FINAL PROJECT – RA.141581

FRAGMENTED CONTINUUM CONCEPT: MUSEUM OF KEDUNG COWEK FORTIFICATION

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Department of Architecture
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FRAGMENTED CONTINUUM CONCEPT:
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Disusun oleh :

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Periode	: Semester Gasal/Genap Tahun 2017 / 2018

Dengan ini menyatakan bahwa Tugas Akhir yang saya buat adalah hasil karya saya sendiri dan benar-benar dikerjakan sendiri (asli/orisinil), bukan merupakan hasil jiplakan dari karya orang lain. Apabila saya melakukan penjiplakan terhadap karya mahasiswa/orang lain, maka saya bersedia menerima sanksi akademik yang akan dijatuhkan oleh pihak Departemen Arsitektur FADP - ITS.

Demikian Surat Pernyataan ini saya buat dengan kesadaran yang penuh dan akan digunakan sebagai persyaratan untuk menyelesaikan Tugas Akhir RA.141581

Surabaya, 9 Juli 2018

Yang membuat pernyataan

Nisita Hapsari

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PREFACE

Praises are to Jesus Christ the Almighty and the most Merciful that because of His blessings, this final project proposal titled “Fragmented Continuum Concept: Museum of Kedung Cowek Fortification” could be finished. In the process, this proposal also got helps from many people. The author would like to thank to:

1. My family who have been rooting for me since day one.
2. My supervisor, Ms. Nur Endah Nuffida, S.T., M.T. that without her thoroughness and excellent skills, the making of this final project would never be possible, nor would it be pleasant.
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6. My best friends, who did not hesitate to help me with any difficulties I encountered.

In the end, the author also aware of how this final project is far from being outstanding. Therefore, the author invite you as the readers to give comments and suggestions from those who are deeply concerned in such topic. Hopefully, this final project proposal will give worthwhile contributions to all readers.

Surabaya, 27 June 2018

Author

FRAGMENTED CONTINUUM CONCEPT: MUSEUM OF KEDUNG COWEK FORTIFICATION

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ABSTRACT

Architecture has always been considered as a carrier of messages. Stories and buildings have been tied up together since the beginning of the conscious formation of space and the first attempts to understand the world around us. Architecture that has been ruined or abandoned is also has the same condition. The 'death' could be a new beginning for buildings. An example that still exists in the present is Kedung Cowek Fort.

Kedung Cowek Fort is a witness of history that still exists. The design problem which will be proposed in this final project is how the ruins of architecture could be 'revived'. Architect also responsible to how the space could be an instrument which people could experience the memory of history from the event of the past with universal language which people in the present could understand.

By using historicism approach, what already happened in the past become a background for the design and by using meaning in architecture approach, those past events are interpreted to story. The tool to transfer the story into architectural design is narrative method.

The building type proposed in this final project is historical museum. The Museum of Kedung Cowek Fort is the place where visitors could experience history like they are the part of it as history perpetrators, exploring the depth of multilayered events in the past. History is defined as a fragmented continuum story.

Key words: experience, fragment, history, museum, narrative

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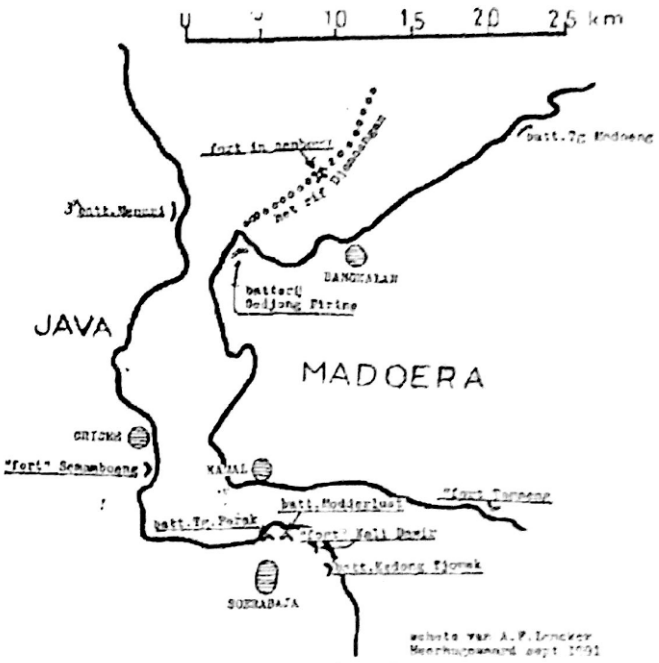
CHAPTER 1
INTRODUCTION

1.1. Background

Indonesia is wealthy with various heritages that need to be properly capitalized on. For example, the heritage buildings that are products of its own indigenous people as well as foreign elements. They have now become the nation's shared heritage.

Fortification is included as one of the nation's heritage. Indonesia possesses a large number of fortification-works as legacies of both native rulers and those structures which were built by European spice trading companies, whose countries later become colonial powers from the 16th to the 20th centuries. The legacy of fortifications also includes those specific structures built as defense mechanism systems in Indonesia during World War II (Ministry of Education and Culture Republic of Indonesia, 2012).



Peta sebaran benteng dari buku *Mars het Historia*

Figure 1.1. Forts around Surabaya
(source : Setyawan, 2015)

The existence of the forts was spread to regions all around Indonesia, including in Surabaya. Surabaya, which is called as City of Heroes, had 4 defense points plans to built in 1990 based on the old map from National Archieve Den Haag. Moreover based on *Mars het Historia*, there were also another forts around Surabaya: Menarie/Lodewijk, Semambung, Tanjung Perak, Modderlust, Kali Dawir, Kedung Cowek, Tompeng, Ujung Piring, Modoeng, Karang Djemuang and one discovery called *Onvoltooid fort.* They were not just built in Java, but also in Madura (Setyawan, 2015).

But now, their greatness time had been passed. They are abandoned and not well maintained. One of those forts, Kedung Cowek Fort, even got called as "The Last Standing Fort" in the book *Benteng Benteng Soerabaia*. It is because compared to another forts which was built around Surabaya, Kedung Cowek Fort still has its entire construction and the structure tends to look solid. But, not many people knows about this historical building.

"The fort was once a symbol of the city's magnificent defense and was noisy by the sound of explosions, artillery, mortars and screams of death. Now, it is only a pile of moss-covered buildings grabbed by the desolate woods and time." —Ady Setyawan

1.2. Issue and Design Context

1.2.1. Issue Study

1.2.1.1. Space of the Past

Nowadays, there are so many buildings on the earth. Some buildings are still used and the others have been ignored because they had been ruined or not used anymore. Those buildings have their own history through image, progress, and time that have been passed.

Ruined building is not always determined as something bad. Even if it seems "death", the story is not completely over as something begins anew from annihilation. If tectonics is about appearing and making appear, destruction is about presenting of an absence. Destruction could be a beginning. It is purposeful, not only a transition to anything new, but also a necessary complement, an active and calculated counterpart.

1.2.1.2. Memory

"Memory is the present's mode of access to the past. The past is preserved in time, while the memory image, one of the past's images or elements, can be selected according to present interests." —Elizabeth Grosz

Memory has emerged as a corrective to the silences, lapses and exclusions of official history. In its transit from unreliable messenger to critical counter-narrative, memory has acquired a surplus of history, just as history has adopted memory as a reflexive index of its own shortcomings (Huyssen 1995; 2003, 2). The progressive, evolutionary time associated with narratives of national culture has been called into question by the troubled history of the nation-state, its failed modernization projects and wars, descents into authoritarianism, and the aftermath of colonialism: historical time has been undone by its own tangled history (Olick 2005; 2007).

Recent investigations into 'present pasts', 'histories of the future', 'histories of the immediate present', and the 'future of nostalgia' suggest that the past is constructed in the present. Events, spaces, even entire societies that once seemed securely fixed in time may, under certain conditions, slip from one temporal domain into another (Huyssen 2003, Rosenburg and Harding 2005; Vidler 2008; Boym 2001). Critics have suggested that time is speeding up, in some cases to such an extent that both the past and future are disappearing into an endless present. Paradoxically, claims that the past and future are disappearing have occurred alongside the accumulation and storage of memories.

1.2.1.3. Bring Back the Ruins of Architecture into Life

The beautiful thing about architecture is that it can "tap into" an occupant's past meaningful experiences through their senses and their emotion. Architecture also has the power set the stage for occupants to create new meaningful experiences — and memory plays a key role in helping to make all of this possible. All awareness of the past is founded in memory, remembering the past being crucial for our sense of identity. Memory could influence perception and decision making.

There are two possibilities architect could do to bring ruined architecture into a new stage of life. Firstly, by completing the elements of architecture as what it is in the pass. Secondly, by turning it into contemporary architecture that cuts its relation with the Humanist totalization of themes such as monument, ruin, and ornament after realizing it has lost much of its symbolic and functional purpose.

The way architect brings life to the ruined architecture should related to observations based of these two assumptions. Firstly, progress is registered in an understanding of time that transforms one's experience of natural time. Secondly, the juxtaposition of the natural and the ruins of modernity—the piled wreckage of the past—is essential for a cognitive mapping of the landscape of modernity where everything is short-lived and has to be handed to history.

Architecture's version of historicism, with its presumption of the forward movement of time, has become the focus of critical operations that seek to place the idealized times and spaces of colonial culture back into the worlds they seek to transcend (Chakrabarty, 2000). If we accept that time and space are inseparable, any consideration of past times is simultaneously a consideration of material and imagined spaces.

1.2.2. Design Context

1.2.2.1. Kedung Cowek Fort

Kedung Cowek Fort is a historical building in Surabaya, located near Suramadu bridge. It was built by the government of the Dutch as bullet warehouse and fortress to survive from direct enemy attacks during their preparation to face World War II. Japan then took control, added more weapons, and strengthen their defense. But unfortunately, they had no time to use the fortress for theirselves. After Japan gave up and got back away, this fort was standing still with their weapons in it and then used by Indonesia soldiers.

In the past time, there were so many historical events going on this building. But since the war was over, Kedung Cowek Fort had not been used anymore. It became abandoned and not well maintained. The area was hard to be

accessed and the building got some damages. Now, Kedung Cowek Fort has been forgotten. Not many people knows about this historical building.

However, Kedung Cowek Fort is an important historical evidence and witness of Indonesian people nationalism spirit in the past. With the presence of Suramadu bridge, now this site turns into a strategic location near the connector between two islands, Surabaya and Madura. It is also supported by the beautiful environment view around the site. Kedung Cowek Fort has a potential to be brought back to the new stage of 'life', turns into a public space where people could experience memory of the past and contemplate its historical value.

1.2.2.2. Design Framework

The design framework for this final project is revitalizing the space in the area of Kedung Cowek Fort to bring the memory of history, defining the new function so people could experience the spirit of nationalism and war in the past through excitement of adventure.

The boundary of the site is in the area of Kedung Cowek Fort. The site is located in Kedung Cowek, Bulak, Surabaya, East Java. The area that will be designed is about 16.000 m^2.

Figure 1.2. Aerial View of the Site in Kedung Cowek Fort, Surabaya
(source : *www.maps.google.co.id*)

1.3. Design Problem and Criteria

1.3.1. Design Problem

Based on the background explained before, the design problem which will be proposed in this final project is how the ruins of architecture could be brought back to 'life'.

Second problem to be proposed is how the space could be an instrument to deliver memory of history that could be understood by people of the present through the language of experience.

1.3.2. Design Criteria

Architectural object is the proposed object that will solve the problems of the issue. From the explained problems above, therefore:

a. The proposed object has to offer spatial experiences. The most memorable thing is not any particular items on display. It is about the atmosphere and the mood of the building itself.
b. The proposed object has to give a perspective of histoy that makes people interested to know more about history and heritage buildings, especially Kedung Cowek Fort.
c. The proposed object has to guide visitor's journey.
d. The proposed object should not be exclusive and also provide social space for public.
e. The proposed object should not causing damage to the land and existing building.

CHAPTER 2
DESIGN PROGRAM

2.1. Recapitulation of Space Needed

2.1.1. Building Function

The building type proposed in this final project is museum. 'A museum is an institution which collects, documents, preserves, exhibits and interprets material evidence and associated information for the public benefit' (Museums Association (UK), 1984). The objective of the proposed museum should be clearly defined, as well as the geographic region, the subject (history, natural history, or art) and extent of display and other services. The basic objective of the museum is to collect, preserve, study and exhibit significant objects of the community, and provide related educational services in order to increase public knowledge and stimulate creative activity. This statement should have further definition by incorporating a reference to the type of collections, whether human history, natural history or art. In this final project, historical museum is chosen to solve the issue about memory of history.

The stories will be presented in the museum, mainly are those which have relation to the site context, Kedung Cowek Fort and the history related to it. The fort was built by the government of the Dutch as bullet warehouse and fortress to survive from direct enemy attacks during their preparation to face World War II. But long after that, it was taken by Indonesia people and became a solid defense fort while they were facing British troops in 1945 war.

Now, Kedung Cowek Fort is an important historical evidence and witness of Indonesian nationalism spirit in the past. From 11 forts that were built in Surabaya during world war, Kedung Cowek Fort is the last standing fort in the present. In the design, architect want to emphasize the experience as object of museum to educate visitors. This museum is targeting on youth generation. So to make the history easy to be understood, the museum should be presented in universal way, not as a conventional museum that just displaying things.

2.1.2. Activity Program

Activity programs in the building are divided based on the users of museum. There are 3 main classification of users in this historical museum: museum staff, conservator, and visitor.

Museum staffs are those who make sure all procedures in the museum going well. They are divided into 3 specific functions to maintain the museum: administration, service and security. Each function has its own accessibility requirement to do each job well.

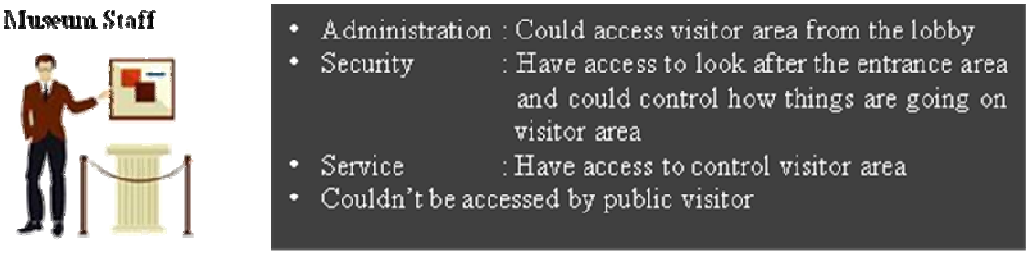


Figure 2.1. Museum Staff Area Accessibility Requirements
(source : author analysis)

Conservators are those who are responsible for display preparation, collection storage, and collection maintenance. By those functions, conservator's area has some requirements to do with their accessibility.

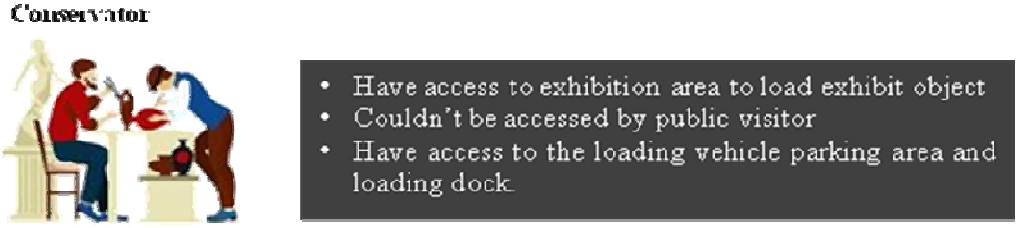


Figure 2.2. Conservator Area Accessibility Requirements
(source : author analysis)

Public visitors are those who act as audience of the storytelling. By seeing and experiencing, visitor could receive the value architect want to tell. The circulation of visitor is decided based on how people could enter the museum, experience the story in the exhibition area, enjoy the ambience, and then go out.

Figure 2.3. Public Visitor Area Accessibility Requirements
(source : author analysis)

Based on those functions and their accessibility requirements, the rooms needed and zoning are decided.

Table 2.1 Zoning Based on Functions and Activities

Zoning	Classification	Rooms
Public	**Collection**	Exhibition room
	Non-collection	Cafetaria Open space Lobby Gift shop Lavatory Public parking lot Loading vehicle parking lot
Non-Public	**Collection**	Workshop room Loading dock Conservation laboratory
	Non-collection	Head of museum room General manager room Manager room Staff room Meeting room Restroom Security post Mechanical room Electrical room AHU room Cafetaria Kitchen Storage
	Security	Collection storage room CCTV room

(source : author analysis)

Besides those conventional activity in the museum, there are also some activities architect want to add in the design to deliver story. By presence of the story, architect want visitors to experience stages of history. Because the context is in Kedung Cowek Fort where many wars happen in the past while Indonesian tried to defend their area, most parts of the story will give the ambience related to war.

2.1.3. Rooms Quantity and Dimension Needed

Before considering the planning of the museum it is essential to determine the size and location of the various services. But the fact remains that two conflicting needs have to be reconciled : on the one hand there must be easy communication between the public rooms and the museum services, since this makes for smooth relations between visitors and staff ; on the other hand it must be possible to separate these two sections, so that they can function independently at any time. This is necessary chiefly to safeguard the collections at times when the building is closed to the public while the curators or office staff are still at work end the library.

Table 2.2. Secondary Rooms Size Calculation

Room Classification	Room and Calculation of Space	Size Range (m^2)
ARRIVAL AREA	**Visitors and Staffs Parking Area**	
	Capacity of 500 people based on vehicles used:	
	➢ Motorcycle (30%) -> 150 people	75 (1 x 2.2)
	@2 people -> 75 units motorcycle	= 165 m^2
	➢ Car (35%) -> 175 people	44 (2.4 x 5.5)
	@4 people -> 44 units car	= 580.8 m^2
	➢ Bus (35%) -> 175 people	5 (2.6x10)
	@40 people -> 5 units bus	= 130 m^2
	Circulation 60%	= 525.5 m^2
	TOTAL PARKING AREA	**1401.3**
	Lobby	
	Capacity of 100 people	
	Buffer zone area (moving area standard) = 0.65 m^2	
	Moving area needs = 100 x 0.65	= 65 m^2
	Circulation 150%	= 97.5 m^2
	TOTAL LOBBY AREA	**162.5**
	Locket	
	Capacity of 500 people	
	Divided to 5 clusters of 100 people	
	Standards 3 m^2	
	1 locket serving for 50 people-> 2 lockets x 3 m^2	= 6 m^2
	Circulation 20%	= 1.2 m^2
	TOTAL LOCKET AREA	**7.2**
	Queue Space	
	1 locket 1 queue row -> 2 rows @50 people	
	Touch zone area 0,28 m^2/person	
	TOTAL QUEUE AREA = 50 x 0.28 m^2 x 2	**28**

	Information Room	
	Capacity of 2 people @ standard 3.2 m^2/person	= 2 x 3.2 m^2
	Circulation 20%	=0.64 m^2
	TOTAL INFORMATION ROOM	**7.7**
	Security Post	
	Capacity of 4 people @ standard 3.2 m^2/person	= 4 x 3.2 m^2
	Circulation 20%	
	TOTAL SECURITY POST	**15.4**
ADMINISTRATOR AREA	**Head of Museum Room**	
	1 table set	= 2 m^2
	1 discussion table	= 3.4 m^2
	4 chairs -> 0.6 x 0.8 x 4	= 1.92 m^2
	1 set of guest table and chair -> 3.4 x 2	= 6.8 m^2
	1 cupboard set	= 4 m^2
	Circulation 40%	
	TOTAL HEAD OF MUSEUM ROOM	**25.3**
	General Manager Room	
	1 table set	= 2 m^2
	2 guest chairs	= 0.96 m^2
	1 set of guest table and chair -> 3.4 x 2	= 6.8 m^2
	1 cupboard set	= 4 m^2
	Circulation 40%	
	TOTAL GENERAL MANAGER ROOM	**19.3**
	Manager Room	
	1 table set	= 2 m^2
	2 guest chairs	= 0.96 m^2
	1 cupboard set	= 4 m^2
	Circulation 40%	
	TOTAL MANAGER ROOM	**9.7**
	Administrative Staffs Room	
	Capacity of 20 @standart 4.8 m^2/person -> 20 x 4.8	= 96 m^2
	Circulation 20%	
	TOTAL ADMINISTRATIVE STAFFS ROOM	**115.2**
	Curator Staffs Office	
	Capacity of 5 @standart 4.8 m^2/person -> 5 x 4.8	= 24 m^2
	Circulation 20%	
	TOTAL CURATOR STAFFS ROOM	**28.8**
	Meeting Room	
	Capacity of 25 people	**50**
	Restroom	
	Capacity of 25 @standart 1.16 m^2/person -> 25 x 1.16	**29**
	Lavatory	
	Capacity of 20 people	
	5 toilet -> 5 x 1.5 x 1.9	= 14.25 m^2
	4 urinal -> 4 x 0.5 x 0.4	= 0.8 m^2
	2 wastafel-> 2 x 0.4 x 0.6	= 0.48 m^2
	Circulation 10%	

	TOTAL LAVATORY AREA		**17.1**
SUPPORTING AREA	**Cafetaria**		
	Capacity of 50 @standart 1.6 m²/person -> 50 x 1.6	= 80 m²	
	Circulation 20%		
	TOTAL CAFETARIA AREA		**96**
	Gift Shop		
	Capacity of 50 @standart 1.6 m²/person -> 50 x 1.6	= 80 m²	
	Administration area -> 3 x 3	= 9 m²	
	Circulation 20%		
	TOTAL GIFT SHOP AREA		**106.8**
	Lavatory		
	Capacity of 20 people		
	5 toilet -> 5 x 1.5 x 1.9	= 14.25 m²	
	4 urinal -> 4 x 0.5 x 0.4	= 0.8 m²	
	2 wastafel-> 2 x 0.4 x 0.6	= 0.48 m²	
	Circulation 10%		
	TOTAL LAVATORY AREA		**17.1**
SUPER SECURE AREA	**Collection Storage Room**		**150**
	CCTV Room		
	Capacity of 3 @standart 1.6 m²/person -> 3 x 1.6	= 4.8 m²	
	20 units of CCTV monitor-> 20 x 0.2 x 0.4	= 1,6 m²	
	2 tables	= 4 m²	
	3 chairs -> 3 x 0.6 x 0.8	= 1.44 m²	
	TOTAL CCTV ROOM AREA		**11.8**
	Security Equipment Room		
	3 shelves -> 3 x 1 x 2	= 6 m²	
	Circulation 60%		
	TOTAL SECURITY EQUIPMENT ROOM AREA		**9.6**
COLLECTION PRESERVATION AREA	**Loading Vehicle Parking Area**		
	3 trucks -> 3 x 8 x 3	= 72 m²	
	Circulation 60%		
	TOTAL LOADING VEHICLE PARKING AREA		**115.2**
	Loading Dock		
	Capacity of 10 @standart 1.6 m²/person -> 10 x 1.6	= 16 m²	
	Loads	= 24 m²	
	Circulation 40%		
	TOTAL LOADING DOCK AREA		**56**
	Conservation Laboratory		
	Temporary storage room	= 60 m²	
	Research laboratory	= 60 m²	
	Consevation room	= 40 m²	
	Quarantine room	= 40 m²	
	TOTAL CONSERVATION LABORATORY AREA		**200**
	Workshop Room		
	Restoration room	= 60 m²	
	Equipment storage	= 20 m²	
	TOTAL WORKSHOP ROOM AREA		**80**

SERVICE AREA	**MEE Room**	
	Pump room	= 9 m²
	Trafo and Genset room	= 15 m²
	Controlling room	= 9 m²
	TOTAL MEE ROOM AREA	**33**
	Cleaning Service and OB Room	
	Capacity of 20 people	
	Equipment storage	= 9 m²
	Locker -> 20 x 0.4 x 0.4	= 3.2 m²
	Long bench -> 3 x 1.55 x 0.8	= 3.72 m²
	Circulation 20%	
	TOTAL CLEANING SERVICE ROOM AREA	**19.1**
	Storage	
	3 shelves -> 3 x 1 x 2	= 6 m²
	1 cupboard set	= 2 m²
	Circulation 200%	
	TOTAL STORAGE AREA	**24**
Total Secondary Rooms Area for the Building	**CLASSIFICATION :**	
	Arrival Area	**1622.1**
	Administrator Area	**294.4**
	Supporting Area	**219.9**
	Supersecure Area	**171.4**
	Collection Preservation Area	**451.2**
	Service Area	**76.1**
TOTAL		**2835.1**

(source : author analysis based on Time Saver Standards, 1983 and Neufert, 2012)

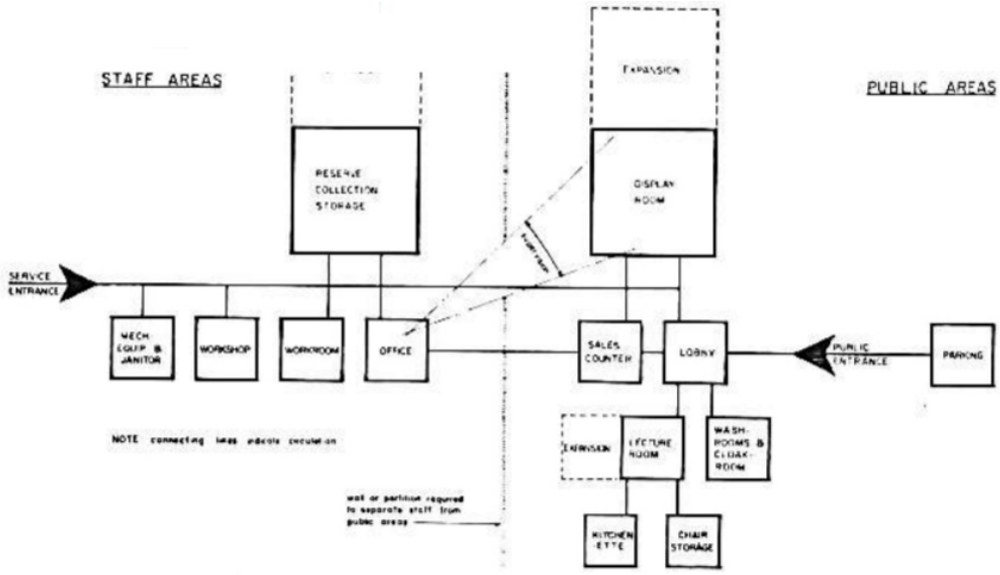


Figure 2.4. Space Organization Diagram
(source : Neufert, 2012)

The main exhibition is not included in the calculation plan of space. Nowadays, the number of museums is increasing. Type of museum is also various. Technology development makes anything possible to be presented in museum. The size range becomes really specific depends on what is inside and how people could feel comfortable enjoying museum's object.

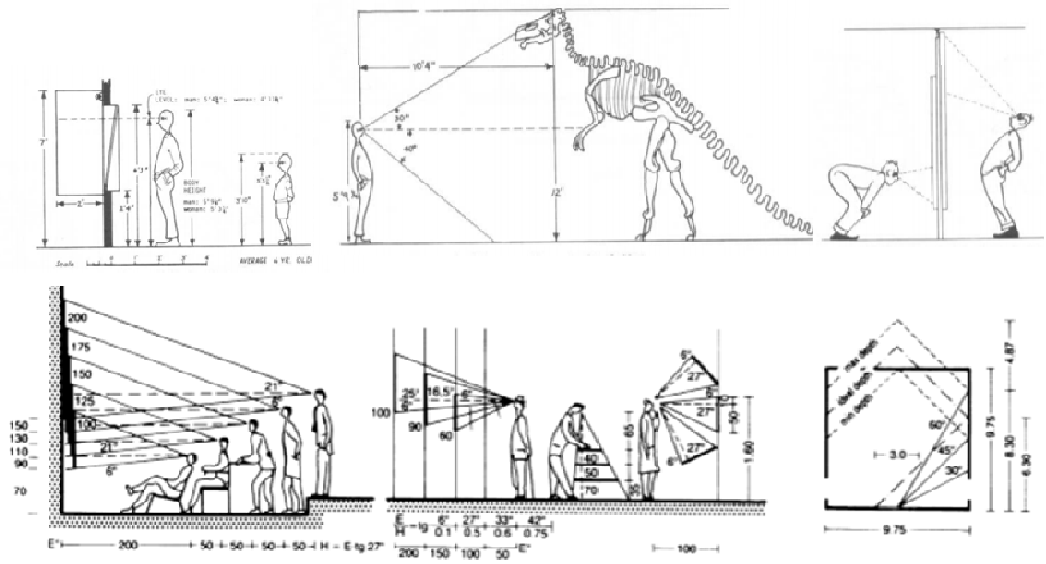


Figure 2.5. Comfortable Viewing Angles
(source : Neufert, 2012)

2.2. Site Description

2.2.1. Site Analysis

The location of study case site is located in Kedung Cowek Fort in Kedung Cowek, Bulak, North Surabaya. It was built as bullet warehouse and fortress by government of the Dutch. The site is about 16.000 m^2.

Geographically, it is bounded by:

North : Madura Strait

East : Madura Strait

South : Fish pond

West : Tambak Wedi Baru street

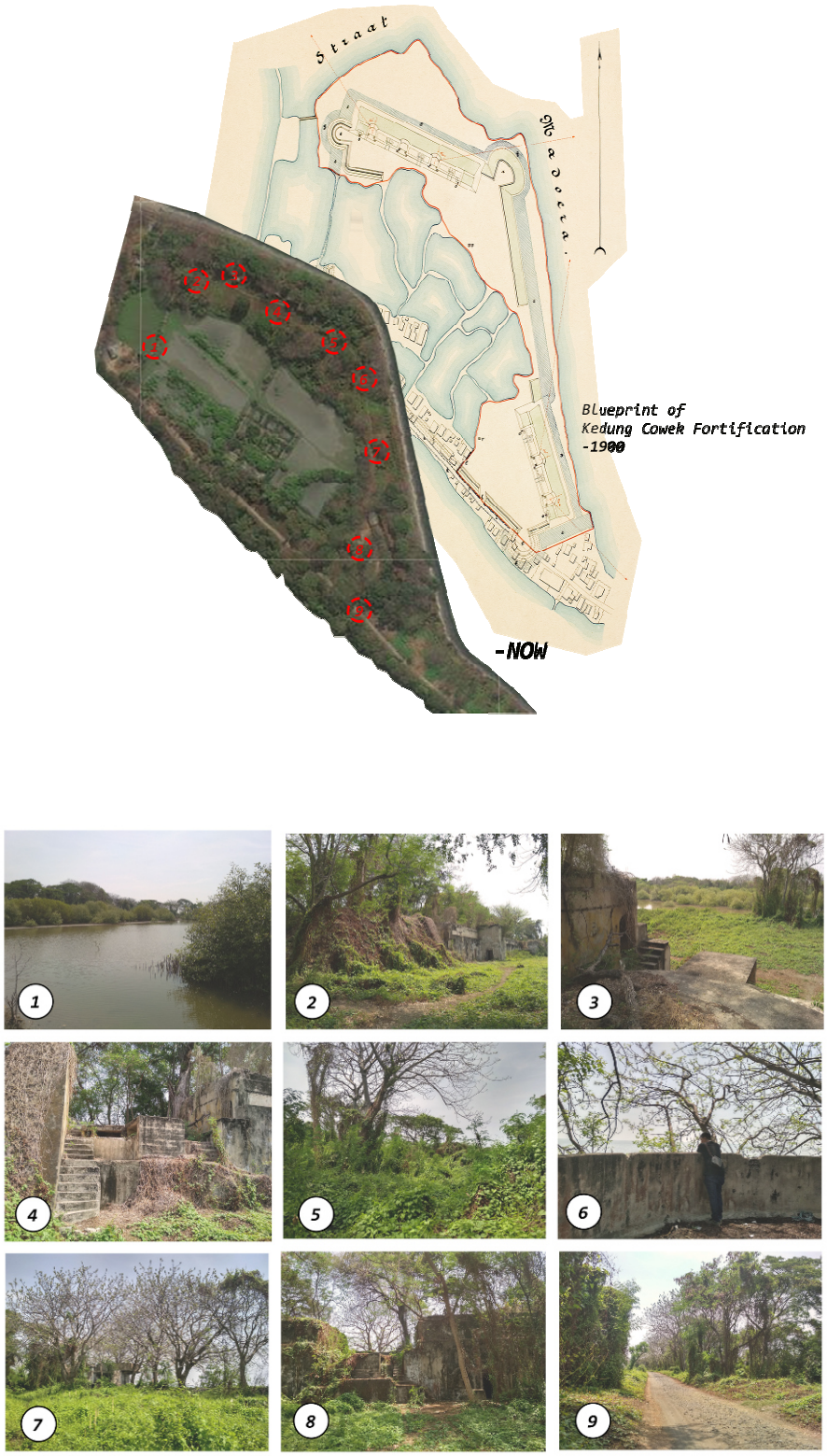


Figure 2.6. Aerial View of the Site in Kedung Cowek Fort and the Surroundings
(source : processed image from *www.maps.google.co.id*)

2.2.2. Climate

The climate in Kedung Cowek is tropical, as well as other regions in Indonesia, that has 2 seasons: rainy and dry season. Generally, Kedung Cowek is similar to other areas near Madura. The area tends to be hot due to relatively low rainfall and has an ocean where the salt content is very high. In addition, there are many ponds around the site. So, that affects the climate in the area. Late at night, the air is cold because the air from the north (sea) blowing to Kedung Cowek. Meanwhile in the daytime, air is hot because the air in the sea blowing ashore.

The dry season starts from July to September, while for the rainy season starts from mid-October to November every. In rainy and dry season, the farmers plant watermelon, belewa, cucumber, golden and others. In the rainy season, the farmers also plant rice in the fields. While for the fishermen, they catch fish in the rainy season. The wind and waves are not too tight and not too big.

2.2.3. Neighborhood Context

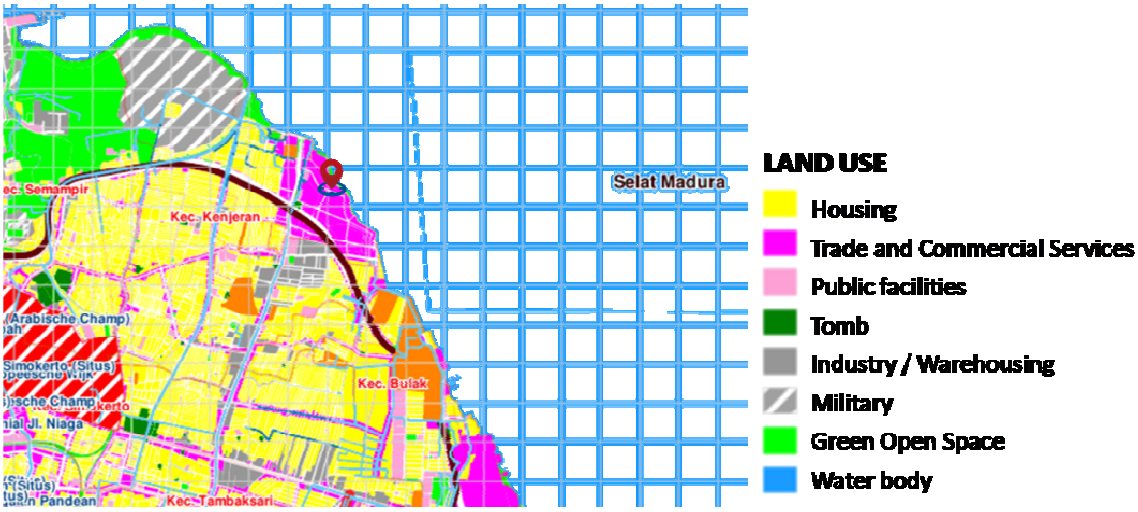


Figure 2.7. Land Use of Kedung Cowek and Its Surroundings
(source : processed image *www.petaperuntukan.surabaya.go.id/cktr-map/*)

Based on region regulation about Surabaya spatial plan, Kedung Cowek Fort which is in Bulak district, is included in Development Unit III Tambak Wedi, with Kenjeran district. Land use of Tambak Wedi is trade and commercial services, tourism, and housing. This area will be developed as a commercial area because of Suramadu Bridge existence. This Development Unit is planned for

trade and commercial services, housing, tourism and entertainment, open space, and public facilities with Suramadu Bridge as the central access of activities. Kedung Cowek street will be the central of trade and commercial services area, supporting the main activities in the foot of the bridge as Central Business District.

2.2.4. Natural Physical Features

The design proposal takes place in North Surabaya coastal area. The topography tends to be flat. The area that directly bounded with the sea is covered with rocks that prevent water eruption.

Further, the soil type covered the land is clay. Soil condition in the older coastal area like in Jakarta, Semarang, Surabaya, etc show similarity to the soil condition in Dutch. The unstable ground with high water content, could be not safe to serve as the base of building foundation. This character encourages the development of technology and foundation uses.

This site that hasn't been used after a long time and abandoned, makes the seashore area full of lush trees and shrubs which are allowed to grow wild. The vegetation alongside the sea shore to the fort area create a potential space to enjoy the view of the sea and Suramadu bridge.

2.2.5. Accesibility

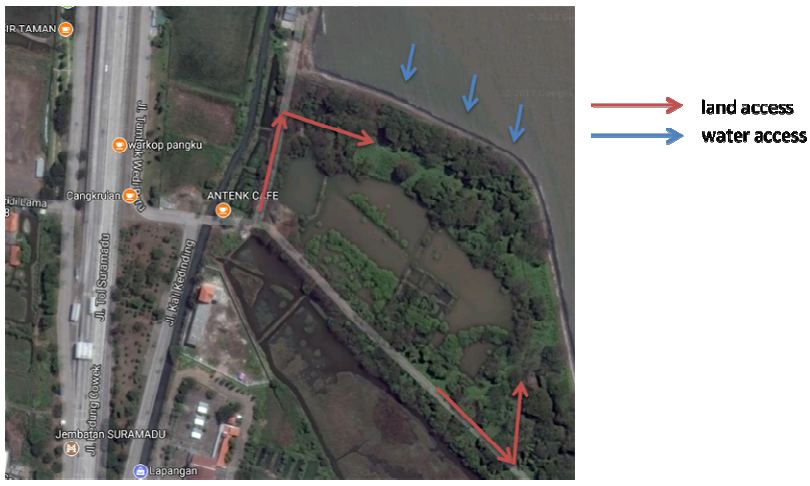


Figure 2.8. Accessibility of Kedung Cowek Fort
(source : processed image from *www.maps.google.co.id*)

Kedung Cowek Fort is in Bulak district, North Surabaya. People could access the site from the street or from the sea because there are some fishermen that offer visiting to the Kedung Cowek Fort using boat.

From the land, the site is on the right side of Tambak Wedi Baru Street. The width of street near the site is just 4m. But people could park their vehicle before go to the small street.

2.2.6. Man-Made Features

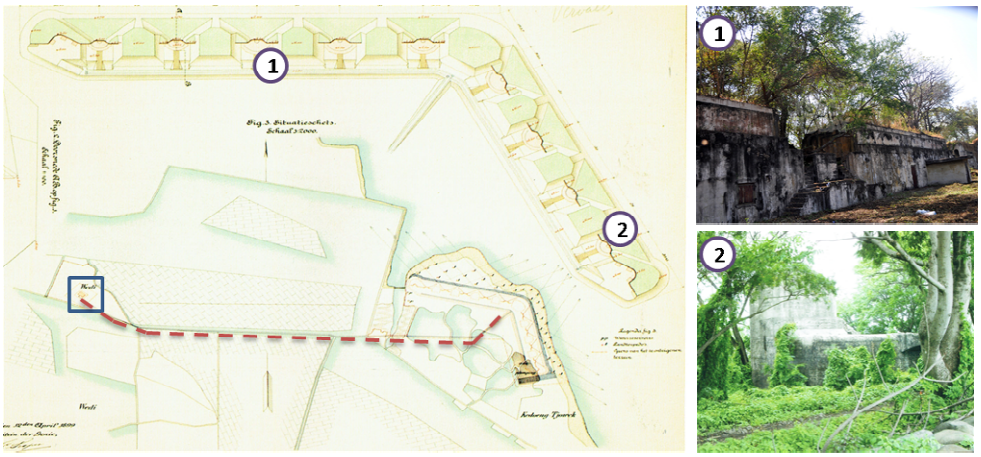


Figure 2.9. Blueprint Design of Kedung Cowek Fort and the Condition Now
(source : Setyawan, Ady. 2015. ***Benteng Benteng Surabaya***. Yogyakarta. Mojok Store)

Benteng Kedung Cowek was designed by H. Proper, a military engineer in early 20th century. According to the blueprint, the fort actually was designed lined alongside the north and east of the site. But when it was built, the plan was changed. They just built some parts of the fort separately. Ady Setyawan, the writer of "Benteng Benteng Surabaya" assumpted that it was because there was crisis in that time.

There are also possibilities that under the ground, there are another hidden historical sites which are the footprint of war in the past. Even in the blueprint design, there is a line connecting Kedung Cowek Fort to another part of Tambak Wedi area. It could be indicated as a ditch or even an underground escape route in the past.

2.2.7. Human and Cultural

Table 2.3. Occupation of Kedung Cowek Inhabitants in 2011

No.	Occupation	Quantity
1	Fisherman	93
2	Employee	249
3	Farmer	88
4	Farm worker	46
5	Sales	200
6	Carpenter	125
	TOTAL	**2971**

(source : Kedung Cowek Region Documentation in 2011)

2.2.8. Building Regulation in the Site

Figure 2.10. Site and the Coastline
(source : processed image *www.petaperuntukan.surabaya.go.id/cktr-map/*)

Building base coefficient : 60%

Building floor coefficient : 180%

Building height : 1-3 floors

Coastline : 12 m

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CHAPTER 3
APPROACH AND METHOD OF DESIGN

3.1. Design Approach

3.1.1. Historicism

Historicism is a mode of thinking in which the basic significance of specific social context—e.g., time, place, local conditions—is central. The history of architecture is the identity of a nation because there are value of life rooting to the nation's character (Antariksa 2015:208). The existence of heritage buildings proof that there are cultural assets which should be maintained and conserved.

Conservation is an heritage management effort through selective research, planning, protection, maintenance, utilization, monitoring and / or development to maintain continuity, harmony, and supportability in responding to the dynamics of the era to build a better nation's life. The goal is to keep architectural building as a part of historical journey.

Kedung Cowek Fort, which has been built since 1900, is an important historical witness of Surabaya, and even Indonesia. Many wars that later played a role in the historical journey of Indonesia to finally achieve independence from colonialism. It was where Sriwijaya troops had to deal with Britain troops in October 1945, which was also bring Surabaya to the event of 'Sepuluh Nopember' war.

The history itself becomes a background why the museum (design proposal) should be there in the present. By the presence of this design, people could reflect to what had been happened in the past as important historical events.

3.1.2. Meaning in Architecture

From the event happen in the past, the design proposal want to bring back the value of the history and remind people about the spirit Indonesian people had in the past to achieve independence from colonialism through fighting in many wars.

Meaning in architecture can be defined as the experience you provide to the users of the spaces you have designed. It is the impact you have on people's memory, people feelings received when they enter a place. By using meaning approach, the design proposal could achieve the goals to tell the value architect want to tell to people.

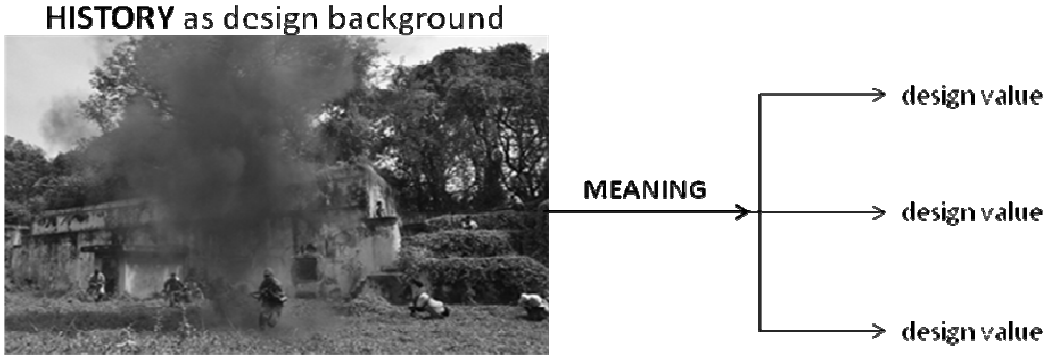


Figure 3.1. Role of Approaches in the Design
(source : *author's illustration*)

3.2. Design Method

3.2.1. Narrative

Narrative and storytelling have been so persistent because these ideas seem to capture something quite fundamental about what it is to be human. Daniel Dennet said that human has the sense of a self-conscious thinking and feeling 'I' with a history of past events and a 'project' for the future, that makes the self with its properties and perceptions becomes the centre of narrative gravity and create a subjective centre from which 'strings or streams of narrative issue forth'.

Narrative is all constructed. It has real value. The capacity for provocation is precisely where its creative potential lies. The process of narrative can be laid out as a sequence, the author develops a story, the story then told to audiences.

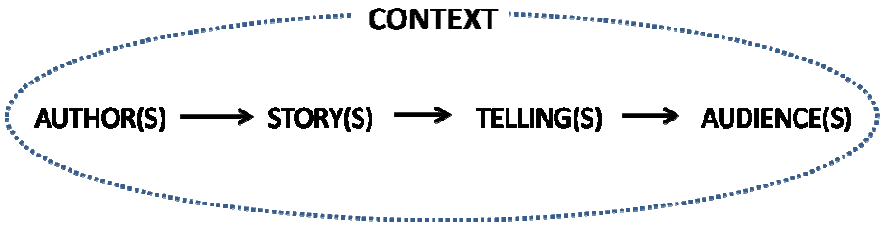


Figure 3.2. The Narrative Process in Context (source : Macleod, Suzanne et al. 2012. ***Museum Making: Narratives, Architectures, Exhibitions***. New York. Routledge.)

While storytelling is about the construction of a story by setting up a timeline of events, design is based on the construction of a physical narration by organizing spatial relationships. There are three categories of design tools that narrate different types of stories. **Representational tools** express visually an image first conceived in the architect's mind, conveying stories of desirable lifestyles. Especially throughout the last decades the process of creating that vision has been influenced by the emergence of digital **design tools** that are able to algorithmically generate architectural forms. Through their use, the narration element becomes strongly incorporated into the design process perhaps at the expense of the final result, becoming inaccessible to those who do not have the access to the code or the ability to understand it. Finally, the most recent development is found in what we define as **"animating" tools**. The use of new media to create immersive and multilayered spatial experiences and interactive stories, that stems neither from an architect's vision, nor from a computer's algorithmic process, but from the layering of information and experiences by a multitude of inputs.

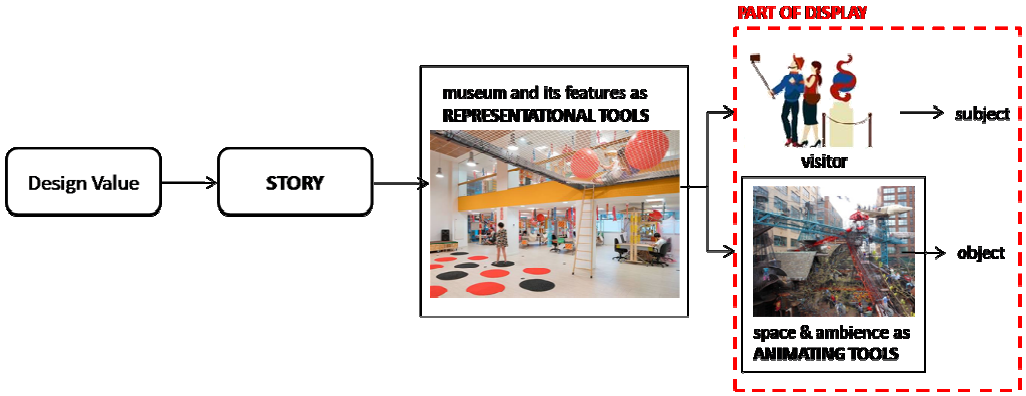


Figure 3.3. Role of Methods in the Design
(source : *author's illustration*)

In the context of Kedung Cowek Fort, the presence of story is there to deliver the design value. The story is divided into some fragments/stages which are represented by architectural elements. Architect is responsible to create the right animating tools through the facility and ambience in the design which will be used by visitors as the subject of story. With those in mind, space of the past

would be brought back to 'life' because there are the visitor as subject and the design itself as the object which would create stories inside.

3.3. Supporting Theoretical Studies

3.3.1. Building Stories in Architectural Design as Narrative

"When a place is lifeless or unreal, there is almost always a mastermind behind it. It is so filled with the will of its maker that there is no room for its own nature." *– Christopher Alexander*

Architecture has always been considered a carrier of messages. Stories and buildings have been tied up together since the beginning of the conscious formation of space and the first attempts to understand the world around us.

The overlapping of stories related to their specific location serves as a mechanism that animates spaces, it assigns values, symbols and meanings to the urban space, that consequently affects spatial practices, perceptions and imaginations. It stimulates new stories, ideas and meanings in a self-propelling cycle. All together, they create a collective story, that is constantly updated, enriched and reiterated. Even if storytelling when considered as entertainment is put into question, as Frascari (2012: 225) claims, the ludic engagement through which millions of people share their stories in the spaces of our cities, is still an unrivaled way to animate those spaces and bringing them to life.

The architect is author of the story in the design. The value architect want to deliver in design could be interpreted through many ways. This can be rather a tricky task for the writer since already from the first words, the reader "reading" a room starts thinking of a space he has inhabited. The author would like to say everything about the room he is describing. He would like to keep his reader's attention, while in reality he has opened a door for him to escape into his own thoughts and memories. The strength of intimacy is so absorbing that the reader doesn't read the writer's room anymore; he visualizes his own. (Bachelard, 1982: 41) "**The success of the story for that reason lies in its ability to be interpreted and understood, so that it might take on a personal meaning for the reader."**

CHAPTER 4
DESIGN CONCEPT

4.1. Formal Exploration

4.1.1. Design Objection

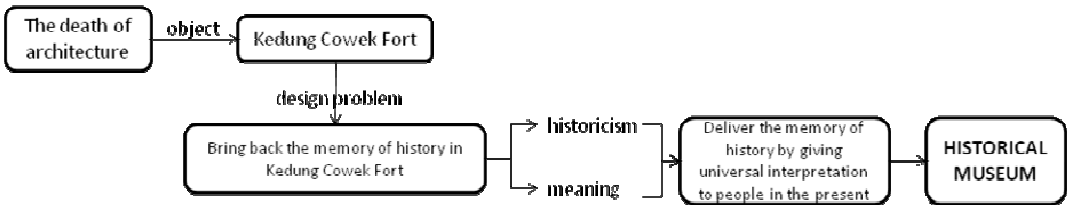


Figure 4.1. Thinking Process Summary
(source : author analysis)

It has been explained in the building function that architect want to emphasize the experience as object of museum to educate visitors. This museum is targeting on youth generation. So to make the history easy to be understood, the museum should be presented in the language of experience through architectural space, not as a conventional museum that just displaying things. **It is not the timeline of history which will be presented in the design. The visitors should also know the lesson of life which could be gotten from events that have occurred in the past.**

By using meaning approach, the design proposal could achieve the goals to tell the value architect want to tell to people. There are 3 main values that architect want to give in the design:

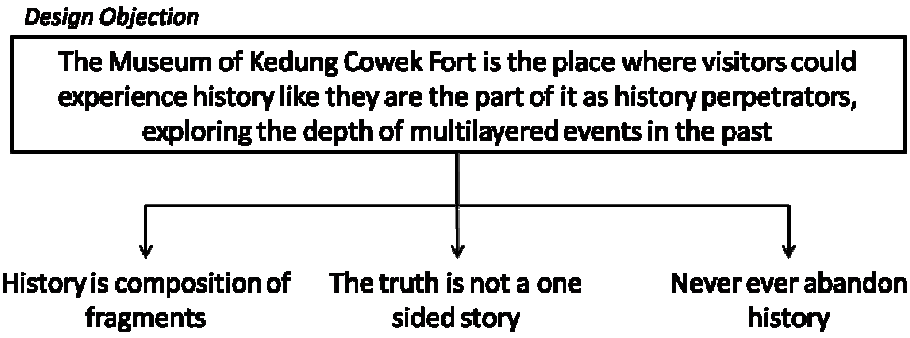


Figure 4.2. Design Objection and Values to be Delivered
(source : author analysis)

History is composition of fragments. It is unite but actually is formed by fragmented events in the past. No one in the present never really know in which order history actually happen in the past. Everyone has their own perspective about history. That is why history is not a one sided story and this concept then called as **fragmented continuum concept**. Even there are many events, many perspectives, they are all connected.

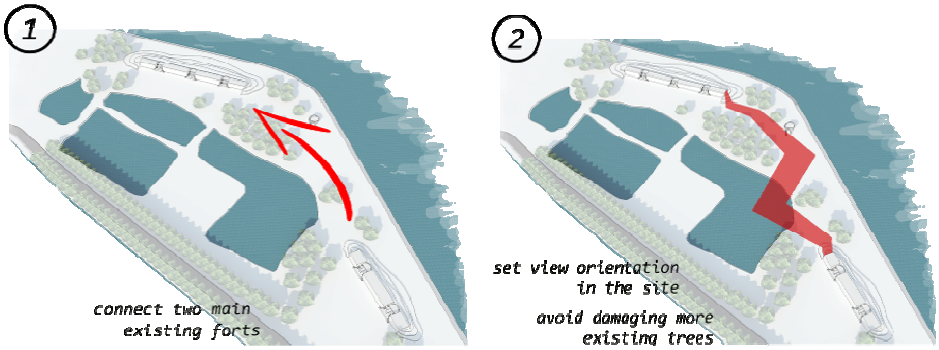
By using narrative method, the story is divided into 3 main stages which are represented by the museum and its architectural features. Architect is responsible to create the right animating tools through the facility and ambience in the design which will be used by visitors as the subject of story. With those in mind, space of the past would be brought back to 'life' because there are the visitor as subject and the design itself as the object which would create stories inside.

4.1.2. Building Form and Color

The design will be built in a historical context with the objection to convey stories of the past. Therefore, it should be harmonized with surrounding environment and let some existing parts look as they are from the beginning. If there is something really contrast in the design, it should be an accent to present narrative/story through meaning.

4.1.3. Site Transformation and Scenario

Fragmented continuum as a form could means many different pieces connected into an integrate composition. Therefore, the site plan is determined by using the concept of fragmented continuum as a guide.



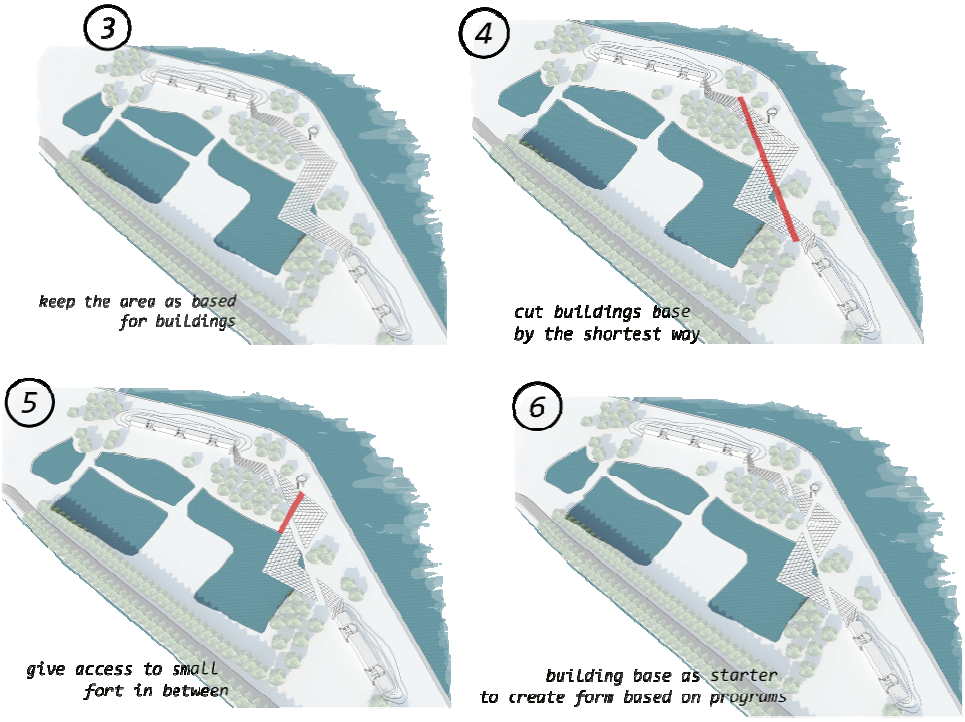


Figure 4.3. Site Transformation
(source : author analysis)

After the arrangement of masses have been decided, sequences are made based on the building programs before.

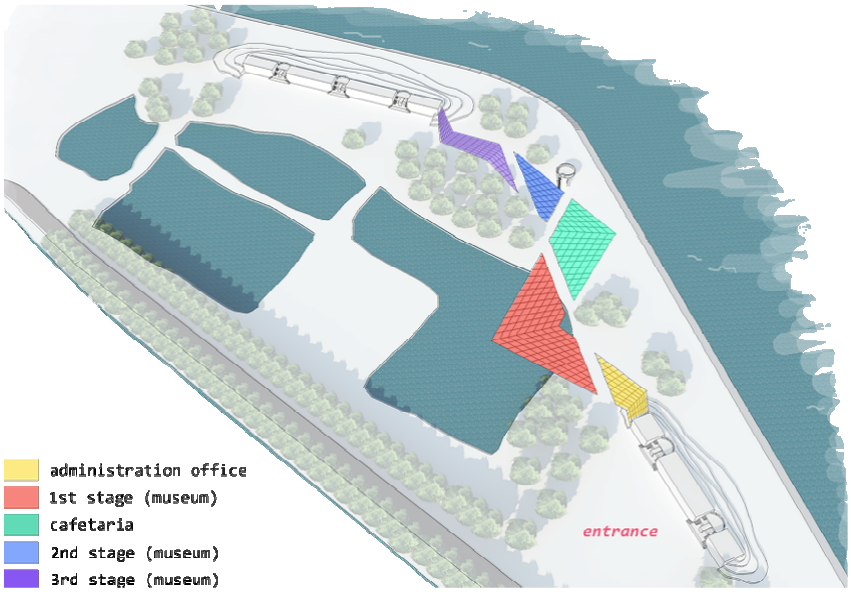


Figure 4.4. Zoning
(source : author analysis)

For the exhibition, based on the 3 main values in the concept, forms are created to convey the narrative using meaning approach.

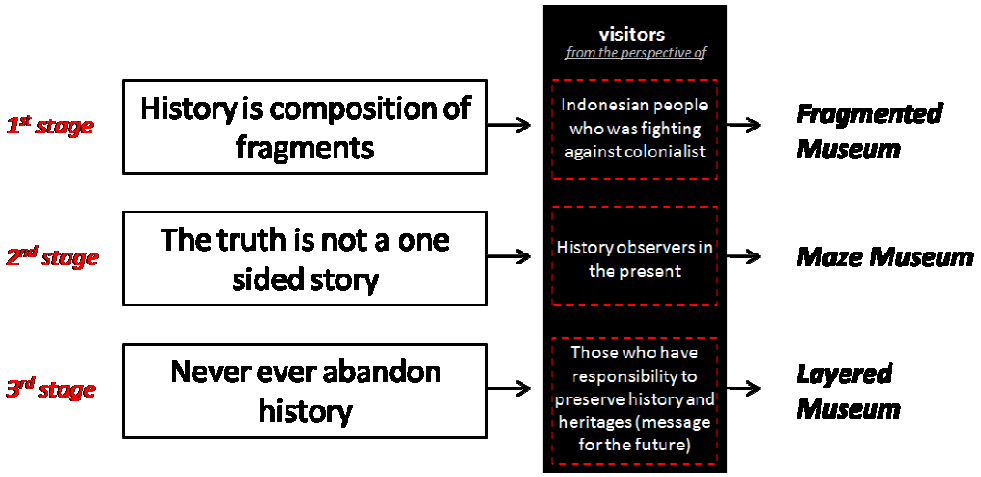


Figure 4.5. Three Stages of The Design Story
(source : author analysis)

4.1.4. Fragmented Museum

History is an arrangement of fragments. It is multilayered. The war is not the only issue to be considered as important events affect history. Behind it, there are also backgrounds of event, why actually it was happening, what people felt in the beginning, in the middle of war and after, how the war affected their life, how they dealt with it.

The first sequence represents humanity (2). It tells people that those who fought in wars also had their own life, their own family. They did not go to war because they really wanted to or they hate people. Soldiers and fighters are human, just like us. They could felt love and comfort. Those are represented by home ambience and pictures of soldiers good old memories.

The next sequence represents darkness of wars (3). It represents the dark time people had in the beginning of war.

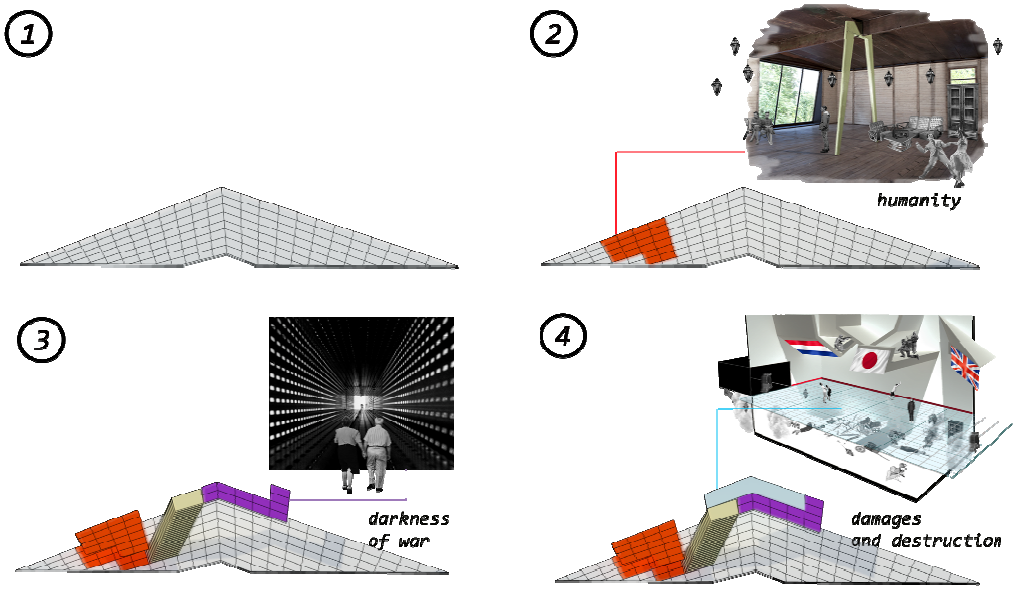
The third sequence is about damages and destruction as physical effects of war (4). In this sequence, people could see blurry images of the house where they lived before (in first sequence), had been ruined. It was caused by colonialists attack.

Then, people will going down to the next sequence where they could clearly see the ruins. This sequence tells how people in the past felt panic and fear

(5). It is represented by how people should be fast in this room because if not, they will get wet from the water fountain that will be splashing one after another. There is also dark blurry image of people's feet on the ceiling (from the previous sequence. It represented as the pressure people had in that moment.

In the time of war, many people also lost their family and friends. The fifth sequence tells about that disappearance and loneliness (6). Visitors will be divided to two groups and they have to be separated to 2 different ways. One group should go down first. Then, another group could continue going forward. The first group will see layers of fabric covering the room as screen for a war video. They will going through all those fabrics to clearly see the whole room. The second group goes to a room which is tribute to heroes (7). The name of those who died in wars in the past will be attached on bamboo sticks hanging from the ceiling. Visitors will going through those sticks and hear those crashing one to another. This visualization represents an old quote. *"Such silence has an actual sound, the sound of disappearance." —Suzanne Finnamore*

Lastly, those two groups will meet in the end. They could continue going to the next building (8).



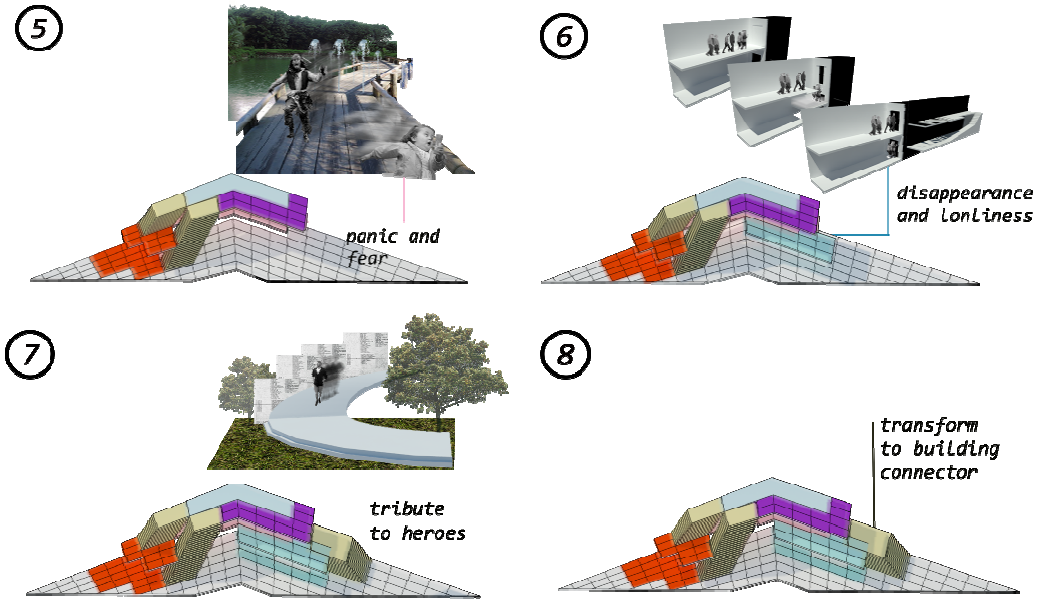


Figure 4.6. Scenario of Fragmented Museum
(source : author analysis)

4.1.5. Maze Museum

History is not a one sided story. People live in time. The space has been replaced. Time is a space where people could create memory. Then, the memory creates history. People could not be fully-objective. Otherwise, *history is subjective.*

In the present, many people discover clues of fact in the past which are different with those written in history. No one know which one is the fact. But, those are still considered as history.

This statement represents as a maze consist of two floors. This maze makes use of a small existing construction as a destination point. In the maze, people could read different timeline of history attached on the walls which are hanging below the second floor. Therefore, those walls position are in the point where the 2nd floor superimposed with the first floor.

The experiences and timeline of history the visitor's see will be different one to another. Furthermore, those who could manage to choose the "right way" will get reward by going to the top of small existing building.

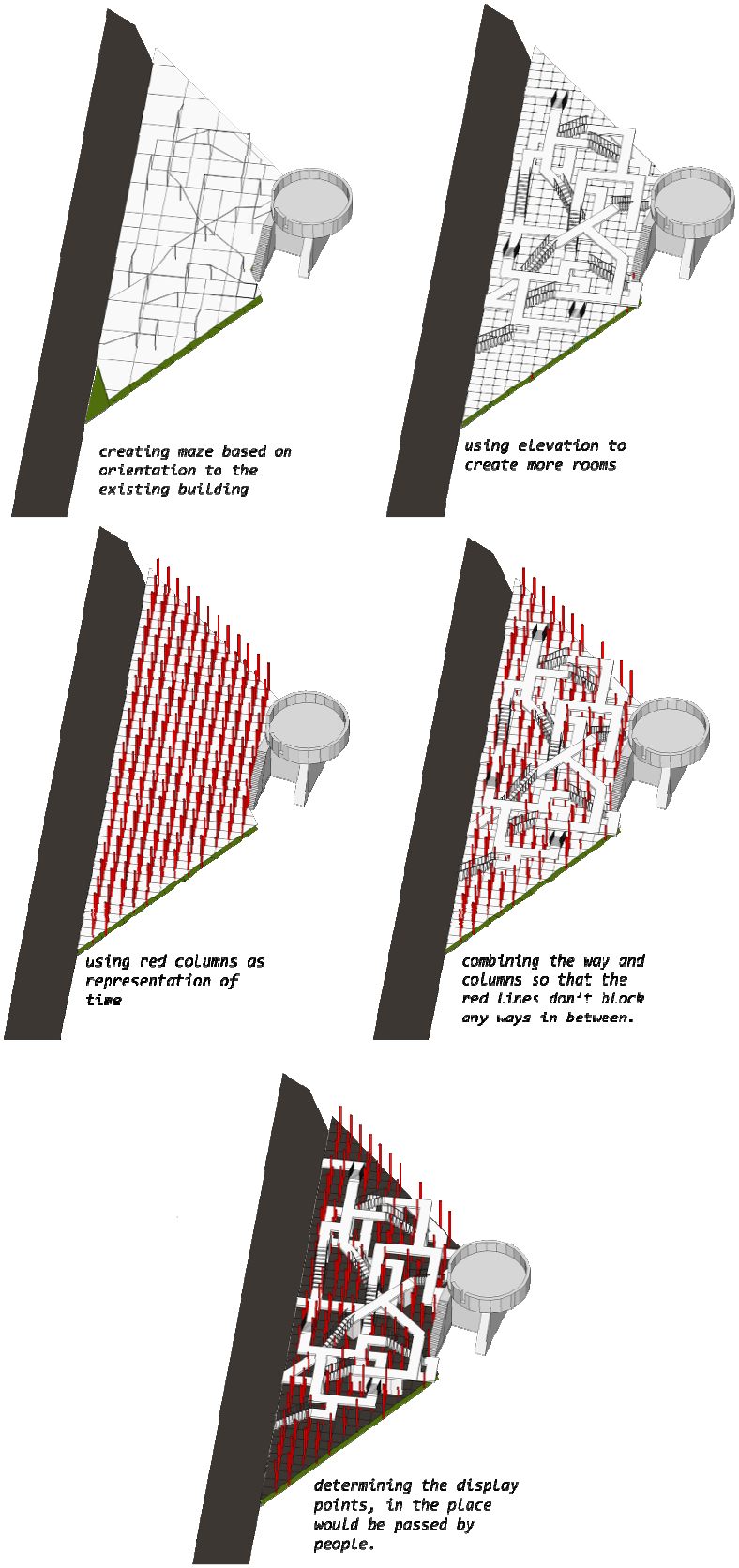


Figure 4.7. Scenario and Transformation of Maze Museum
(source : author analysis)

4.1.6. Layered Museum

Never ever abandon history. Kedung Cowek Fort is called the last standing fort (Purwono, 2011). It is because compared to another forts which was built around Surabaya, Kedung Cowek Fort still has its entire construction and the structure tends to look solid. But, if it is left neglected, destruction could be possible one day. The government and also residents should maintain this fortress. Moreover, it is a heritage that once a witness of important history.

This message is represented by an alley leading to the biggest existing fort in the site. The alley is composed of transparent layers with picture of the fort on those layers. If visitors going further into it, they will see the pictures become darker and blurry until it vanish on the last layer. In the end, they will see the real fort itself in front of their eyes.

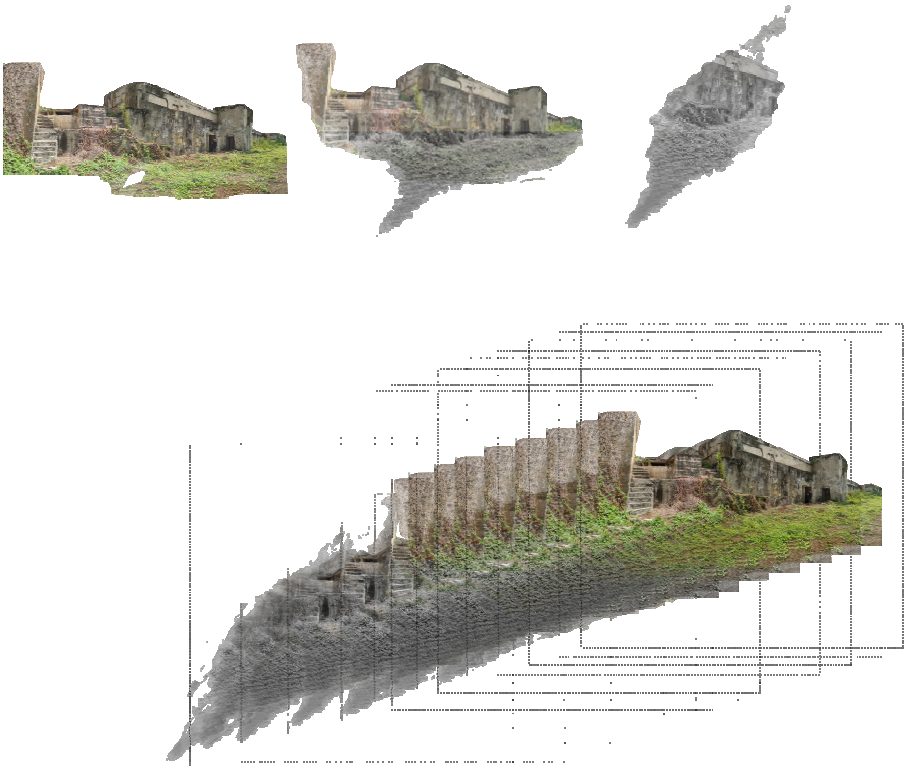


Figure 4.8. Layers Scenario in Layered Museum
(source : author analysis)

4.2. Technical Exploration

4.2.1. Heating, Ventilation, and Air Conditioning (HVAC) System

Heating, ventilation, and air conditioning (HVAC) system in closed museum and storage area is using fabric ducting. Ducts are conduits or passages used to deliver and remove air. The needed airflows include, for example, supply air, return air, and exhaust air. Fabric ducting is made using particular polyester material.

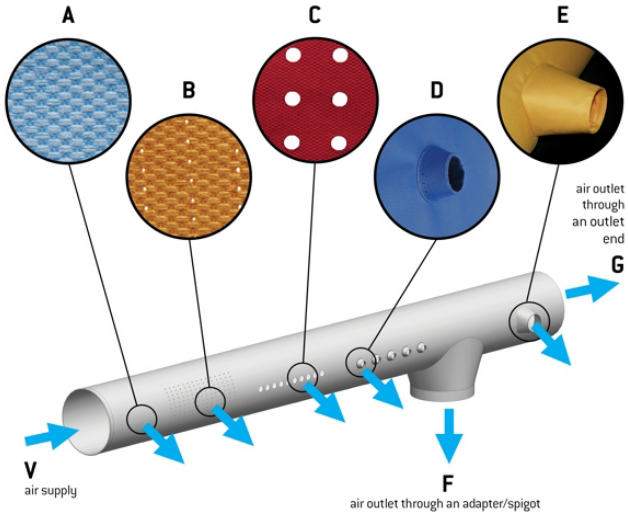


Figure 4.9. Fabric Ducting
(source : *www.prihoda.com*)

It could distribute air smoothly and evenly. This system also more efective and safe for storing collections.

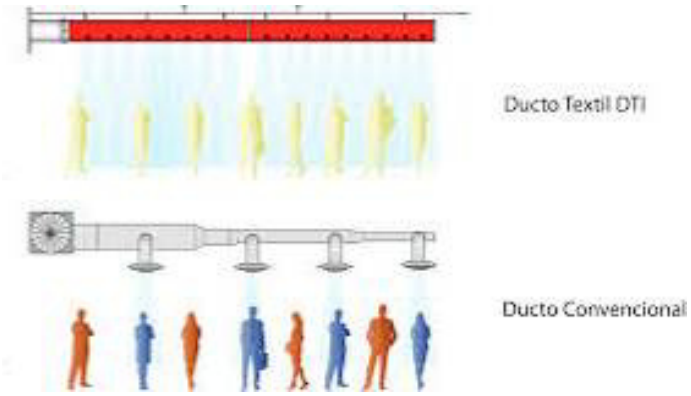


Figure 4.10. Air Distribution
(source : *www.difusiontextil.com*)

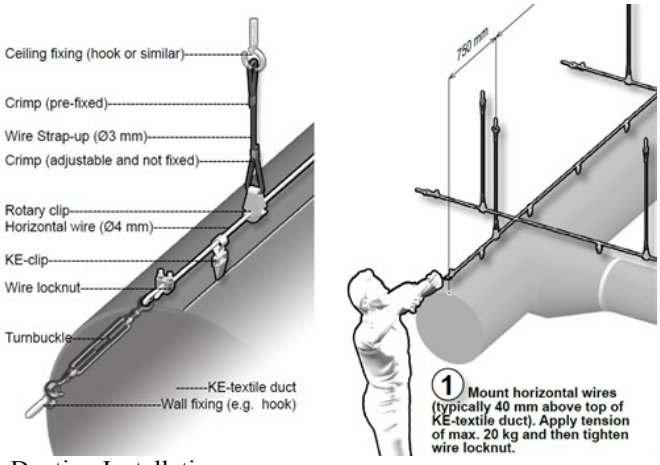


Figure 4.11. Fabric Ducting Installation
(source : *www.ke-fibertec.com*)

4.2.2. Sanitation System

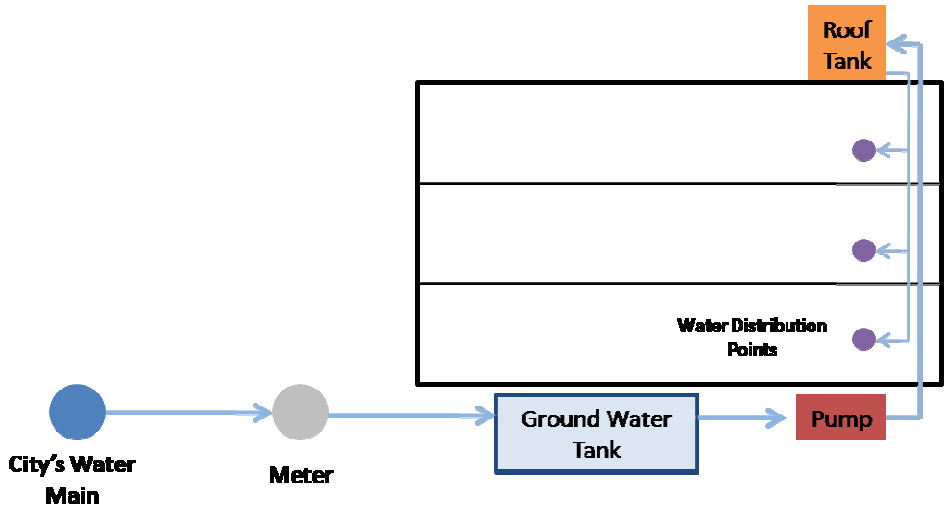


Figure 4.12. Clean Water Distribution System
(source : *author's illustration*)

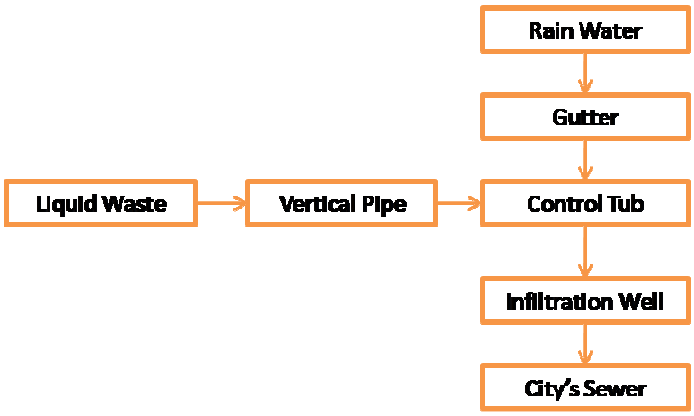


Figure 4.13. Liquid Waste Disposal System
(source : *author's illustration*)

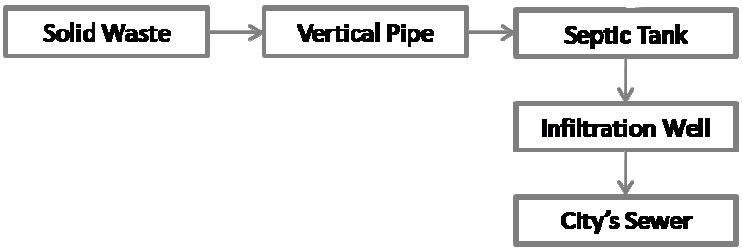


Figure 4.14. Solid Waste Disposal System
(source : *author's illustration*)

Beside the standard sanitation system, the design also needs specific water system to support visitor's experience in the sequence of panic and fear. There will be water fountains splashing one after another, represent the danger itself.

4.2.3. Structural System

The proposed object should not causing damage to the land and existing building. Therefore, the building will be using steel structure which is tend to be lighter than concrete. Steel structure is also more effective in dimension. So, not much space will be used for supporting the structure.

Furthermore, the steel structure will be elevated. By using elevated steel structure, building footprint on the site could be reduced.

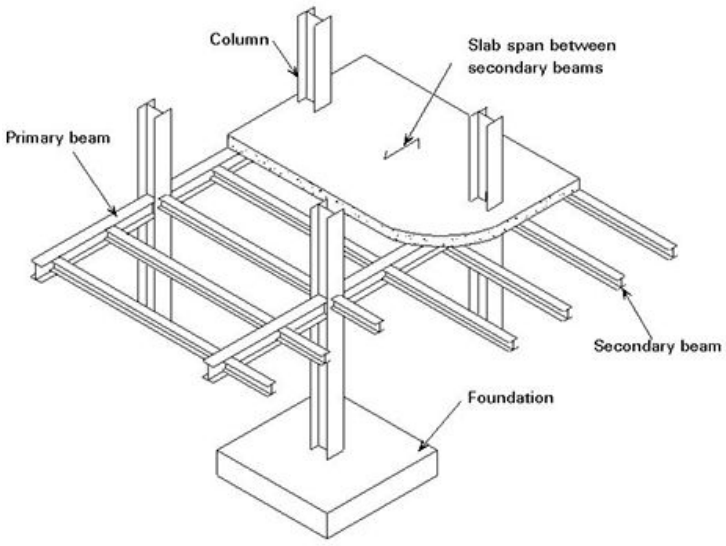


Figure 4.15. Elevated Steel Structure
(source : *www.pinterest.com*

Spesificly for maze museum, it needs structure to support the second floor by using minimal dimension of column. So, those columns will not blocking the track on the first floor.

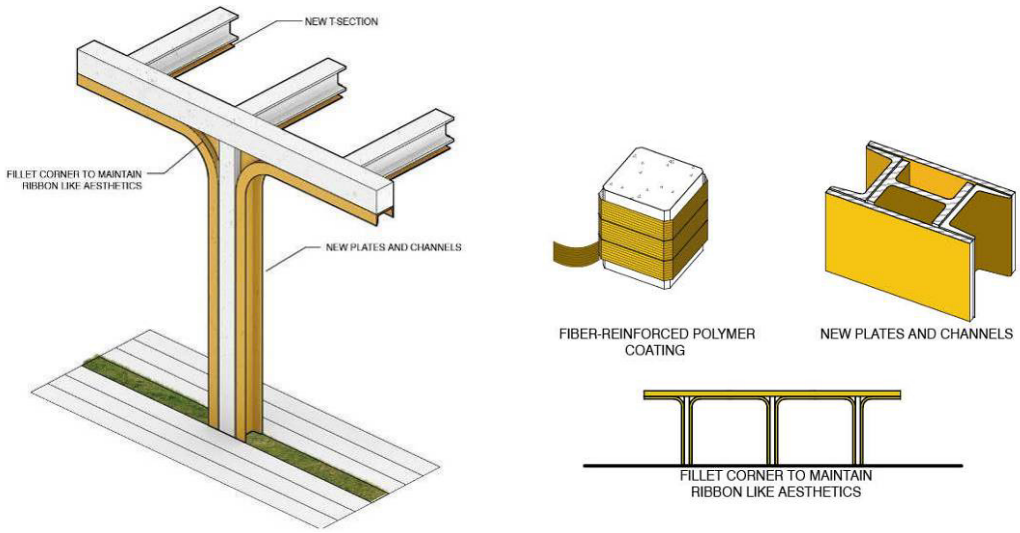


Figure 4.16. Structural Reinforcement
(source : *www.aoarchitect.us*)

CHAPTER 5
THE DESIGN

5.1. Formal Exploration

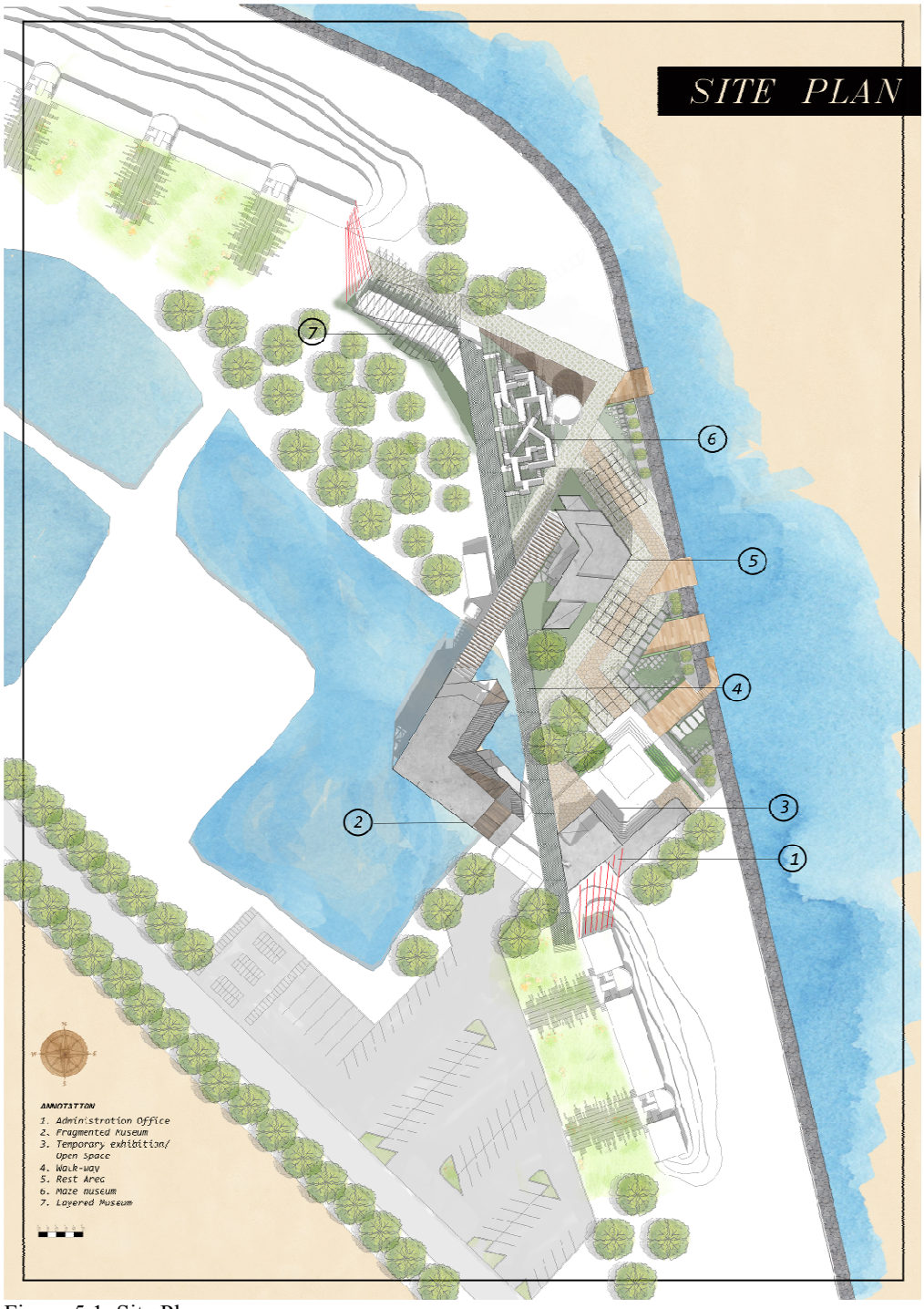


Figure 5.1. Site Plan
(source : *author's illustration*)

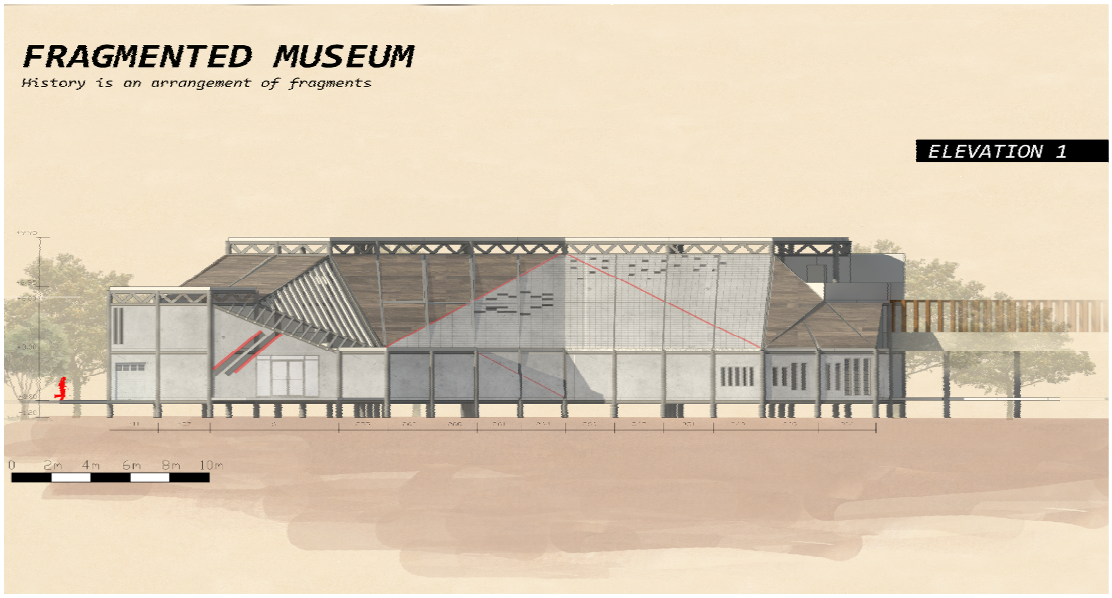
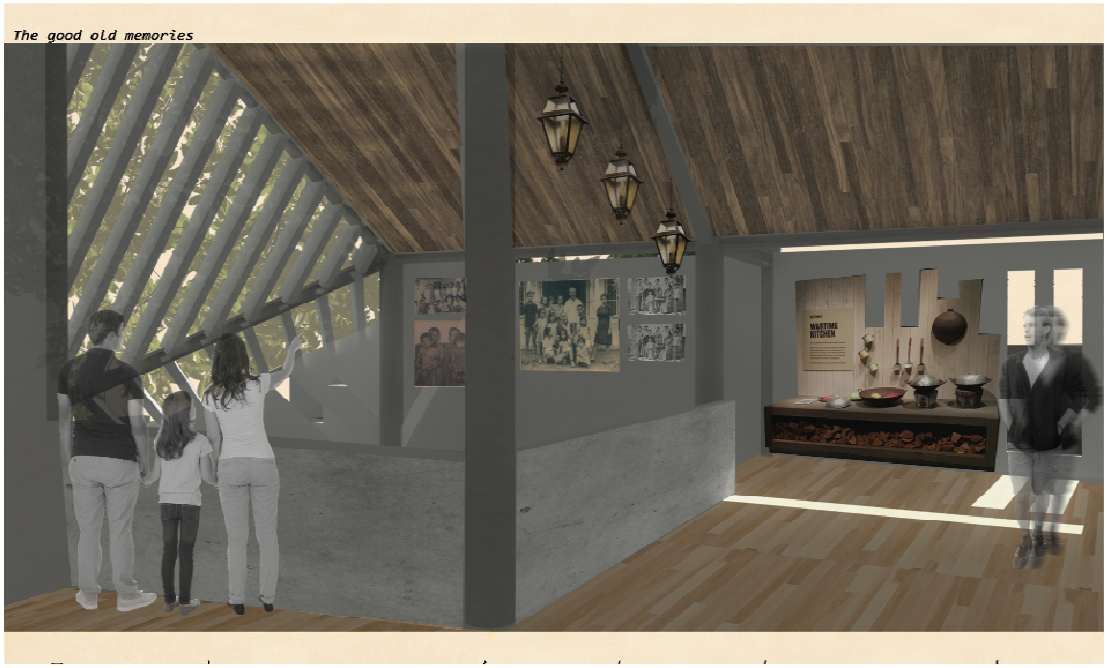


Figure 5.2. Fragmented Museum Elevation
(source : *author's illustration*)



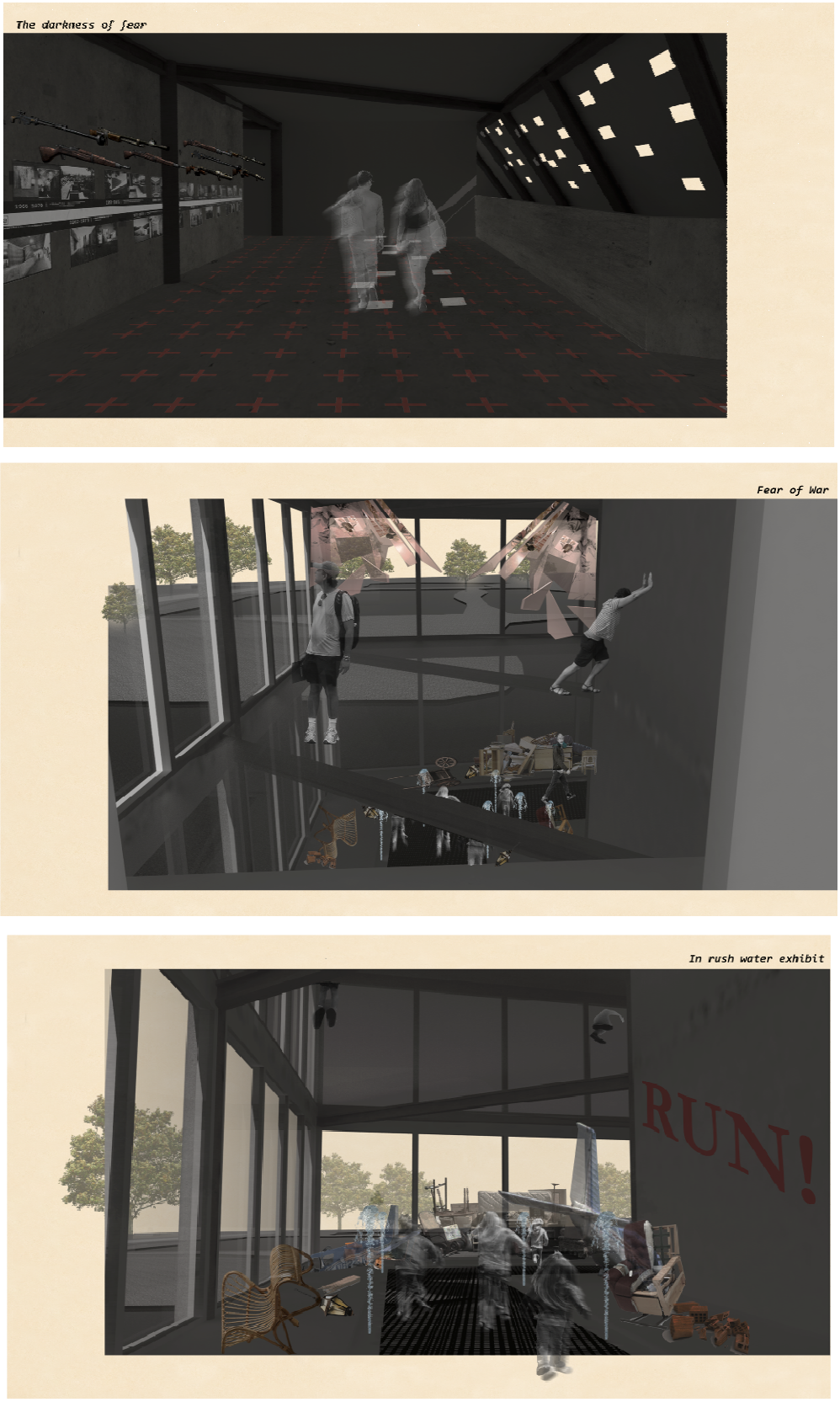


Figure 5.3. Interiors
(source : *author's illustration*)

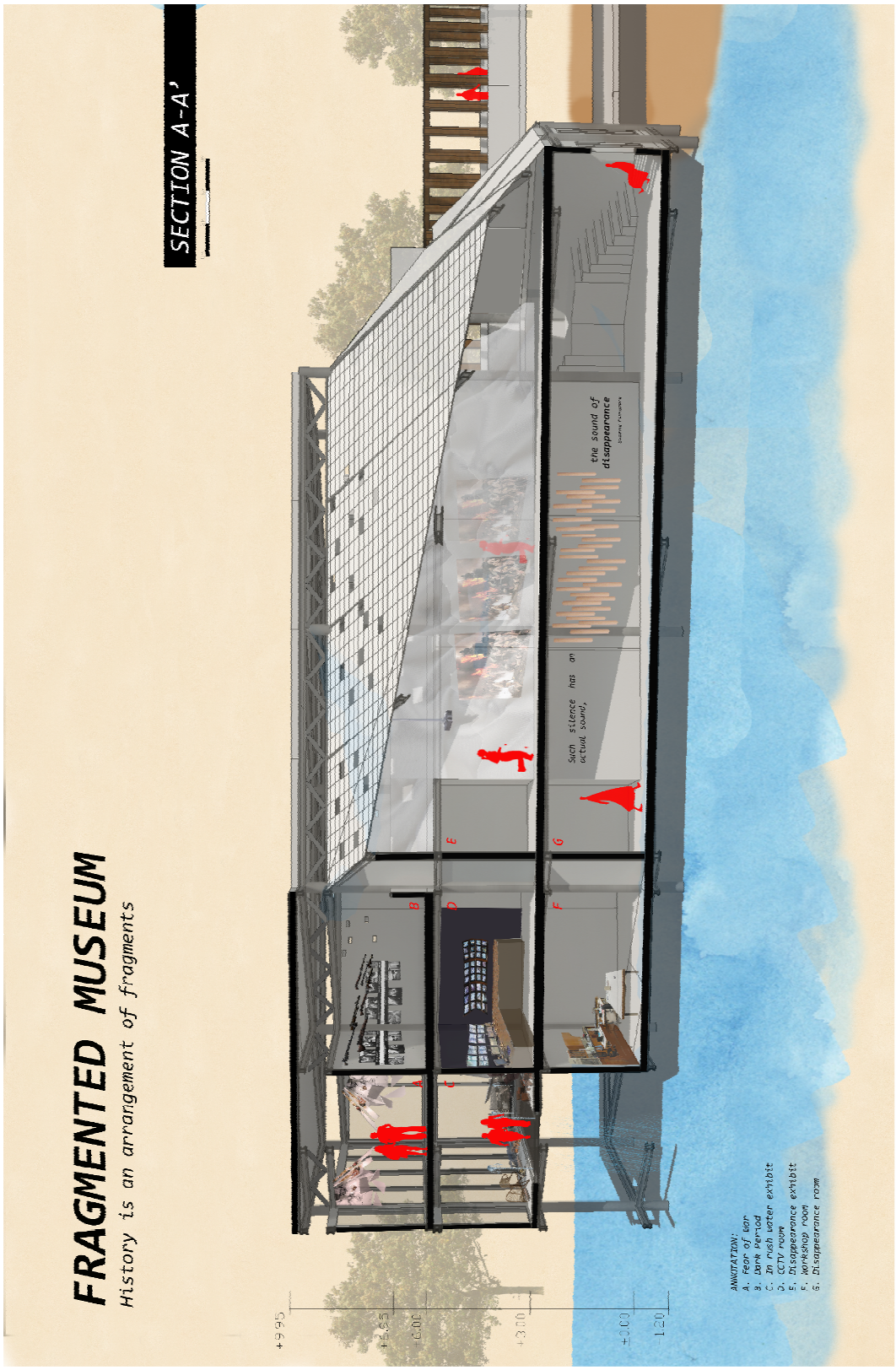


Figure 5.4. Building Section
(source : *author's illustration*)

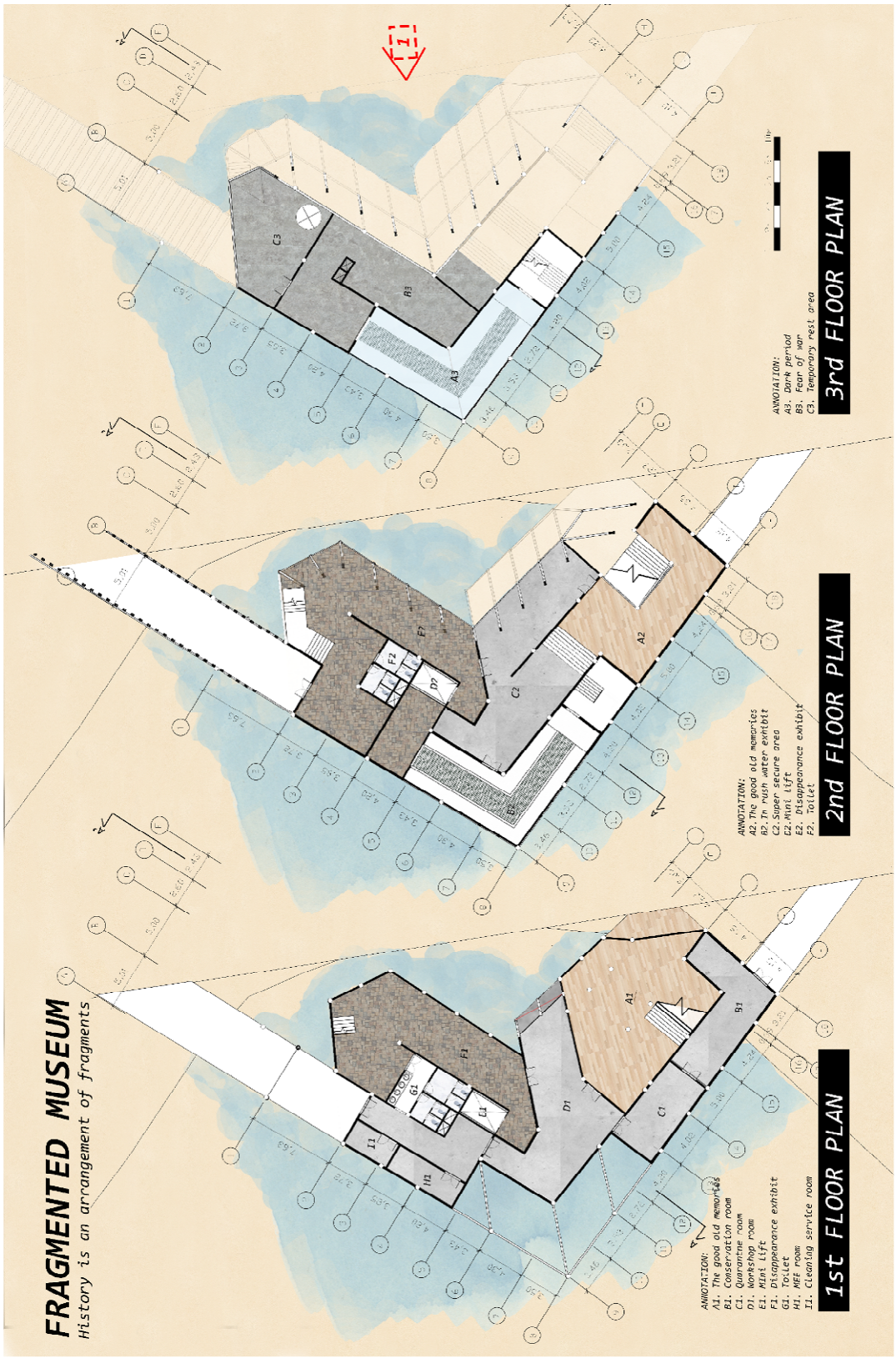


Figure 5.5. Fragmented Museum's Floor Plan
(source : *author's illustration*)

Figure 5.6. Maze Museum Elevation
(source : *author's illustration*)

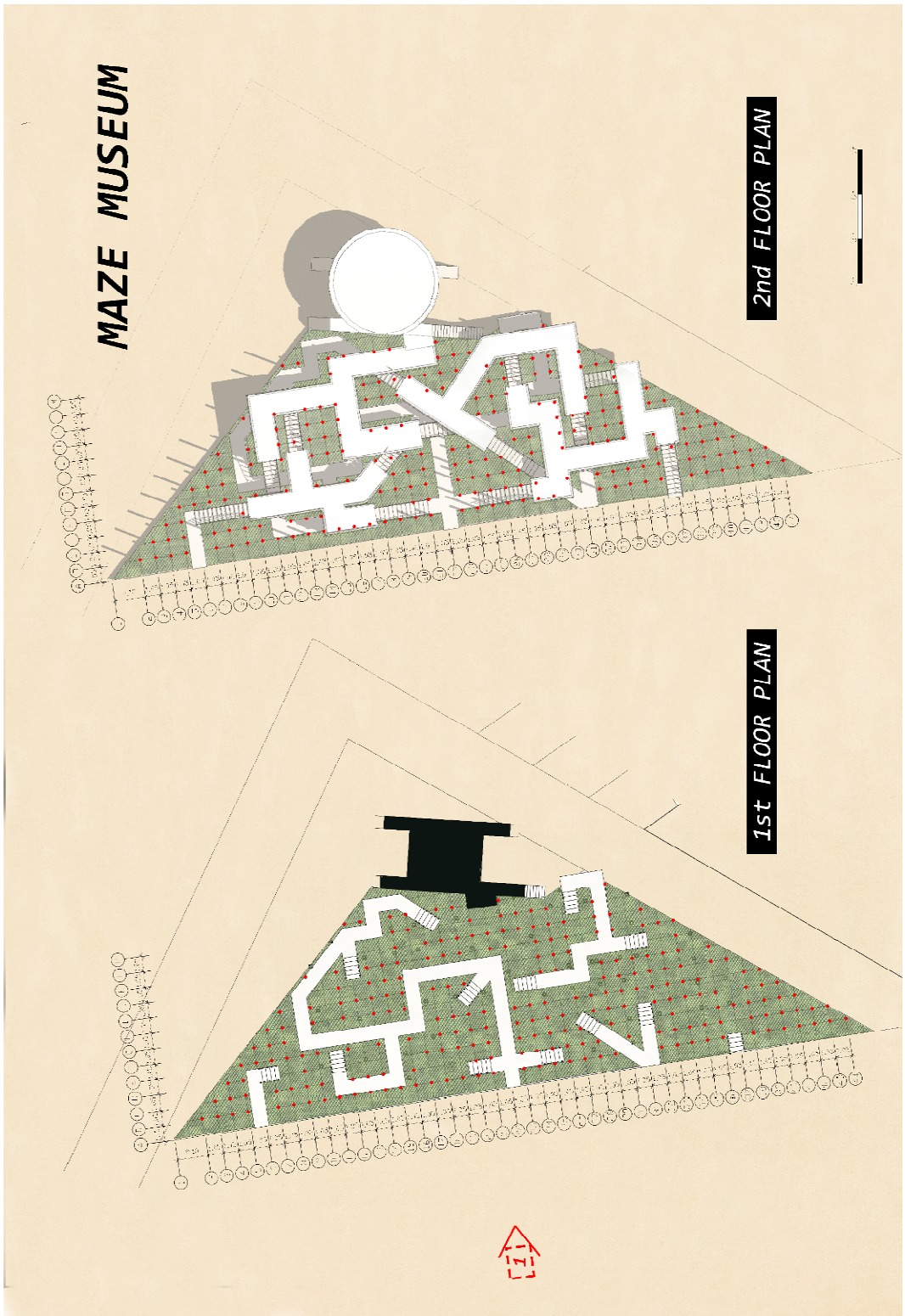


Figure 5.7. Maze Museum Floor Plan
(source : *author's illustration*)

Figure 5.8. Maze Museum Perspective
(source : *author's illustration*)

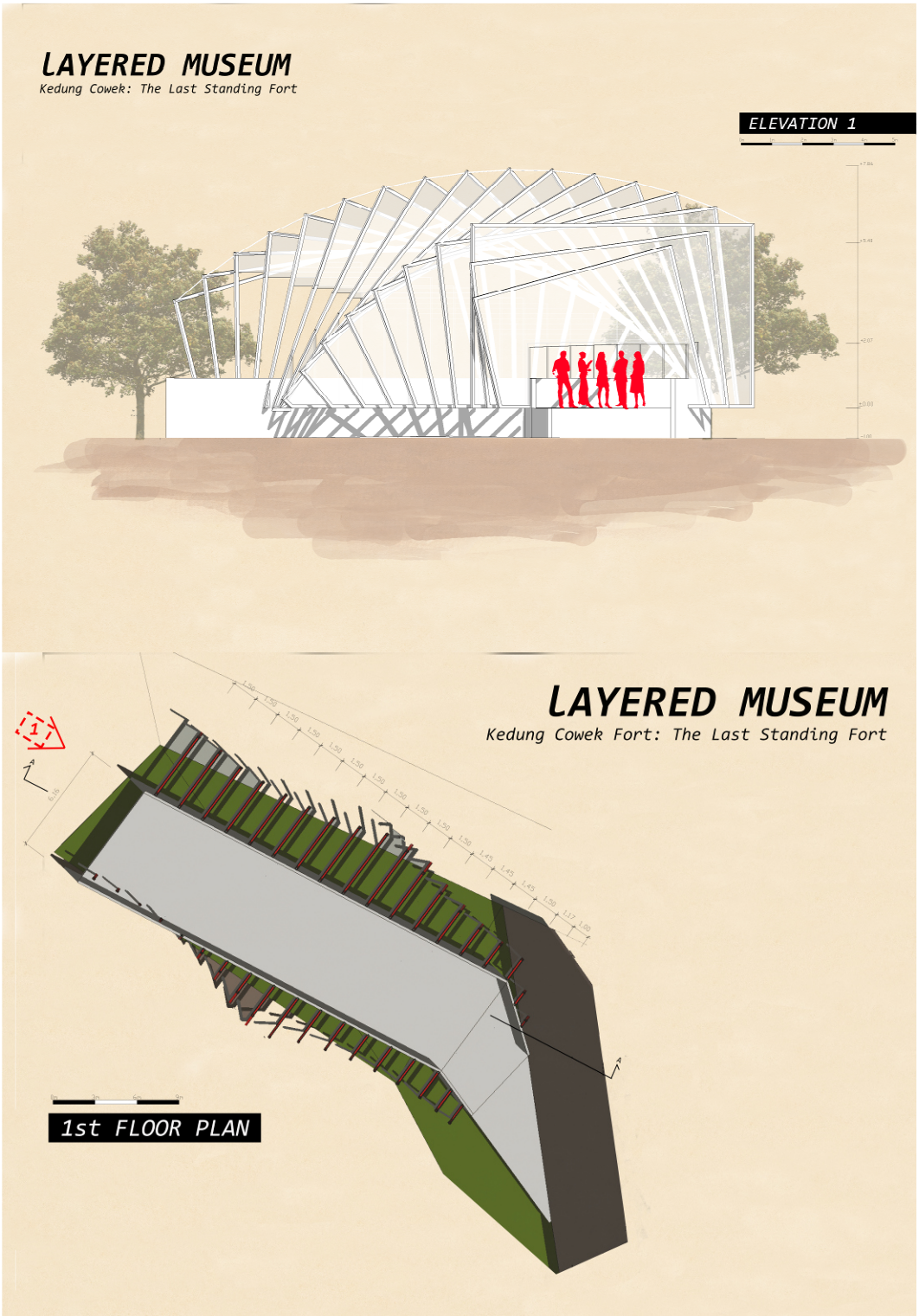


Figure 5.9. Layered Museum Elevation and Floor Plan
(source : *author's illustration*)

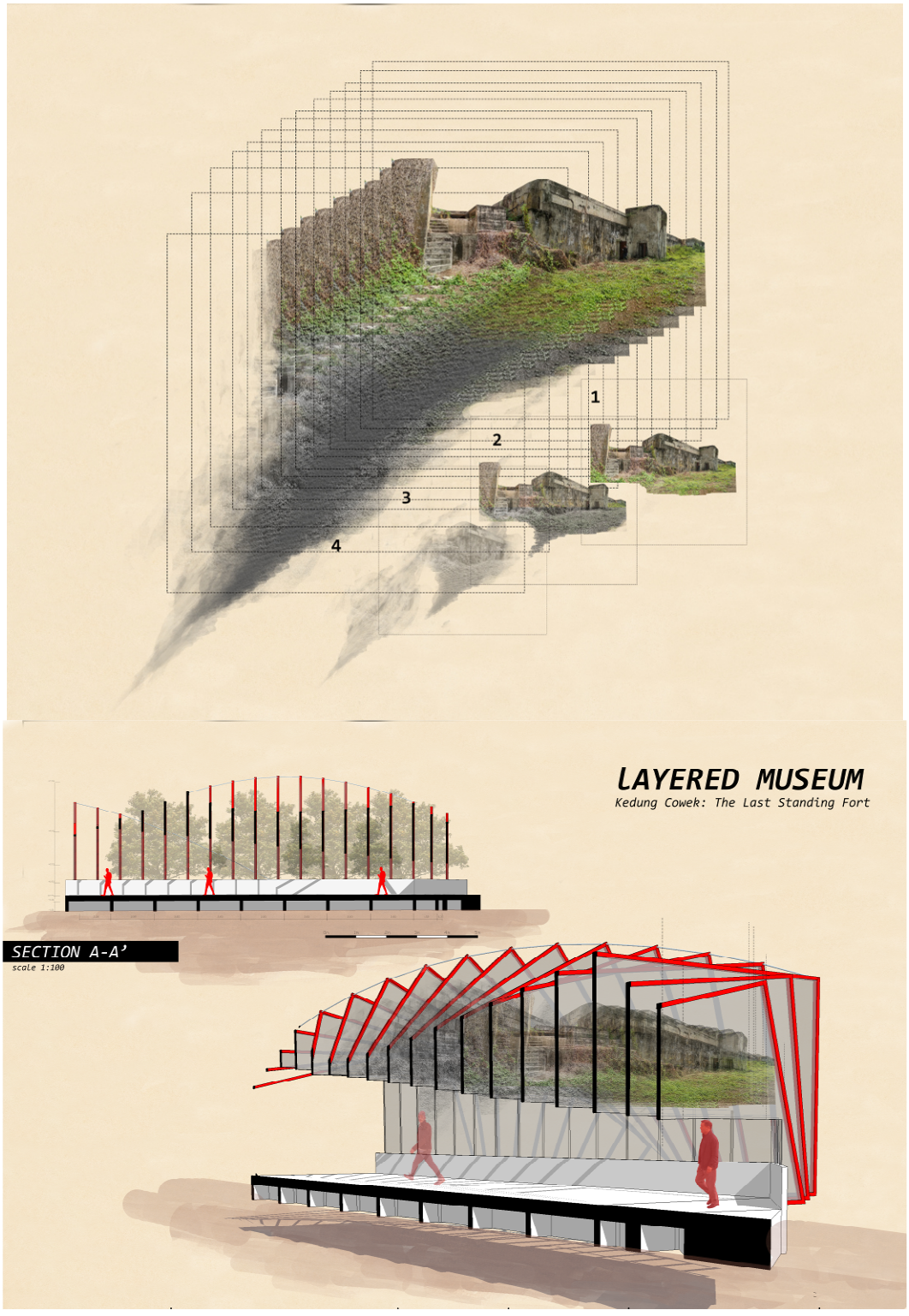


Figure 5.10. Layered Museum Section
(source : *author's illustration*)

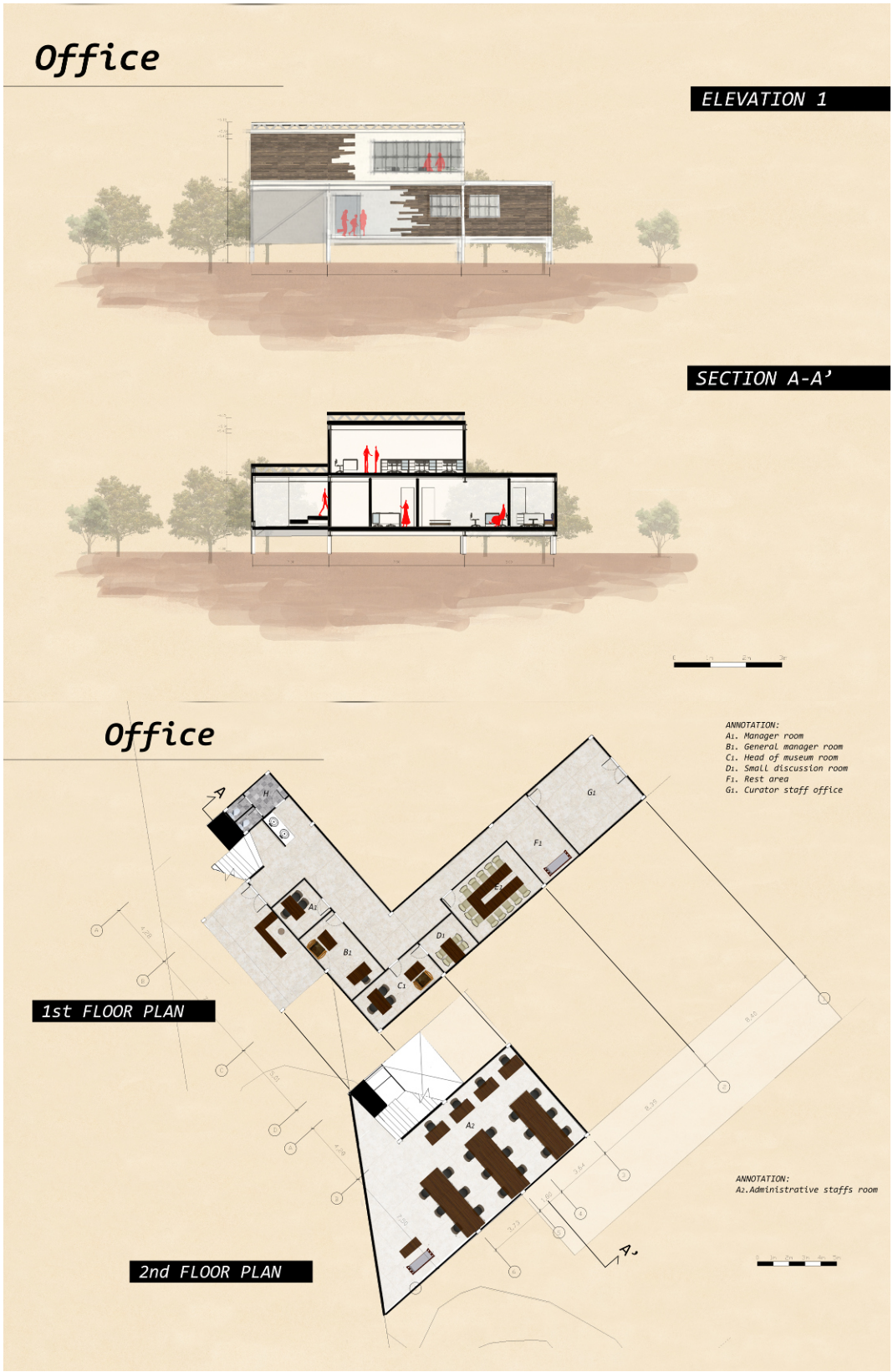


Figure 5.11. Administration Office
(source : *author's illustration*)

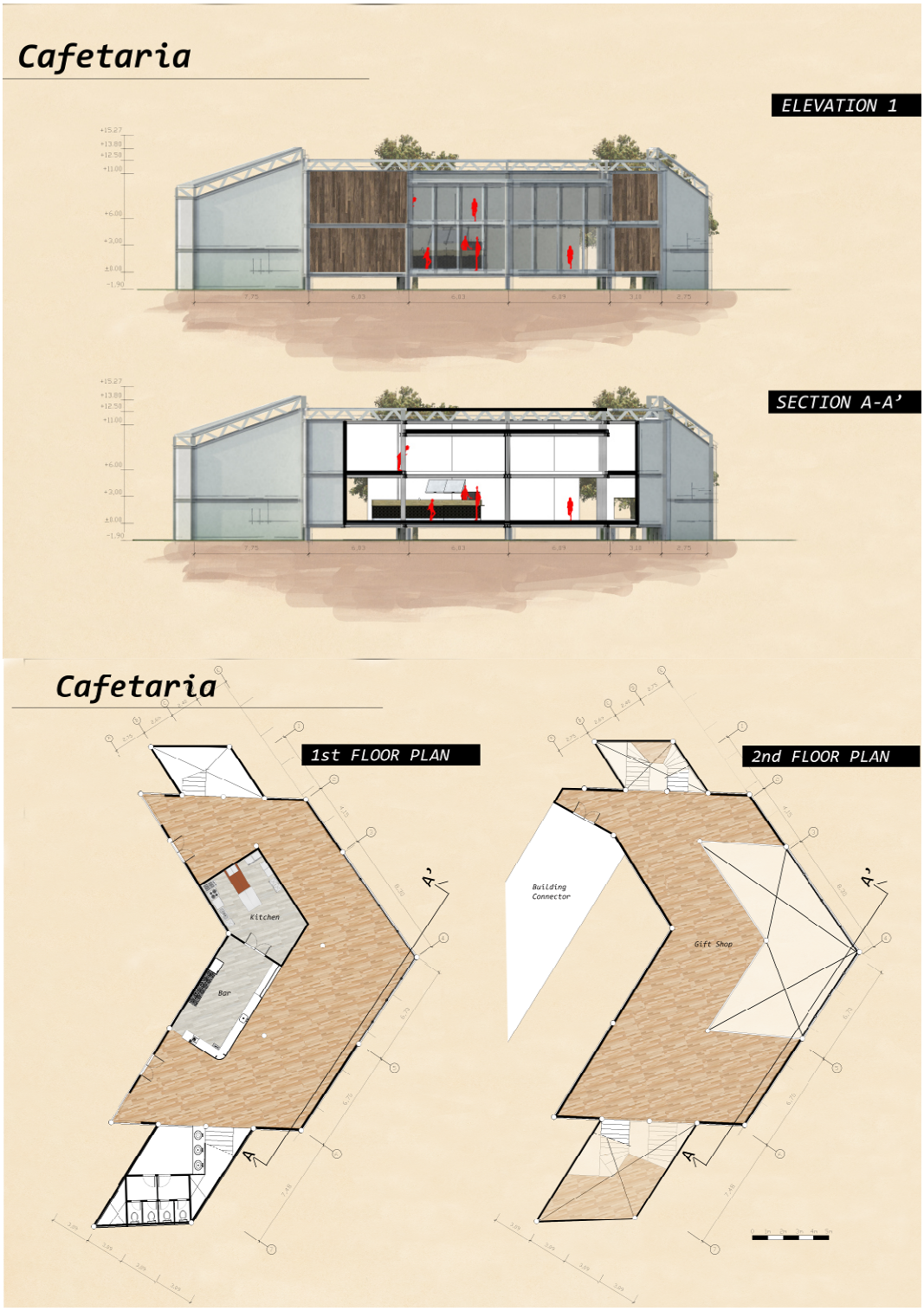


Figure 5.12. Cafetaria
(source : *author's illustration*)

Figure 5.13. Open Space and Temporary Exhibition
(source : *author's illustration*)

5.2. Technical Exploration

Figure 5.14. Water Sanitation System in the Site
(source : *author's illustration*)

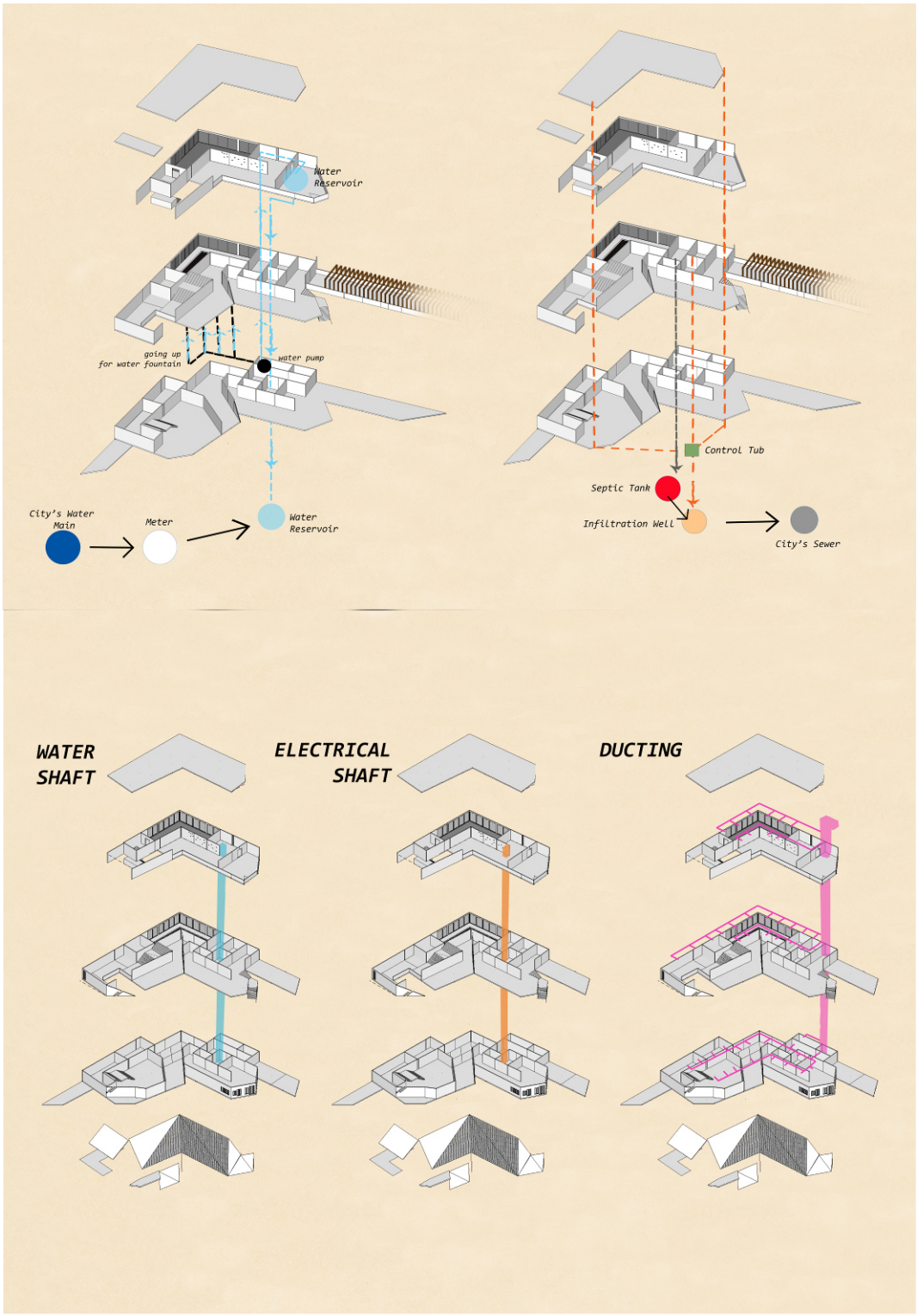


Figure 5.15. Utility System in Fragmented Museum
(source : *author's illustration*)

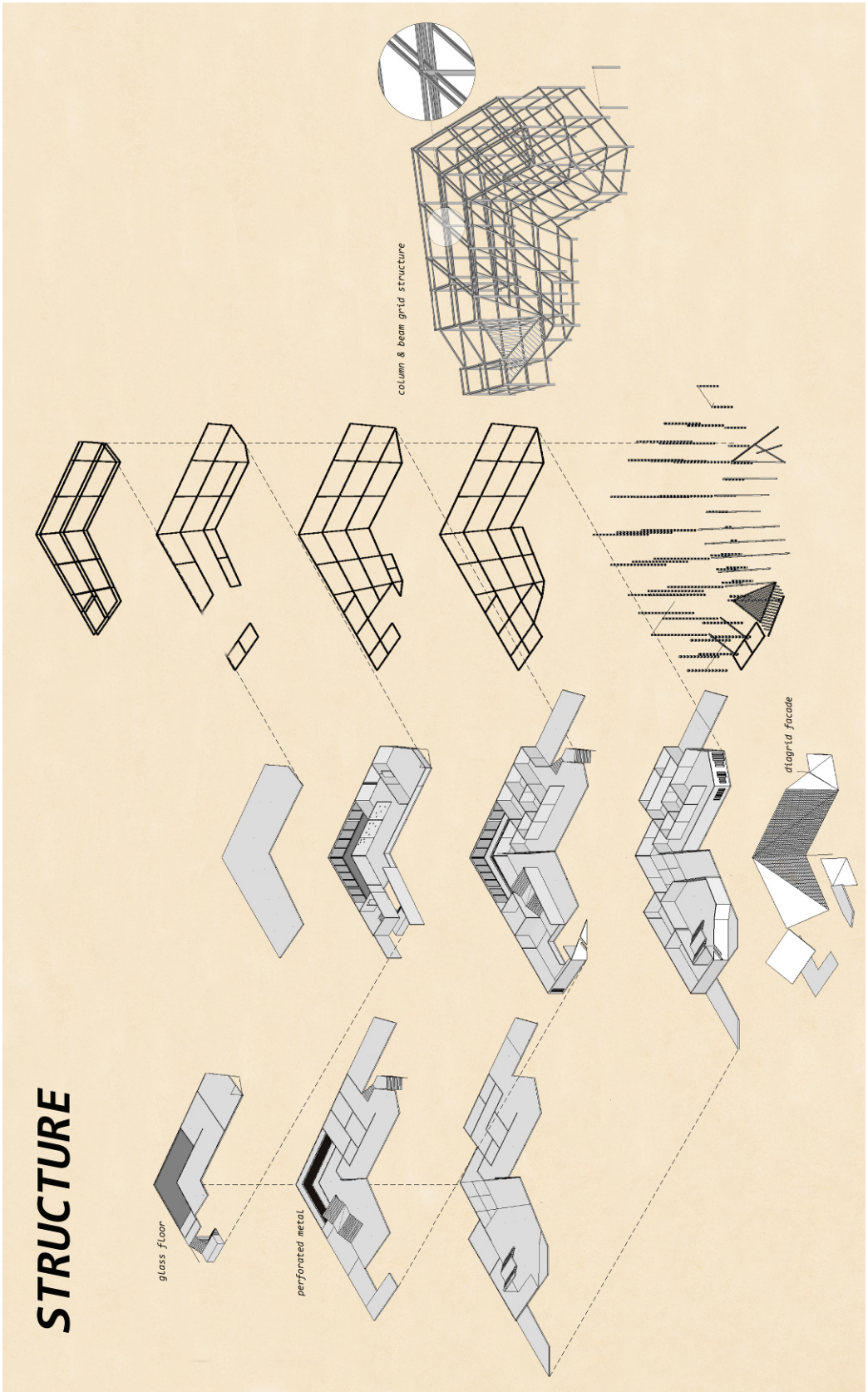


Figure 5.16. Structural System in Fragmented Museum
(source : *author's illustration*)

Figure 5.17. Structural System in Maze Museum
(source : *author's illustration*)

CHAPTER 6
CONCLUSION

People nowadays may not be able to know the real dilemma which was faced by people in the past, when chaos and wars were everywhere. Events in the past, will remain in the past. What has happened, could not be repeated. Time keeps running and people changes overtime.

Space of the past could be revived, not just by presenting timeline and witness of history. The architect should re-interpret the way people could experience the memory of history as a clear statement. In this case, the main statement of the design (Museum of Kedung Cowek Fortification) is fragmented continuum.

By giving the interpretation of historical background, people could try to understand the history from the perspective and story architect creates. The story is not just about the event itself, but also about what is behind. Because sometimes in history, the most important thing is not the event itself, but what is behind.

Furthermore, a good design gives impact to the present and future. In this case, *Kedung Cowek Fort* as a heritage building should be maintained well. Through this proposed design, the architect tries to convey the message for people to keep preserving history.

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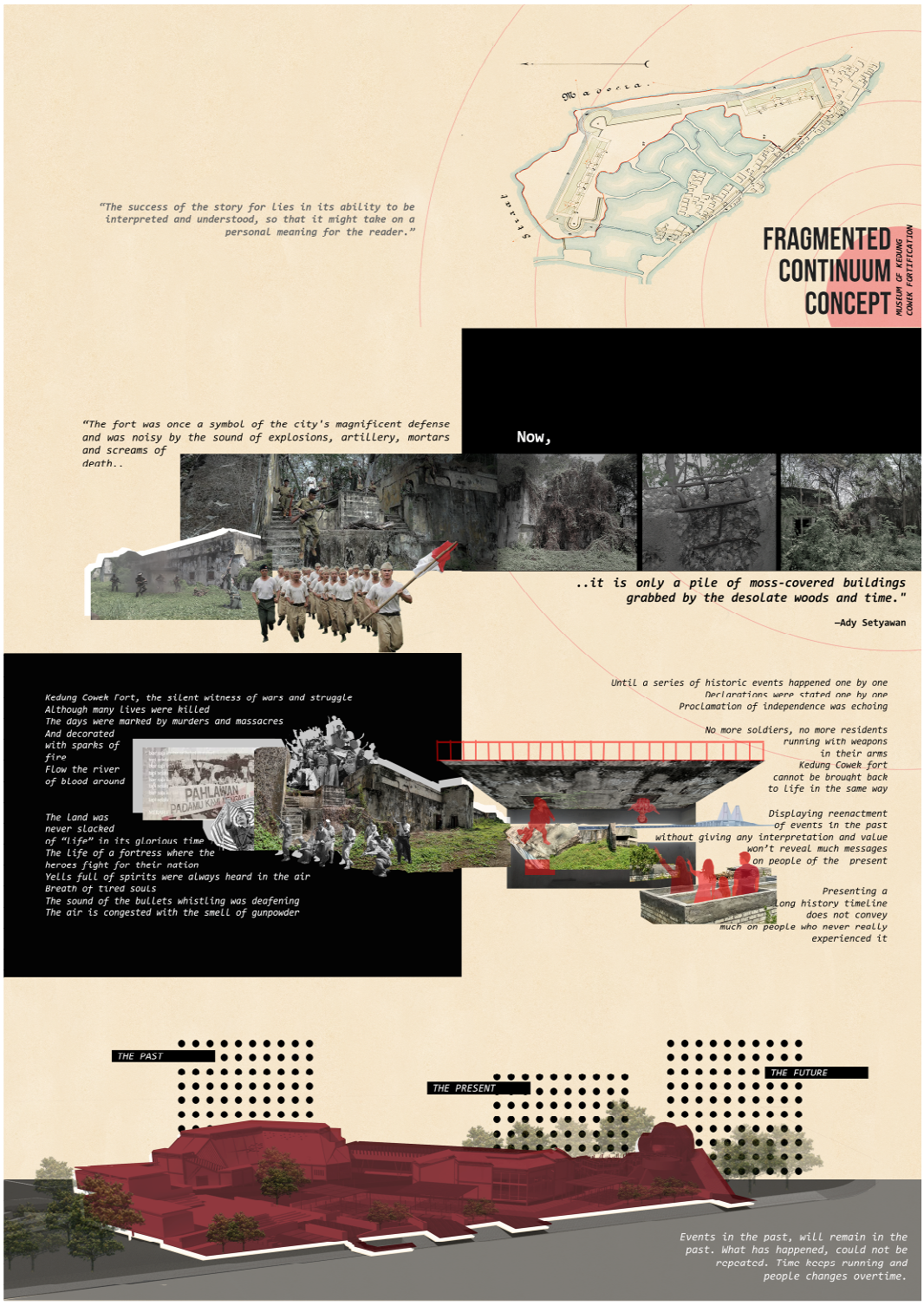
APPENDIX

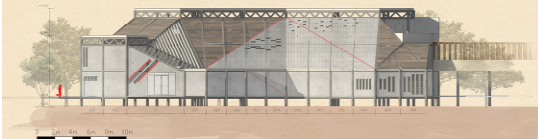
Appendix A

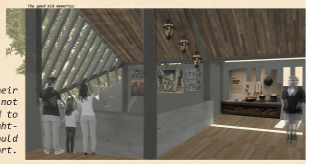


FRAGMENTED MUSEUM

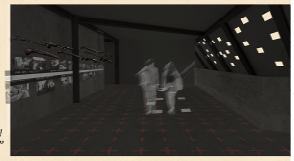
History is an arrangement of fragments

ELEVATION





Those who fought in wars also had their own life, their own family. They did not go to war because they really wanted to or they hate people. Soldiers and fighters are human, just like us. They could felt love and comfort.

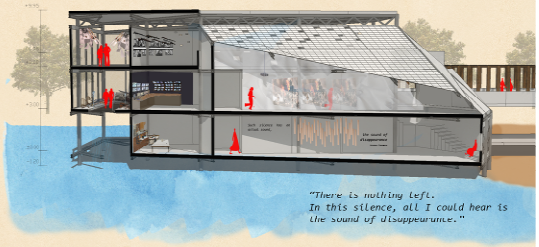


"Time of war is coming!
Here it is, the dark period.."

"Chaos is everywhere.
I've lost my home.
I've lost my family.
Those colonialists bastards ruining my life."

"Run! Run!
Other attack will be here anytime."

SECTION



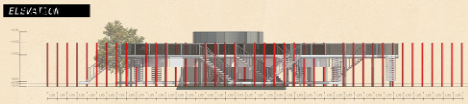
"There is nothing left.
In this silence, all I could hear is the sound of disappearance."

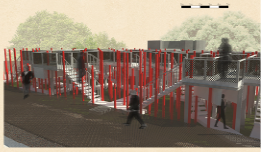
SITE PLAN

MAZE MUSEUM

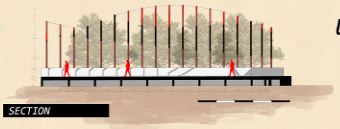
History is not a one sided story

ELEVATION





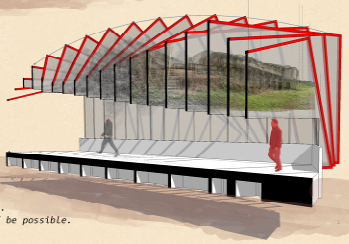
People live in time. The space has been replaced.
Time is a space where people could create memory.
Then, the memory creates history.
People could not be fully-objective.
Otherwise, history is subjective.



LAYERED MUSEUM

Kedung Cowek Fort:
The Last Standing Fort

SECTION



This is all we had.
A witness of history.
Never ever abandon it.
Or another lost would be possible.