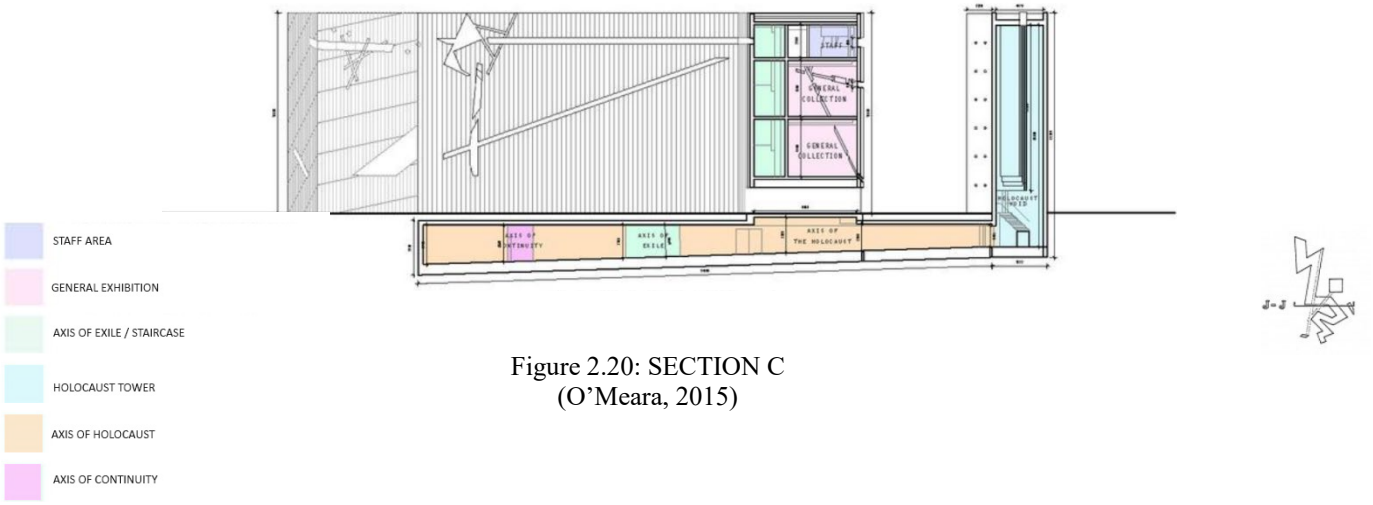


Figure 2.20: SECTION C
(O'Meara, 2015)

The third section shows the intersection of the three axes with each other (the axis of continuity, the axis of the Holocaust, and the axis of Exile), but it passes mainly through the axis of the Holocaust that reaches the Holocaust Tower as shown in Figure 2.21.

The elevations

For the museum's facades, an uncoated-zinc is used as a material for the exterior facades, punctuated by many random lines that emphasize the ambiguity and abstraction present throughout the building.

The Berlin Museum was one of the pioneering projects in the use of reflective steel as a material for the external cladding of the building, preceded only by the Frank Gehry Museum Bilbao, the construction of the Bilbao Museum was completed only two years before the Berlin Museum.

Libeskind comments on this comparison, ***"Never meant it as a shiny building, like Bilbao, but something that will recede in its figure".*** Libeskind's aims to use uncoated zinc, so that as the building reacts with time, it changes color and age, and eventually merging more with the windows that permeate it (Andenmatten,2011).

One of the distinguishing features of the building is the strip windows that penetrate the building's exterior facades, the goal behind their thinness is to bring in soft light into the building in order to create a dramatic environment inside, and separate visitors from the outside world as well.

When looking at these windows for the first time, we feel that they were placed and arranged randomly, but there was a story behind these windows like the rest of the design elements in the building. Libeskind decided to treat the exterior facades as if they were a physical scheme for Berlin's past. He designed them by defining the residences of famous personalities in Berlin, such as Mies van de Rohe, and by linking the lines extending from those sites, they appears on the architectural facades, and it feels like as if they describe the history of the city (Andenmatten,2011).

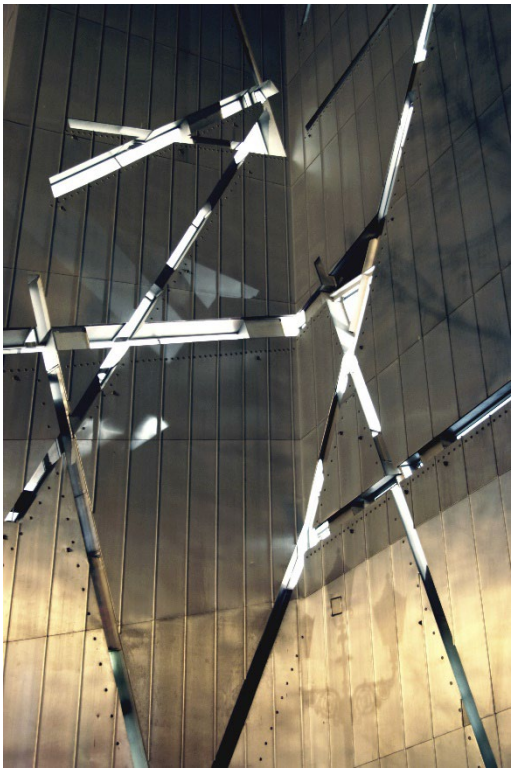


Figure 2.21: The museum windows from outside (Studio Libeskind)

Figure 2.22: The museum windows from inside (Jens Ziehe)

As for the structure of the building, the external facades are the structural basis of the building, which made the need for internal columns unnecessary.
Steel-reinforced concrete was cast-in place to create the structure, and the zinc cladding was cold-formed in site. The façade structure was very complicated and needs a lot of structural details (Andenmatten,2011).

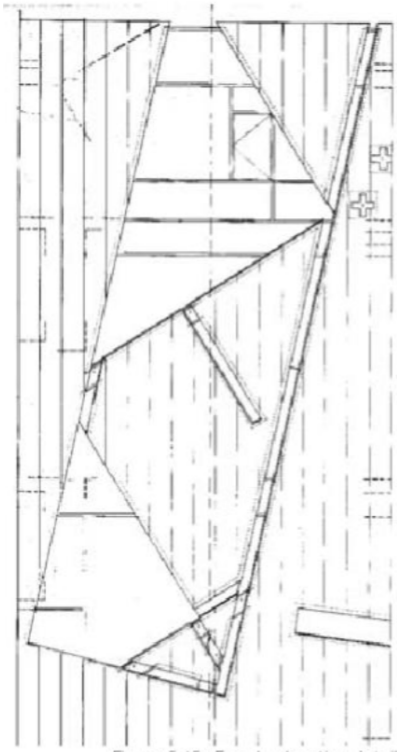


Figure 2.23: Façade details
(Andenmatten,2011)

2.1.7. Criticism

After analyzing the case study, it must be mentioned that this case was chosen in order to show an important issue, that the Jews at one day were subjected to injustice by certain parties and countries, as a result of which they fled to Palestine where the Palestinian families welcomed them and shared their daily sustenance, but the result was that in In 1948, they killed, displaced and exterminated the Palestinians, and they committed more horrific crimes than those that ever occurred to them.
Moreover, after analyzing the case study, we proved the double standards of the world and the great powers in judging issues, focusing on the Holocaust, neglecting the Palestinian cause and other oppressed peoples' issues.

2.2. Red Location Museum

This case study is selected because its content is very similar to the project intended to be designed, which is the idea of apartheid and ethnic cleansing, also because of there is a strong connection between the site and the project in this case.

2.2.1. The Description of the museum and the site context

Location: New Brighton, Port Elizabeth South Africa.
Architect: Wolff Architects & Noero Architects

This museum honors those who fought for their liberation from the apartheid regime that prevailed in South Africa. It was built on the site of the first black town settled in the Port Elizabeth area, where it is considered "the site of the national struggle in South Africa". (Noero)

The name of the project (red) stands for the red rusting iron buildings, which date back to the early twentieth century, when the Boers used them as a concentration camp in Uitenhage. After that, they painted these steel buildings red, and thus the name "Red Location" was given to that site. Then these buildings were used as primitive dwellings for black people in 1902 during the periods of apartheid, and the site became a site for the struggle against apartheid, as where many prominent leaders and politicians were born. (Noero & Rinaldi,2012)

The museum is part of a major cultural project established in the region, aimed to exposing the crimes of apartheid, and to show the cultural life and ethnic diversity that exists in South Africa.

Figure 2.24: Project aerial image
(Rinaldi,2012)

Figure 2.25: Houses at the Red Location
(Msila, 2013)

2.2.2. Concept and Design

The Red Location Museum is one of the memorial museums, which goes beyond the idea of the traditional design of museums, where the boring narration of events. So that visitors in the memorial museums are treated as participants and not as consumers.

When designing the museum, the designers relied on the ideas of Andreas Heusen, who wrote extensively on the concepts of history and memory in architecture. (Wolff)

The architect used the corrugated iron as a way to reflect the random construction of the surrounding buildings (Figure 2.26) containing 12 memory boxes as shown in (Figure 2.27).

The challenge in museums lies in linking successive historical events of particular people or geographical area within one story. The memory boxes used as a tool to link these events in an expressive way (Noero & Rinaldi,2012).

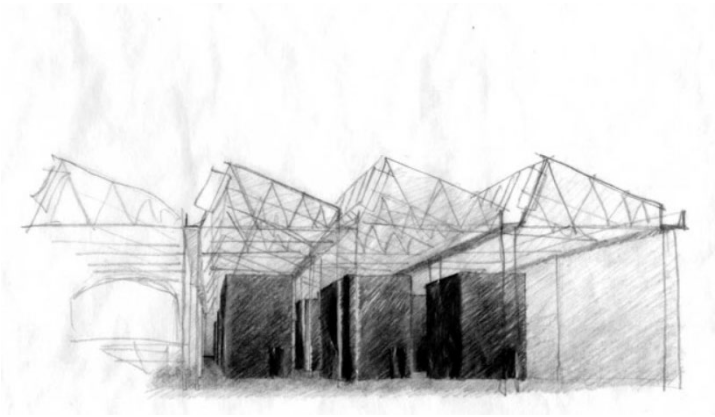


Figure 2.26: A sketch that represents the memory boxes
(Wolff Studio)

The memory boxes

The museum consists of 12 rusty iron boxes, each one of them referred to an icon in the history of South Africa, containing his belongings and presenting his life. The boxes dimensions are 6 * 6 with a height of 12 meters. The visitor cannot know what is inside these boxes unless he enters them, as each box constitutes of a complete story. As for the spaces between those boxes, they are for contemplation, as described by Andreas Heusen (Wolff).

It is important to point out that these boxes are inspired by the boxes that were used by the workers of the region to put their valuables when they left their families, so it is very important and emotional for the people of that area (Rinaldi,2012).

Figure 2.27: The 12 boxes
(Noero Architects)

The huge size of the building plays an important role in people's perception of spaces and exhibits in a realistic way, for example a picture of an anti-apartheid person is displayed on very high columns, and the huge size of the memory boxes.

2.2.3. The Functional Analysis

iIt should be noted that the project is very large and the museum is part of this project, as it contains a library, an art center, an archive and several functions in addition to the museum.

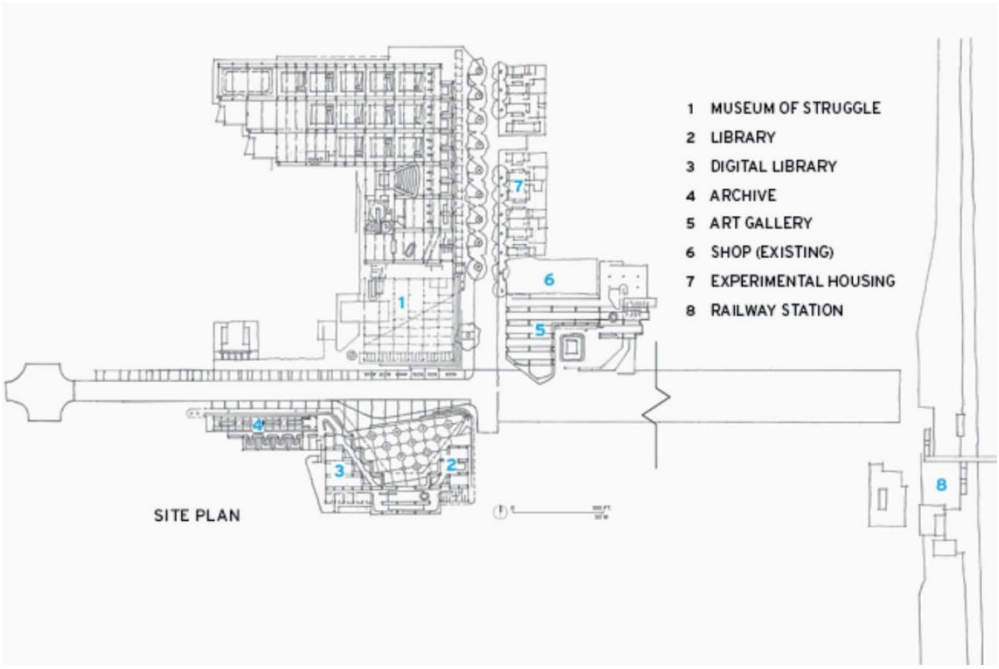


Figure 2.28: Site Plan
(Rinaldi, 2012)

Let's talk about the museum. At first, the visitors enter a large hall carried by concrete columns. This hall was designed to honor those who sacrificed their lives in the struggle against the policy of apartheid.

In addition to the exhibition areas and 12 memory cubes, the museum contains several functions, a library, a discussion room, an Auditorium, a space for memorials to the heroes of the anti-apartheid struggle, as well as offices. (Noero Architects).

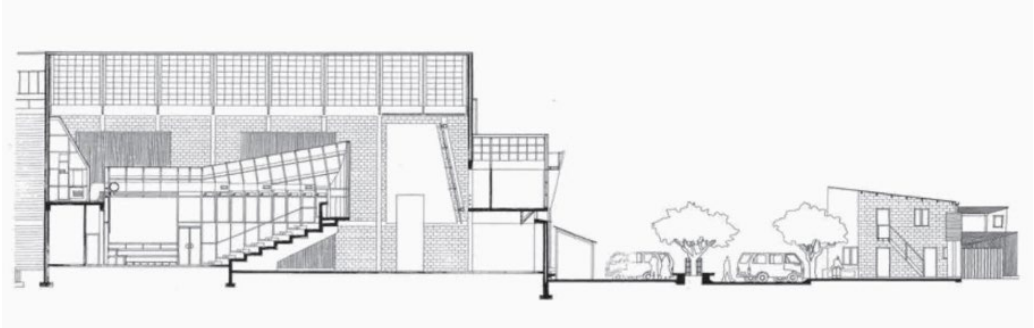
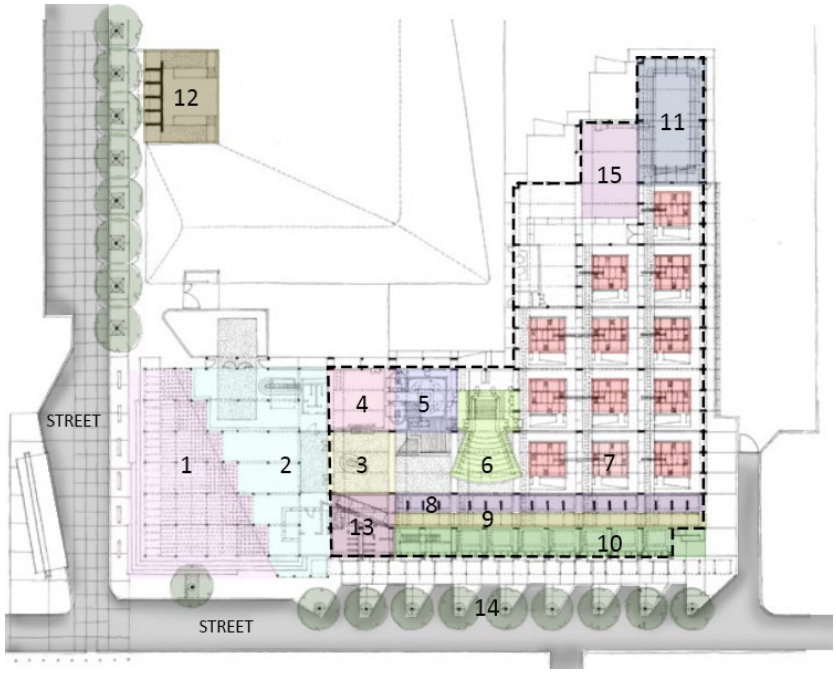


Figure 2.29: Section cuts the Auditorium
(Rinaldi, 2012)

Figure 2.30: An image represents the boxes and the Auditorium from outside
(Rinaldi, 2012)

Plan



1 Public space
2 Buffer zone
3 Entrance
4 Cafe
5 Tombs + Memorial spaces
6 Auditorium
7 Memory boxes
8 Memorial column
9 Temporaray Exhibition
10 Coverd walkway
11 Art Gallery
12 Cinema hall
13 WC
14 Parking
- - - Building Boundry

Figure 2.31: Master Plan
(Analyzed by Majd Odeh)

2.2.4. Materials and Structural analysis

Figure 2.32: Elevations & Sections
(Rinaldi, 2012)

The main material used in construction is corrugated iron as mentioned previously, in addition to the use of bricks and glass (Noero Architects).

Figure 2.33: An Exterior shot
(Iwan,2009)

As for the structural system, two construction systems were used, the steel structure, where the truss system was used in the stealing, and concrete was also used in the columns and walls as shown in Figure 2.34 and Figure 2.35.

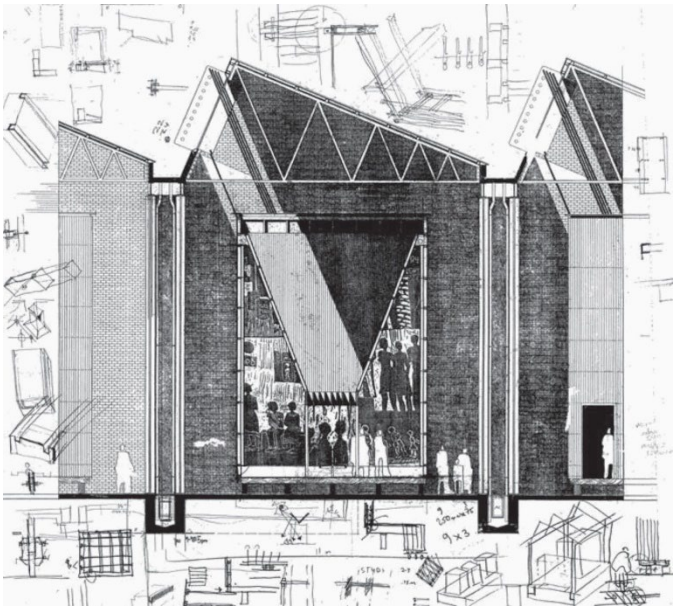


Figure 2.34: A section shows the structural system
(Rinaldi, 2012)

Figure 2.35: An Interior shot shows the structural system
(Rinaldi, 2012)

2.2.5. Conclusion

South Africa is a country of history full of colonialism and wars, and a country in which the policy of racial discrimination was embodied in an ugly way, so it was necessary for the resisters and heroes to appear to confront such policies and colonialism. The museum's goal is to shed light on those who sacrificed themselves for freedom, human values and social justice.

Architecture was once used as a tool for apartheid politics, our goal now is to use architecture to shed light on what happened in the past, and try to remedy its effects.

Chapter 3

Project program

3. Chapter Three: project program

In the beginning, we will mention the main functions with a detailed analysis, including the functional requirements and the operational requirements which means I'll include the users, the equipment's, vehicles and activities expected to be done in each space.

The museum is directed to the Palestinian people, but of course it will also attract a group of thinkers and people with political experience to talk about different issues, in addition to attracting artists.
The museum will be directed not only to the residents of Palestine, but will also attract foreign tourists, thinkers, analysts and artists from outside the country.

Museums are generally divided into 2 main zones:
A. Public Spaces
B. Non-Public Spaces

(Neufert 4th edition)

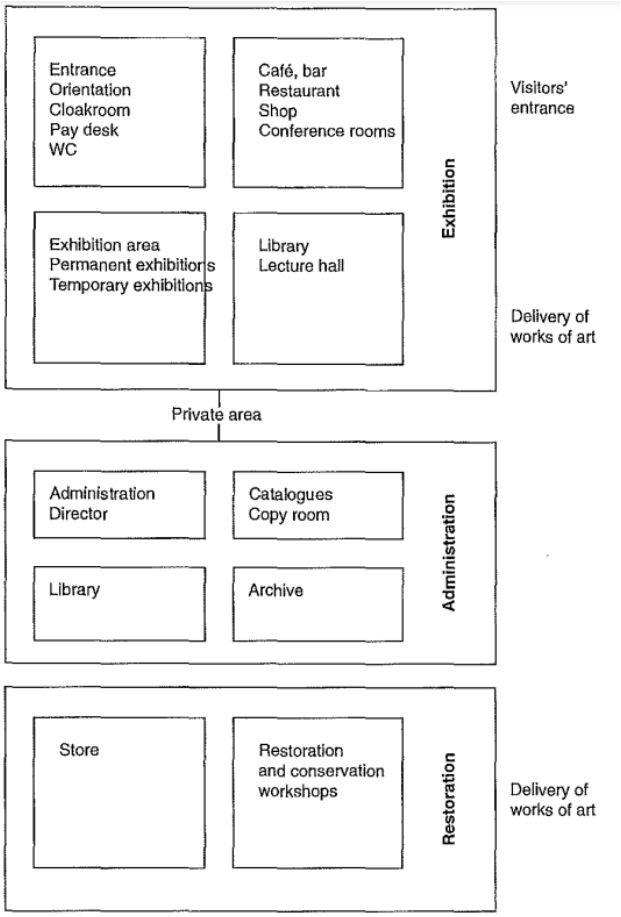


Figure 3.1: Museum Functional scheme
(Neufert 4th edition)

3.1. The Main Functions

The main **public spaces**:

3.1.1. The Entrance & Reception Hall

Description

The entrance is one of the most important spaces of the museum, which gives the visitor the first impression, so the architects used to design the entrances in different and attractive ways that reflect their ideas about the museum.

Museums usually have one main entrance leading to the hall duo to security considerations, in addition to a secondary entrance for employees (Haji,2022).

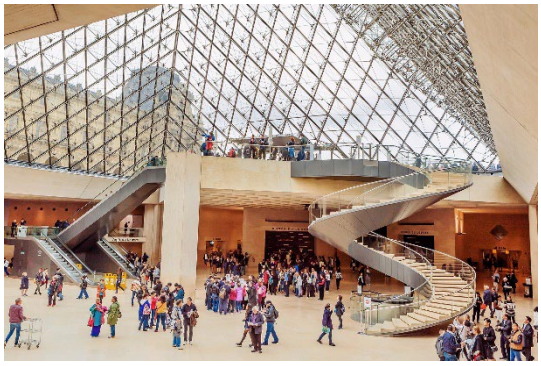


Figure 3.2: louvre Museum Reception Hall
(By: Alarmy)

Figure 3.3: Louvre Museum Entrance - Paris
(By: HeadOut)

The reception hall is one of the most crowded halls in the museum, especially in the case of museums where the entrance and exit are from the same hall.

The Functional Requirements

A. Users
The reception hall is directed mainly to the public, but it is also used by employees and service workers.

B. Equipment
The reception hall mainly contains the reception counter and the tickets counter, and a waiting area that can include seating.
Furthermore, it is expected that there will be guiding machines to facilitate the movement of visitors inside the museum.
The Counters must be designed in a special way by the architect.

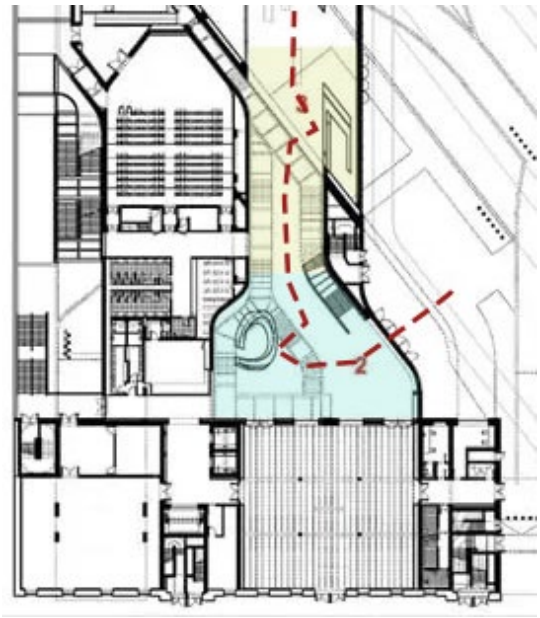


Figure 3.4: Reception Hall plan - The MAXXI Museum
(Analyzed by the Author)

C. Vehicles

The reception hall is closely connected to the entrance, so it will have a close relationship with pedestrian and car traffic outside the building.

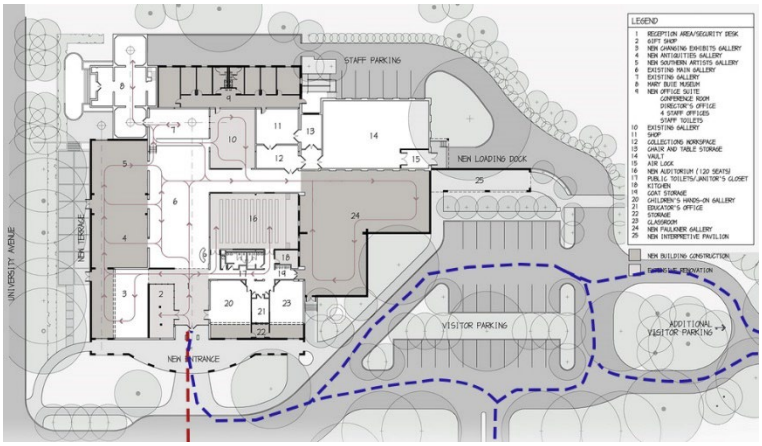


Figure 3.5: Parking and Entrance Relation - University of Mississippi Museum
(Analyzed by the Author)

The reception hall is associated with some Ancillary Spaces:
A. Deposit.
B. services (rest rooms).
C. Museum Store.

3.1.2. Memorial routes

Description
Since the galleries are the most important spaces of the museum and where visitors engage with the exhibits, they must be designed to be welcoming and attractive.

The permanent exhibition spaces will be divided into two parts:

A. A section that displays memories and events in unconventional ways by using architectural elements in addition to using pieces of the apartheid wall, which is the main display area that will be indoor and outdoor, and it's supposed to be on the ground floor or basement floors.

B. The secondary part, will contain exhibits covering Palestinian history and showing the impact of the apartheid wall. It may be on the first floor.

C. Exterior Exhibitions, which will be complementary to the first category of exhibitions.

Design Standards

It is very difficult to determine specific design dimensions for exhibitions, especially those belonging to the first and third type of the previously mentioned types, because in such types of exhibitions the architect seeks to put the visitor in a certain atmosphere based on the architectural design of the spaces so, it is very difficult to set specific design standards for such exhibitions**.**

But first, I will talk about memory museums and the display **routes**, and the method of exhibits in them, and then I will move on to talk about the other part that I will use in the museum, which is the traditional exhibitions**.**

a. Circulation

The path will be a mixture between the internal and external paths, there will be several paths in the museum, each reflecting a specific issue.

The figure below such an example of how the route will more or less look like.

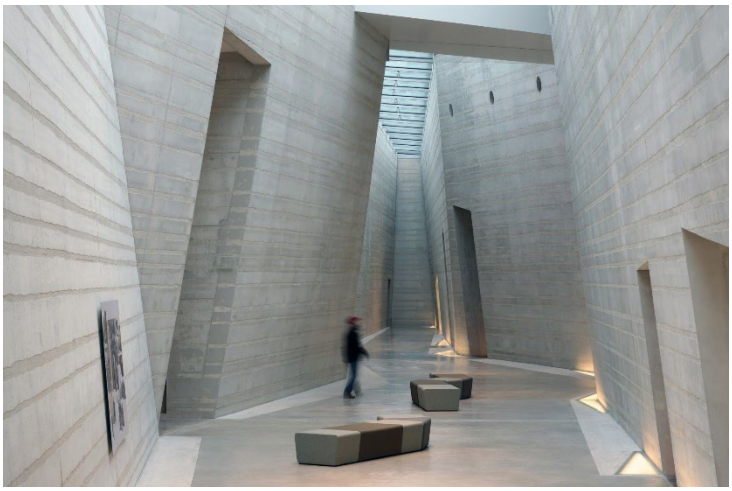


Figure 3.6: Centre International d'Art Pariétal in Montignac
(FLOORNATURE ARCHITECTURE)

b. Exhibits

The display method will be different and varied, some of which will be displayed using the apartheid wall itself, as shown in the image below.

Figure 3.7: Display at the National September 11 Memorial Museum.
(Jin Lee/National September 11 Memorial Museum)

Other ways of displaying it would be by using the ceiling (using parts of the wall to convey a message).

Figure 3.8: National memorial for peace and justice.
(Bob Miller)

In this type of paths and exhibitions, architecture is clearly employed in affecting the interior spaces, such as using natural lighting, for example, to focus on a specific part or placing the visitor in a special atmosphere.

Figure 3.9: Sancaklar Mosque.
(Ozgun Ozturkcine)

It is also possible to use technology to display panoramic images along the paths to show a story and specific historical events.

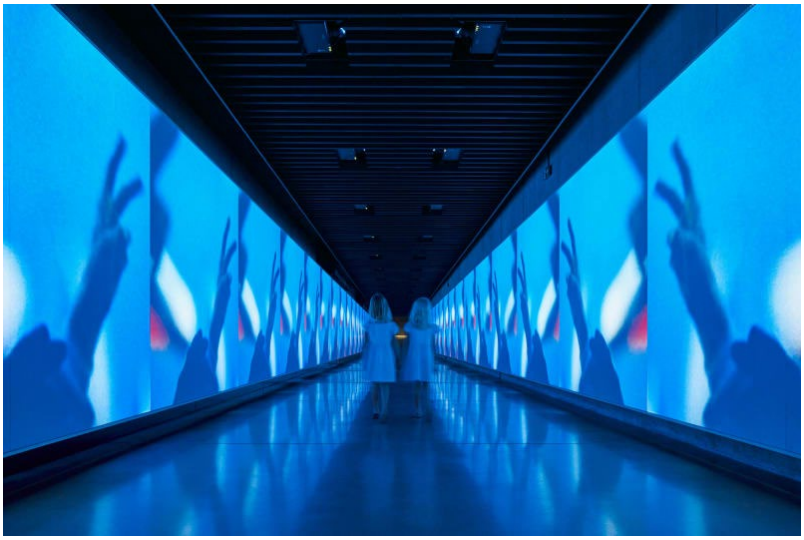


Figure 3.10: Moments of history / The time corridor
(Boysplaynice)

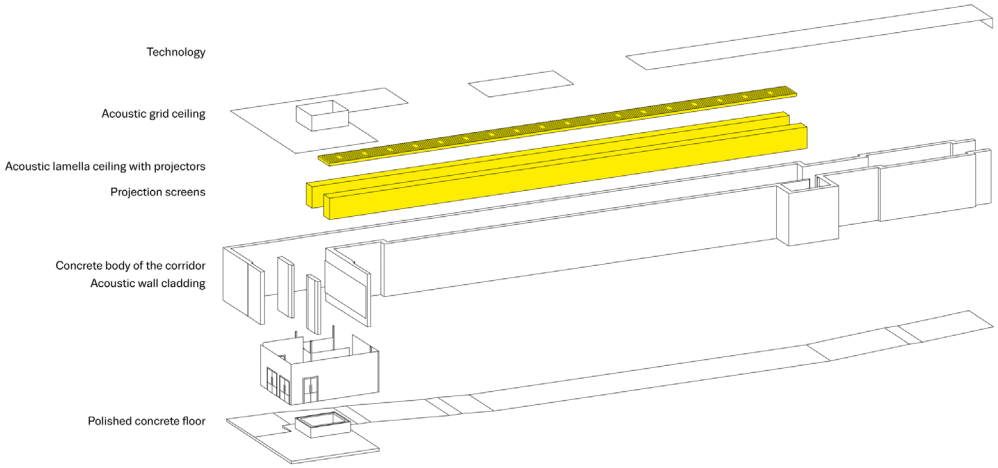


Figure 3.11: The time corridor – 3D
(Boysplaynice)

It is also possible to use the walls to display exhibits along the paths, as shown in the image below

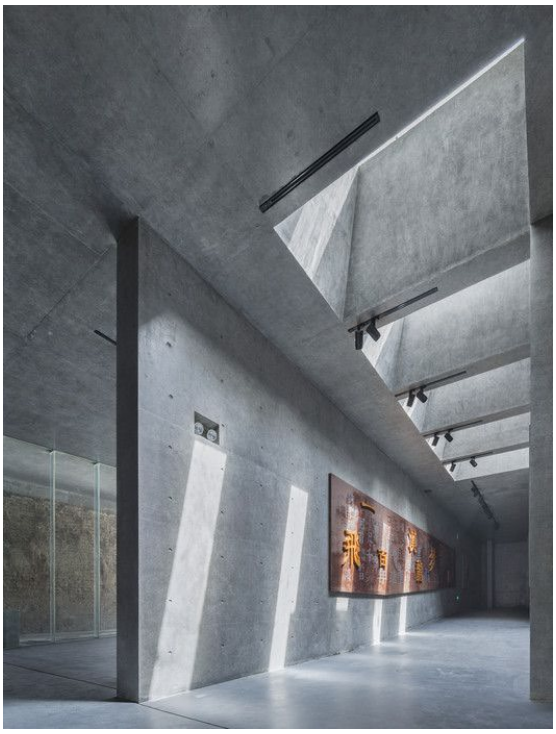


Figure 3.12: Wall sculpture
(Oklahoma City National Memorial & Museum)

These memorial routes must lead visitors to the indoor and outdoor exhibits, so we'll also use the outdoor spaces as an outdoor exhibit.

Figure 3.13: The outdoor sculpture
(Oklahoma City National Memorial & Museum)

3.1.3. Main (permanent) Exhibition Halls.

Design Standards

As what said previously, the traditional exhibitions have design dimensions and certain criteria that the architect can follow in the design process.

When designing exhibition halls, there are several design criteria that must be taken into account:

a. Circulation

- A building's circulation space is any area used by pedestrians for movement, such as corridors, stairways, or passageways leading to other rooms. So, we have to create exhibits that takes into considerations the visitors circulation patterns.

- Create a space that requires no additional movement from visitors. As for this, wide corridors beyond the standard 8–9 feet currently used when designing circulation spaces.

-
- Keep the width of the hallways constant. Bottlenecks are caused by expanding and contracting corridors. To provide a sight line to the intersecting corridor, think about rounding or angling corners.
-
- Blind corners may present a risk. When turning corners or walking swiftly, people may not notice traffic in the cross sections. Congestion, bumping, crashes, and physical altercations may result from this.

(Senthile, 2018)

The relationship between the collection and how it will be shown will determine how exhibition rooms are laid out (display concept). The following are the most popular forms of layout (figure 3.41).

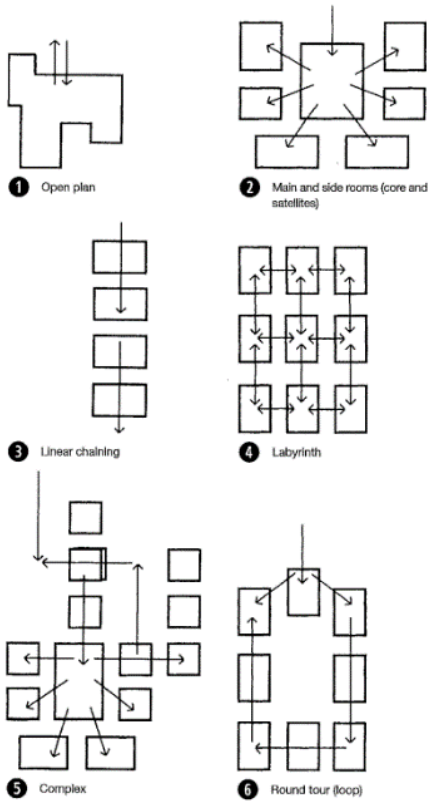


Figure 3.14: Forms of layout.
(Neufert 4th edition)

b. Visual Continuity

It is one of the most important issues that the designer must take care of while designing the exhibition halls, and there are several circulation methods to ensure that, as shown in the figure below (Sánchez,2005).

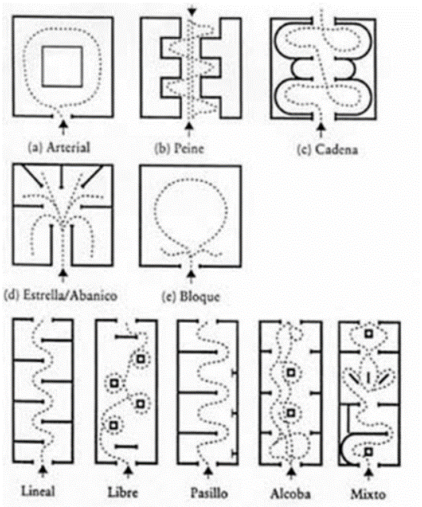


Figure 3.15: Circulation Methods
(Sánchez,2005)

c. Dimensions & Proportions

The display rooms' width and height vary depending on the size of the artwork and the size of the collection, but a minimum height of 4 m is required (Neufert 4th edition).
In general, we can say that the ideal exhibition hall ratio is 1:1.5, which is calculated by dividing the space's length by its breadth. (Haji,2022)

As for the furnishing we will mention it in the functional needs section below.

The Functional Requirements

A. Users

Mainly, the exhibitions are directed to museum visitors from different strata of society.
Usually, there is no need for a guide staff at memory museums, but they can be present in very few numbers.

B. Equipment

Based on the presence of two types of exhibitions, each exhibition needs its own equipment.
The first part of exhibitions is untraditional, so it is integrated as architectural works in the building rather than as ordinary exhibits, and because it is closely related to the architectural design stage, it is difficult to anticipate its contents because it depends on the vision of the architect.
The second part is close to the traditional display methods, so it mainly needs shelves or display walls, in addition to some other methods shown in the figure below.

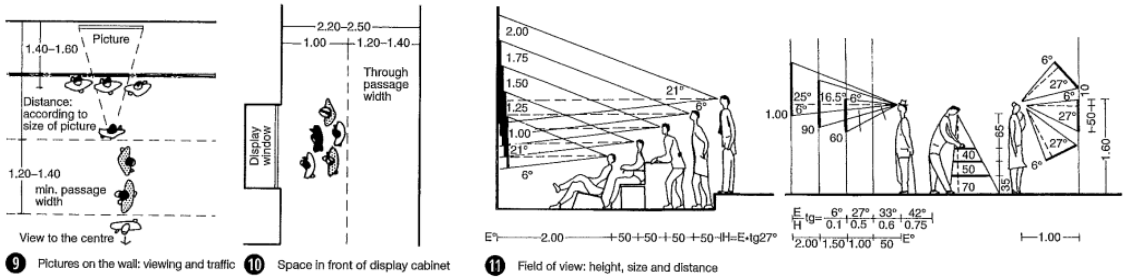


Figure 3.16: Display standards
(Neufert 4th edition)

It goes without saying that various artworks require various means of exhibition. Frames are required for paintings, vertical display cases may be required for sculptures and other freestanding pieces, and table cases are frequently used to display books, papers, or other similar items. These issues must be addressed on a case-by-case basis while keeping in mind the characteristics of the piece and the overall layout of the gallery or exhibition (Cao,2020).

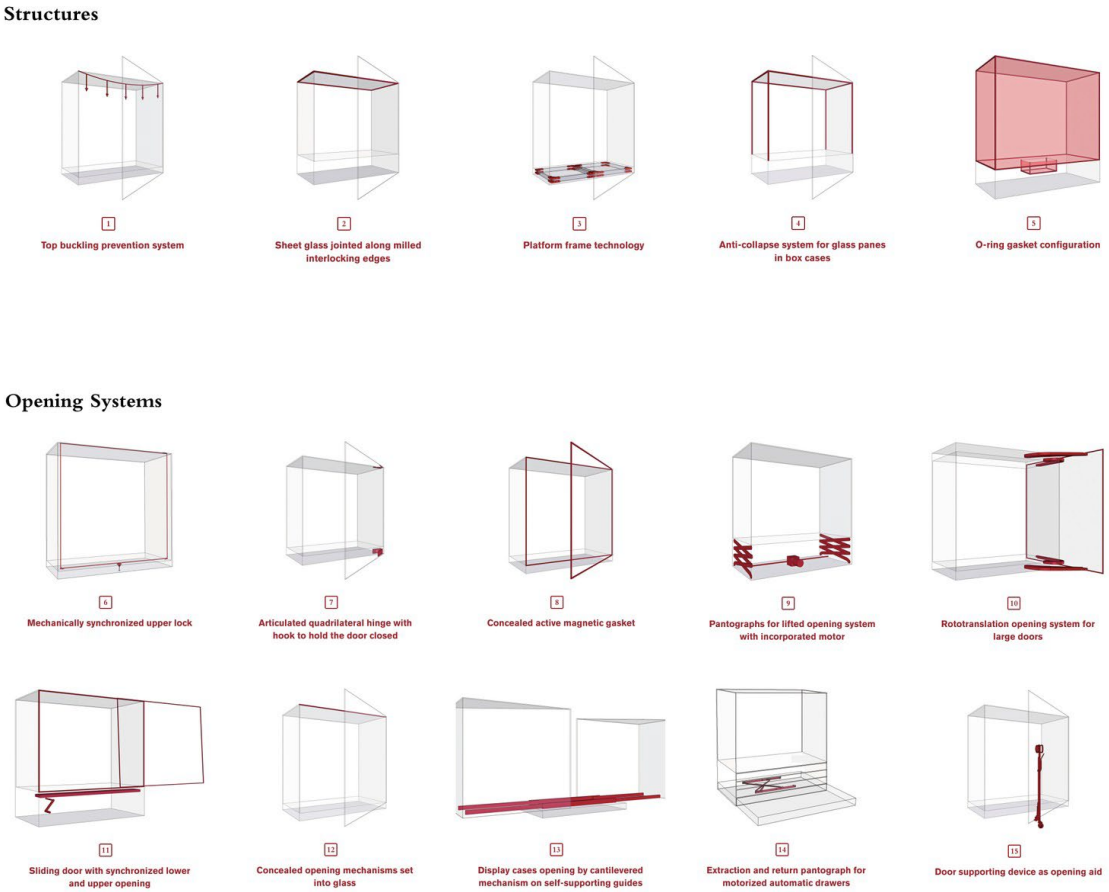


Figure3.17: Glass display Case
(Cao,2020)

Regarding the items, it extends beyond only putting it on display; it should also take into account practical issues like chemical and physical protection. The age of the object, the materials, the state of the gallery or museum building, and the number of visitors anticipated to be in close proximity to the art can all have an impact on these considerations. Some sculptures and other free-standing items might not even require a display case. Others, however, require airtight protection to prevent the item from deteriorating or degrading over time. Designers must select display choices for these sensitive products that can provide the required environmental conditions (Cao,2020).

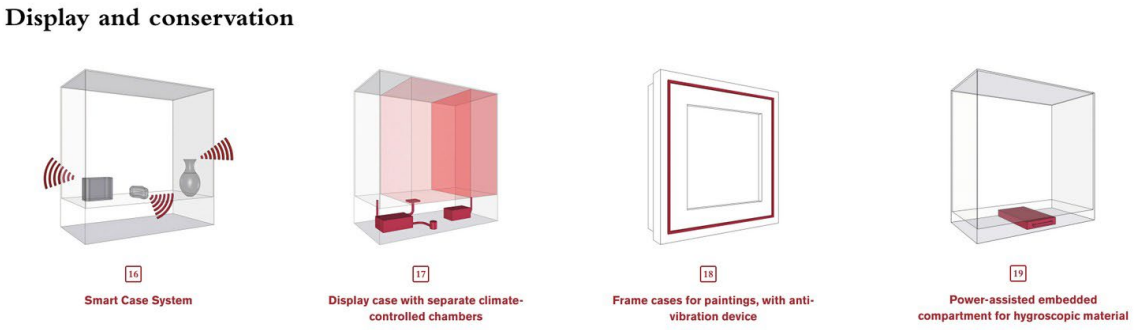


Figure3.18: Display and Conservation
(Cao,2020)

C. Vehicles

There must be a link between the exhibition halls and the service entrance for loading and unloading to facilitate the placement of the exhibits.

3.1.4. Temporary Exhibitions

Description

These exhibitions will be on display as a consequence of the projects that are finished at the museum's workshops. In addition to displays for presenting digital arts, they will be walls and shelves for displaying paintings and sculptures.
To guarantee the continuation of the artwork inside the museum, it will be periodically replaced.

There must be a strong relationship between these exhibitions and the museum's workshops, in addition to their proximity to the external loading and unloading corridor.

As for the standards, they are the same as the main exhibitions.

The Functional Requirements

A. Users

This area will be primarily and regularly used by museum visitors.
To renew art displays, employees and artists will sporadically use this space over a set length of time.

B. Equipment

Renewable and mobile exhibitions must be easy to disassemble and move, so the movement inside them must be easy and its corridors wide or expandable in order to facilitate the process of renewing the exhibit. So, we will use movable gypsum boards as display walls, figure 3.41

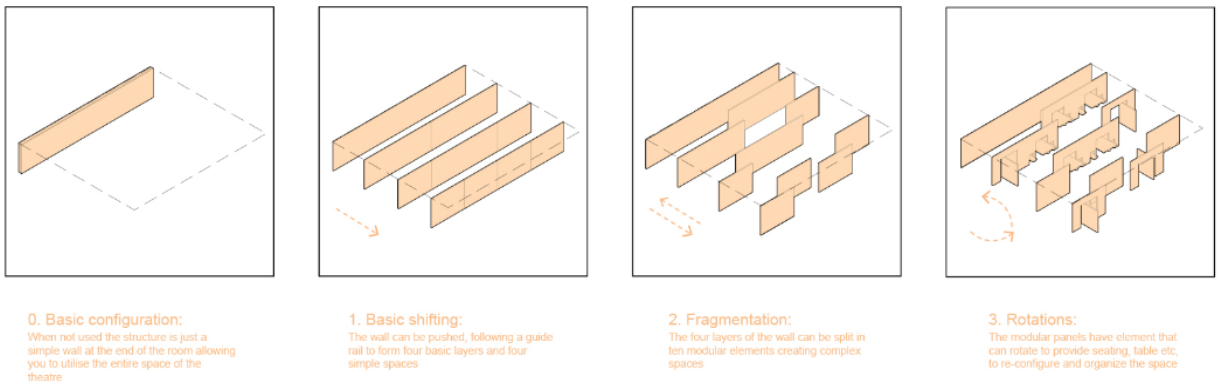


Figure 3.19: Movable Exhibitions
(Facchinelli, Mirco & Loftus, Kevin)

C. Vehicles

There must be a link that facilitates the transfer of the exhibits from the workshops to the temporary exhibitions, as well as its proximity to the services entrance for loading, unloading and transporting to the storage.

3.1.5. Administration

Description

In order for the museum's administrators to perform their tasks without interference, the visitors and the public areas must be separated from them.

Museum directors have great and different responsibilities, each according to his specialization, such as fundraising, public relations policies, staff management, and achieving public safety in the museum. It generally contains different departments, namely:

1. The main administration department.
2. Finance department.
3. Public Relations department.
4. Internal relations department.
5. Research and Documentation Department.
6. Offices for artists, lecturers and intellectuals.

Design Standards

There are two types of offices according to occupation and size:

1. **Single rooms**

   Along a corridor that is primarily lit artificially, single and double rooms are organized in rows.

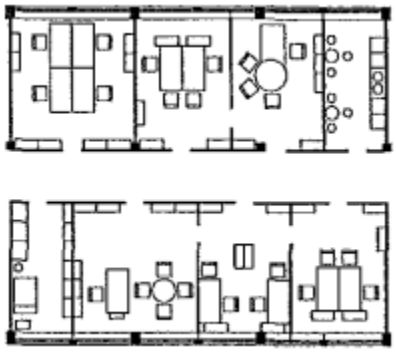


Figure 3.20: Single rooms office
(Neufert 4th edition, 2012)

2. **Open-plan offices**

   Artificial lighting and ventilation enable expansive office landscapes with one hundred or more workstations, which represent openness and free communication.

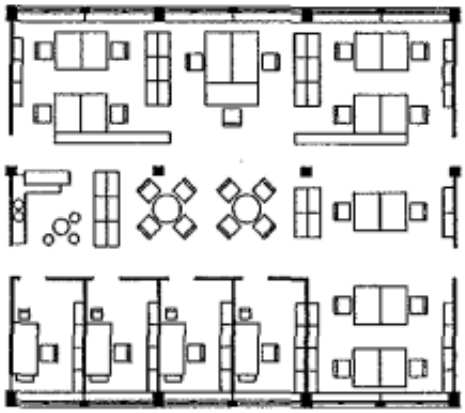


Figure 3.21: Open-plan offices
(Neufert 4th edition, 2012)

And here is a figure that explain the room layout:

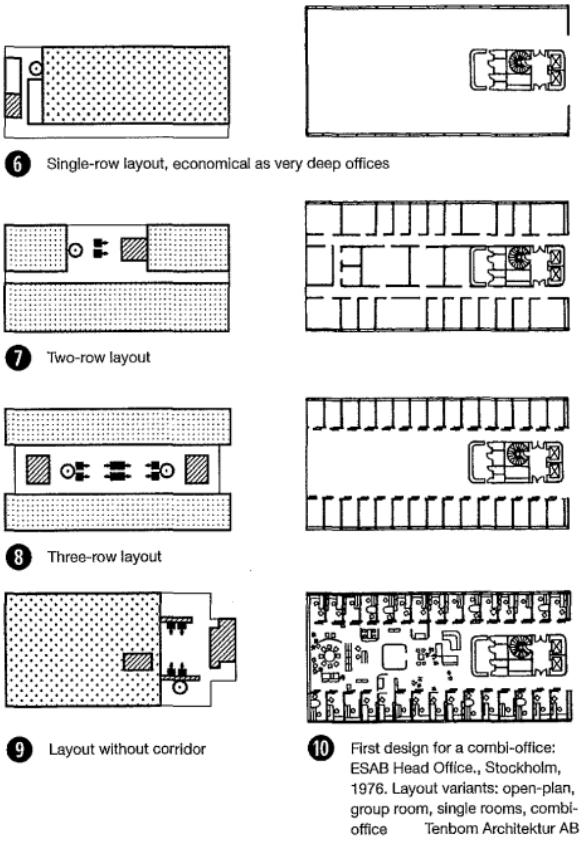


Figure 3.22: Offices Layout
(Neufert 4th edition, 2012)

A. Users

The use of this spaces is limited to the directors, the staff and the Lecturers. So, the visitors are prohibited from entering them.

B. Equipment

Instead of specifying set workspace dimensions, the standard now calls for enough space for people to walk around while working and to change positions, as well as for the placement of equipment that may be customized for each worker.

The spaces are: -
- desk for work.
- Shelves.
- Archive.
- Circulation.

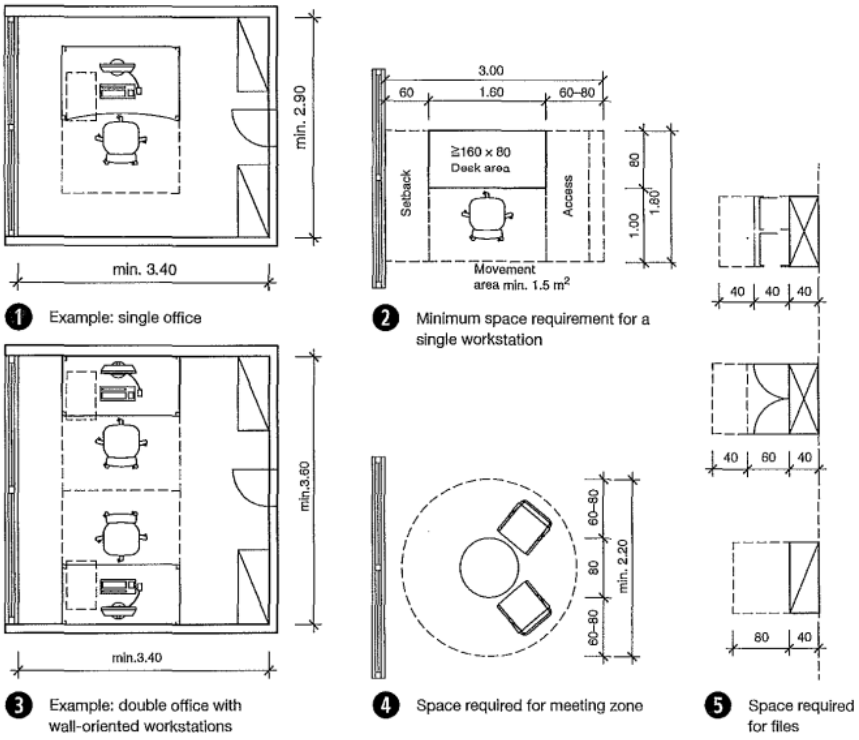


Figure 3.23: Offices Equipment
(Neufert 4th edition, 2012)

As a result, the area for every single office will be approximately 9m^2.

C. Vehicles

There must be a strong relation between the administration and the cultural department, including the workshops.
Also, it is assumed that there will be a separate entrance, serving only employees and administrators, and connecting directly to the administration area.

The administration is connected with some **Ancillary Spaces**:
- Services (kitchen + restrooms).
- Meeting rooms.

3.1.6. Services

Which includes:

1. **Restrooms.**

Design standards.

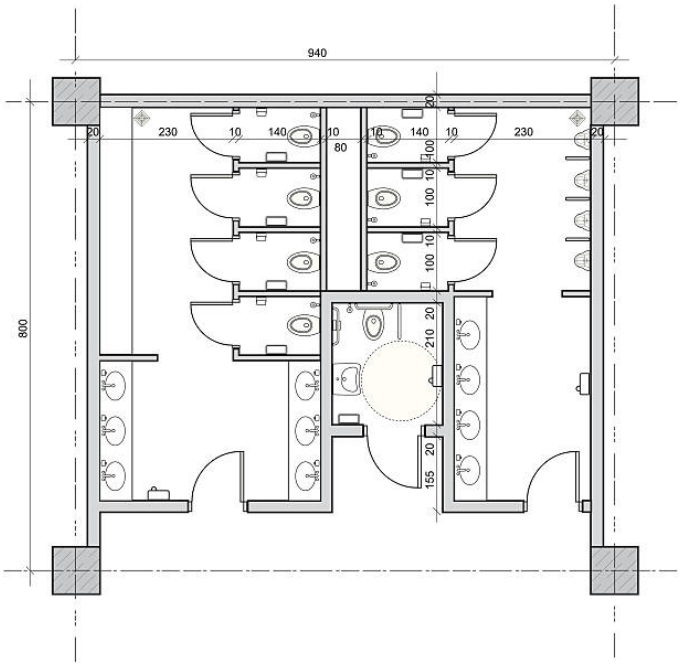


Figure 3.24: Public Restroom plan
(architetta, 2010)

A. Users.

There should be many bathroom units that serve all museum users, including:
-visitors.
-Administrators.
-employees.
-artists.
-Lecturers.

B. Equipment

In designing WC units, attention should be paid to two important things. First is the gender of the users, as the design of male units differs from that of female units. Secondly, is providing a special WC unit for people with special needs.

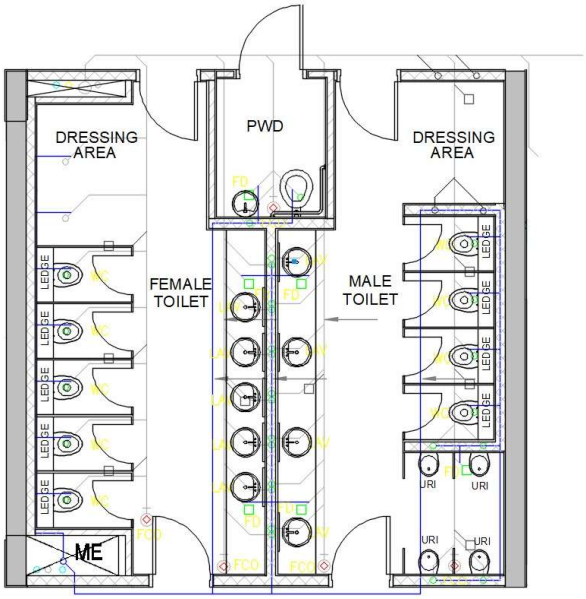


Figure 3.25: Female and Male WC units
(Fuentabella, 2010)

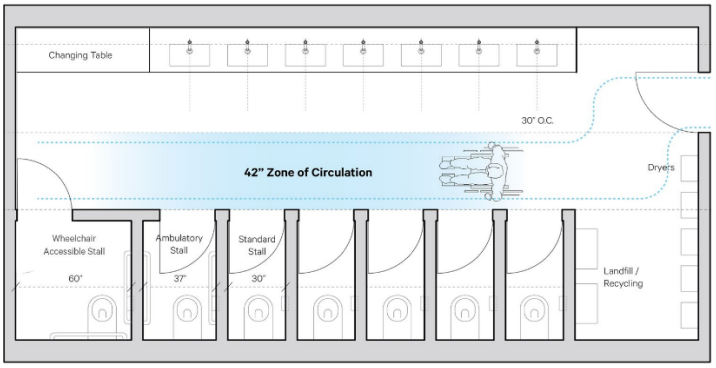


Figure 3.26: Special Need WC unit
(Stalled, 2018)

C. Vehicles

The WC units must be placed in the circulation areas and gathering areas for each of the categories, while preserving the privacy of entry for them.

The administration is connected with some **Ancillary Spaces**:

- Ventilation room.
- Cleaning room.

2. Mechanical rooms.

A. Users

They are used only by employees and professionals in this field.

B. Design Requirements for Mechanical Rooms:

The location of the mechanical room must be determined in the early design stages in order to reduce:

- Noise transfer to adjacent areas.
- Transmission of vibration to adjacent areas.
- Conflicting traffic patterns with other building occupants.

The slabs, ceiling and doors must be taken into consideration while designing theses spaces especially in terms of thermal and sound insulation.

Regarding the heating and ventilation, the Mechanical Rooms must have a temperature range of 13°C (minimum) to 28°C (maximum).

(McGill,2015)

Mechanical room includs:

- Electrical room.
- Fire Suppression room.
- Others

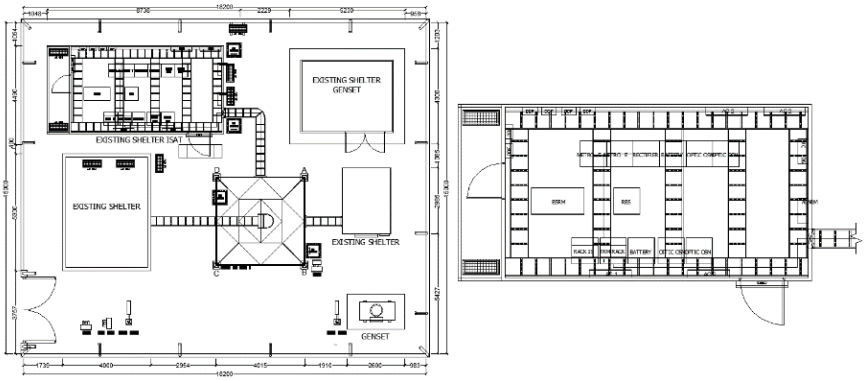
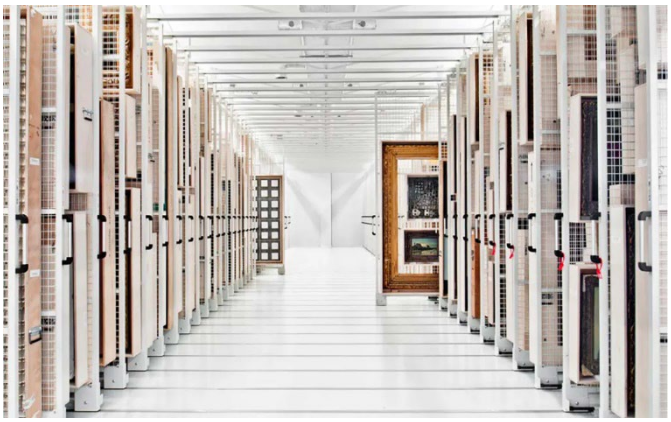


Figure 3.27: Electrical room plan
(SETHUPATHI)

3. Storage.

Discerption

Museum stores should be specially designed differently from regular stores.
The type of the exhibits determines the size and shape of the stores, as follows:
1- Artifacts are stored in drawers or glass boxes, paying attention to the internal temperature, and protecting them from external factors.
2- The paintings are stored horizontally either on large and wide shelves or vertically by mobile shelving systems.



Figures 3.28: mobile shelving systems 01
(Kordic,2016)

Figure 3.29: mobile shelving systems 02
(Kordic,2016)

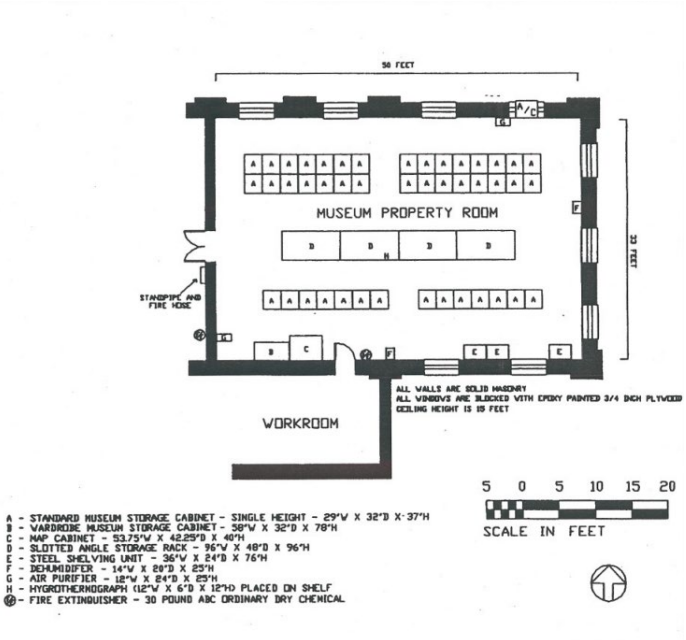


Figure 3.30: Museum store plan
(Museum Property Handbook)

4. Stairs and elevators

Design Standards

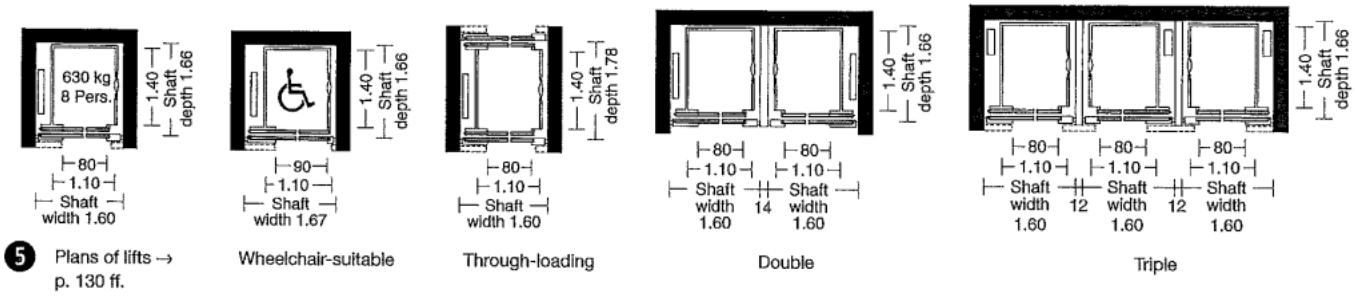


Figure 3.31: Elevators Standards
(Neufert 4th edition, 2012)

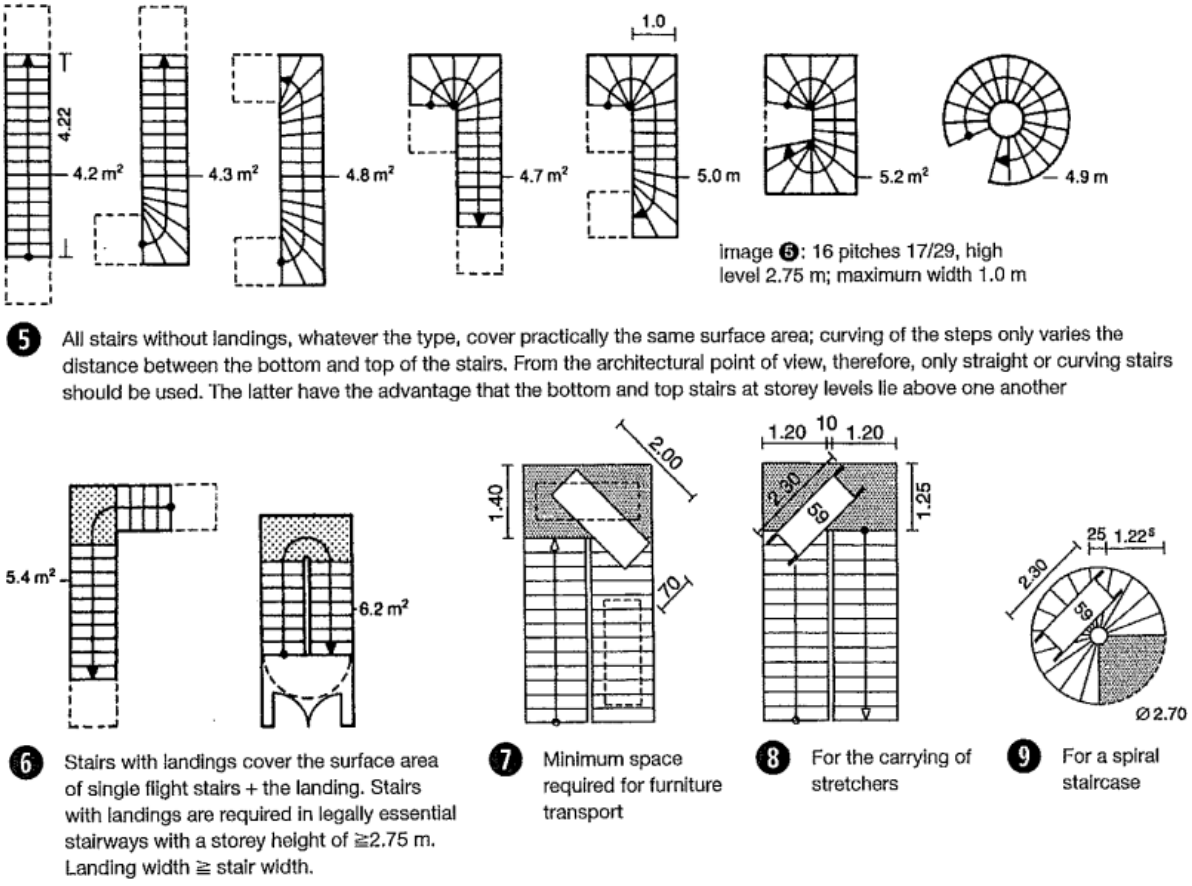


Figure 3.32: Stairs Standards
(Neufert 4th edition, 2012)

3.1.7. Outdoor spaces

1. Car Parking Design Standards

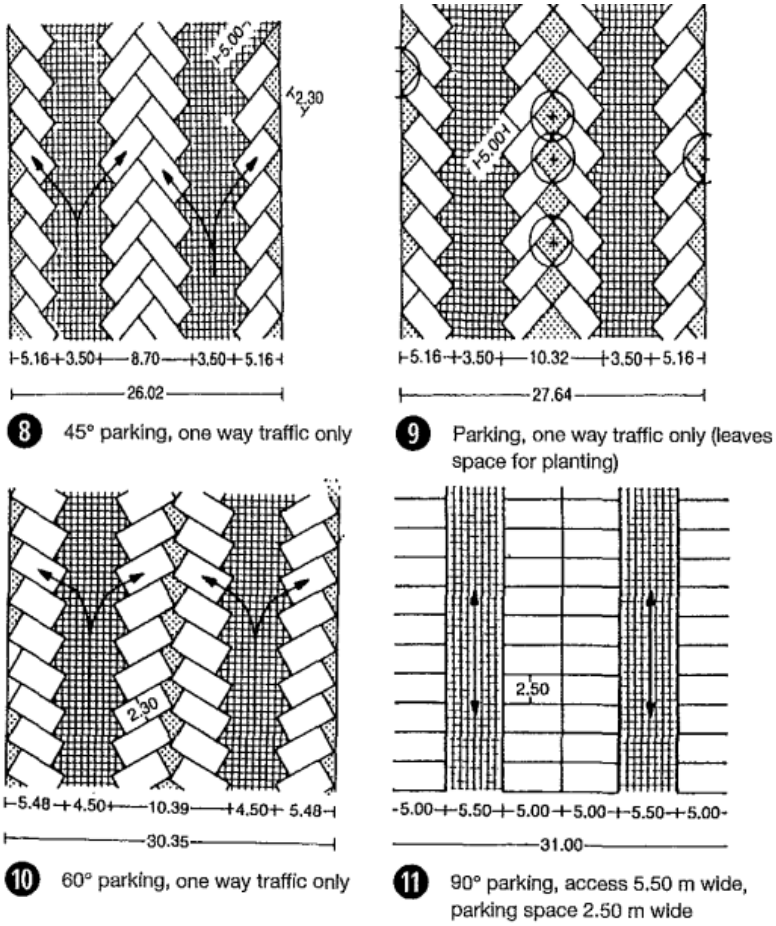


Figure 3.33: Parking Standards
(Neufert 4th edition, 2012)

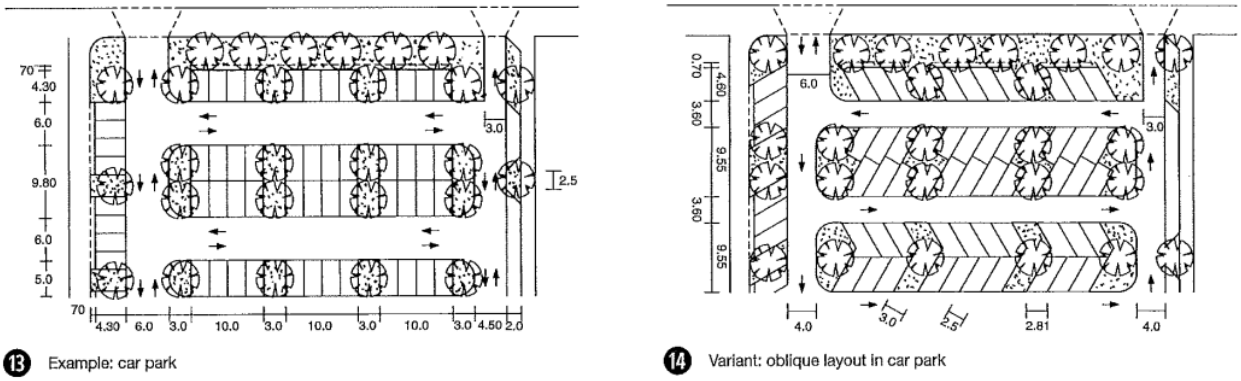


Figure 3.34: Car Parking layout Standards
(Neufert 4th edition, 2012)

2. Bus Parking

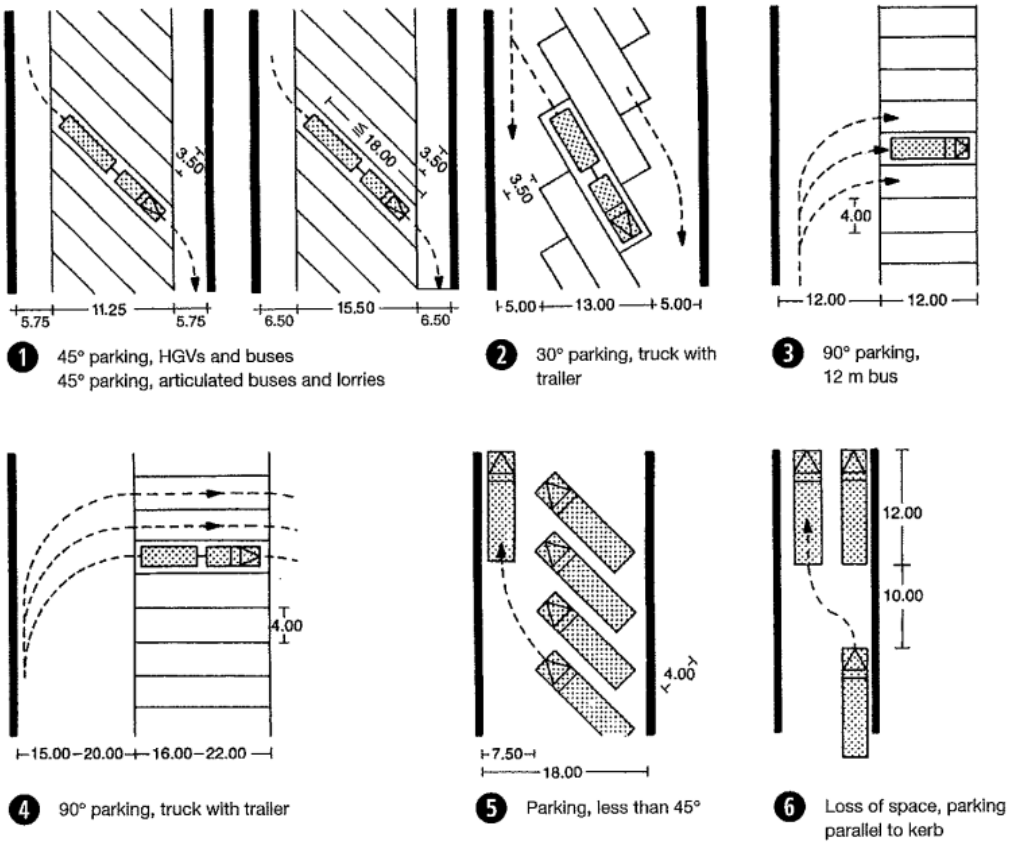


Figure 3.35: Bus Parking layout Standards
(Neufert 4th edition, 2012)

3.2. Operational Requirements.

3.2.1. Exhibition Operational Requirements

There are several systems that must be taken under consideration regarding the exhibition halls:

a. Lighting systems

Daylight

Direct daylight should not reach the items since it might harm them, so that flexible lighting solutions should be installed in show rooms; no fixed wall or ceiling lights should be present.

Table 3.1: Guidelines for lighting (Neufert 4th edition, 2012)

Object sensitivity	lx
Very sensitive	50-80 lx
Sensitive	100-150 lx
Less sensitive	150-300 lx
UV radiation must not exceed 25 W/m2	

And Figure 3.24 Shows some examples of how to use the indirect daylight in the exhibition halls.

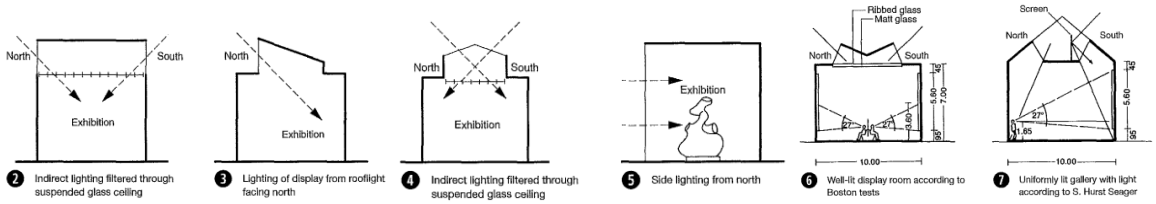


Figure 3.36: Indirect daylight in the exhibition halls
(Neufert 4th edition, 2012)

Artificial Lighting

When all aspects of the display are within your control and the light can be changed, colored, and focused while remaining weather-independent, you've reached the state of an ideal exhibition. Thus, by adjusting these factors, one can manage interest, mood, attention, and even pleasure. Artificial light can be used to create dramatic and theatrical effects (Khurana,2013).

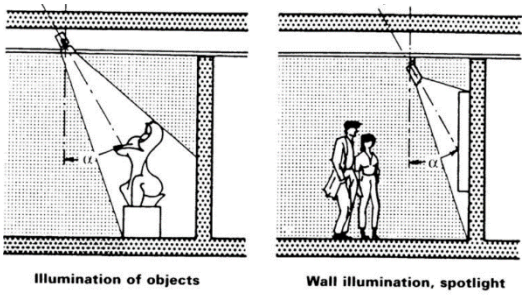


Figure 3.37: Artificial Lighting.
(Khurana,2013)

Also, we can use both direct and indirect lighting.

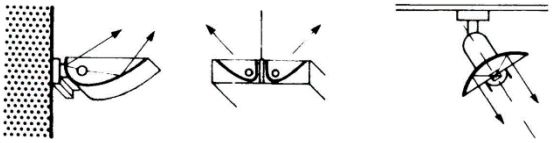


Figure 3.38: Direct and indirect lighting.
(Khurana,2013)

Strategies for using light effectively in museums:

1. **Concentrate on vertical lighting**

Even at low illumination levels, illuminated vertical surfaces give the sense of a large, bright space and direct visitors within a space with controlled lighting (ERCO,2022).

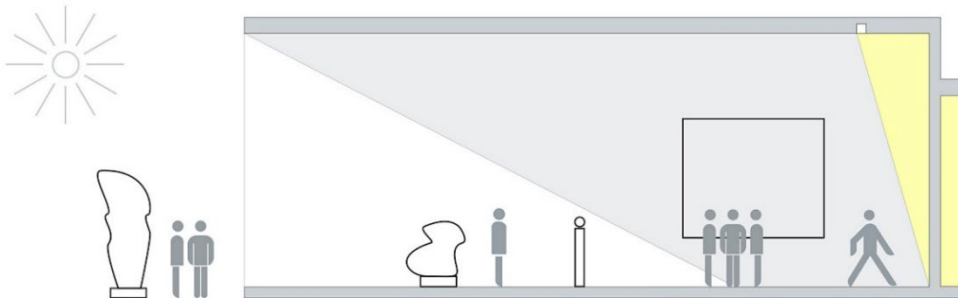


Figure 3.39: Concentrate on vertical lighting
(ERCO,2022)

2. **Create adaptation light**

After being exposed to the amount of light outside, our eyes need a few minutes to adjust to the brightness in spaces with light-sensitive components. So be careful when guiding tourists in dimly lit areas. Avoid glare, reflections from objects and direct glare from luminaires (ERCO,2022).

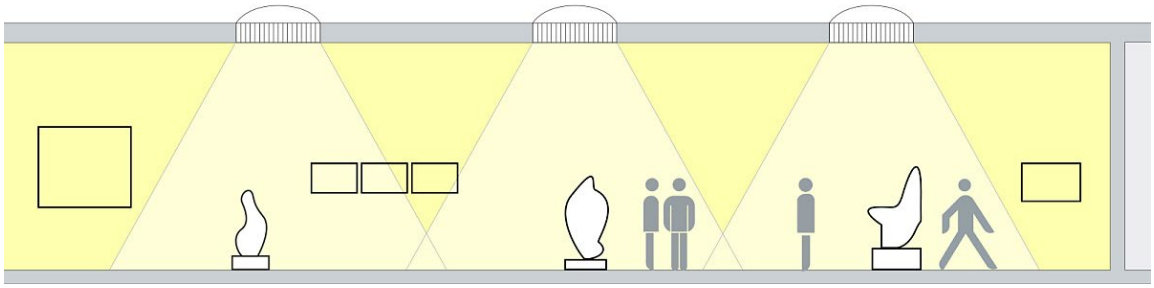


Figure 3.40: Create adaptation light
(ERCO,2022)

3. **Utilize the specific characteristics of visual perception**

Every object that is in a person's range of view is different to them. In addition to specialized informative requirements, museum visitors also have a fundamental desire to learn about their surroundings. Visitors in dimly lit portions of an exhibition can be directed if displays that are indifferent to light are given a high-contrast accent because humans tend to interpret the brightest point in our surroundings as the most significant (ERCO,2022).

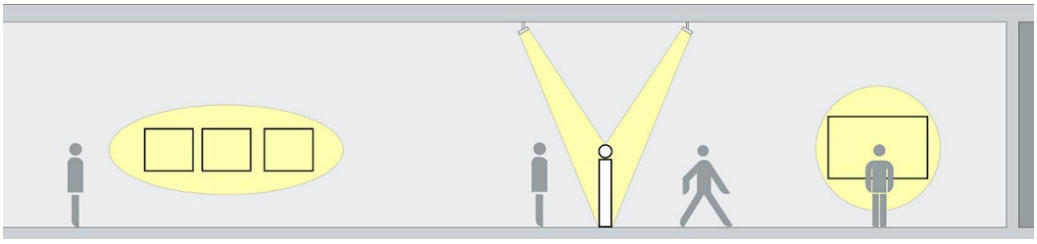


Figure 3.41: Utilize the specific characteristics of visual perception
(ERCO,2022)

4. Design based on dark room

Accent lighting draws attention to sculptures and paintings. The exhibit's visual impact depends on how strikingly it stands out from the background. Brightness ratios of 1:5 to 1:10 between the environment and the exhibit are ideal. Artwork can be concisely highlighted with only 50lx with strong glare control. Dark room method is ideal for enhancing contrast perception at very low illumination levels, allowing the exhibits to be contrasted sharply (ERCO,2022).

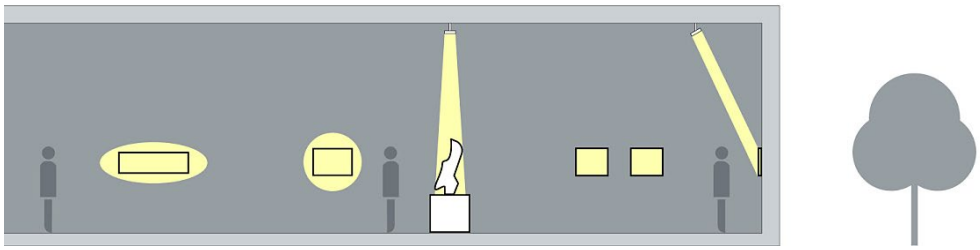


Figure 3.42: Design based on the dark room
(ERCO,2022)

b. Monitoring systems

1. Temperature and humidity

Temperature and humidity levels need to be checked and adjusted (24/7). The majority of museum objects are impacted in one way or another by high degrees of fluctuation (Scottish Museums Council Fact Sheet, 2003)

In the winter, the ideal temperature for the exhibition halls is 15–18°C, and in the summer, 20–22°C. In the summer, 26°C shouldn't be exceeded, save for brief peaks (Neufert 4th edition, 2012).

The best relative humidity levels for displaying and storing materials are for wood at 55 to 60 percent, canvas at 50 to 55 percent, paper at 45 to 50 percent, and metals at a maximum of 40 percent. Short-term changes in relative humidity should be avoided; they shouldn't be more than 2.5% within an hour or more than 5% within a day. Seasonal changes shouldn't exceed 5% in either the summer or the winter. The varying visitor flow in museums causes a constant change in the climatic variables (Neufert 4th edition, 2012).

2. Light and ultraviolet radiation

Every time light-sensitive materials are installed; the intensity of light and ultraviolet radiation must be calibrated. Readings must be monitored and recorded periodically in all parts of the museum.

3.2.2. General Operational requirements

a. ventilation and heating system (HVAC)

In museums, sophisticated HVAC systems are frequently employed to regulate the indoor environment for preservation and for visitor comfort.

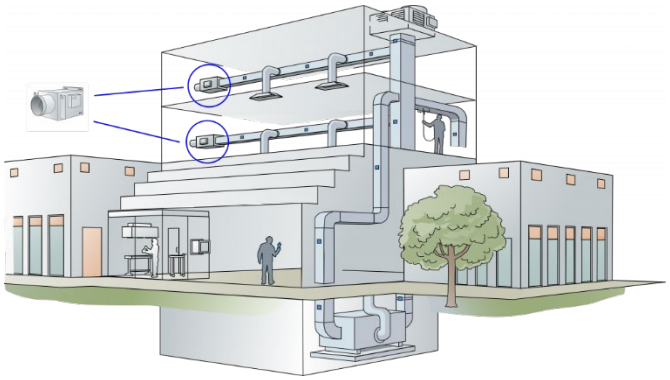


Figure 3.43: VAV System
(Gioeli, 2021)

Preventive conservation is a technique that aims to stop or lessen the impacts of things that endanger the existence of collections. Inadequate temperature or relative humidity (RH), high amounts of dust, and gaseous pollution are a few of these dangerous conditions that may be mitigated by mechanical devices. The conservation of heritage is seriously hampered by inappropriate temperature.

b. Security system

With the help of eocortex VMS, you can carry out a variety of critical tasks for modern museums and art galleries, ensuring the security of visitors' safety and the protection of their belongings while also boosting departmental productivity.

1. **People Counting**
   Depending on data from numerous cameras, reports and graphs can be built with hours, days, months, and years (eocortex).

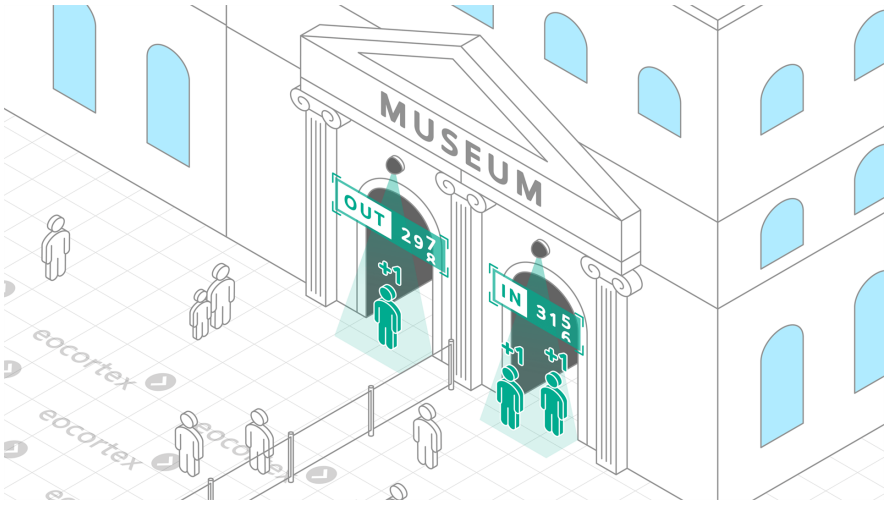


Figure 3.44: People Counting system
(eocortex)

2. **Face Recognition**

Sync the module with the access control program of a museum or gallery which construct a gallery of "blacklisted" and "trusted" people's pictures. And then we can use a person's photo to find him in the video collection (eocortex).

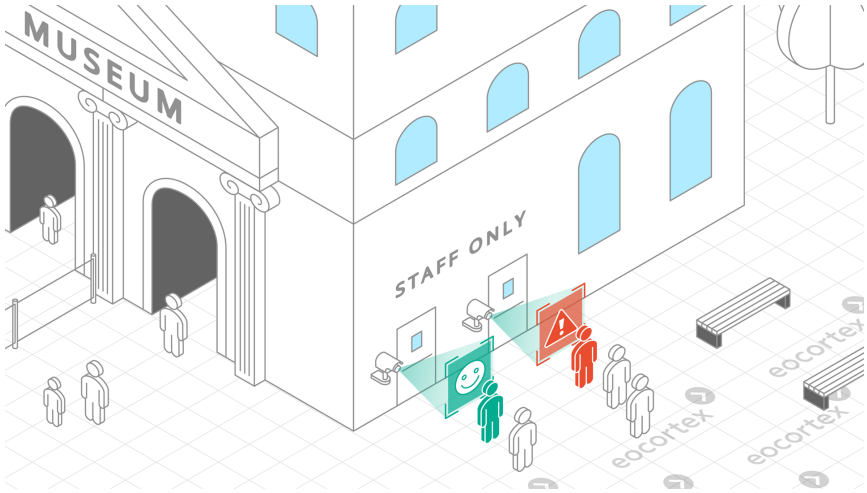


Figure 3.45: Face Recognition system
(eocortex)

3. **PTZ Camera Control**
We can move it and decide the exact direction.

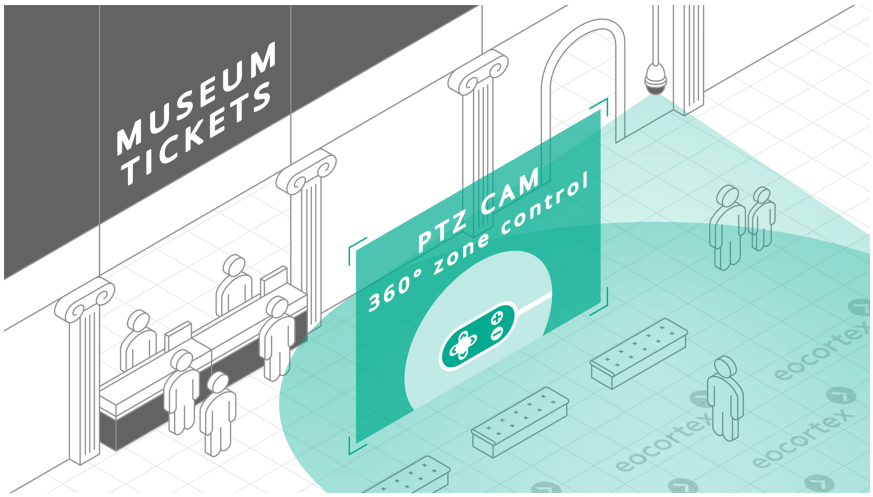


Figure 3.46: PTZ Camera Control system
(eocortex)

4. **Abandoned Object Detection**
Indicate how long the item must remain in the area before an alarm goes off. And then the system will give a prompt notification through phone, email, or the monitor when a control event is found (eocortex).

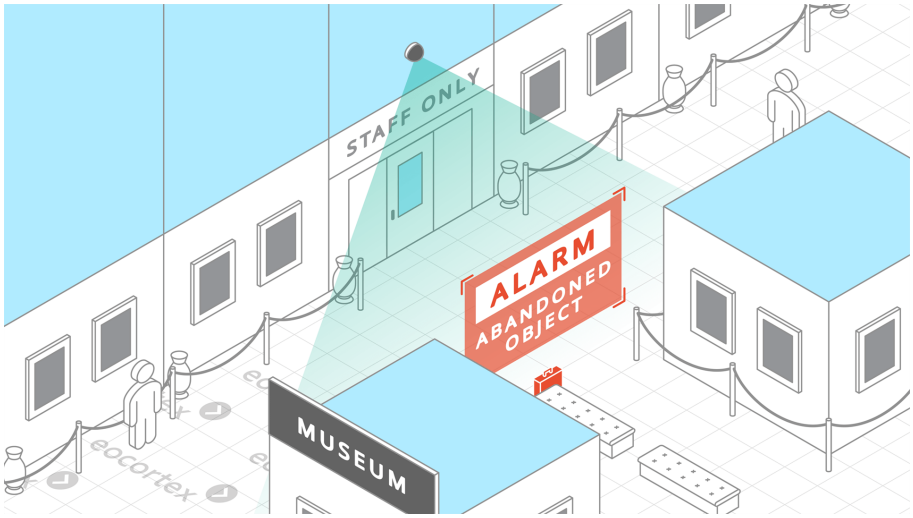


Figure 3.47: Abandoned Object Detection system
(eocortex)

5. **Audio Stream Processing**
A camera with an integrated microphone is used by the application to broadcast and record sounds.

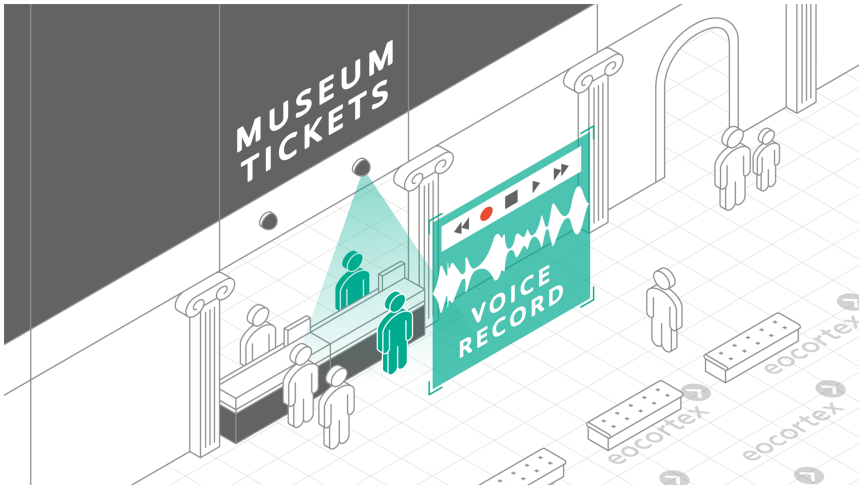


Figure 3.48: Audio Stream Processing system
(eocortex)

3.3. Functional Relations.

3.3.1. Bubble Diagram

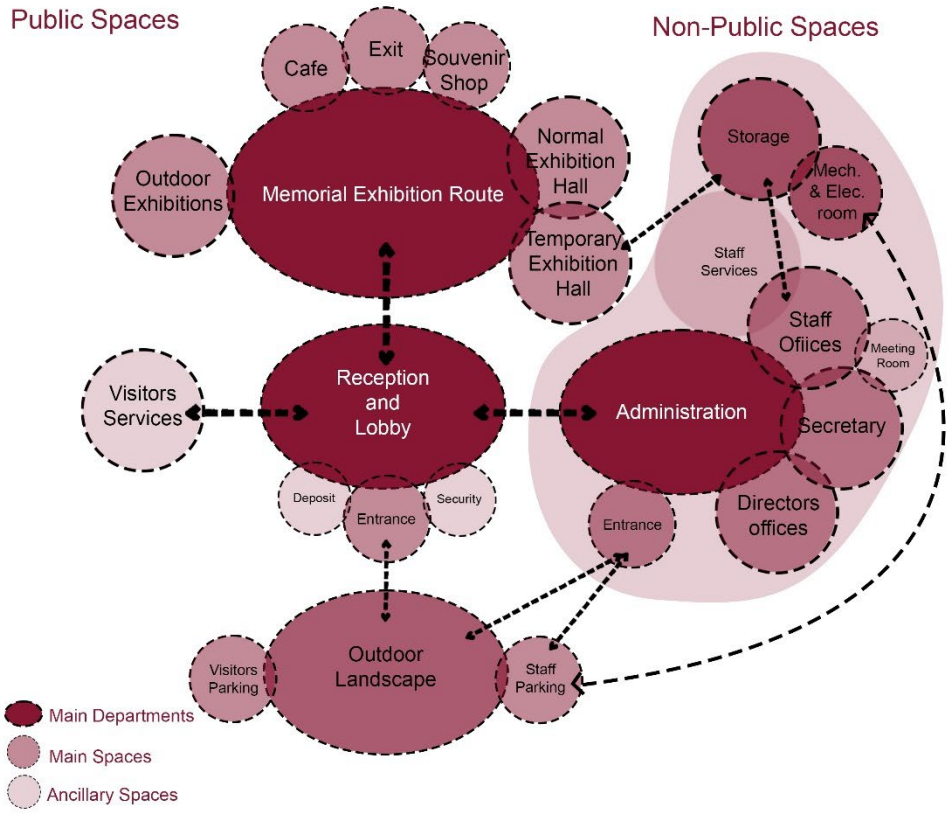


Figure 3.49: Bubble Diagram
(By the Author)

3.3.2. Adjacency matrix.

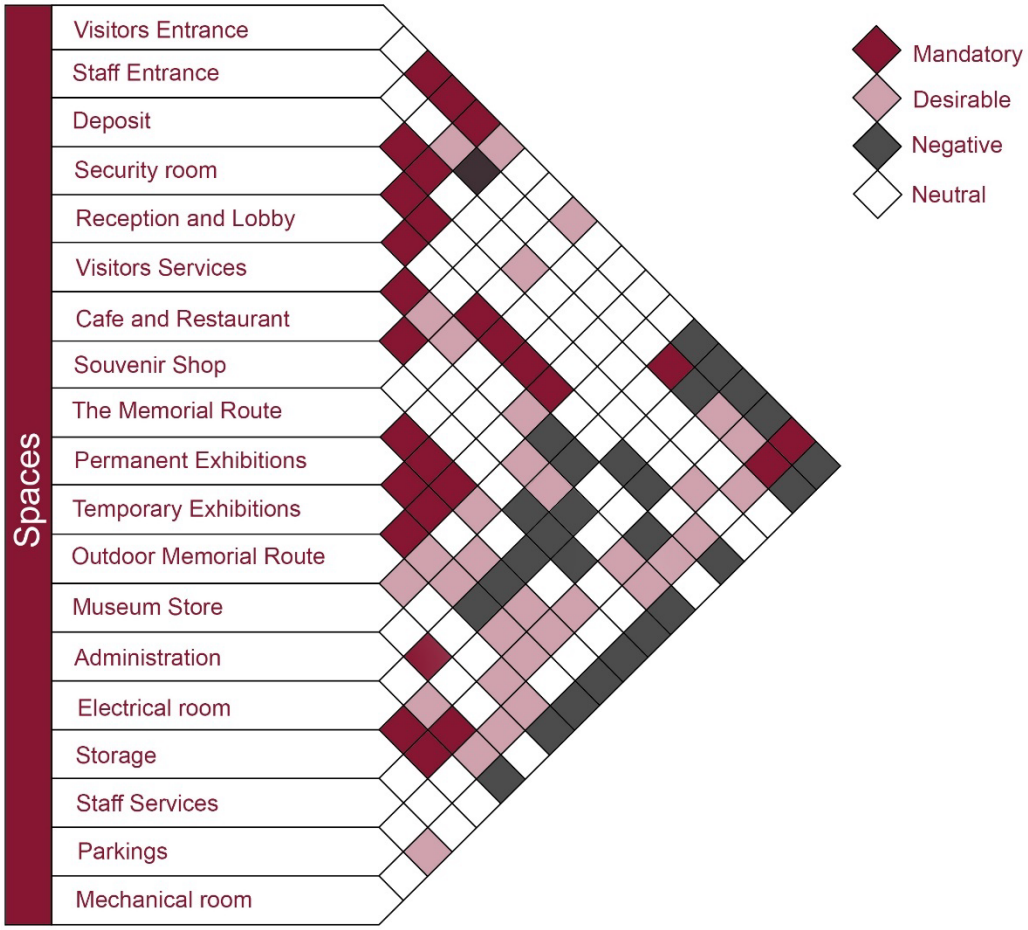


Figure 3.50 :Adjacency matrix.
(By the Author)

3.4.Suggested project areas.

Table 3.2: Entrance Hall Areas (By the Author).

Space	Area in m^2 per unit	Users	#of Units	Note
Main Hall	400-500	visitors	1	
Tickets room	40-50	staff	1	
Deposit	30-40	staff	1	
Restroom	30-40	visitors + staff	2	
Security	30-40	staff	1	
Total Area		**560-710 m^2**		

Table 3.3: Exhibition Halls Areas (By the Author).

Space	Area in m^2 per unit	Users	#of Units	Note
Memorial Route	1500	visitors	1	
Permanent Exhibitions	1000	visitors	1	
Temporary Exhibitions	1000	visitors	1	
Outdoor Memorial Route	1000	visitors	1	
Staff offices	20-30	staff	4	One in each space
Storage	200	staff	2	One for the perm. Exh. One for the temp. Exh.
Restroom	30-40	Visitors + staff	5	4 for visitors One for staff
Total Area		**5130-5220 m^2**		

Table 3.4: Administration (By the Author).

Space	Area in m^2 per unit	Users	#of Units	Note
Reception	50	staff	1	
Museum Curator's Office	40	director	1	
Secretary	30	secretary	1	
Finance department	30	staff	1	
Public Relations department	30	staff	1	
Research and Documentation Department	30	staff	1	
Meeting Room	30	staff	2	
Archive	20	staff	2	
Kitchenette	10-20	staff	1	
Restroom	30-40	staff	1	
Total Area		**300-320 m^2**		

Table 3.5: Outdoor Areas (By the Author).

Space	Area in m^2 per unit	Users	#of Units	Note
Landscape	2000	staff + visitors	1	
Visitors parking	1800	visitors	1	For 150 visitors
Staff parking	625	staff	1	For 50 workers
Total Area		**4525 m^2**		

Table 3.6: services Areas (By the Author).

Space	Area in m^2 per unit	Users	#of Units	Note
Mechanical room	100	staff	1	
Storages	200	staff	4	Was mentioned in the previous tables
Vertical circulation	40	Staff + visitor	3	
Total Area		**1020 m^2**		

The average total-<u>built</u> area of the project: 7000 m^2
The average total area (<u>with the landscape</u>): 11500 m^2

Chapter 4

Site Analysis

4. Chapter four: Site Analysis

4.1. Approach

At the outset, I will mention the criteria on the basis of which I determined the location of my project:

1. Land on or clearly surrounded by the apartheid wall.
2. In Jerusalem area or the vicinity of Jerusalem, as explained in the first chapter.
3. A site overlooking Jerusalem (The old city) to support the architectural idea.
4. An area where the Palestinian citizens has been clearly affected by the apartheid wall and settlements.
5. A site overlooking and close to many sites that embody the effects of the wall on various aspects of life, and other sites that show the methods used by apartheid on the ground.

4.2. Location

4.2.1. Macro and Micro level maps

We will indicate the location of the selected piece of land gradually, starting with its location in relation to the world, and ending with its location in relation to the city of Jerusalem.

Figure 4.1 : Macro level map.
(By the Author)

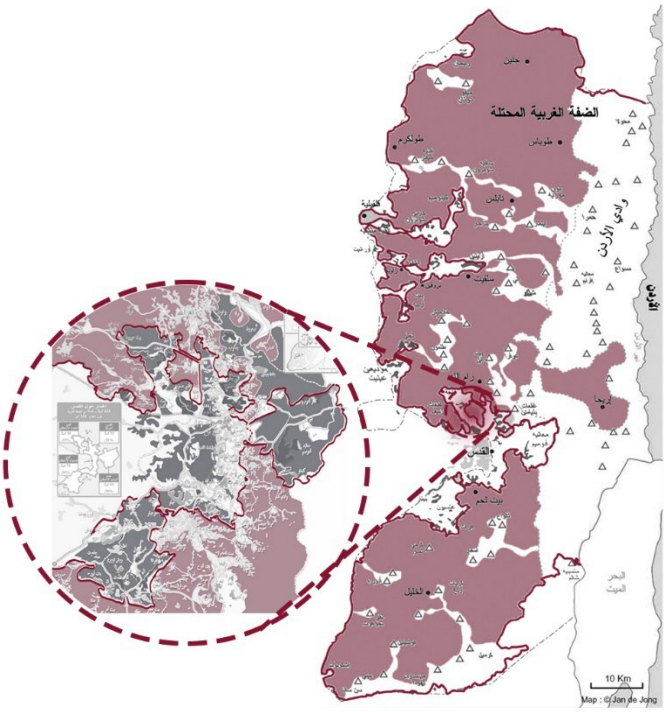


Figure 4.2: Micro level map.
(Wikipedia, 2005, Edited by the Author)

4.2.2. Arial Photos.

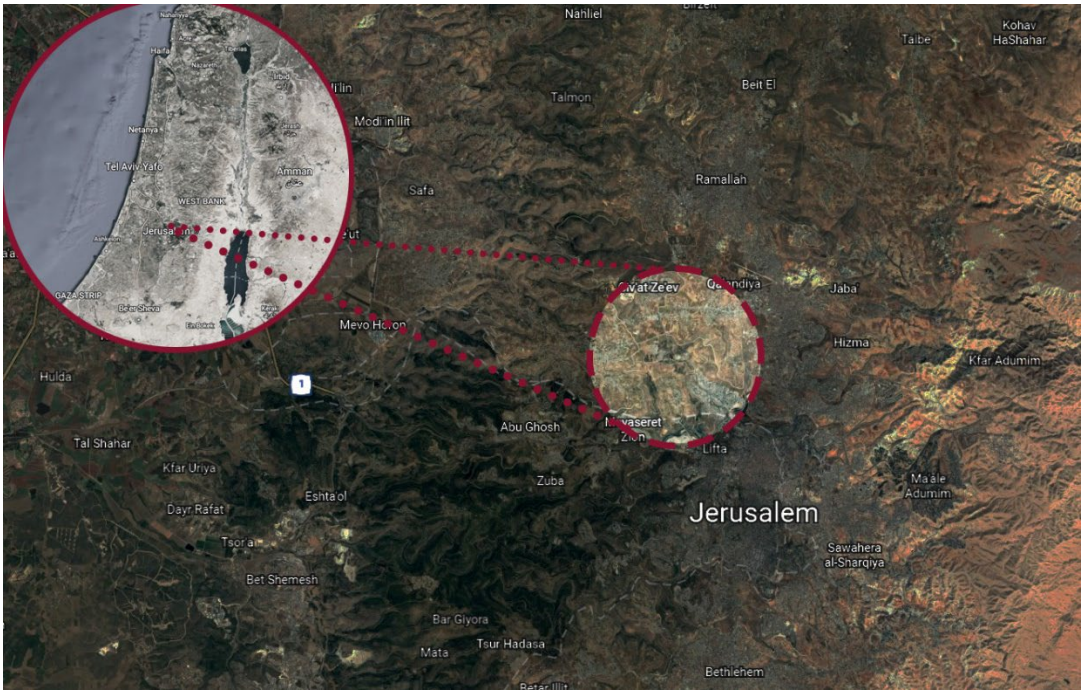


Figure 4.3: Arial photo shows the region.
(Google earth, Edited by the Author)

4.2.3. Distances.

The land is located in a strategic location, as it is surrounded from most sides by some important landmarks. Below is a picture showing the arial distances between the selected piece of land and some important landmarks that are somewhat close to it.

Figure 4.4: Arial photo shows the important arial distances.
(Google earth, Edited by the Author)

4.2.4. Accessibility

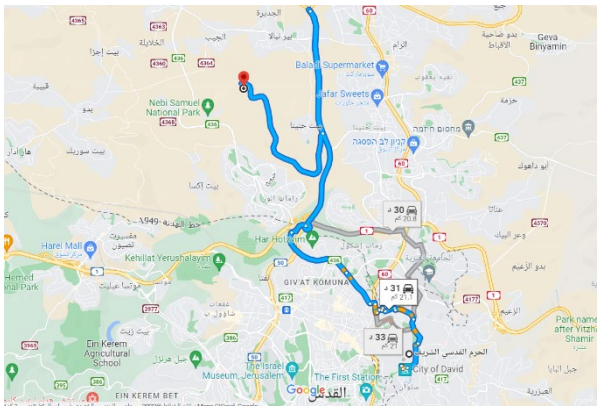


Figure 4.5: The road by car from Al-Aqsa Mosque to the land site. (Google Earth)

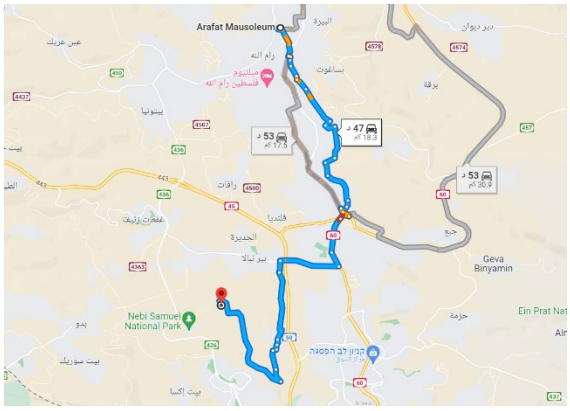


Figure 4.6: The road by car from Arafat Museum to the site. (Google Earth)

4.3. Site and surrounding.

4.3.1. Location and Physical Characteristics

As previously explained in the first chapter, the site will be selected in the areas located between the three settlement blocks surrounding Jerusalem, and after studying the three areas based on the previously mentioned criteria, the area shown in the figure below was chosen.

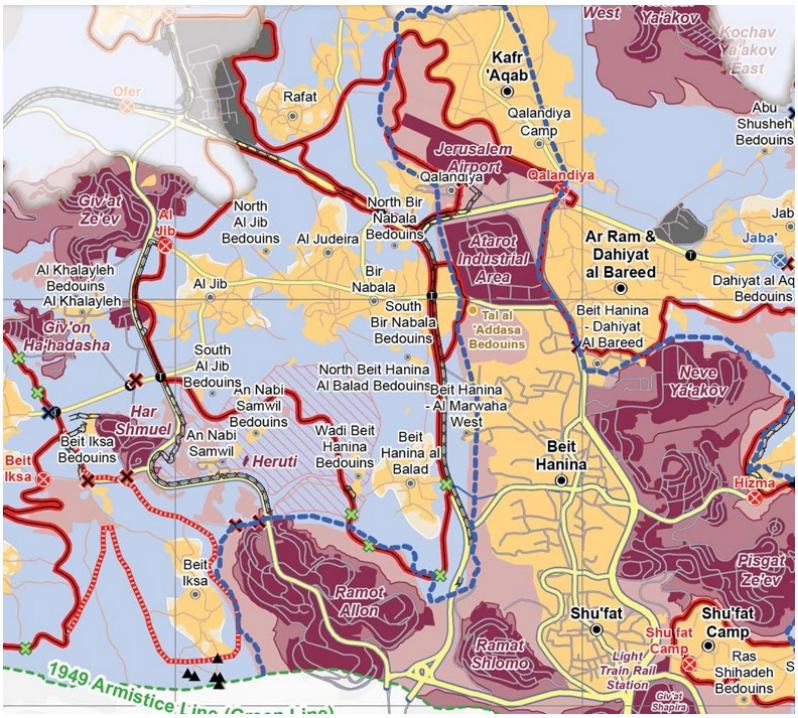


Figure 4.7: A close-up map showing the area of the site (OCHA, 2018)

The site was chosen in the hill of Nabi Samuel (the village of Nabi Samuel), where the wall significantly surrounds that area, separating it from the West Bank area as well as from the 48 lands, as it belongs politically to the West Bank, but geographically there is a wall and a gate separating the village from the West Bank.

A Palestinian hamlet called An-Nabi Samuel is situated in the Jerusalem Governorate 7.6 kilometers (horizontally) northwest of Jerusalem City. It is bordered to the east by the villages of Beit Hanina al Balad and Bir Nabala lands, to the north by Al Jib village, to the west by Beit Iksa village lands, and to the south by Beit Iksa village (ARIJGIS).

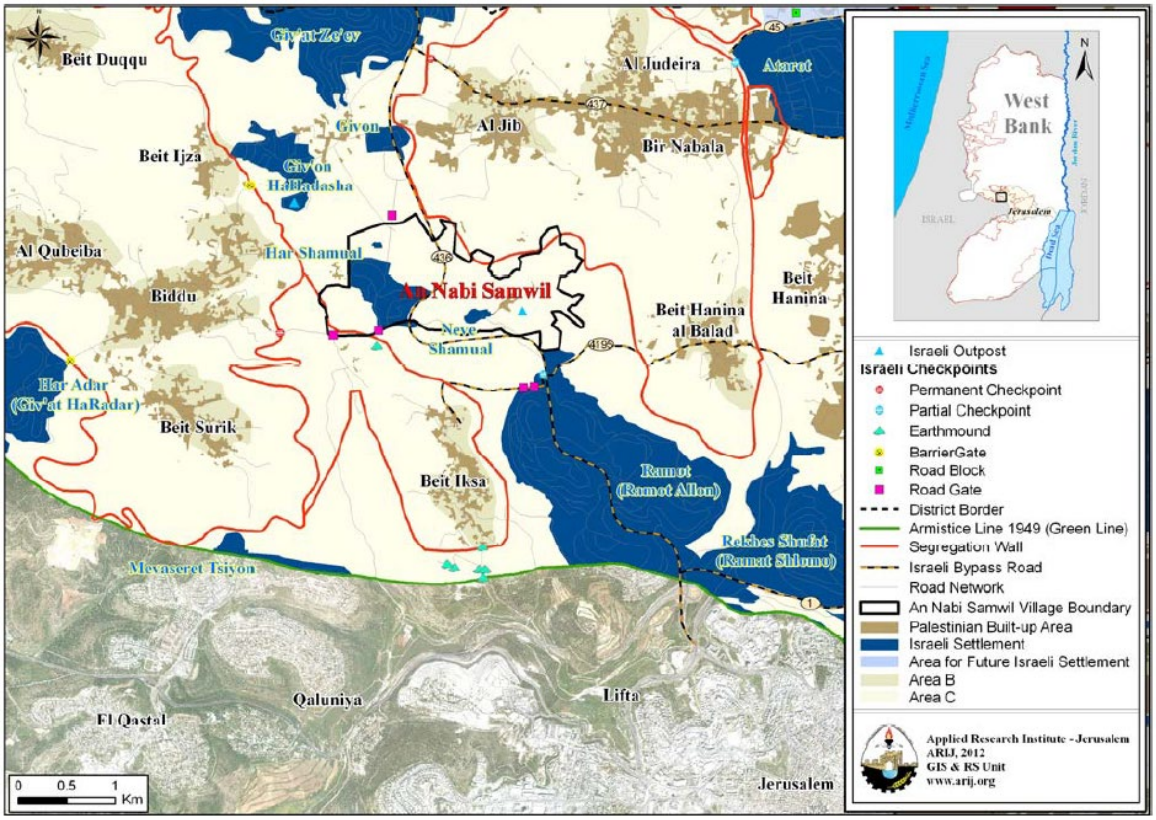


Figure 4.8: AL-Nabi Samuel Village location and borders
(ARIJ - GIS Unit, 2012)

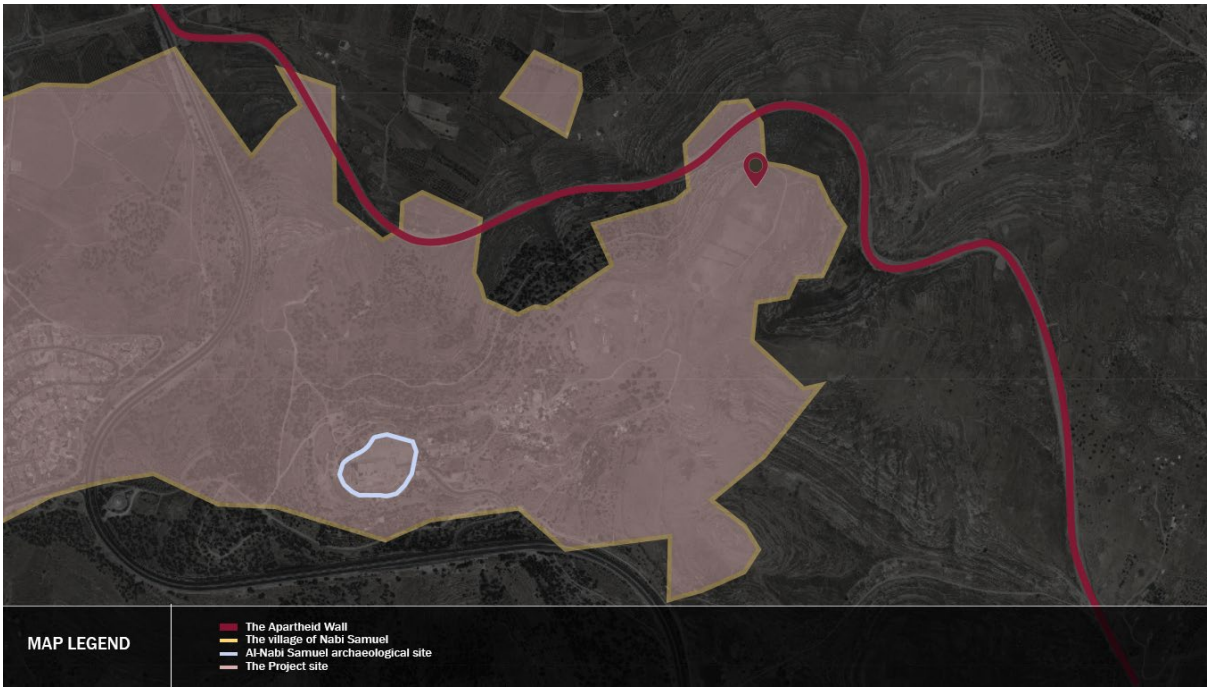


Figure 4.9: AL-Nabi Samuel Village site
(Gemolg. Edited by the Author)

4.3.2. History.

The Canaanite village "Masfat" is thought to have been built over by the present village. The name of the village was inspired by Prophet Samuel, who lived and was buried there (Al Dabbagh, 1991). The village's people are descended from the original Jordanian citizens, who lived there during the Salah ad Din era (An-Nabi Samuel Village Council, 2010).

There is only one mosque in the area, and it was built during the Salah ad Din era. The village contains several old Roman ruins. In addition, there are tombs, a mosque that was formerly a crusader church, the ruins of a walled yard, a reservoir coiled in rocks, and more (Al Dabbagh, 1991).

Figure 4.10: AL-Nabi Samuel ruins
(Wikipedia)

4.3.3. The Political situation

Due to the village's categorization as Area C and a national park, it is subject to an illegal planning system where construction, even of small structures, is virtually forbidden. As a result of the apartheid Wall's construction, An-Nabi Samuel became even more isolated, and its people now face significant access and mobility limitations since they are West Bank ID holders and because the hamlet is situated to the east of the Green Line and to the west of the Wall (Al-Haq,2018).

All of the An-Nabi Samuel village's 2,261 dunums were designated as area "C" under the Oslo II Interim Agreement, which was signed on September 28, 1995, between the Palestinian Liberation Organization (PLO) and Israel (the power of occupation), where Israel (the power of occupation) retains complete control over security and administration. Palestinian construction and land management are prohibited in area "C" unless a permission has been granted by the Israeli Civil Administration. The majority of the lands in area "C" are agricultural and were taken over by Israeli settlements.

Property was taken from a Nabi Samuel community for a number of Israeli purposes, including the construction of Israeli settlements on the village's land and the Segregation Wall (The Applied Research Institute,2012).
The Israeli government has taken 467 dunums of land from An-Nabi Samuel village during its occupation of Palestinian lands in order to build the Israeli settlements of Har Shamual and Neve Shamual. The Giv'at Ze'ev settlement block, which includes the towns of Givon and Giv'on Hadasha to the north as well as Ramot to the south, that surrounds the hamlet on all sides (Table 4.1) (Al-Haq,2018).

Table 4.1: Israeli settlements built on An-Nabi Samuel lands.

Settlement Name	Year of construction	Area confiscated from An Nabi Samwil (dunums)	Population of settlers
Har Shamual	1996	331	500
Neve Shamual	1996	136	N/A
Total		**467**	**500**

4.3.4. A Nabi Samuel and the Israeli Segregation Wall Plan.

A Nabi Samuel Village has been negatively and destructively impacted by the Israeli Segregation Wall.
The wall separates A Nabi Samuel hamlet from the other Palestinian villages, according to the most recent revision of the plan, which was posted on the Israeli Defense Ministry's website on April 30, 2007, and includes it as part of the Giv'at Ze'ev settlement block. There are Israeli settlements, farms, and open spaces on the remote lands (The Applied Research Institute,2012).

Table 4.2: The lands of An-Nabi Samuel that are separated by the Segregation Wall (ARIJ-GIS Unit, 2012)

NO.	Land classification	Area (dunums)
1	Agricultural areas	652
2	Open spaces	544
3	Israeli settlements	467
4	Forests	564
5	Palestinian residential areas	18
6	Wall zone	6
7	Construction area	10
Total		**2261**

Israel has also taken property from the hamlet of An-Nabi Samuel in order to build the bypass route 436 that links Jerusalem and Israeli towns in the occupied Palestinian area with the Israeli settlements that surround the village. The true danger posed by the bypass routes is in the 75-meter-wide buffer zone that the IOF has designated beside the road. Furthermore, Israeli settlers have continued to occupy An-Nabi Samuel village's territory by force in order to build the Israeli outpost "Hiroti" to the village's east. Israel built 232 of these outpost-style settlements in the West Bank during the course of the last 20 years (The Applied Research Institute,2012).

Palestinian Suffering in An-Nabi Samuel Resulting from the Construction of the Separation Wall.

The previously mentioned policies results in a high population and urbanization density in the village due to a lack of land for construction, as all of the village's lands were classified within area "C," where Israel retains full control over security and administration. This move has given the village residents a new socio-geographic reality that will be challenging to reverse. As a result, the Israeli civil administration must provide building licenses to Palestinians residing in the village, which is practically difficult, especially in locations close to Israeli settlements. Therefore, the people of An-Nabi Samuel village have two options: either stay in their current homes and adjust to the circumstances brought on by population expansion, or leave the area (The Applied Research Institute,2012).

4.4.Neighborhood context

4.4.1. Surrounding buildings

Here is a map showing the percentage of buildings to unbuilt lands in the vicinity of the site, as it turns out that the percentage of built-up area is low.

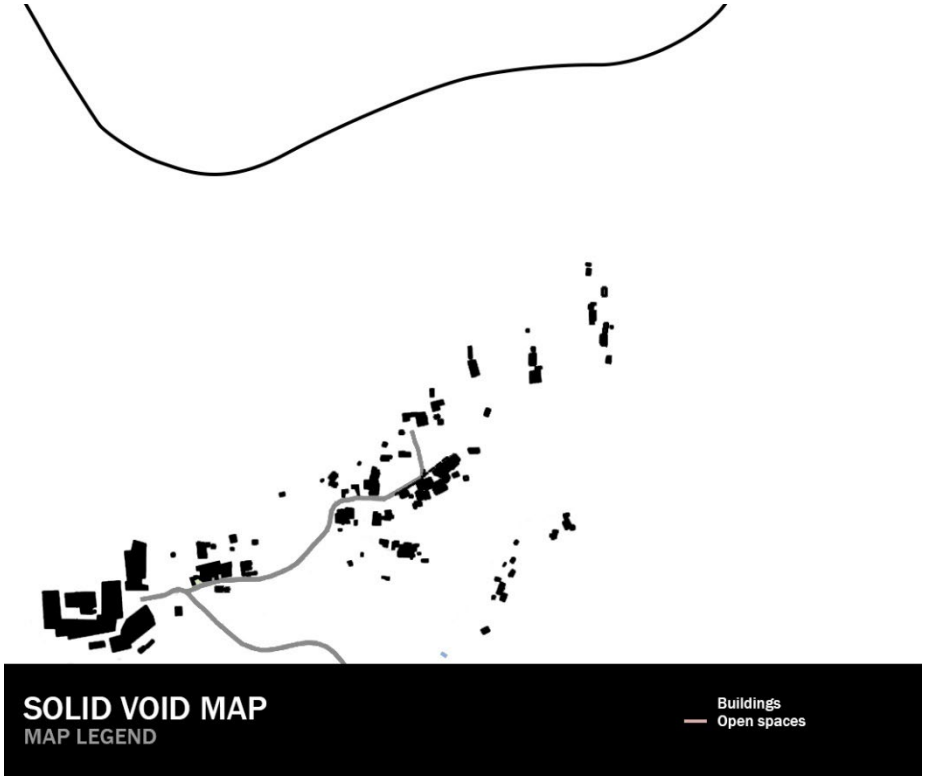


Figure 4.11: solid void map
(By the Author)

Below is another map showing the uses of the surrounding buildings, the majority of the buildings are residential buildings, with the exception of the archaeological historical area.

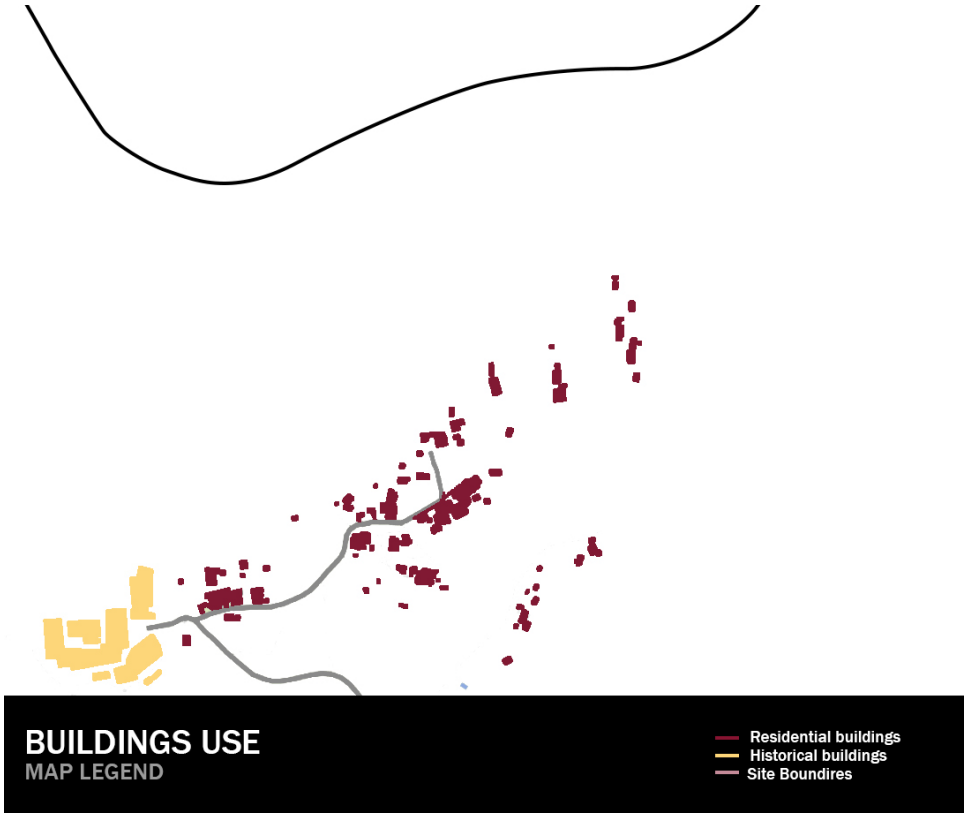


Figure 4.12: Buildings use map
(By the Author)

A total of 2,260 dunums make up An-Nabi Samuel, of which 732 are categorized as "arable" land and 18 are designated as "residential".

Table 4.3: Land use in Al-Nabi Samuil village -areas in dunum- (ARIJ – GIS Unit, 2012).

Total Area	Built up Area	Agricultural area (¯32)				Inland water	Forests	Open Spaces	Area of Industrial, Commercial & Transport Unit	Area of Settlements, Military Bases & Wall Zone
		Permanent Crops	Green-houses	Range-lands	Arable lands					
2,260	18	110	0	81	541	0	670	463	10	367

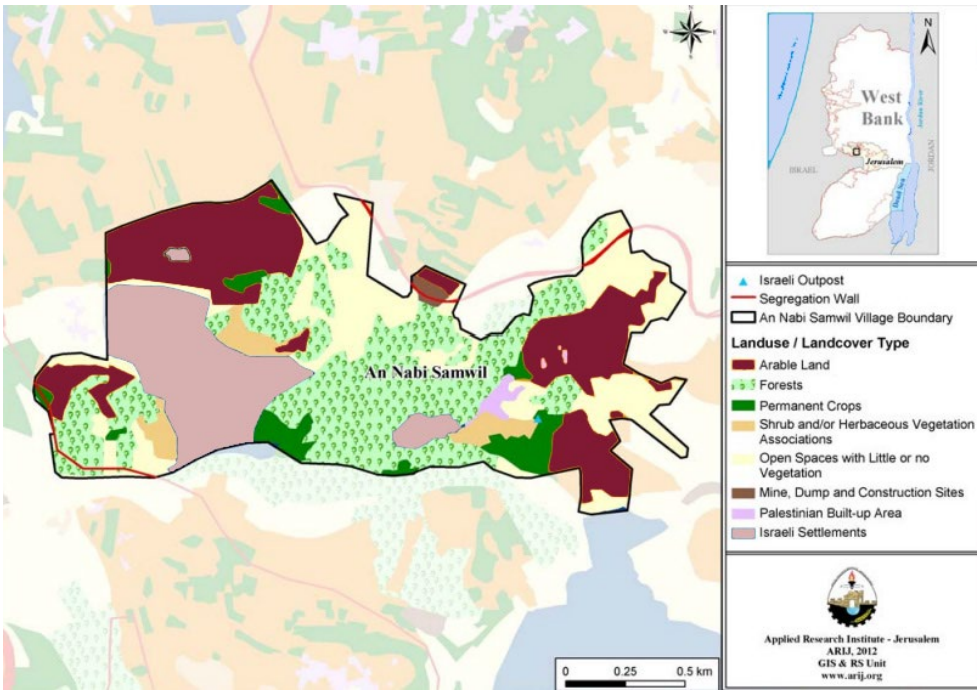


Figure 4.13: Land use map
(ARIJ - GIS Unit, 2012)

The agricultural sector is the largest part of the village, so it was necessary to study the nature of the trees planted in the area, as shown in the table below.

Table 4.4: Total area covered by fruit and olive trees in the town of An-Nabi Samuel (dunum)
(Palestinian Ministry of Agriculture - Jerusalem, 2010)

Fruit trees	Rainfed	Irrigated
Olives	82	0
Citrus	0	0
Stone-fruits	7	0
Pome fruits	13	0
Nuts	0	0
Other fruits	112	0
Total Area	**214**	**0**

4.4.2. Roads and transportation

Here is a map showing the main and secondary streets that surround the land, in addition to the apartheid wall that clearly surrounds the land.

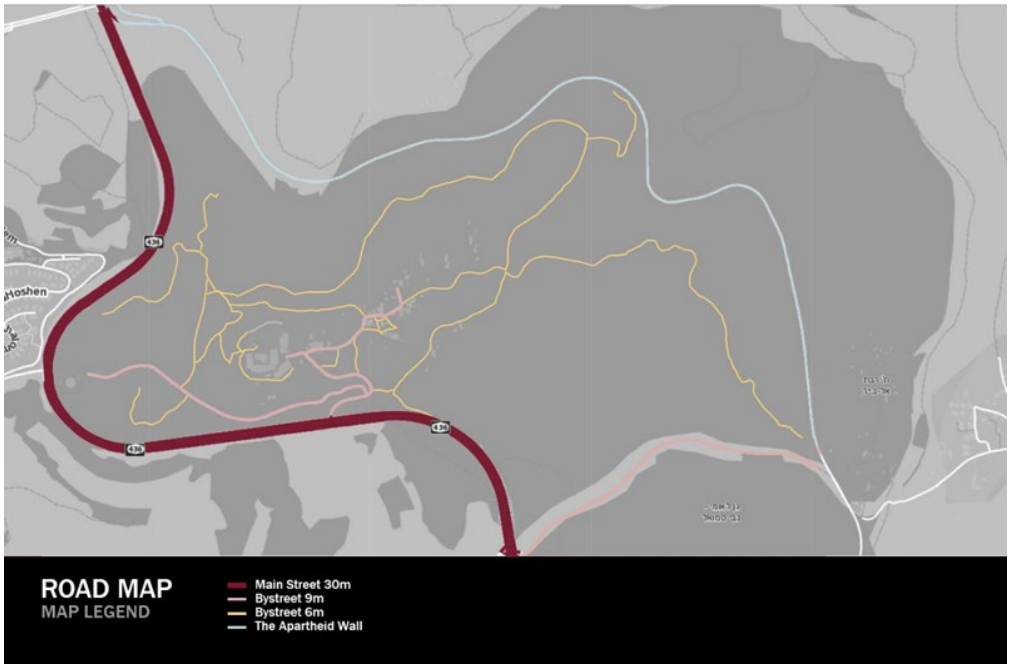


Figure 4.14: Road map
(By the Author)

4.4.3. Building context

Residents of Nabi Samuel were compelled to relocate into the abandoned homes and other buildings owned by Palestinians who fled in 1967 when their homes were demolished in an area just a few hundred meters from the mosque. One local claimed that some people moved into the residences left vacant by close relatives, while others were compelled to seek shelter in animal barracks (Farah,2018).

Residents of Nabi Samuel are severely constrained in their ability to construct because of its placement in Area C. Almost 60% of the West Bank is classified as Area C and is therefore entirely under Israeli control. Only 1% of Area C is slated for Palestinian usage (Farah,2018).

Based on the foregoing, most of the village's buildings are either old buildings that have stayed safe from Israeli demolition and are therefore built of stone, or buildings to which the Palestinians have been displaced and built of corrugated sheet.

Figure 4.15: Al-Nabi Samuel buildings
(Manor,2014)

4.5. Site and zoning

An-Nabi Samuel is situated 859 meters above sea level, here is a map showing the elevation and contour lines of the exact location.

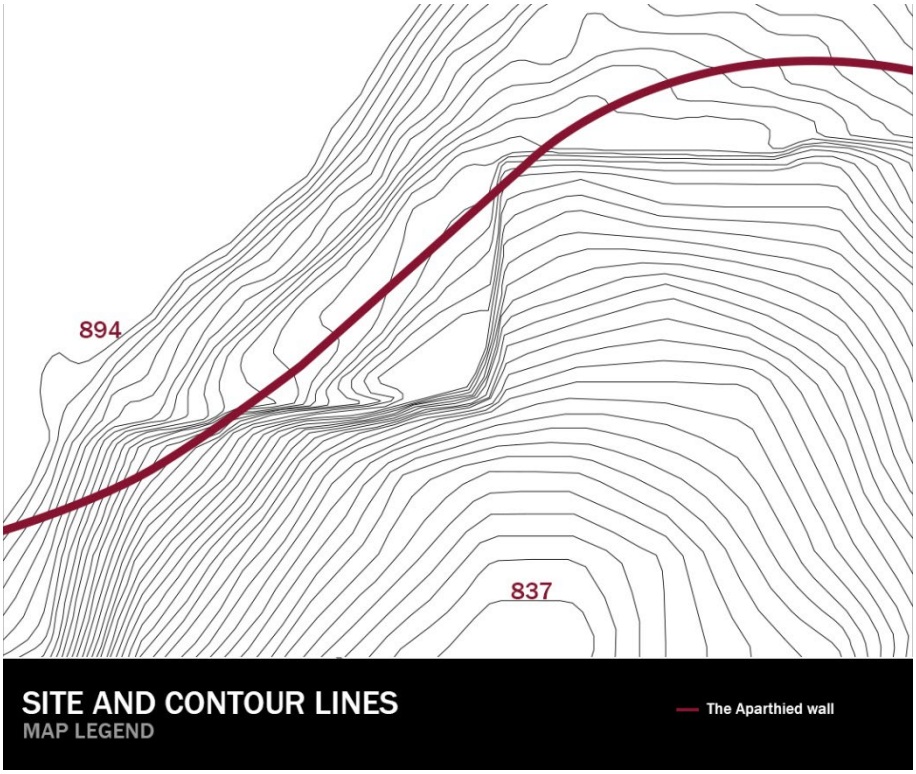


Figure 4.16: The project site contour line
(Govmap. Edited by the Author)

4.6. Climate

In this part, I will study the region's climate in detail in terms of the sun path, humidity, wind speed, radiation, and many others, as will be explained later.

In general, the mean annual rainfall in An-Nabi Samuel is 582.3mm.16 degrees Celsius is the average annual temperature, and 60.4% of that is relative humidity (ARIJ-GIS Unit, 2012).

4.6.1. sun path

I will study the movement of the sun around the earth on the fall and spring solstices.
The pictures below show the movement of the sun at autumn solstice on September 21.

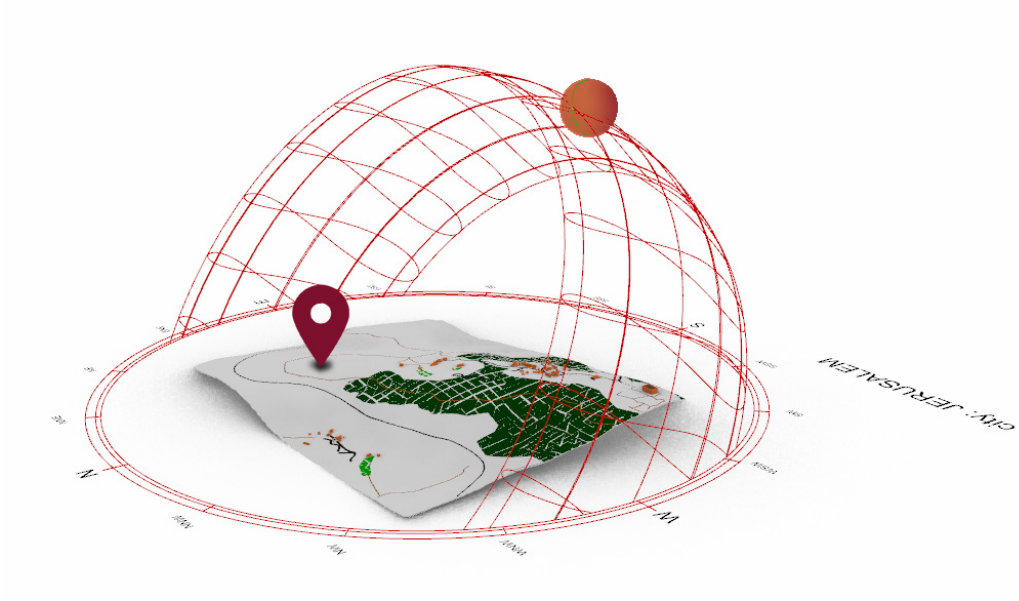


Figure 4.17: Sun path -21 Sep- 3D.
(Grasshopper, By the Author)

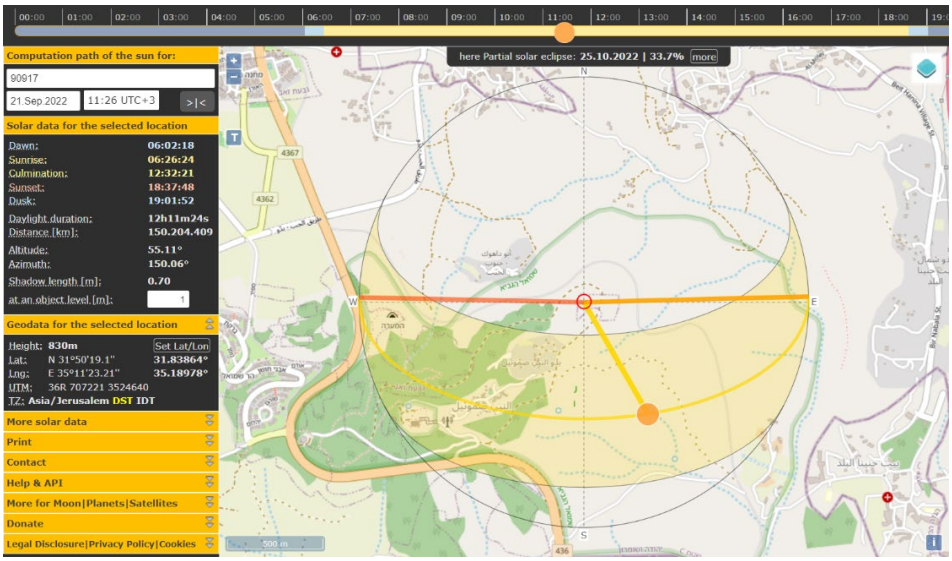


Figure 4.18: Sun path -21 Sep-.
(Suncalc)

The pictures below show the movement of the sun at autumn solstice on March 21.

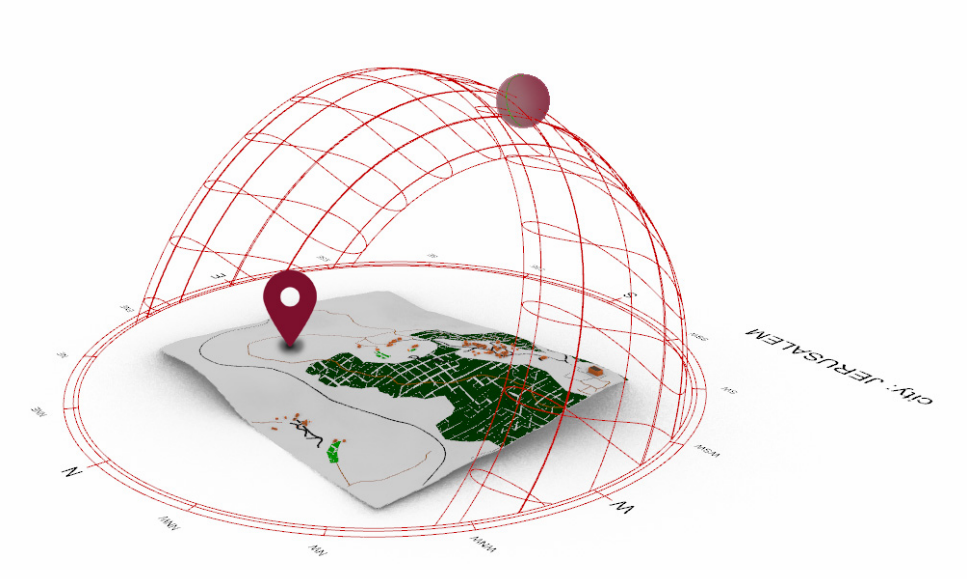


Figure 4.19: Sun path -21 Mar- 3D.
(Grasshopper, By the Author)

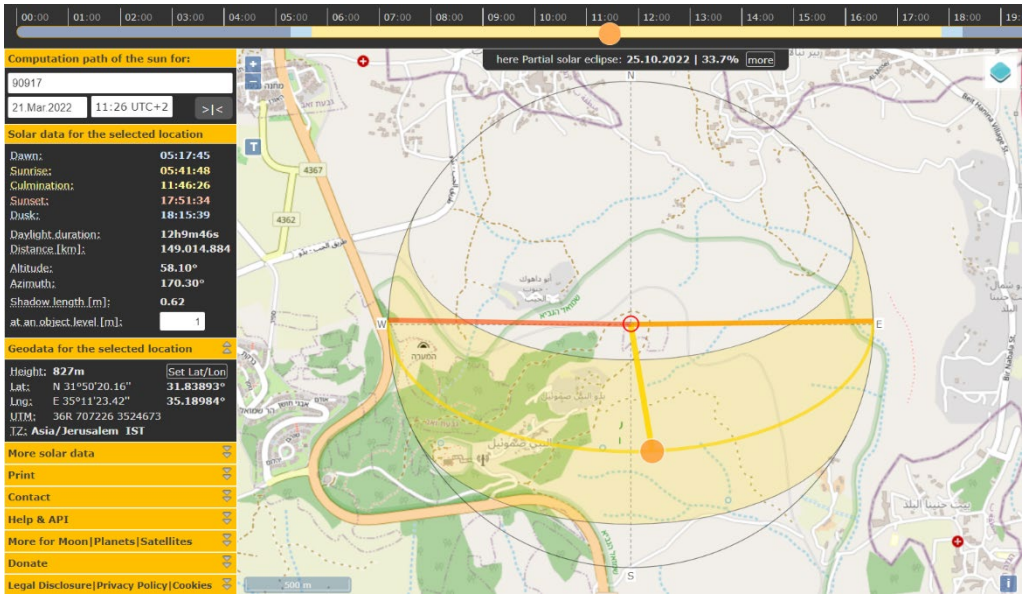


Figure 4.20: Sun path -21 Mar-.
(Suncalc)

4.6.2. Average temperatures and precipitation

The "mean daily maximum" (solid red line) displays the highest temperature on an average day for each month. The average minimum temperature is shown by the "mean daily minimum" (solid blue line). The average of the hottest day and coldest night of each month over the past 30 years are represented by the dashed red and blue lines.
Precipitations each month above 150 mm are often moist, whereas those under 30 mm are typically dry.

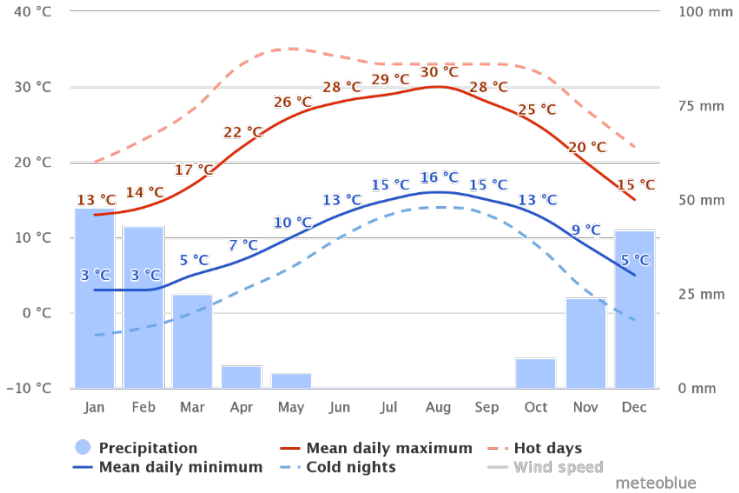


Figure 4.21: Average temperatures
(meteoblue)

4.6.3. Cloudy, sunny, and precipitation days

This chart shows the sunny and the rainy days during the whole year.

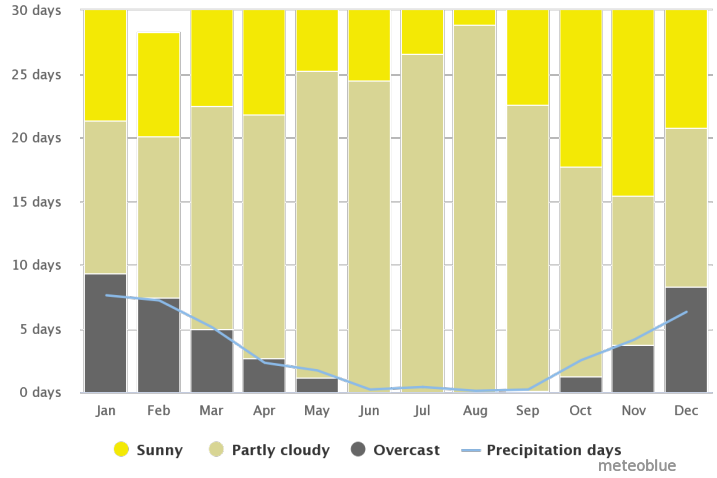


Figure 4.22: Cloudy, sunny, and precipitation day (meteoblue)

4.6.4. Maximum temperatures

This Chart shows the temperatures during the year, it seems like July and August are the hottest months while January and December are the coldest.

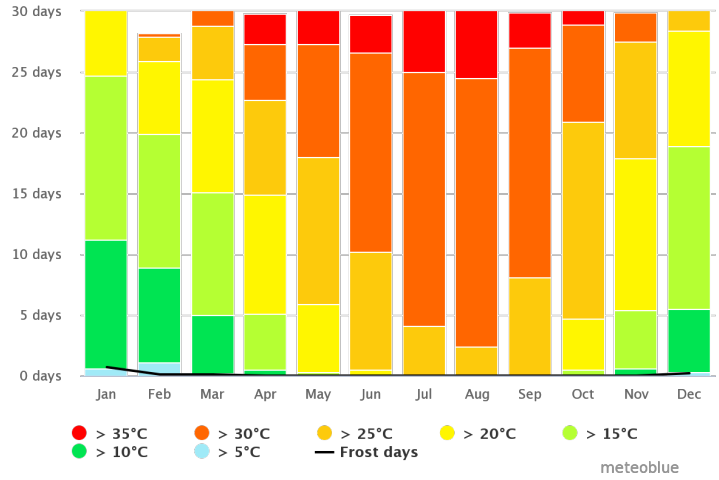


Figure 4.23: Maximum temperatures (meteoblue)

4.6.5. Precipitation amounts

According to the chart below, it seems like most of the days are “dry” during the whole year, we can read some precipitation in the months from November to March, but it is very minor precipitation that does not greatly affect the project.

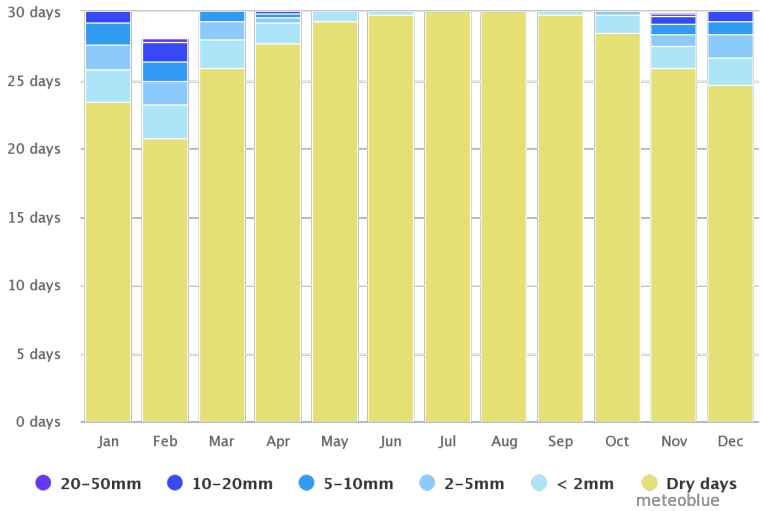


Figure 4.24: Precipitation amounts
(meteoblue)

4.6.6. Wind speed

The chart down below shows the wind speed during the year, it appears that June, July and August are the windiest months.

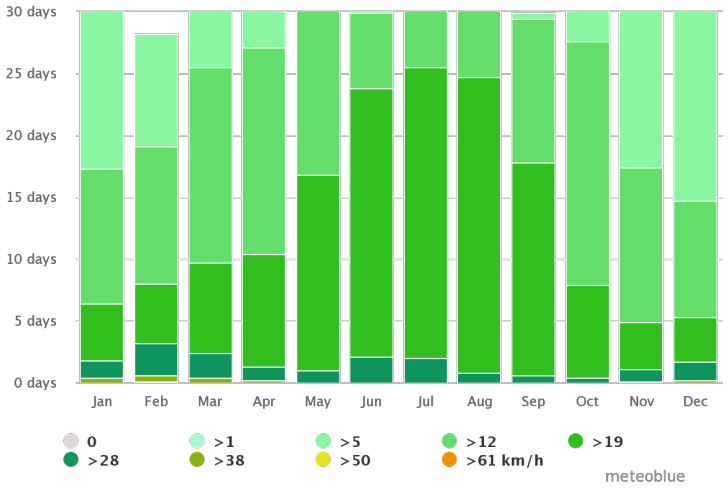


Figure 4.25: Wind Speed
(meteoblue)

4.6.7. Wind rose

This Chart shows the wind direction on the site, and it turns out that it towards the west and southwest.

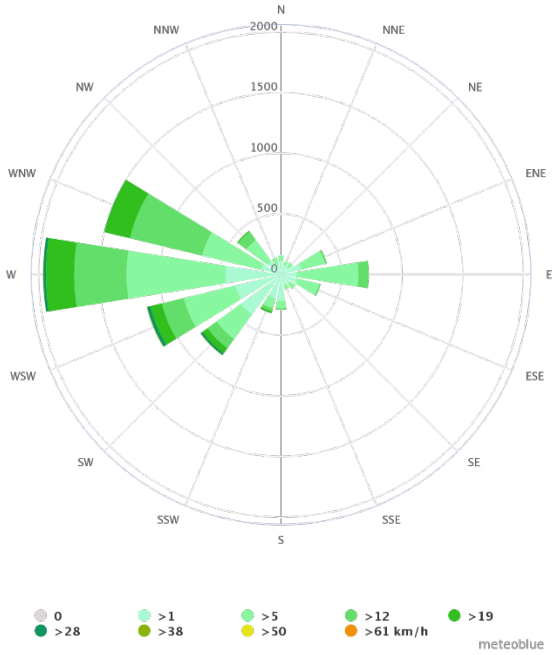


Figure 4.26: Wind rose
(meteoblue)

4.7. Views

The best view is towards the southeast, towards the Old City of Jerusalem.

Figure 4.27: View 1 - site-
(Govmap. Edited by the Author)

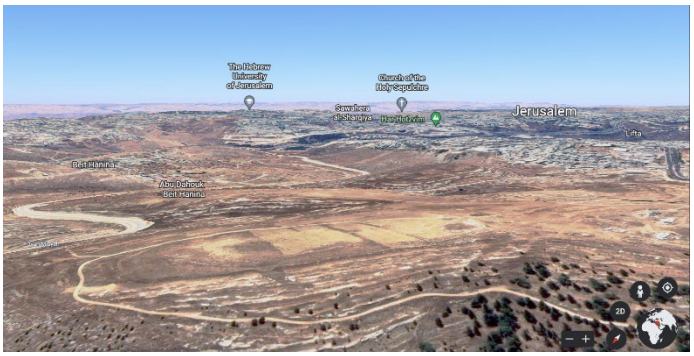


Figure 4.28: View 1 from the site
(Google Earth)

The reverse view is towards the north and overlooks the city of Ramallah and the villages northwest of Jerusalem.

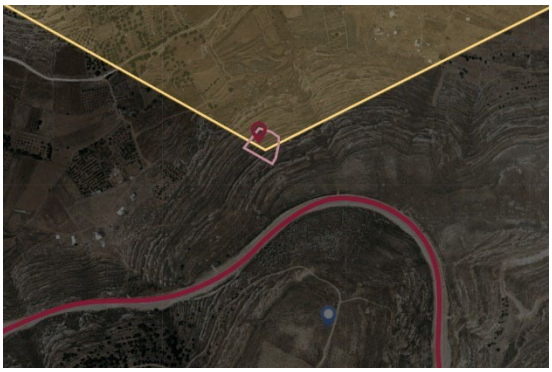


Figure 4.29: View 2- site-
(Govmap. Edited by the Author)

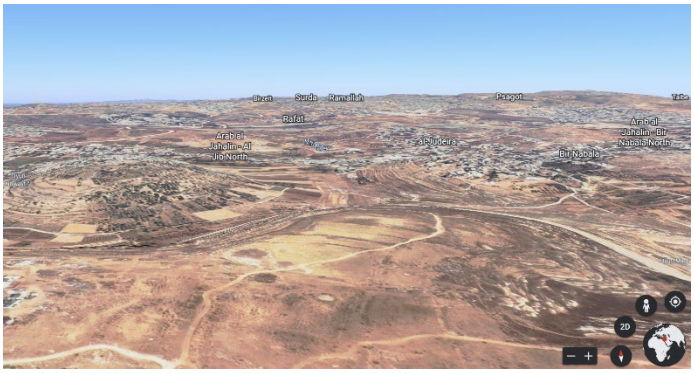


Figure 4.30: View 2 from the site
(Google Earth)

And here is a picture shows the project's site from Al-Aqsa Mosque.

Figure 4.31: View 3 to the site
(Google Earth)

4.8. Human and Culture

4.8.1. Population

An-Nabi Samuel had 233 residents overall in 2007, 123 of them were men and 110 women, according to the Palestinian Central Bureau of Statistics (PCBS). In 41 dwelling units, 43 households were present (Al-Haq).

According to the General Census of Population and Housing conducted by PCBS in 2007, An-Nabi Samuel's age groups were distributed as follows: 38.2% of those surveyed were under the age of 15, 54.5% were between the ages of 15 and 64, and 2.1% were 65 or older. Data also revealed that the village's male-to-female ratio was 111.8:100, which meant that males and females made up 52.8% and 47.2% of the population, respectively (Al-Haq).

Residents of An-Nabi Samuel are primarily from the families of Barakat, Al 'Abed, 'Obeid, Kasawnah, and 'Abd al Latif (An-Nabi Samuel Village Council, 2010).

4.8.2. Immigration

Since the Al Aqsa Intifada in 2000, roughly 17 families, or about 100 people, have fled the area, according to ARIJ's field study (An-Nabi Samuel Village Council, 2010).

4.8.3. Education

The population of An-Nabi Samuel had an estimated 8.7% illiteracy rate in 2007, with 78.6% being female. 11.3% of those who could read and write had no formal education, 24.4% had completed elementary school, 40.6% had finished high school, 6.9% had finished secondary school, and 8% had finished their higher education.

Table 4.5: Population of Nabi Samuel (10 years and older), by sex and level of education, 2007. (Al Haq)

SEX	Illite-rate	Can read & write	Elem-entary	Prepa-ratory	Second-ary	Associate Diploma	Bach-elor	Higher Diploma	Master	PhD	Un-known	Total
M	3	6	24	44	6	2	1	-	1	-	-	**87**
F	11	12	15	21	5	6	3	-	-	-	-	**73**
T	14	18	39	65	11	8	4	-	1	-	-	**160**

4.9. Infrastructure and Natural Resources

4.9.1. Electricity and Telecommunication Services

Since 1981, An-Nabi Samuel has been linked to a public energy grid. The primary source of electricity in the village is Jerusalem Electricity Company.

4.9.2. Transportation Services

In An-Nabi Samuel hamlet, a public bus is regarded as the primary mode of transportation. Regarding the village's road system, there are 2 km of unpaved "secondary" roads (An-Nabi Samuel Village Council, 2010).

4.9.3. Water Resources

The West Bank Water Department delivers water to An-Nabi Samuel via the public water network set up in 1992. The majority of dwelling units—about 100%—are linked to this network. An-Nabi Samuel received roughly 6,000 cups of water per year in 2010. As a result, An-Nabi Samuel typical daily water use per person is 64 liters (An-Nabi Samuel Village Council, 2010).

4.9.4. Sanitation

Since there is no municipal sewer system in An-Nabi Samuel, most villagers dispose their waste primarily in cesspits (An-Nabi Samuel Village Council, 2010).

4.9.5. Solid Waste Management

The management of the collection and disposal of solid waste produced by the residents and businesses in the village is under the control of the Joint Services Council for Development and Planning of northwestern Jerusalem. Due to the high cost of solid waste management, the population served by residential solid waste collection and transportation services has been assessed a fee (about 500 NIS/year) (An-Nabi Samuel Village Council, 2010).

The majority of the residents of An-Nabi Samuel take advantage of the solid waste services, which involve collecting trash in plastic bags from homes, businesses, and public spaces before transferring it to eight containers placed around the hamlet. Once a week, the Joint Council gathers the solid garbage and drives it 15 kilometers outside the community to the Ramallah Municipality dumping facility, where it is buried (An-Nabi Samuel Village Council, 2010).

Chapter 5

Concept & Design

5. Chapter Five: Concept & Design

5.1. Design Concept

A Palestinian Storytelling on a part of the apartheid wall - after the liberation -, as the wall is an intensification of the substitutionary settlement project based mainly on the policy of ethnic cleansing carried out by Israel (the occupying power) in the occupied Palestinian.

In this museum, the suffering and tragedy that the Palestinian people went through during the past decades will be mentioned, at the same time, the hope and optimism of the inevitability of freedom will be clearly highlighted.

The Project Concept is based on dividing the museum into three stages: the stage of suffering of the Palestinian people, the stage of transformation and ascent towards freedom, and the stage of liberation. These stages were implemented by directing the building towards the Old City of Jerusalem and the Dome of the Rock Mosque in particular, which is less than 8 km away from the project site, so that the visitor's journey to the project begins from breaking the apartheid wall, passing through the stages of suffering that lie entirely underground, and then the stage of transformation (The radical ascent from the darkness to see the natural lighting for the first time), reaching the Freedom stage, which is the highest point of the project, from which the Dome of the Rock can be clearly seen.

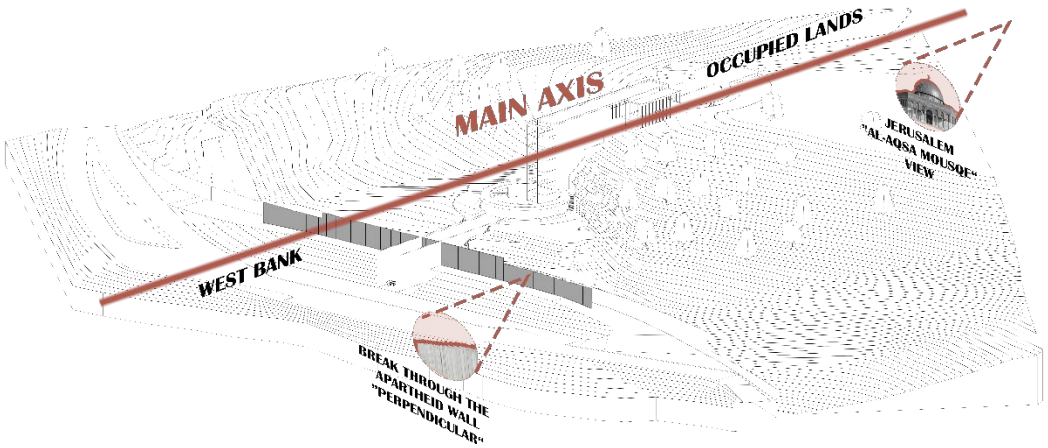


Figure 5. 1: Main Axis
(By the Author)

The project will be divided into 3 main phases:

a. Suffering phase
b. Uprising Phase “The turning point"
c. Liberation Phase

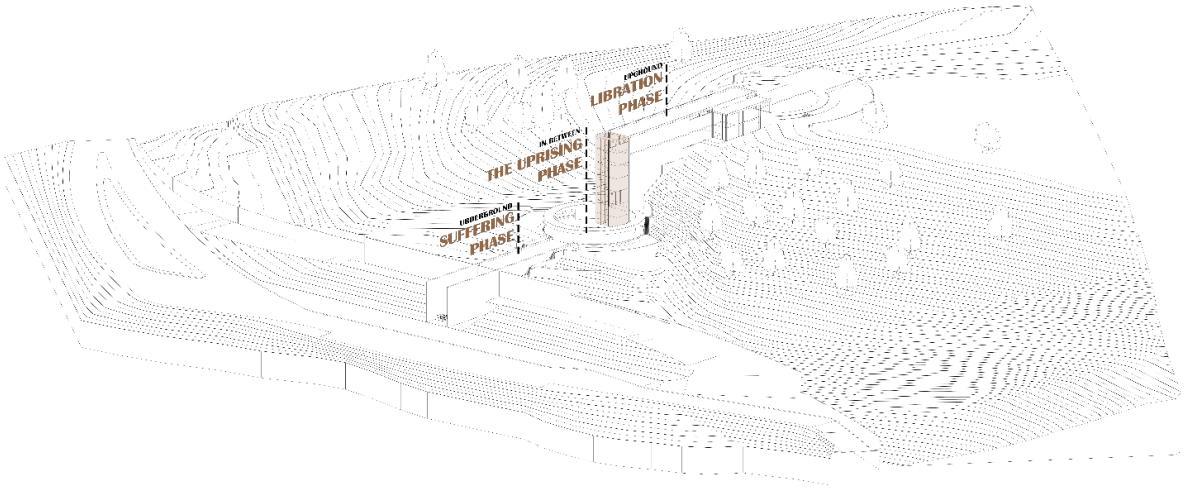


Figure 5. 2: Main Phases
(By the Author)

5.2. Architectural Drawings

5.2.1. Plans

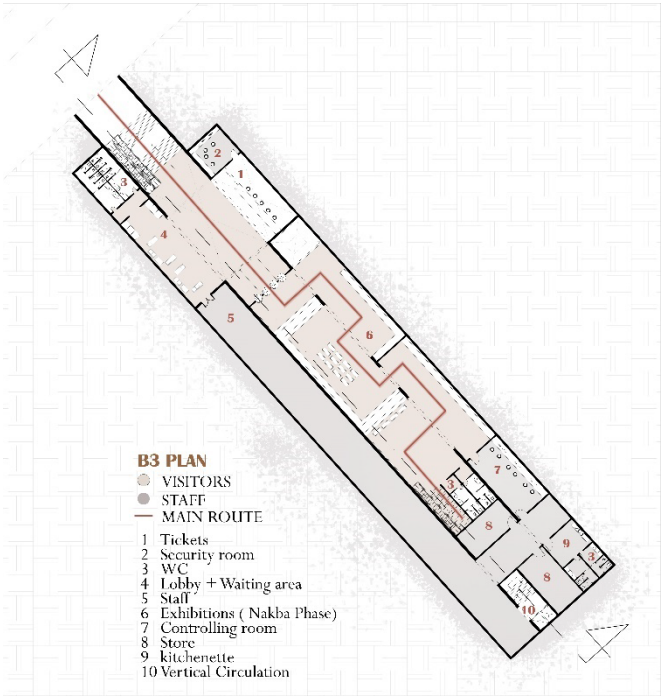


Figure 5. 3: B3 Floor Plan
(By the Author)

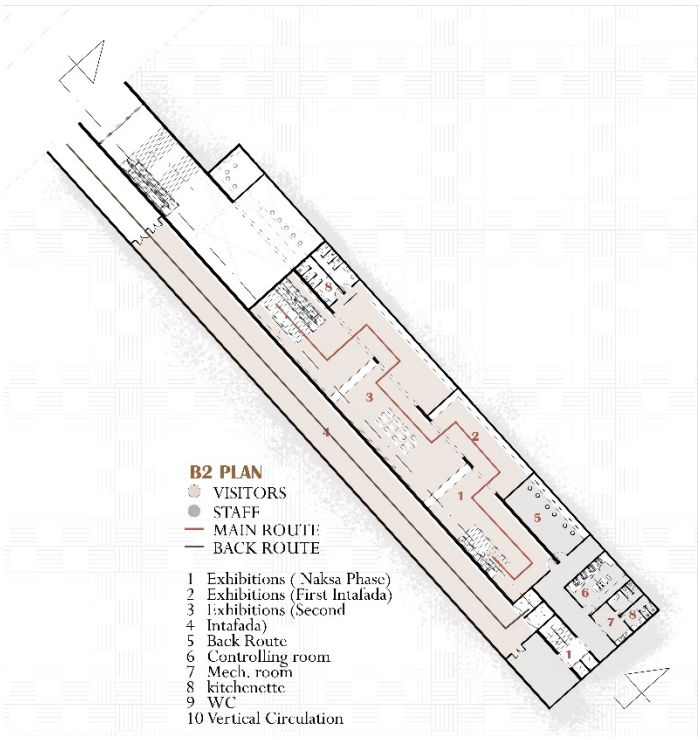


Figure 5.4: B2 Floor Plan
(By the Author)

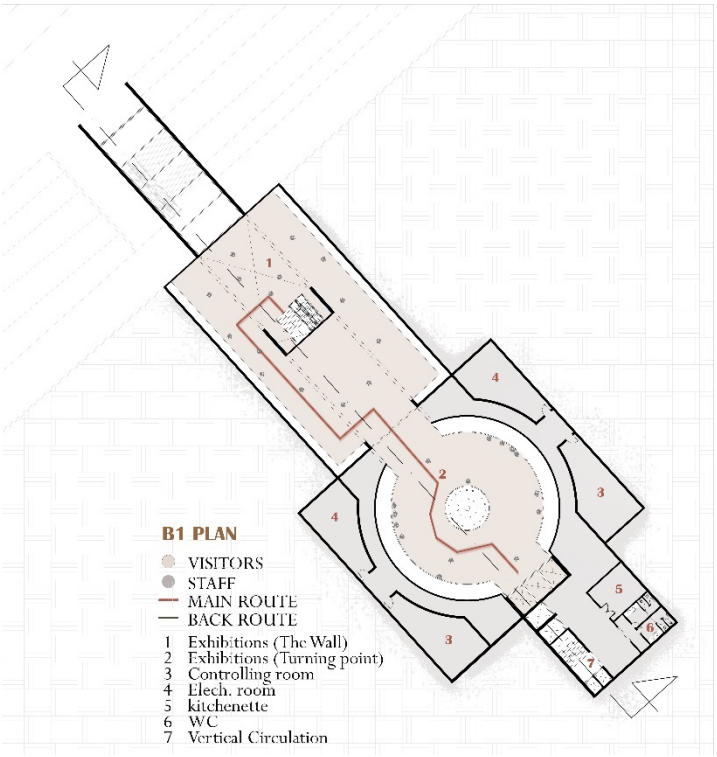


Figure 5.5: B1 Floor Plan
(By the Author)

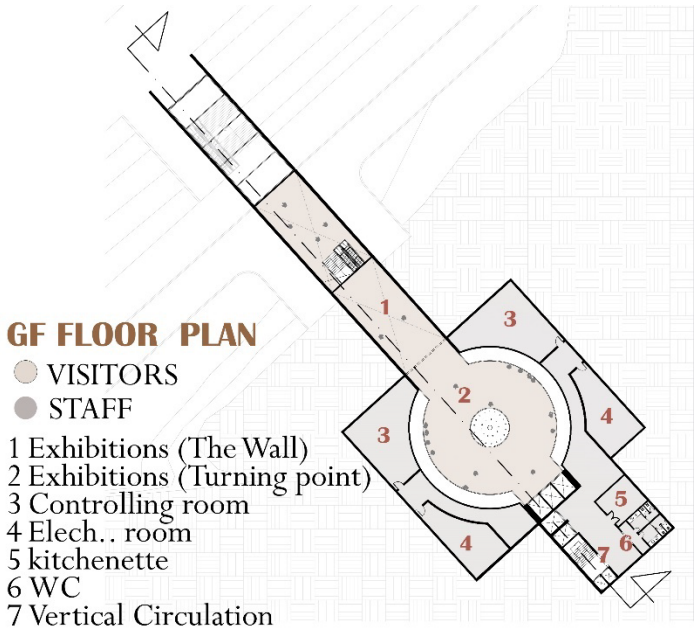


Figure 5.6: Ground Floor Plan
(By the Author)

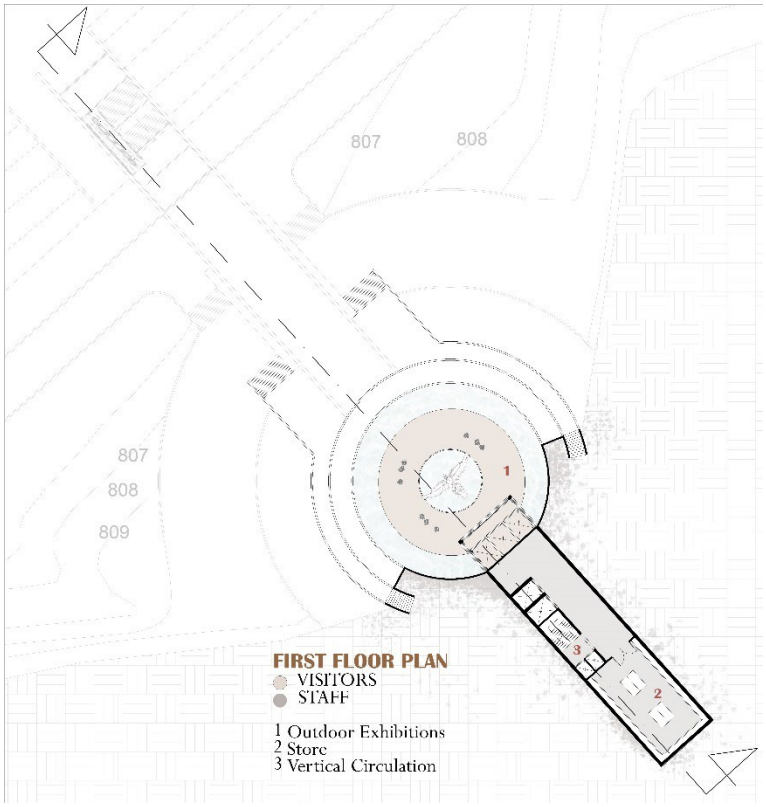


Figure 5.7: First Floor Plan
(By the Author)

Figure 5.8: Second Floor Plan
(By the Author)

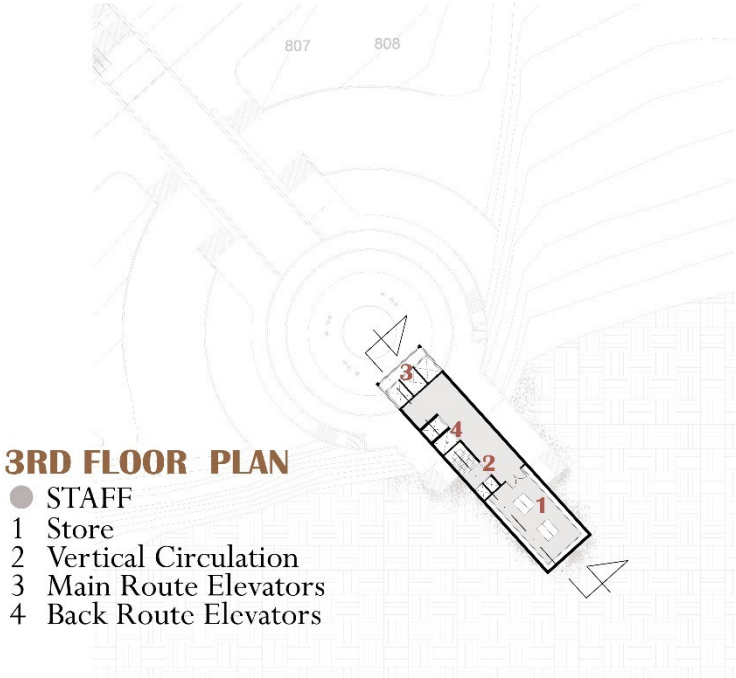


Figure 5.9: Third Floor Plan
(By the Author)

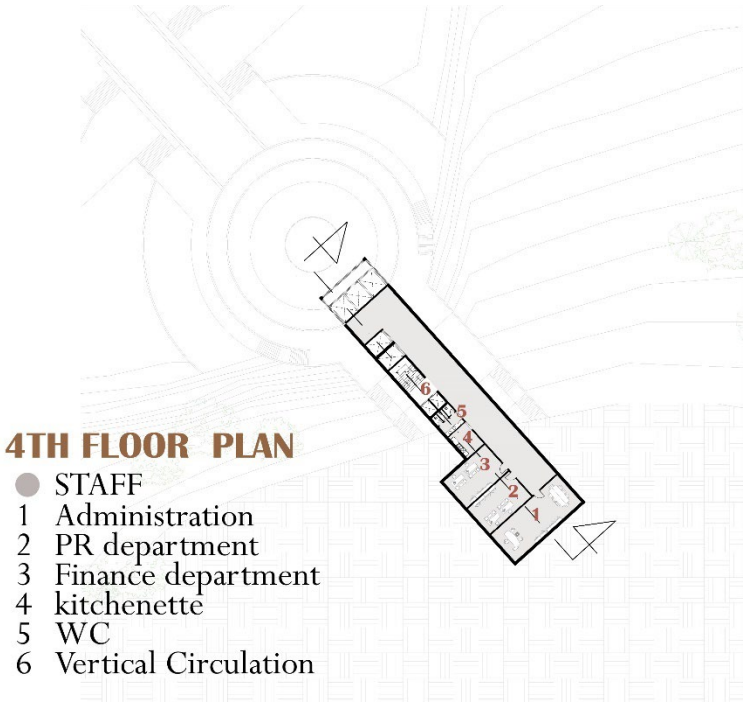


Figure 5.10: Forth Floor Plan
(By the Author)

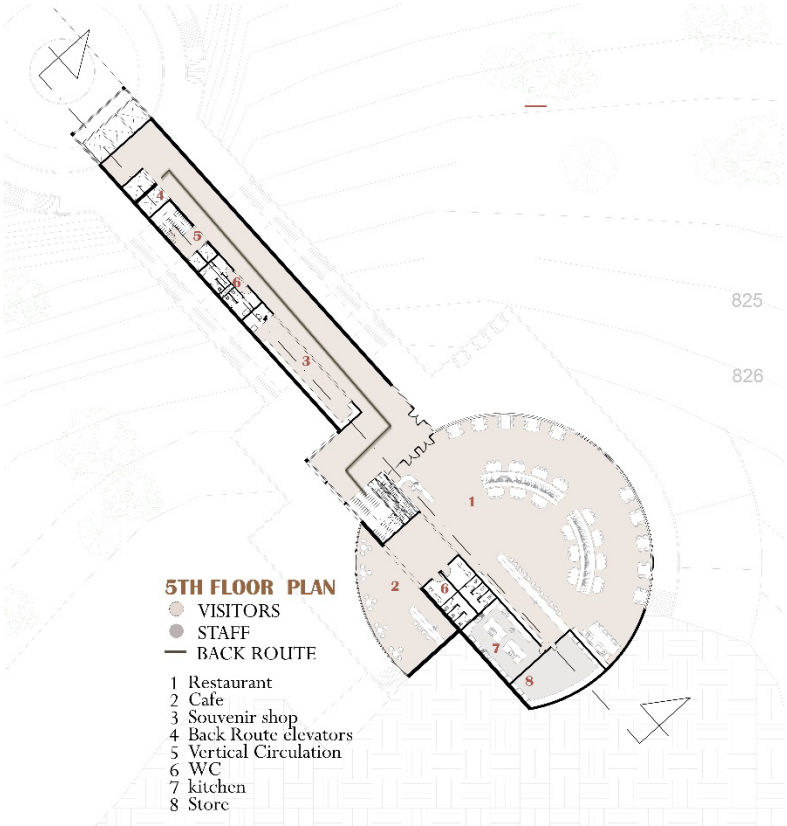


Figure 5.11: Fifth Floor Plan
(By the Author)

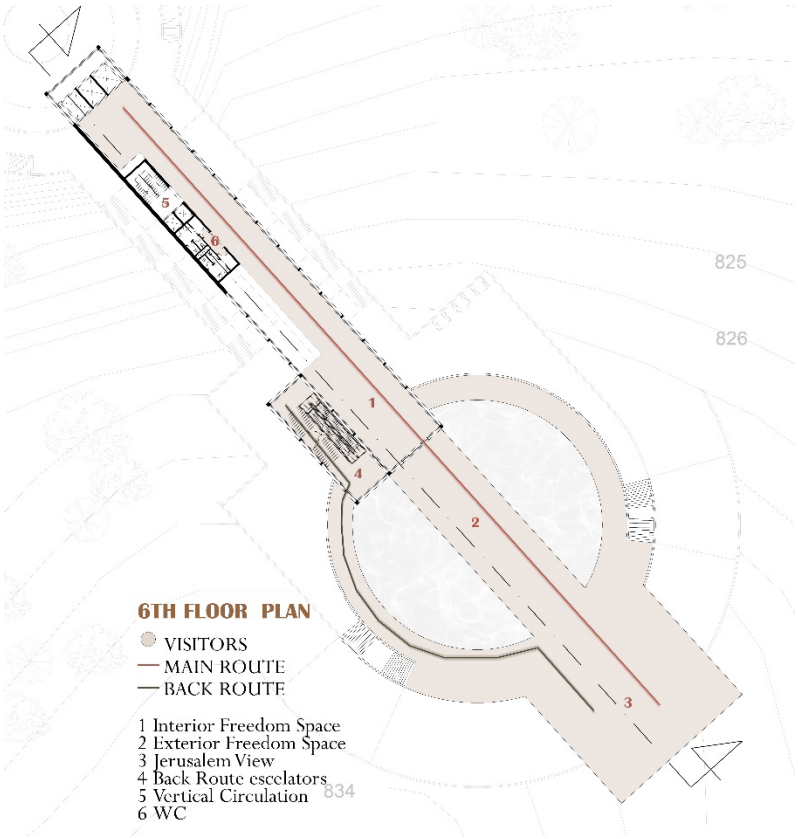


Figure 5.12: Sixth Floor Plan
(By the Author)

5.2.2. Section

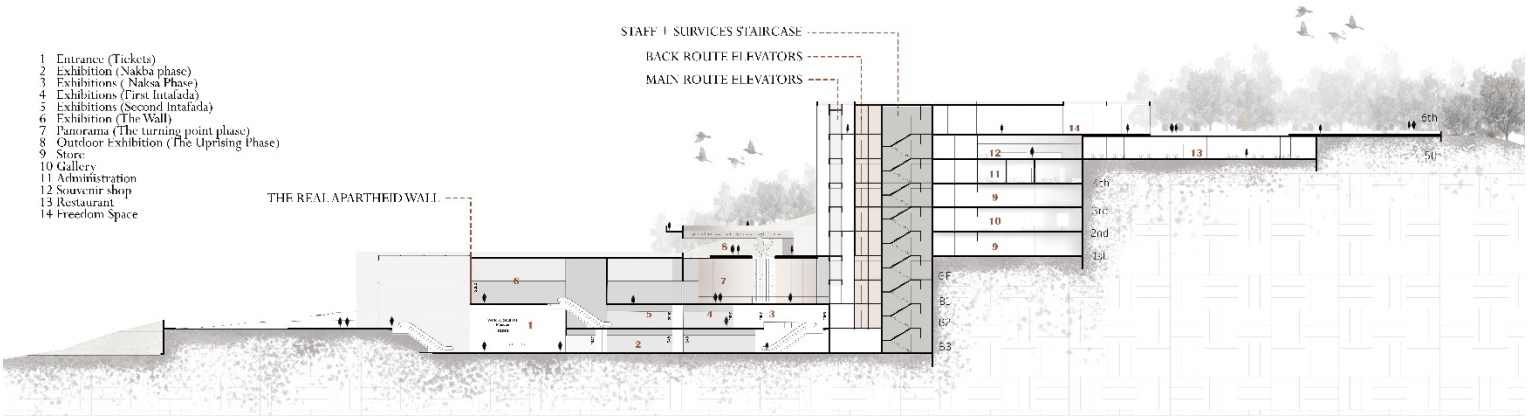


Figure 5.13: Section
(By the Author)

5.2.3. Elevations

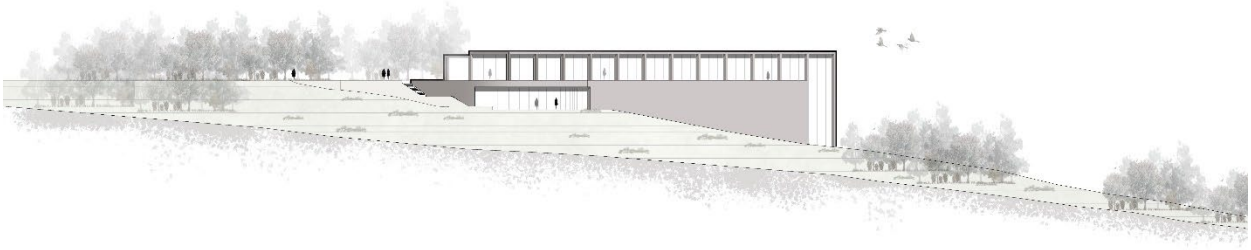


Figure 5.14: East Elevation
(By the Author)

Figure 5.15: North Elevation
(By the Author)

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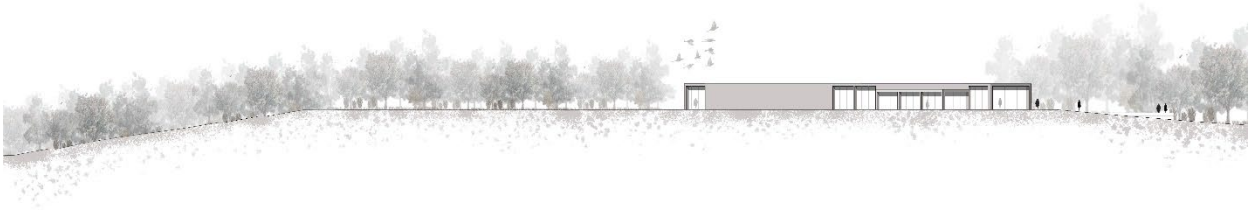

Figure 5.16: South Elevation
(By the Author)

Figure 5.17: West Elevation
(By the Author)

5.2.4. Site Plan

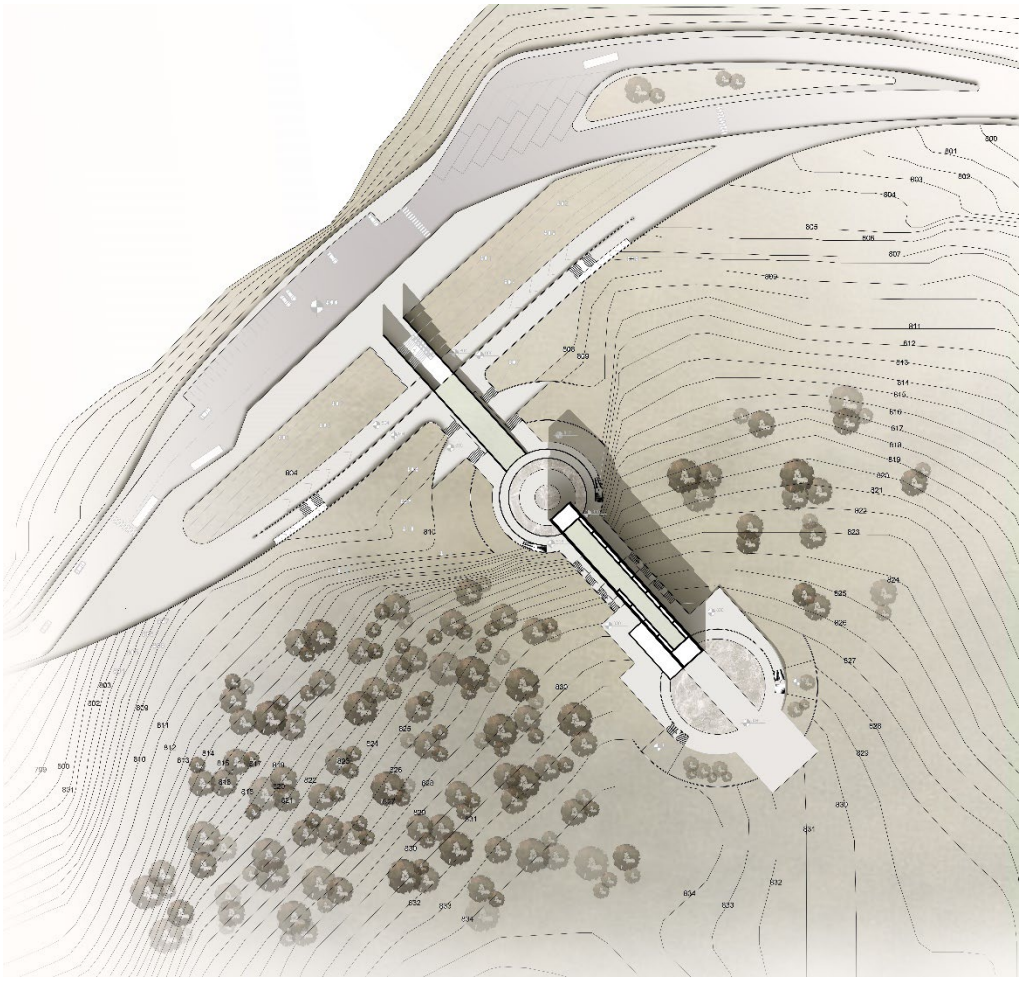

Figure 5.18: Site Plan
(By the Author)

5.2.5. Circulation

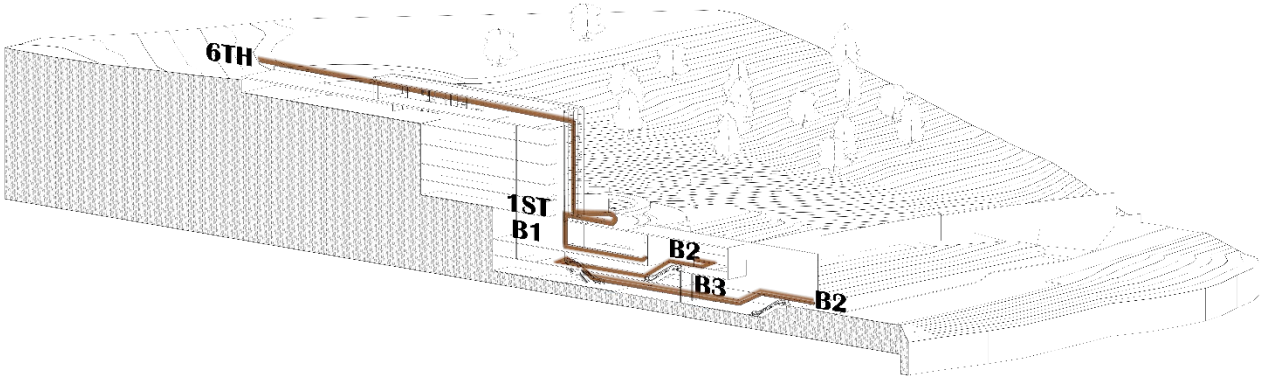

Figure 5.19: Main Route
(By the Author)

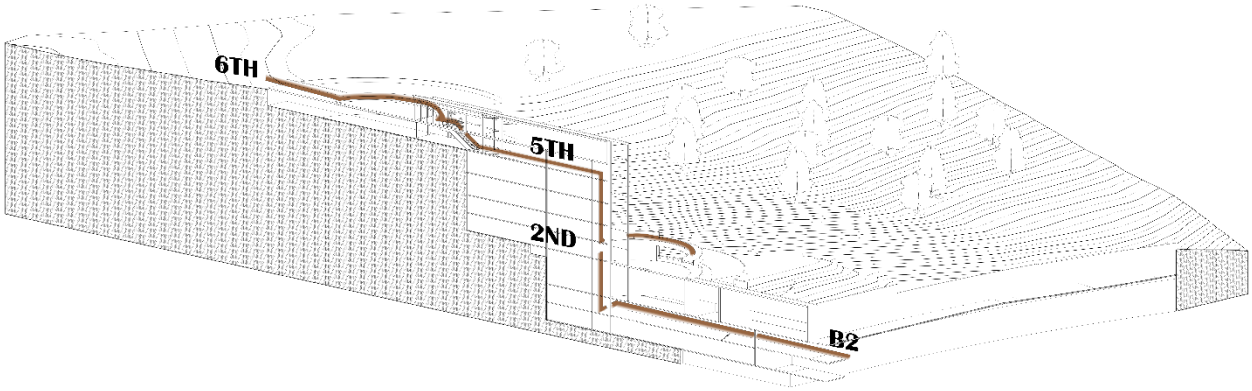

Figure 5.20: Back Route
(By the Author)

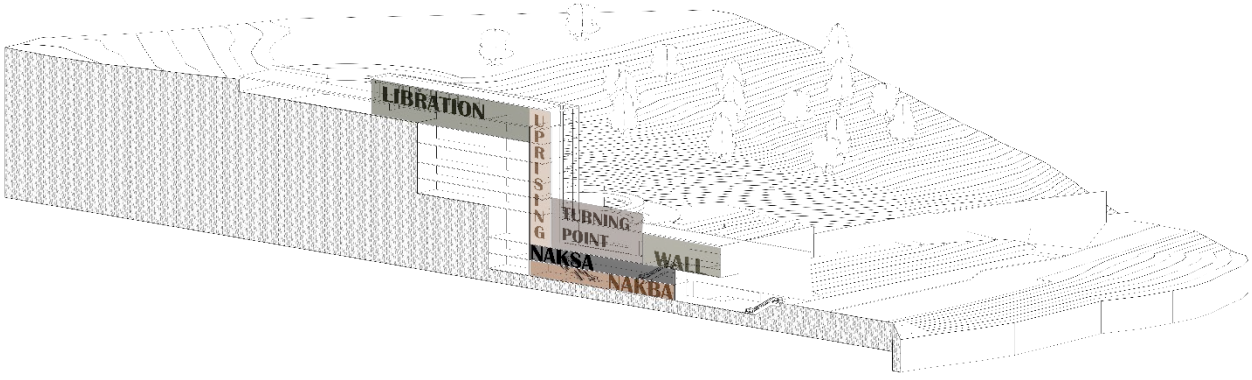

Figure 5.21: Zoning
(By the Author)

5.3. 3D Rendering

Figure 5.22: Main Shot 1
(By the Author)

Figure 5.23: Main Shot 2
(By the Author)

Figure 5.24: The Turning point Phase 01
(By the Author)

Figure 5.25: Liberation Phase (Jerusalem View)
(By the Author)

Figure 5.26: Nakba Phase
(By the Author)

Figure 5.27: Naksa Phase
(By the Author)

Figure 5.28: The Wall Phase
(By the Author)

Figure 5.29: The Turning point Phase 02
(By the Author)

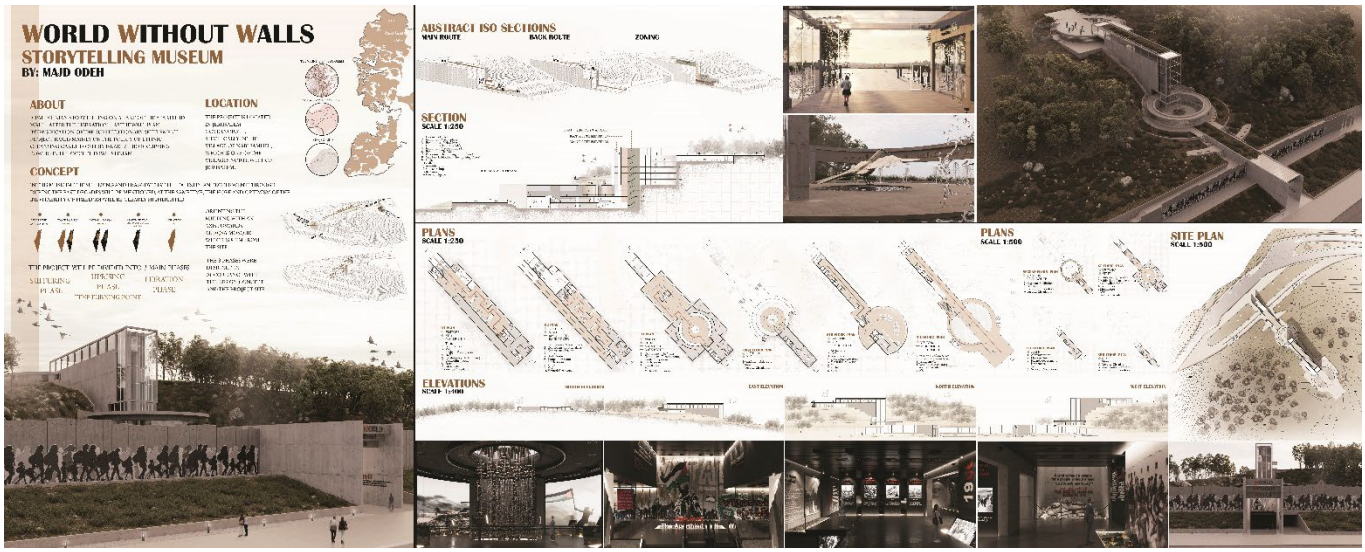

Figure 5.30: Final Poster
(By the Author)

Video Link: https://youtu.be/nOr29ygupIY

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