PRECARIOUS LANDSCAPES

VALPARAISO'S EARTHQUAKE MUSEUM AND RESEARCH CENTRE

A PLACE FOR DOCUMENTATION, EDUCATION AND COMMEMORATION

THESIS PROPOSAL

Project Title & Signature Page

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PRECARIOUS LANDSCAPES

Valparaiso's Earthquake Research Center & Memorial Museum

A Design Thesis Submitted to the
Department of Architecture and Landscape Architecture
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By

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In Partial Fulfillment of the Requirements
For the Degree of Master of Architecture

Primary Thesis Advisor

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The feeling of smallness is a distressing experience.
When one faces the vastness power of nature we experience the feeling of being powerless, and distress that overwhelms.

But there is also pleasure from such encounters, liberation from conceding to one's limitations.
Since antiquity, a term has been used to signify the origin of these paradoxical experiences: ***THE SUBLIME.***

THESIS ABSTRACT

The relationship of humans and nature has changed over time due to the advancement of technology and science, which has led us to believe that everything in the world can be somehow explained and controlled. However, a drastic unpredictable change, such as a natural disaster, alters that perception.

How does a disaster change the identity of an individual and a community?
Can architecture help these victims find themselves in the world after such distressing experience?

This thesis explores architecture's role in a community dealing with catastrophic trauma; the physical and psychological needs of the people. While we can't really predict or stop a disaster, the reaction to and recovery from these devastating events, can be improved to better facilitate the survival and recovery process of the community, and its victims.

Through the creation of an Earthquake Research Center and a Memorial Museum, in the city of Valparaiso, Chile (a city that has gone through tremendous catastrophes); the architecture will explore the placing and displacing of memory, becoming a place for documentation, education and commemoration. The intended experience is a bridging between chaos and order, sacred and profane, creation and destruction.

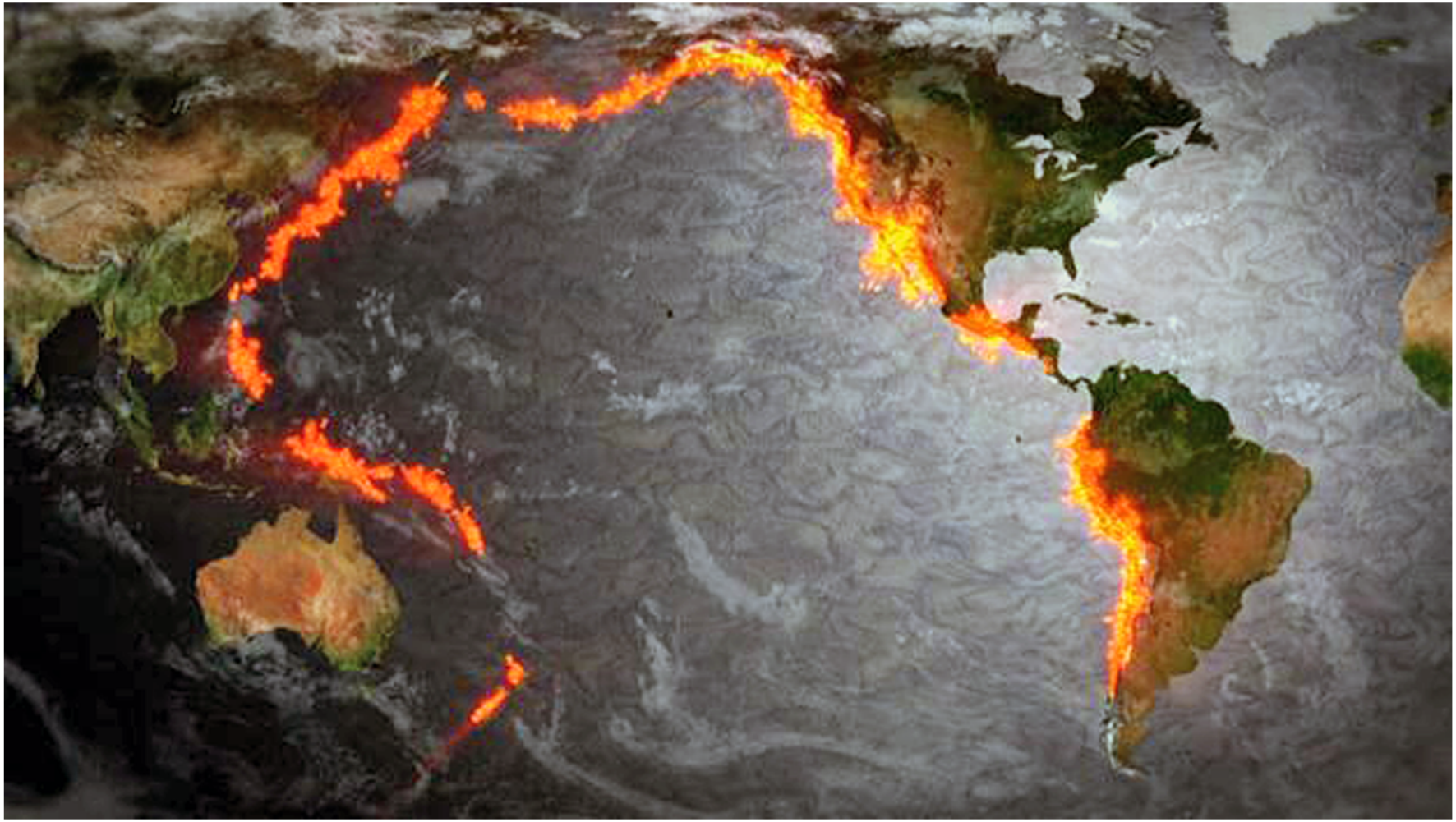


Figure 01 | Pacific Ring of Fire

The ***Ring of Fire*** is a string of volcanoes and sites of seismic activity, or earthquakes, around the edges of the Pacific Ocean. Roughly 90% of all earthquakes occur along the Ring of Fire, and the ring is dotted with 75% of all active volcanoes on Earth.

NARRATIVE OF THE UNIFYING IDEA OF THE THESIS

Being from Chile, one of the countries that's the most prone to natural disasters due to its location within the ***'Ring of Fire'***, with active volcanoes and high earthquake risk. I have always been curious and captivated by how these disasters affect the psyche of a community and even a whole country.

Many natural disasters are escapable if you have been forewarned, by using tornado shelters or by evacuating before floods or forest fires, or even tsunamis. But with an earthquake there is usually no previous warning and there's no escape, your whole world is shaking. There is nowhere to go. It is one of the rare moments that 21st century man is absolutely powerless.

The largest and most devastating earthquake ever recorded took place in Chile in 1960 on the southern side of the country. The earthquake wrenched the seafloor 20 feet (a massive displacement) thus creating gigantic waves that spread all the way to the coasts of Philippines and Japan.
This quake had a magnitude of 9.5 (For context, the Great Quake that destroyed San Francisco had a magnitude of 7.9), left 2 million people homeless and the injured and dead totaled close to 6,000 people between Chile, Japan and the Philippines. Only a day after the massive quake, the volcano Puyehue erupted for several weeks and spewed lots of ashes into the air. The earth kept shaking up to a year later with aftershocks ranging anywhere from 4.0 to 7.8.

It is true that terrible tragedies are happening every day from natural disasters, war, and massive shootings or terrorist attacks. We are somehow becoming accustomed to quickly digest all these tragic events, given the information era we live in. We are bombarded with imagery in our cell phones, computers and televisions, and it is very easy to disregard and forget yesterday's news. However, the suffering and trauma experienced by those people involved is not easily forgotten and it marks them for the rest of their lives.

All of these catastrophes are major events then become part of the collective memory of an individual, a community and even a whole country. Many people can easily remember what they were doing when these major catastrophes occurred and these tragedies can become a milestone in individual people's lives.

However, I believe that these traumas haven't been addressed properly. In our fast pace lives it seems like there's no time to come to grips with what has happened and how these tragedies affects and will affect our being and existence, but only time to address the immediate physical needs such is shelter,water, food and first aid.

Matthew Ratcliffe, in his essay 'Why mood matters' reflects on Heidegger's idea of mood and change.
With our Modern lifestyle becoming so monotonous and repetitive, the excessive use of technology and social media is isolating us each and every day. Our modern society has become very disconnected, and in a way, earth and nature appear to be more alive than us, therefore nature itself may help us to re-connect with our true self.

"What happens when major life events or catastrophes "sink in" – what starts off as a focused emotion leads to a change in how one finds oneself in the world."

"The process of recovering oneself of a certain mood, the contrast between moods, and the shift in the sense of belonging that serve to illuminate; what one previously took for granted becomes salient and thus amenable to phenomenological reflection when it is lost or distorted."

As Matthew Ratcliffe implies, a drastic change in our lives- a fracture in our world, environment or society can serve as a benefit to find oneself. And perhaps architecture can facilitate this process by providing the condition to introspectively engage with oneself and our community.

Vilem Flusser in his essay 'Exile and Creativity' touches this same topic but with reference to exile- which is another drastic change that some people have been forced to experience. Exile has been commonly viewed as a negative thing but Flusser, an exiled himself, gives a different view arguing that perhaps when a person is pulled back from their habit, one discover things. As these drastic and unwanted changes in a person's environment can open a bridge for re-discovery.

"In habit, only change is perceived; in exile, everything is perceived as if in the process of change. For the expelled, everything challenges him to change his life. He becomes a revolutionary"

"Exile, no matter what form it takes, is a breeding ground for creative activity, for the new"

Figure 02 | Valparaiso's 1906 Earthquake

Figure 03 | Storm surge in Valparaiso

"Nature's mood swings can severely alter landscapes, destroying cities and homes, throwing everything off balance, and architecture can offer us a way to look at these events with a new sight"

– Juhani Pallasmaa

Figure 04 | John Martin's Apocalypse

The relationship between humans and nature hasn't always been this distant.

In Before Philosophy - Henri Frankfort, a Dutch archeologist, compares how the ancients and natives see the world and themselves to how we see the world and ourselves today. The fundamental difference between the attitudes of modern and ancient civilizations as regards to the surrounding world is that modern scientific man sees the world as an I-it", and for ancient man is an I-thou".

In the book "I and Thou" Martin Buber, a Jewish philosopher, explains these two word pairs to categorize the modes of consciousness, interaction, and being through which an individual engages with other individuals, inanimate objects, and all reality in general. Philosophically, these word pairs express particularly how a person exists and actualizes that existence. A person is at all times engaged with the world in one of these modes.

The "It" of I-It refers to the world of experience and sensation. Treats that other being as an object, the I-It relationship is in fact a relationship with oneself; it is not a dialogue, but a monologue. Essentially, this form of objectivity relates to the world in terms of the self – how an object can serve the individual's interest.

I-Thou relationship describes the world of relations. This is the "I" that does not objectify any "It" but rather acknowledges a living relationship.

When a disaster strikes a city, our landscape and architecture become an embodiment of the complex dialogue of Man's power to manipulate his environment, and at the same time nature's latent power over Man.

"Nature reminds us of the numinous. A humble recognition of the ultimate unavoidable uncertainty that is our lives."
– Juhani Pallasmaa

The numinous, explained by Rudolf Otto in his book 'The Idea of the Holy', is a "non-rational, non-sensory experience or feeling whose primary and immediate object is outside the self".

'The numinous- magical character is a 'presence' or an atmosphere rather than a formulated idea. It cannot be described in words, because it lies beyond intellectual definition.'

Numenous comes from the latin word 'numen' which means an influence perceptible by the mind but not by the senses. An experience difficult to facilitate, which involves a phenomenology of the "mysterium tremendum'.
A blissful mix of exhilaration, joy, insight, and peace, although it sometimes can manifest itself as awful, depressing, and even horrific.

Due to the close relationship between the land, the sea and all that exists, indigenous people saw nature as sacred and strived to maintain a cosmic order.

In ancient times myth prevailed over scientific knowledge, and rituals were vital in nurturing and maintaining balance and harmony. The myth of the Flood, known from Mesopotamia, Greece and the Bible, reveals the different stages of an overwhelmingly destructive natural disaster, and human reactions to it. An angry God turns on his creation and decides to destroy it because of the sinfulness of man:

'When the Lord saw that man had done much evil on earth and that his thoughts and inclinations were always evil, he was sorry that he had made man on earth, and he was grieved at heart' (Genesis 6, 5–6).

As nature remained ultimately unpredictable. Earthquakes, wild fires, storms and floods, tsunamis, volcanic eruptions, and plagues recurred often enough to convince man that he was not the master of his world.

So, when a disaster strikes a city, our landscape and architecture become an embodiment of the complex dialogue of Man's power to manipulate the environment, and at the same time nature's latent power over Man. Perhaps, there is a reversal on this relationship now whenever we experience a catastrophe, and with it the idea of the sublime.

In ancient times the idea was that culture was susceptible to human control, nature not. The beautiful was culture: human in scale, manageable, measurable. The sublime was nature- which has always been sensed as uncontrollable, and unresponsive to human desires.

In today's day and age with the advancements of technology and science, it's hard to cause wonder or amazement outside man-made experiences so the concept of the sublime has had a significant shift. We can certainly be comfortable and block nature from our lives, with our air conditioned homes and well-built structures designed to protect us from nature.

However, nature's presence and latent power can still be felt in certain parts of the world, as it is in Chile, and it has become more prominent in recent years with massive earthquakes, storms and tsunamis that have taken us by surprise, reminding us that nature indeed is uncontrollable and that of our miniscule existence in the cosmos.

Figure 05 | Noah's ark

THE PROJECT TYPOLOGY

Valparaiso after going through so many tragedies can benefit of a place that can identify its residents, and at the same time needs a place where the community can rely on after a disaster.

The program includes places where people can go before, during and after an earthquake or other natural disasters happen.

MEMORIAL MUSEUM –LANDMARK BRIDGE– EARTHQUAKE RESEARCH CENTER

BEFORE A DISASTER – An Earthquake Research Center and Museum, a place to study and learn about earth's tectonic movements and earthquake prevention; where the community can learn more about how to react when a disaster happens. Exemplary seismic resistance architecture will be displayed throughout the facility, creating a strong connection to the community as visitors are encouraged to witness the current experiments through different viewing paths along the site.

DURING A DISASTER - The research center facility will incorporate seismic radars that allow to monitor seismic activity in the area. During a disaster, the facility will also be able to serve as temporary shelter in case people need a safe place during a catastrophe.

AFTER A DISASTER - Providing a sanctuary for the community to serve as a "threshold", A bridge between the profane and the sacred. Becoming both a landmark and a meeting point; a place where a person can engage in introspection and contemplation.

In the aftermath of a disaster, people often experience a major loss of place and loss of memories.
The loss of a home has a big impact in a person's life. The home is often seen as an extension of the self, since it contains objects that symbolize past events, relationships, and elements that define and reveal communal and personal identities. Thus, providing a place to acknowledge these losses is extremely important.

THE TYPOLOGICAL RESEARCH

When considering precedents and case studies that would help develop my project, it was important to select buildings that had a strong relationship to its context, especially nature. Another important aspect in my project is a building to act as a sanctuary, and a sanctuary doesn't necessarily mean a religious institution, a sanctuary as a mean of relief in our chaotic lives.

The first case study selected is Mosche Safdie 'Yad Vashem', the Holocaust History Museum, located in Jerusalem – Israel.

This building has a very strong relationship to its context as it is immerse in the hill, dramatic cantilevers that create a strong connection to nature, and the city, as well with a dramatic view of modern-day Jerusalem.

My second case study is Louis Khan, 'The Salk Institute', located in La Jolla, California.

The monumental presence of this building hasn't diminished since it was built in 1959, which is what I intend to do with my architecture, create a symbol or landmark for the city of Valparaiso. What is most interesting to me about this building is that, even though this isn't a religious building, it is a building that encourages contemplation.
This building has been described as a gracious place for reflection and discovery.

My third case study is the 'Museum of Memory and Human Rights', located in Santiago – Chile,
and was designed by 'Estudio America' architects.

This building is simple and powerful at the same time, and it is full of metaphors in every corner creating rich and deep experiences for its visitors. This museum deals with a very sensitive topic in Chile, which is the dictatorship that has divided the country since then.

This is a building that stimulates thinking and introspection by leading its visitors on a journey, and the use of materiality to create different abstract metaphors makes this building very interesting.

Figure 06 | Yad Vashem Exterior

CASE STUDY #1

YAD VASHEM HOLOCAUST MUSEUM

MOSHE SAFDIE JERUSALEM - ISRAEL

The Yad Vashem Memorial and Institute is 800,000-square-foot project that includes several memorials, a historical museum, a central archive and a research and documentation of the Holocaust. The concept and mission behind the architecture is to reproduce the story of the Holocaust. Generating interesting and emotional experience for visitors.

LOCATION

The Museum is located on Har Hazikaron, which means in Hebrew the Mount of Remembrance. It is a hill located in the extreme west of Jerusalem, semi-desert.

CONCEPT

A giant concrete prism through the Mount of Remembrance, digging into the depths of the earth and bringing visitors to a strong sensory experience while zigzagging runs so different rooms. With this proposal, the architect achieves an atmosphere and ambiance that places in context and perpetuates the memory and lessons of the Holocaust for future generations.

SPACES

The structure that cuts the 182 meters from Monte, mostly underground with a large skylight and longitudinal hosts a modern museum immerses visitors in the depths of the abyss and then rises to contemplate from a balcony, between huge wings cantilever, the play of light on the new state of Israel and Jerusalem.
Visitors enter through a bridge tangential and can look to the light at the end and throughout the building, but feel the oppression that create the sloping walls of the prism. And they are required to follow the meandering path of the galleries in strict order, back and forth through cracks in the concrete of the central corridor.
As the story about Auschwitz, the floor slopes slightly downward, as if the person will delve into the earth.
The concrete deepens palette photos and black and white documentary on display. Unfinished surfaces cause a normal life awful feeling dehumanized, mixed metal, bones and ashes.

The highlight is the Hall of Names, created by designer Dorit Harel museum, a repository of the testimonies of the 6 million Holocaust victims, half of which are still unknown. In the center, as a mausoleum, a dome on top played thousands of photographs and names drawn from the 'Pages testimonies'.

One of the side rooms show flags with swastikas and Hitler posters that reflect the symbolism of the Nazi force.
The main memorial Yad Vashem is the Hall of Remembrance (Ohel Yizkor), an austere concrete-walled structure, lower deck, which is empty except for an eternal flame. On the pavement of black basalt are engraved the names of 21 death camps, concentration camps and Nazi killing sites in Central and Eastern Europe. A crypt in front of the flame contains ashes of victims.

Access to the Hall of Remembrance is lined with trees planted in honor of the "Righteous Among the Nations," more than 16 000 non-Jews who risked their lives to try to save Jews.

The Children's Memorial is a sculpture that reminds the Jewish children who perished (approximately 1,500,000). It is an underground cave in which the flickering flames of candles reminders are reflected to infinity in tiny lights that stand out in the dark.

The Historical Museum is the centerpiece of Yad Vashem, which exhibits the history of the Holocaust in chronological order through photographs, objects, documents and audio-visual resources.
The Yad Vashem archive collection is the largest and most extensive in the world. This includes 55 million pages of documents, nearly 10,000 photographs, films and videos with testimonies of survivors. The library contains more than 80,000 titles, newspapers documents.

The National Institute for Holocaust Research coordinates and supports research at national and international level, organizes conferences and symposia and publishes a variety of important works on the Holocaust, including diaries and memoirs. Also, one of the fundamental objectives of Yad Vashem is education. International School for Holocaust Studies courses held annually for more than 100,000 students, 50,000 soldiers and thousands of educators.

A metal chandelier with six arms was installed as a symbol of the Jews who died and is also museum logo.
Every year on the day turns to commemorate the martyrs of the Holocaust.

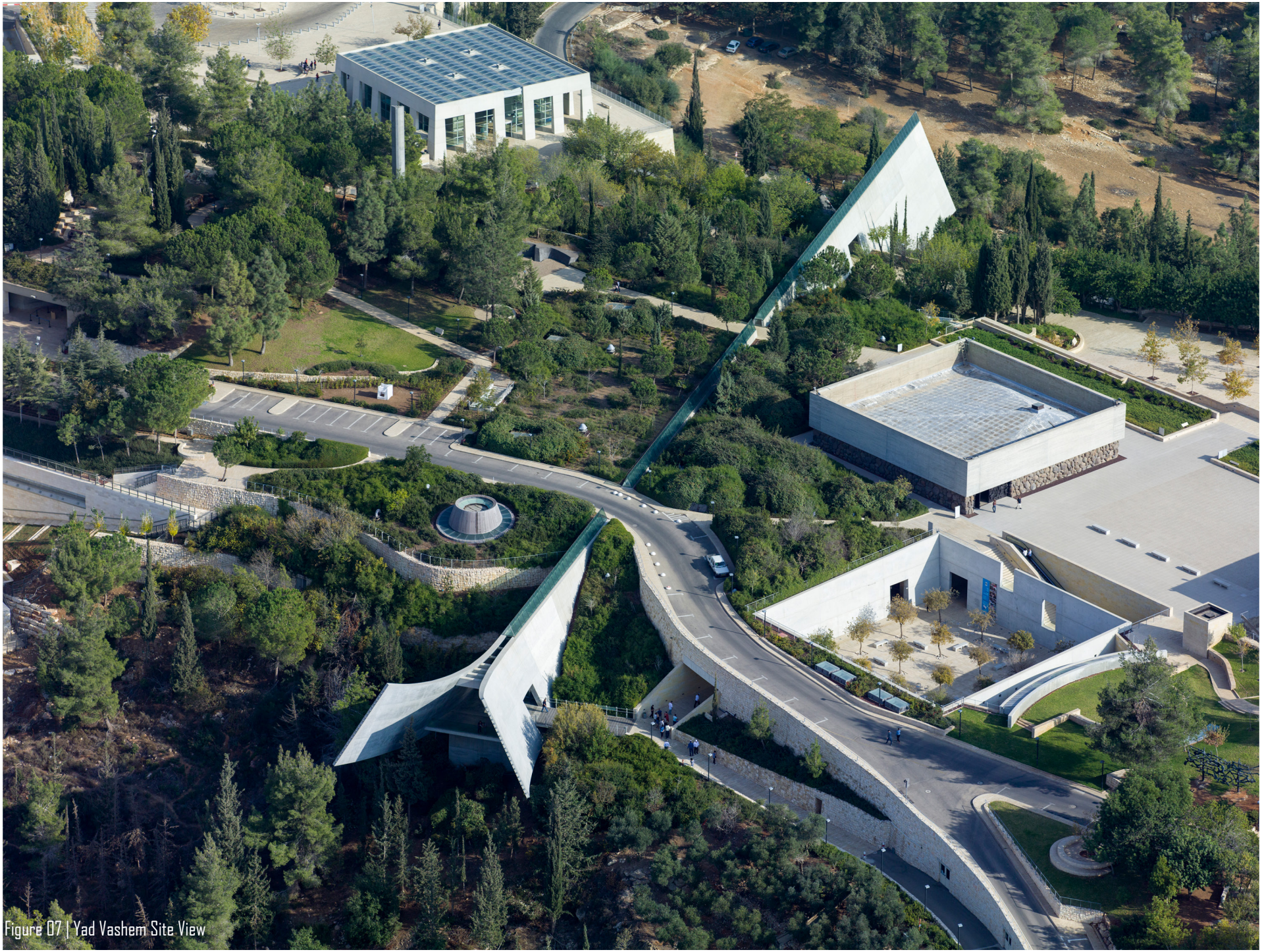


Figure 07 | Yad Vashem Site View

Figure 08| Yad Vashem Contemplation

Figure 09 | Yad Vashem Interior

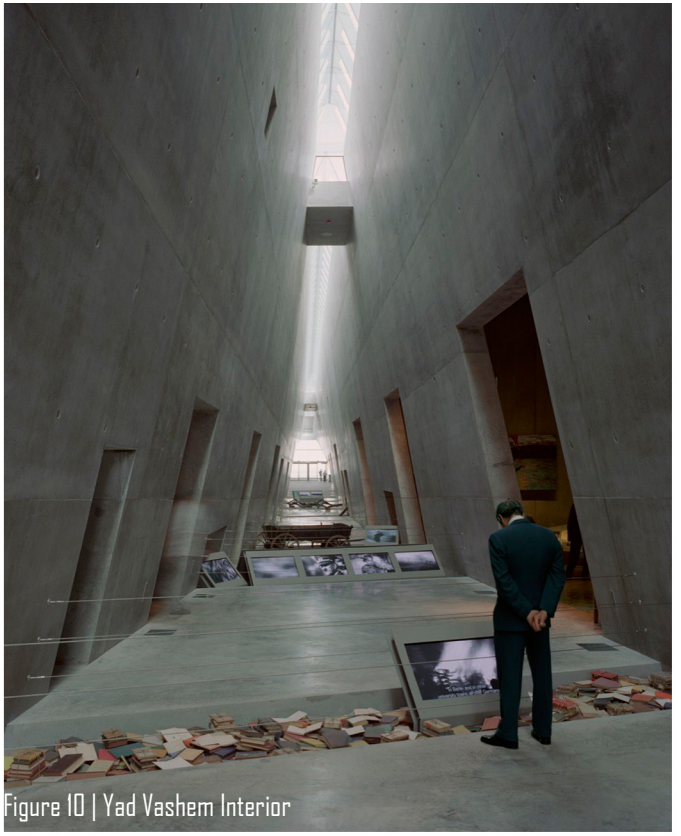


Figure 10 | Yad Vashem Interior

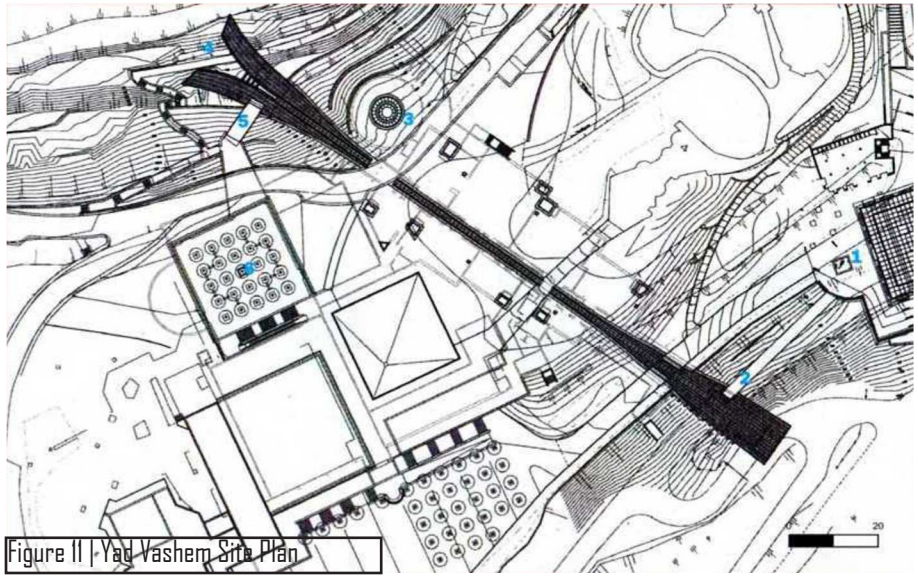
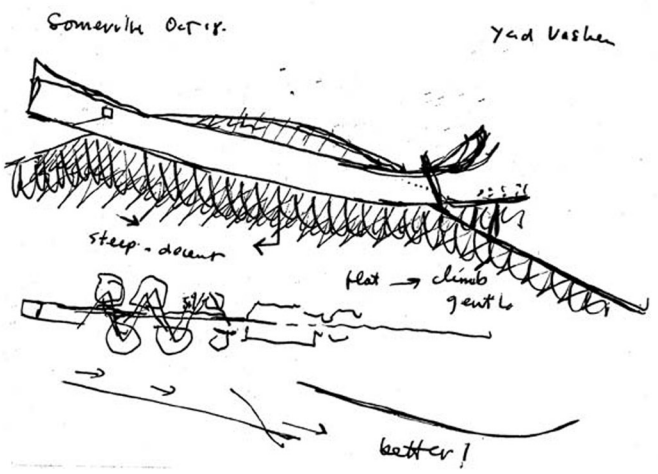


Figure 11 | Yad Vashem Site Plan



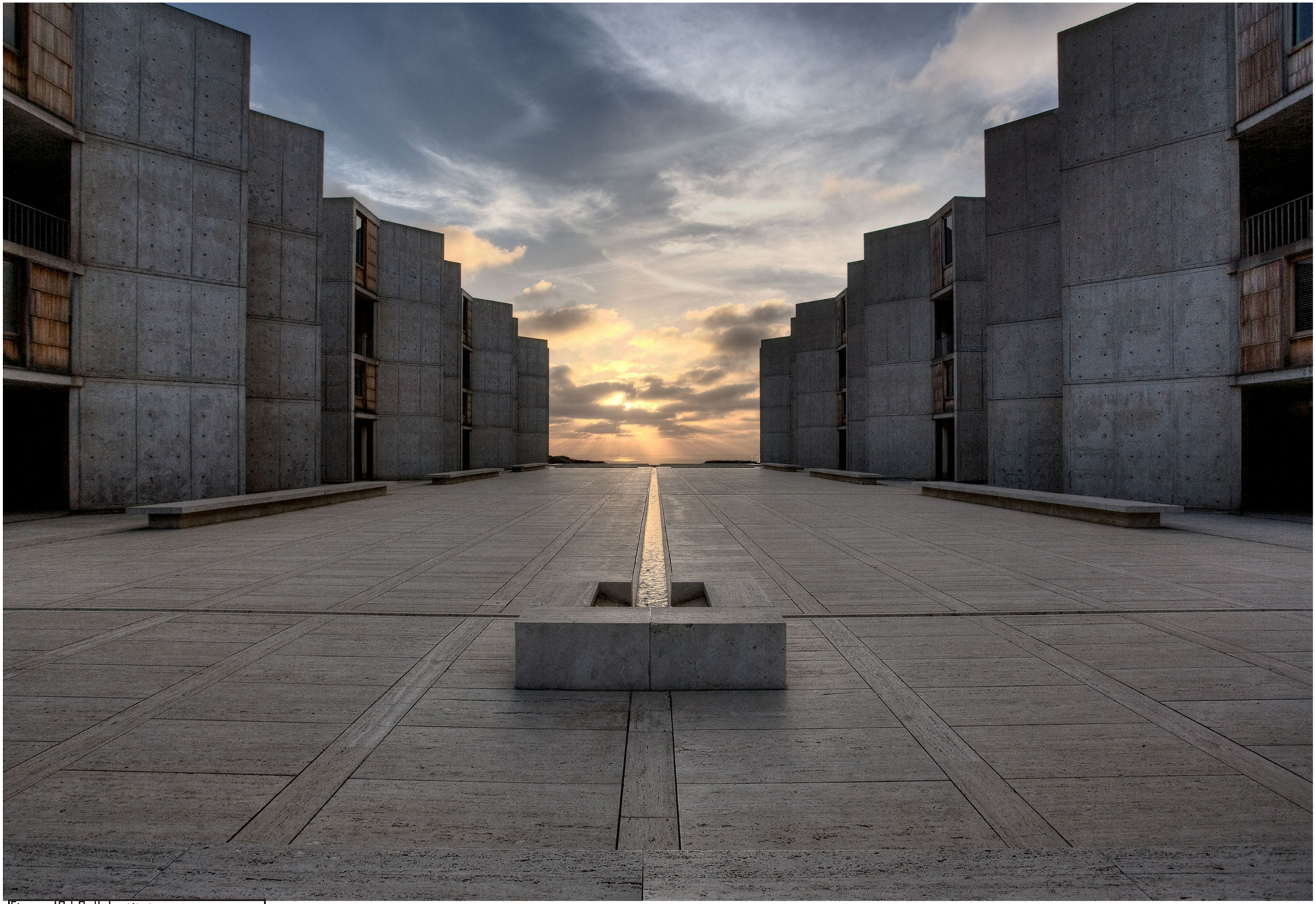


Figure 13 | Salk Institute

CASE STUDY #2

SALK INSTITUTE FOR BIOLOGICAL STUDIES
LOUIS KAHN LA JOLLA - CALIFORNIA

The Salk Institute for Biological Studies is a very poetic building without compromising its functionality, located in La Jolla, California, USA, on a cliff overlooking the Pacific Ocean. It was completed in 1965 by the innovative American architect Louis I. Kahn, the nonprofit research center (specializing in genetics, neuroscience, and molecular and plant biology) interweaves private and public spaces with a strikingly formal, inward-looking plan that echoes the format of a medieval cloister. Composed of strong-willed yet sensuous materials—travertine and reinforced concrete—it possesses a hushed dignity that encourages contemplation.

Before designing, Kahn referenced and studied monasteries in order to build his concept of an "intellectual retreat." With a prime location in La Jolla, California and bordering the Pacific Ocean, Kahn took advantage of the site's tranquil surroundings and abundant natural light. His scheme became a symmetrical plan, two structures mirroring each other separated by an open plaza.

Two six-story laboratory buildings form the north and south boundaries of the complex. Each shelters an inner row of angular semidetached office structures that face each other across a travertine courtyard. Bisecting it all is a channel of water that seems to pour into the Pacific below. The buildings, fashioned of concrete accented with teak, focus one's gaze on the horizon.

In the laboratories the vertical ducts of the Richards Building have been turned on their sides, housed in the hollows of spanning box girders and vented from huge hoods at the flanks of the building. The pre-cast units of structure have thus continued to become larger as the crane can lift them. Order, once an affair of repetitive crystals for Kahn, is now felt in grand components, space-making themselves....[A]ll utilities are now directly channeled through the structure,...(the result being that) 'served' spaces, and 'servant' spaces are entirely integrated,...this 'meaningful order' was almost instantly arrived at in Kahn's design.

Before designing, Kahn referenced and studied monasteries in order to build his concept of an "intellectual retreat." With a prime location in La Jolla, California and bordering the Pacific Ocean, Kahn took advantage of the site's tranquil surroundings and abundant natural light. His scheme became a symmetrical plan, two structures mirroring each other separated by an open plaza.

The buildings each have six stories, with the first three floors containing laboratories and the last three with utilities. These spaces are connected to protruding towers that contain spaces for individual studies linked with bridges.

The towers at the east end of the buildings contain heating, ventilating, and other support systems while at the west end the towers are six floors of offices that all face the Pacific ocean, providing a warm tranquil setting for concentration. The separation of the laboratories and the individual study spaces was intended by Kahn, establishing the different activities.

Due to zoning codes, the first two stories had to be underground, sinking the laboratories in the courtyard. In order for these spaces to receive ample sunlight, Kahn designed a series of lightwells on both sides of each building that were 40 feet long and 25 feet wide. The laboratories above ground are also well-lit spaces with large glass panes for their exterior walls.

The materials that make up the Salk Institute consist of concrete, teak, lead, glass, and steel. The concrete was poured using a technique studied in Roman architecture. Once the concrete was set, he allowed no further finishing touches in order to attain a warm glow in the concrete. Mechanical spaces are hidden within the building, separating the "served" and "servant" spaces, as Kahn refered to them.

The open plaza is made of travertine marble, and a single narrow strip of water runs down the center, linking the buildings to the vast Pacific Ocean. A person's view is then directed towards nature, reminding people of their scale compared to that of the ocean.

The strip of water also enhances the symmetry intended in the plan and creates a sense of monumentality in the otherwise bare open plaza that is meant to be in the words of Luis Barragan "a facade to the sky." Complete with this dignified water element, the Salk Institute is simply put in Kahn's words, "the thoughtful making of space" revealed through such simplicity and elegance that it has since its completion in 1965 been regarded as of the most inspirational works of architecture in the world.

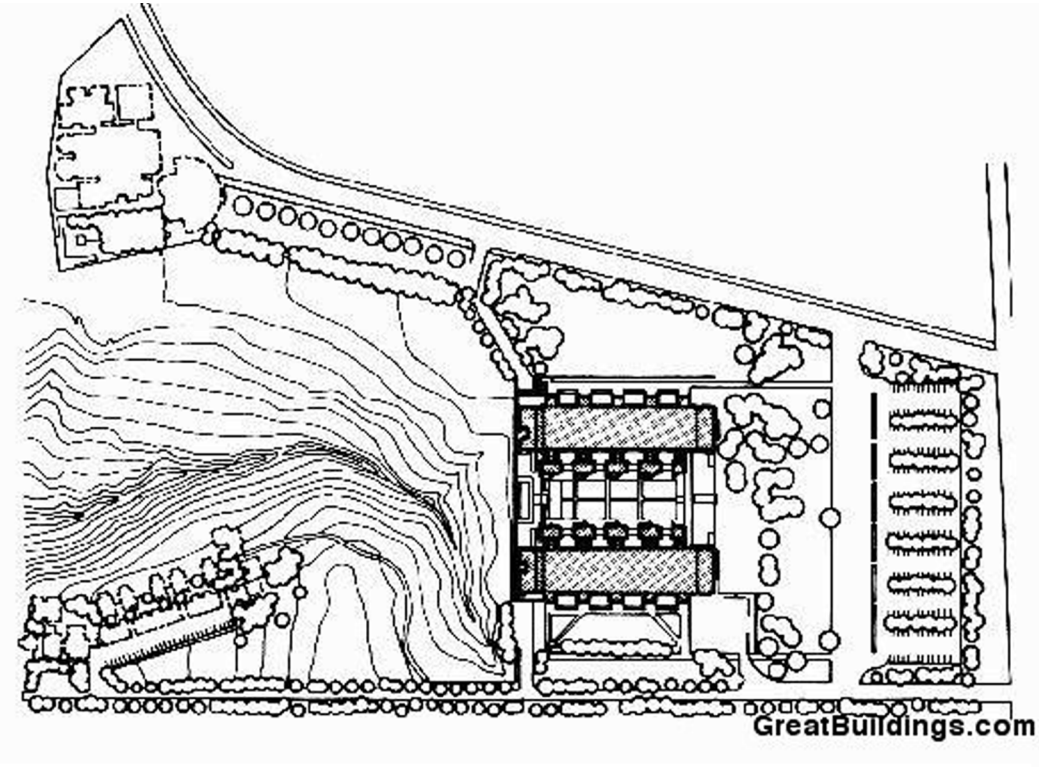


Figure 14 | Salk Institute [site plan]

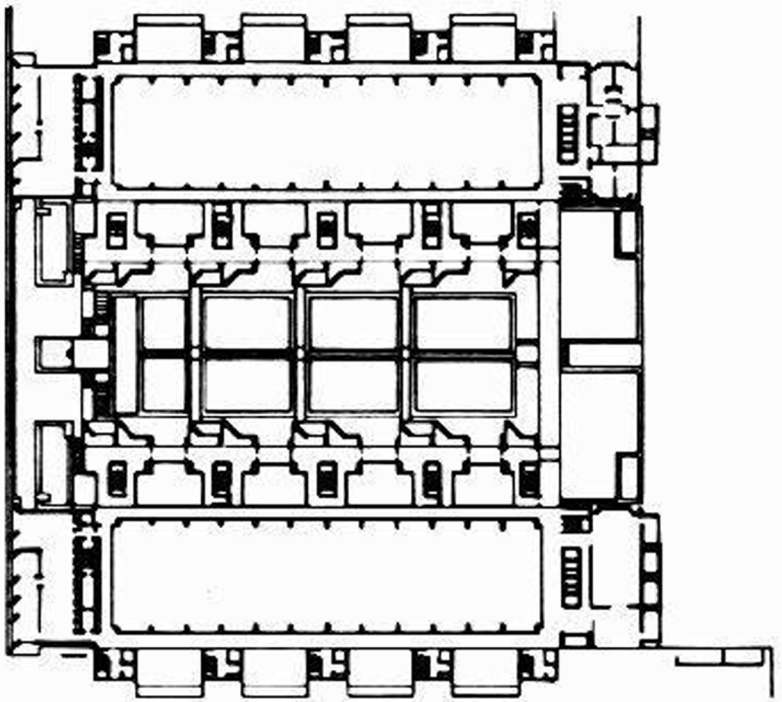


Figure 15 | Salk Institute [floor plan]

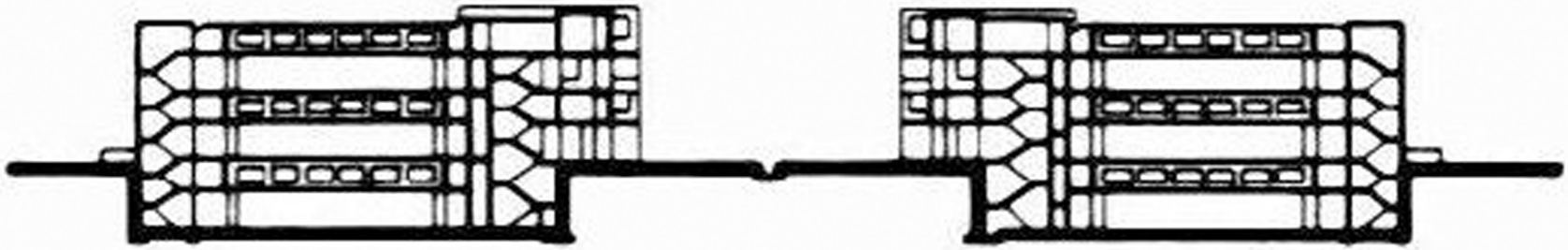


Figure 16 | Salk Institute [section]

Figure 17 | Salk Institute

Figure 18 | Salk Institute

Figure 19 | Salk Institute

Figure 20 | Salk Institute

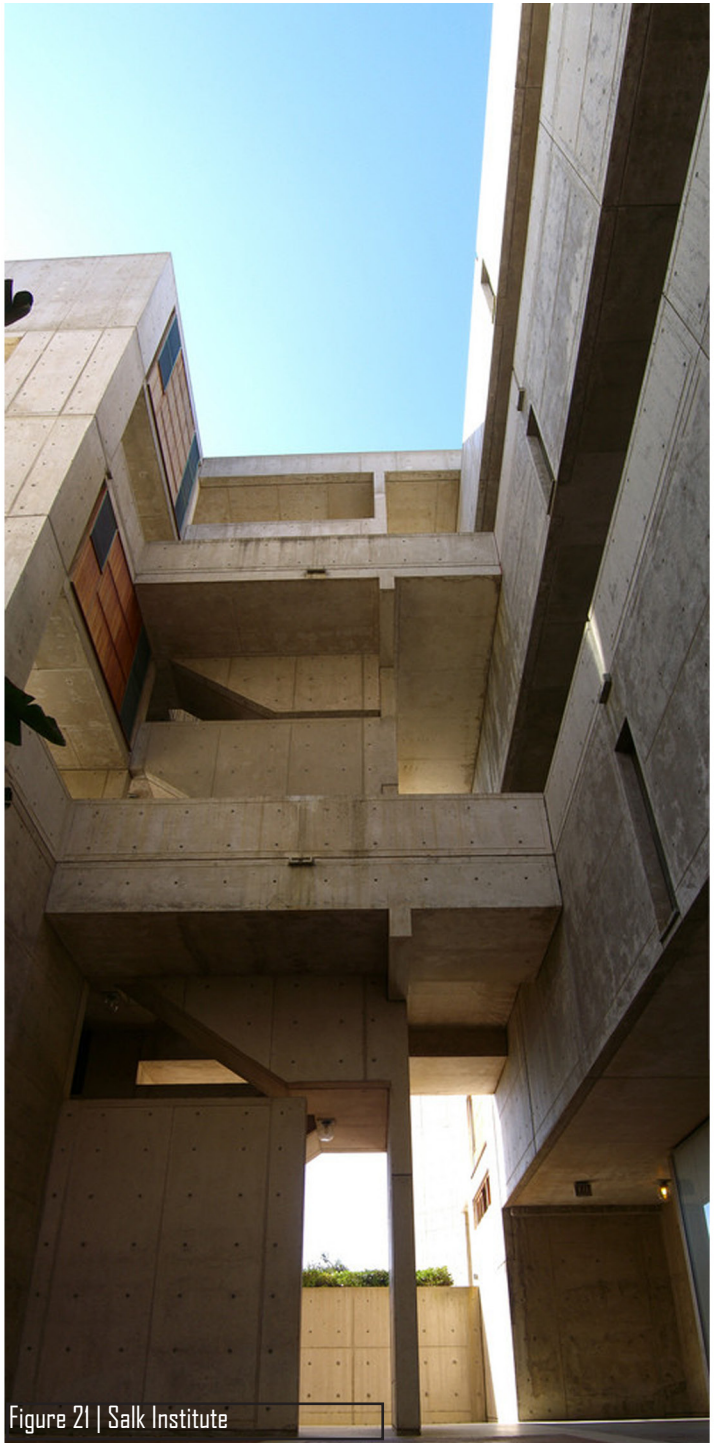


Figure 21 | Salk Institute

Figure 23 | Museum of Memory & Human Rights

CASE STUDY #3

MUSEUM OF MEMORY AND HUMAN RIGHTS

ESTUDIO AMERICA **SANTIAGO - CHILE**

The architect commissioned for this project is 'Estudio America', and architecture firm from Sao Paulo-Brazil, thus this building has plenty of São Paulo tradition: a simple volume that has a strong structural system and including large indoor and outdoor lights. The building also incorporates subtle finishes that don't interject with the imposing structure.

Estudio America' design process was quite important, because during the project several adjustments were made especially in terms of surfaces, parking, auditorium, and they had a time constrain given the need to inaugurate the museum before the election. However, the project remained faithful to the original idea of a sunken plaza with a volume flying over it.
The large square above the building gives us enough distance to account for this, taking the entire volume in sight, which thanks to the shadow in the slight gap that occurs where the structural system is located, it gives the impression that they are detached from them. A set of bleachers on the north side allow the yard to accommodate larger-scale events.

The entrance to the building is from below the volume at the lowest point of the square. This provides a generous shade, and also connects to the Quinta Normal subway station. After passing the reception desk, there is an exhibition hall and circulation area. In this hall is a staircase that gives a visual access to the exterior and the lower level of the building (administration, study and storage), bringing natural light to these spaces. After going through this staircase one meets a triple height space with various exhibition spaces downtown and a box flying. After the structural beams that give support to the volume. There are more exhibition space on the North Rim, while circulations are on the south side.

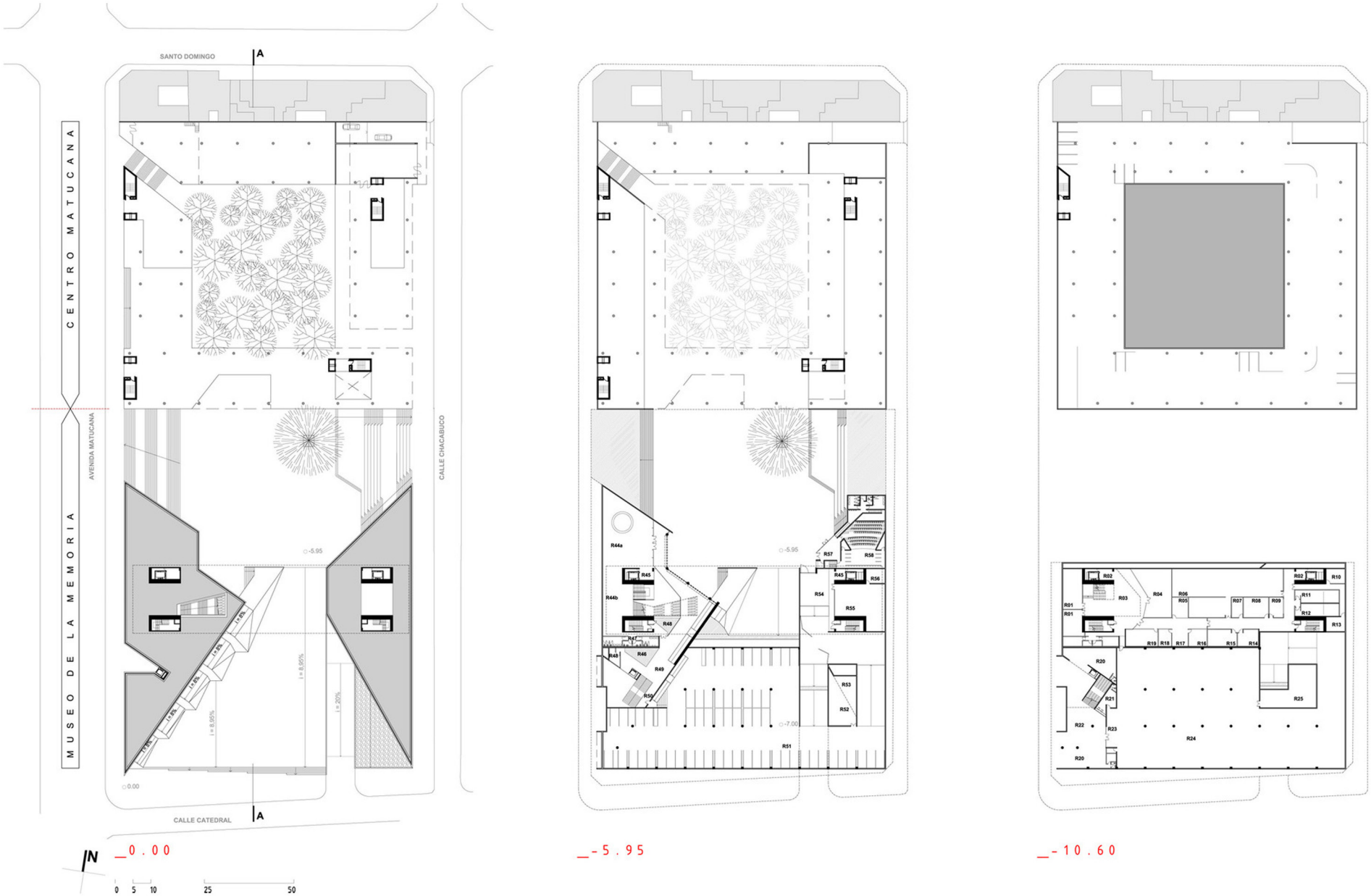


Figure 24 | Museum of Memory & Human Rights [site plan & plazas]

Figure 25 | Museum of Memory & Human Rights [entrance]

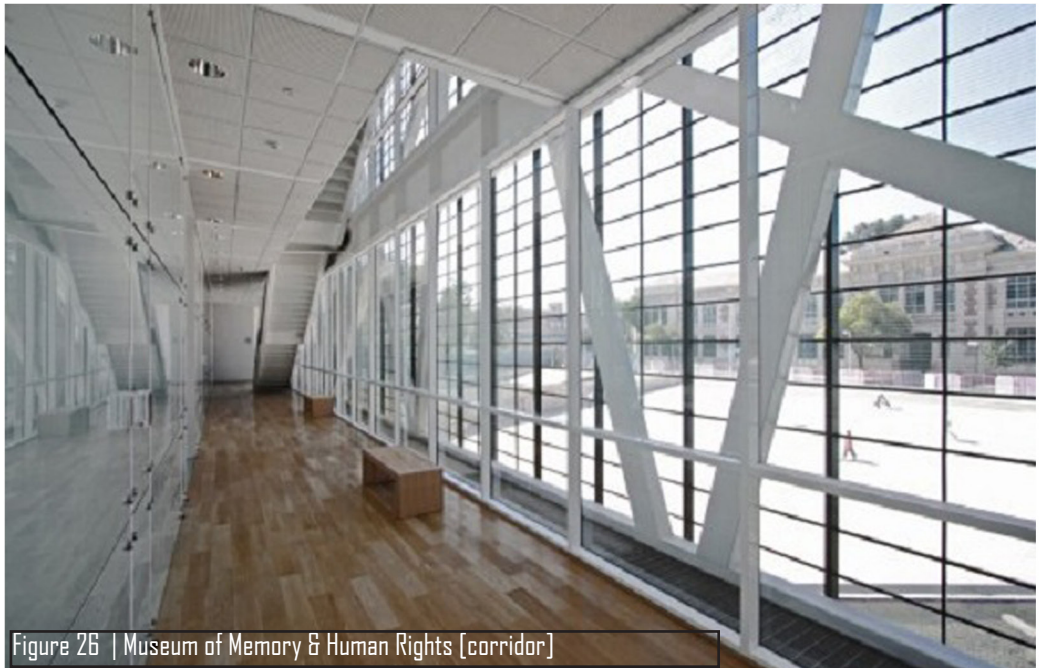


Figure 26 | Museum of Memory & Human Rights [corridor]

Figure 27 | Museum of Memory & Human Rights

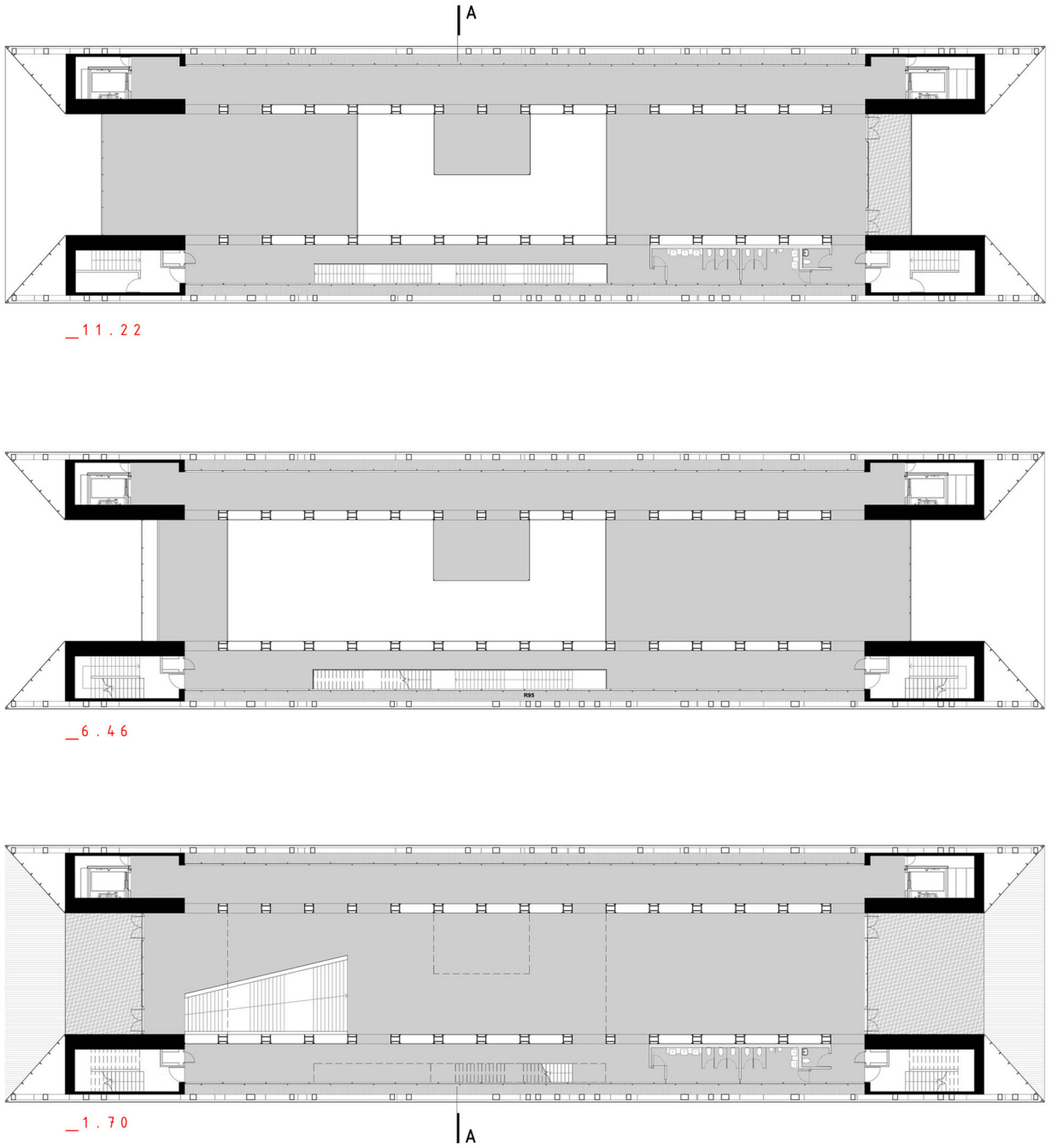


Figure 28 | Museum of Memory & Human Rights [floor plans]

MAJOR PROJECT ELEMENTS

S A N C T U A R Y

M O N U M E N T

M U S E U M

C O N T E M P L A T I O N

E X H I B I T I O N _ S P A C E S

C I R C U L A T I O N

G A T H E R I N G _ A R E A S

I N T E R A C T I V E _ L E A R N I N G

S T O R A G E

L A B O R A T O R I E S

O F F I C E S

USER/CLIENT DESCRIPTION

CLIENTS

The clients are a mix of private and public entities. The project is divided in a city owned building (government funded), as well as private investors.

MONUMENT VISITORS

Either local, regional or international visitors would find interests in visiting this project. In order to recognize the city's identity, this project aims to create a monument for the community. This building will be city/community owned for ends to identify the vast history of Valparaiso, and show visitors and residents what the forces of nature have done to shape it – the creation and destruction of nature.

EDUCATIONAL INSTITUTIONS

As a matter to inform people about the natural disasters such as their causes, consequences, prevention and response.

GEOLOGY & NATURE ENTHUSIASTS

Interactive learning experience about natural disasters, especially earthquakes. Learning about the aftermath, the destructiveness of earthquakes and the recovery process.

Figure 29 | Site location map

SITE | MACRO

Valparaiso, Chile was selected for the proposal of this thesis project.

Valparaiso is located along the South Pacific Cost of Chile, and it's one of the oldest cities in Chile, conquered by Spain in 1536, it was once a thriving sea port which attracted many European immigrants, creating a culturally rich city with a strong character due to its unique topography. The city grew so quickly and organically that in a way you can describe it as chaotically beautiful. Things drastically changed in 1914 after the opening of the Panama Canal. Valparaiso was abandoned as the wealthier moved to other cities, thus having a big impact in the city's economy.

I see Valparaiso as a fractured city. This community has had to deal with many catastrophes throughout its history. Many have been natural disasters as well as man-made disasters. From intense earthquakes, tsunamis and wild fires, to the aftermath of persecution, repression and censorship, which have caused immense damage and has scared the built and natural environment as well as the emotional state of the community, that is far less apparent and more subtle.

Valparaiso deteriorated and was abandoned for most of the 20th century. Due to this abandonment, the city was claimed by different artists trying to express their dissatisfaction and frustration during Chile's censorship era, thus becoming a canvas for street art. From painter to poets, artists saw this city as a place for self-expression. Pablo Neruda, a Chilean poet, was one of its residents, I believe he does a really great job describing the city in his poem 'Ode to Valparaiso' for people who haven't had the chance to experience it firsthand. In the poem he sums up the chaotic beaty as well as all the suffering this city has had to endure.

In 2003, the historic quarter of Valparaíso was declared a United Nations Educational, Scientific, and Cultural Organization (UNESCO) World Heritage Site. This declaration has helped the city to force the government to work on the much needed revitalization of this community.

Figure 30 | Valparaiso (elevator)

Figure 31 | Site Context

Figure 33 | Site Context [street art]

Figure 34 | Site Context [street art]

Figure 35 | Site Context [street art]

Figure 36 | Site Context [hills]

Figure 37 | Site Context

SITE | MICRO

The unique topography of this city includes dozens of steep hillsides giving the town a unique layout comprised of warrens of alleys and side streets, the improvised nature of which has earned the nickname, "The Jewel of the Pacific."

At the end of the first half of the twentieth century, due to the low production generated by the construction of the Panama Canal – which displaced the port of Valparaíso as the main port of the Pacific - much of the port's railway infrastructure was forced to close. The turntable and warehouse, were still partially used to maintaining the night train services, but activities completely stopped in 1996. Despite its appointment as a Historical Monument in 1986, the structures have been abandoned, suffering the deterioration that this implies.

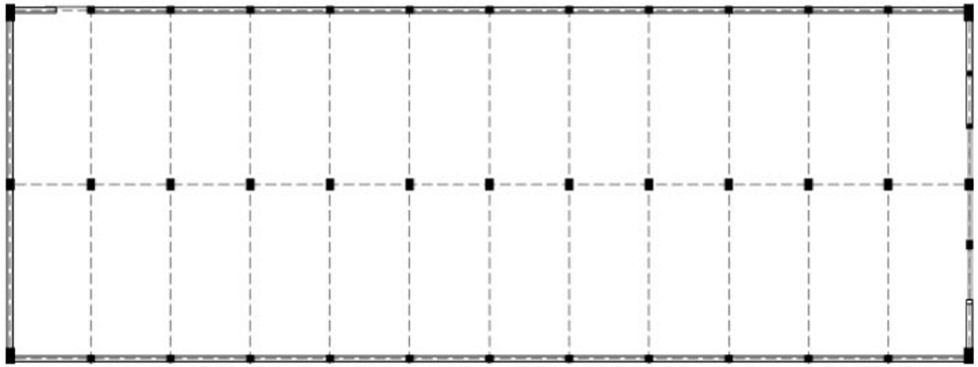
Symbol of development and modernity in the early twentieth century, this building testifies to the productive and industrial processes of the 1900 and configuring a significant architectural and urban space for its shape and dimension, also bearing nostalgia of an entire national historical period.

My proposal aims for the recovery of these abandoned structures and to give them a new life, allowing its conservation over time. The abandoned site was a symbol of prosperity, such as port growth and open access to the city.

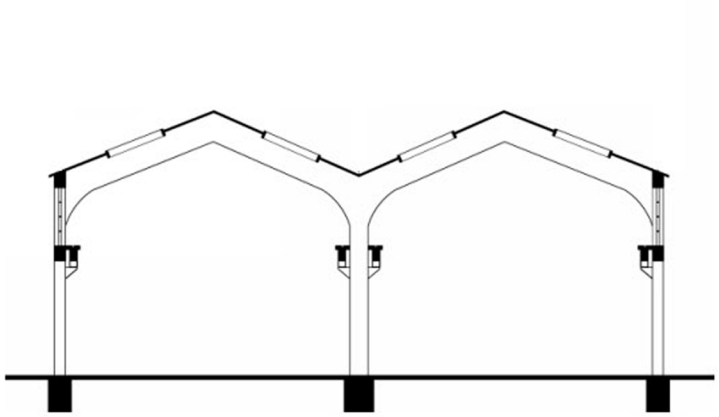
The principal reason of proposing the resurrection of the abandoned structures, is to express the memory of human activities of the past, the importance of the port and its links with the social fabric of the city, its use and its geographical location. It is possible to appreciate these structures from many points in the city, as most of the community resides on the hills.

Another important factor is the site's alignment with the coastal edge and the train tracks, along these abandoned structures, which can be linked to intangible values that are able to strengthen the memory of Valparaiso.

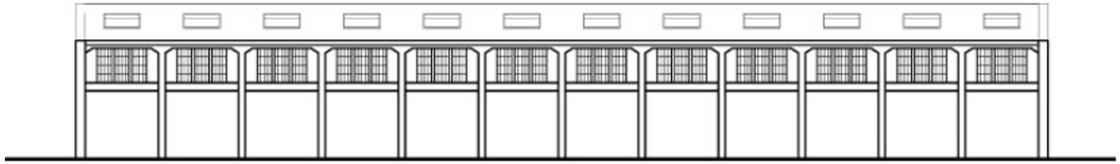
My program aims to redevelop and convert this hill as a symbol or monument for the city, as well as creating connections with the community and nature. I believe this community needs an identity after all of the tragedies that they have had to endure, and I intend to achieve that with this thesis.



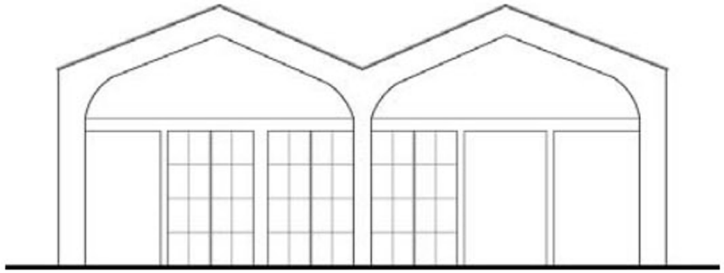
Floor Plan



Building Section

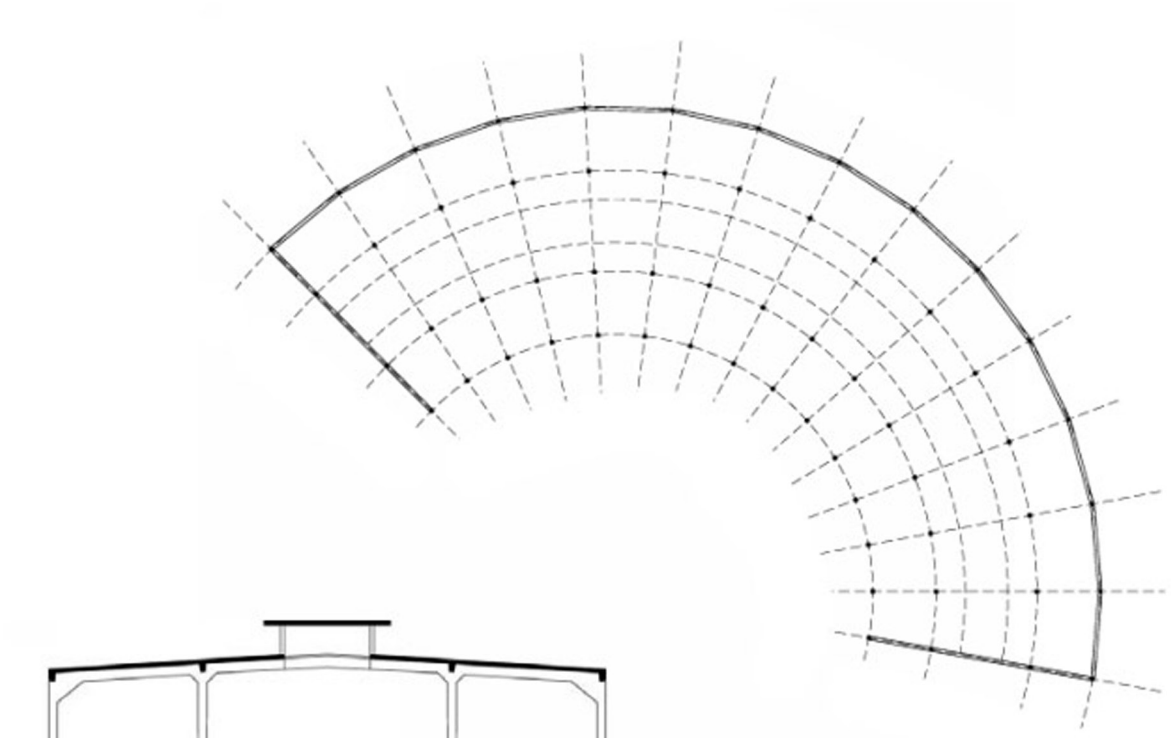


Side Elevation



Building West Elevation\ Facing turntable

Figure 38 | Warehouse Facility



Floor plan

Building Section

Building Elevation | Facing ocean

Building South Elevation

Figure 39 | Turntable

THE PROJECT EMPHASIS

The emphasis of this project lies on 5 different areas:

The creation of a sanctuary and monument that the city and its residents can identify with, especially after having to deal with so many catastrophes.

Creation of a place for reflection and introspection. Using the connections and relationship between humans and nature to promote re-discovery of one-self.

Community Development. Integration art studios and galleries for the community to engage and participate. The creation of art leads to healing of oneself.

Help revitalize the city in order to attract more people to the area.

Creation of a research facility - linking the community with specialists. Encouraging visitors and the community to witness different seismic developments through viewing paths around the facility.
The creation of a museum to educate visitors about earthquakes, what causes them, the aftermath and level of destruction and the recovery process.

GOALS OF THE THESIS PROJECT

My thesis project aims to explore the idea of the "sublime", and its effect in today's modern society. I'm intrigued in how this concept has evolved through time, and specifically how it relates to architecture.

The premise of this thesis is that experiencing the power of nature, whether it's in its immense beauty or its capacity of producing incredible destruction; it can really have an impact in a person's or a community, and architecture can be used as a threshold for rediscovery. Taking something negative and looking into in a different way.

My ultimate goal is to integrate history, nature and social and cultural context in my architecture in order to benefit a community dealing with catastrophic trauma. Through the rehabilitation and re-integration of the abandoned structures by the shore; I aim to provide a landmark for this community. A place that creates connections between the city, its residents and nature.

Professionally, I will use this project to explore different modes of creation and representation in architecture. Expanding my skills through different mediums, to gain a wider perspective and perhaps new insights about my design process. My goal is to reincorporate the "older" design methods, engaging our five senses during the process and don't rely exclusively on visual stimuli.

A PLAN FOR PROCEEDING

DOCUMENTING THE DESIGN PROCESS

All of my findings while doing research will be presented to my thesis advisor on a weekly basis through presentations and critiques. The iterations, feedback and process will be preserved in digital format, physical documents and drawings. The research will then be made available through the North Dakota State University Repository for later presentation and analysis by peers and colleagues. At the end of the thesis, a one-time digital and physical presentation will be composed and delivered to a jury of peers, professors, and advisors.

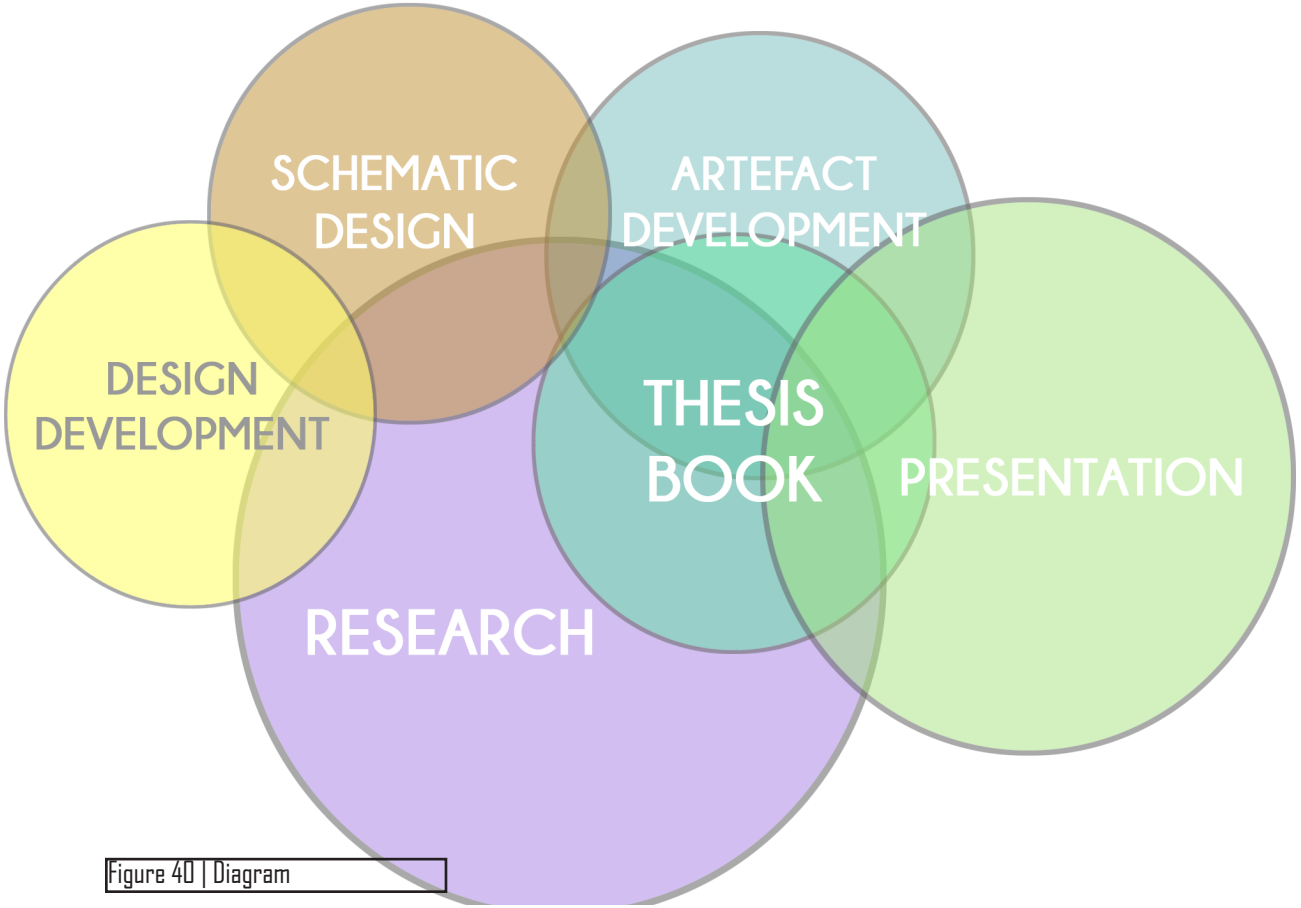


Figure 40 | Diagram

THESIS PROJECT SCHEDULE

FALL SEMESTER 2016

23 Aug. First Full Day of Classes
23 Aug. 1st meeting ARCH 763 Course
5 Sept. Labor Day Holiday
13 Sept. 1st Draft of Thesis Proposal due to ARCH 763 Instructor
22 Sept. Draft of Thesis Proposal returned to students in class
13 Oct. Thesis Proposal due
17-21 Oct. Midterms for ARCH 771
27 Oct. Last day of ARCH 763
11 Nov. Veterans' Day Holiday
21-23 Nov. Final week of ARCH 771 Design Studio / Presentations
24-25 Nov. Thanksgiving Holiday
9 Dec. Last day of classes
12 Dec. Final Thesis Program due to ARCH 763 Instructor
12-16 Dec. Final Examinations

SPRING SEMESTER 2017

10 Jan. First Full Day of Classes
16 Jan. Martin Luther King, Jr. Holiday
20 Feb. President's Day Holiday
6-10 Mar Mid-semester Thesis Reviews
13-17 Mar Spring Break
14-17 Apr Holiday Recess
20 Apr. Thesis Project Final Exhibits in digital form due
24 Apr. All physical exhibits for the Thesis Project due
24-26 Apr. Annual Thesis Exhibit opens
01-04 May Final Thesis Reviews
05 May Last day of classes, Awards Ceremony
08 May Digital copy of Final Thesis Documentation due
08-12 May Thesis Awards Finalist show
12 May Final Thesis Document due at 5:00pm
13 May Commencement at Fargo Dome

A PLAN FOR PROCEEDING

RESEARCH DIRECTION

Areas of future research include:

- Precedents in the design of sacred spaces and memorial museums.
- Further research in the evolution of the “sublime”.
- Identify cultural and social character of the site.
- Identity client and future visitors in order to specifically aim my design, be more particular.
- Research topology, geology and the causes of natural disasters.
- Further Investigate program and spaces that will allow a transcending experience.
- Investigate seismic resistant structures and different applications.

DESIGN METHODOLOGY

Different systems and methods will be used to perform research and design development. These include but are not limited to:

Looking back and studying history, philosophy and science using quantitative and qualitative analysis.

Development of artefact to explore ideas found through research studies, and utilize artefact to inform architecture through the development of physical models.

Exploration of case studies to inform different approaches taken in the development of sacred spaces, to conclude and formulate own design strategies.

Graphic analysis of effective sustainable strategies used in this region and specific climate.

Development of physical models to explore the site and context of this project

Analysis of phenomenological practices through historical texts and documents.

A concurrent Transformative Strategy will be employed throughout the process, allowing the theoretical premise to be implemented through quantitative and qualitative analysis.

Hierarchy will be practiced when relating the data back to the theoretical premise. The data includes but is not limited to statistical data, scientific data, or qualitative data.

THESIS RESEARCH

Results from Theoretical Research

Project Justification

Historical, Social and Cultural Context of the Thesis

Site Analysis

Performance Criteria for Thesis Project

Appendix

RESULTS FROM THEORETICAL PREMISE

THE EVOLUTION OF THE SUBLIME

The relationship of the sublime in art and architecture is tremendously vast and rich, and it is an important topic in order to begin answering the question this thesis poses. By examining the evolution of the sublime and how that affects our perception would help determine an architectural solution to this project. The word Sublime has been primarily associated with experience bound up in the powers of nature, but as nature has changed throughout the ages, so has our sense of ***the Sublime.***

In the beginning of time many ancient civilizations were highly focused on keeping nature in balance, as they believed and worshipped many Gods and Goddesses which represented an important aspect related to the forces of nature. One false step could lead to angry the Gods thus causing a natural disaster.

In ancient times nature was the sublime- the uncontrollable, and unresponsive to human desires, our ancestors knew that the divine in nature was an extension of their own humanity and depended on this relationship to support their very existence. Since the industrial and scientific revolution this idea of the sublime has been reversed, and it is now thought that we can in fact control nature – at least we can harm it, perhaps even destroy it; meanwhile, Culture and technology have become the sublime, a vast, terrifying force.

While our perception today is that we can indeed control nature, it is true to a certain extent. When we experience a natural disaster, it throws everything off balance and it is a reminder of natures' latent power over us, and with it a reversal on the idea of the sublime. A sublime experience has the power to transform, to subvert, and to help shape meaningful realities. It can spark a positive transformation and self-discovery.

Figure 41 | Longinus

ORIGINS

The Oxford English Dictionary defines "sublime"-when it applies to "things in nature and art"-as "affecting the mind with a sense of overwhelming grandeur or irresistible power; calculated to inspire awe, deep reverence, or lofty emotion, by reason of its beauty, vastness, or grandeur." The word sublime originates from the Latin sublimis, which connotes "uplifted, high, lofty." Sublimis is a composite of sub, up to, and limen, the lintel of a door, a threshold. In this way, the sublime comes to describe that which approaches a boundary or limit, giving insight into its modern definition: the awe-inspiring, the grandiose, that which instills lofty emotion. Expanding upon these ideas, the sublime object is elevated above us, testing the boundaries of our comprehension.

Early writings on the sublime offer foundational precepts for later models but are not of themselves central to current media theory. The earliest extant treatment is a fragmentary Greek essay entitled On the Sublime, dated to the first century C.E. and popularly attributed to Longinus.

LONGINUS: THE RHETORICAL SUBLIME

Longinus, Greek literary critic who may have lived in the 1st century, in his writing in 'On the Sublime', analysis how writers achieve the effect of sublimity; it thus offers little substantial characterization of the sublime itself. The author defines sublime feeling as "the presence of noble passion," qualifying as sublime any literary works exhibiting "an elevated and lofty style." He offers numerous examples of sublime writing, from Homer to the Greek tragedians and the book of Genesis.

The next durable work on the sublime appears some sixteen centuries later, in Edmund Burke's Philosophic al Inquiry into the Origin of Our Ideas of the Sublime and the Beautiful (1757). Here for the first time, the sublime appears explicitly in contradistinction with the beautiful, its partner in aesthetics.

EDMUND BURKE: THE EMPIRICAL SUBLIME

Burke, an Irish philosopher, deploys a taxonomy of sublime objects and modes of sublimity, thus risking superficiality. Nevertheless, he opens lingering questions about the affectivity of sublime experience (terror versus joy) and about sublimity's location (in art, nature, or both), it changed the direction that discourse on the sublime had been taking since its inception (from the sublime object to the experience of the viewer).

Up until that point, the sublime had been primarily understood as an experience of perfection, pleasurable and glorious. Burke, however, identifies pain as an element of the sublime. He observes that sublime delight is often accompanied by fear, at once shocking, disruptive, and transformative.

Figure 42 | Edmund Burke

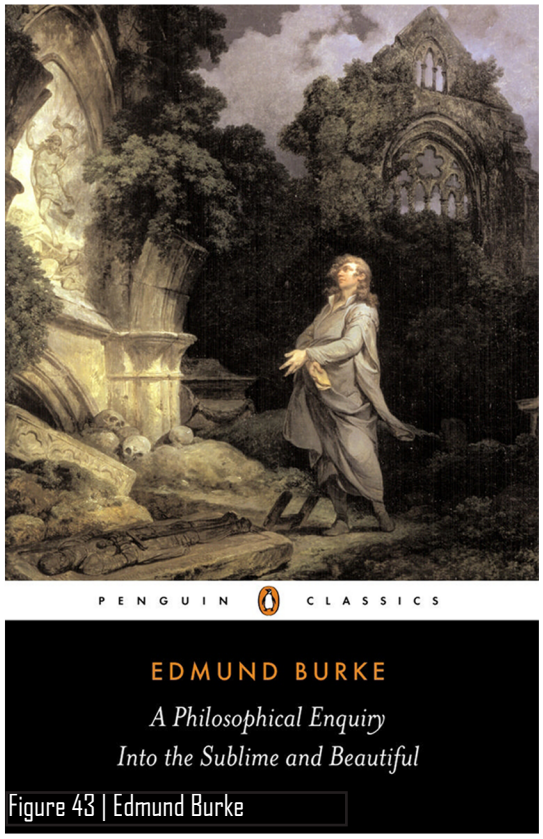


Figure 43 | Edmund Burke

IMMANUEL KANT: THE POWER OF REASON

Immanuel Kant, a German philosopher, is considered the central figure of modern philosophy, like Edmund Burke, was active during the Enlightenment period at the end of the 18th century.

In his book Critique of Judgment (1790) He distinguishes between the Beautiful and the Sublime, noting that beauty "is connected with the form of the object", having "boundaries", while the sublime "is to be found in a formless object", represented by a "boundlessness". Kant declares that an object itself is not sublime, but rather, the sublime is an effect of the mind in its struggle to conceive of the object.

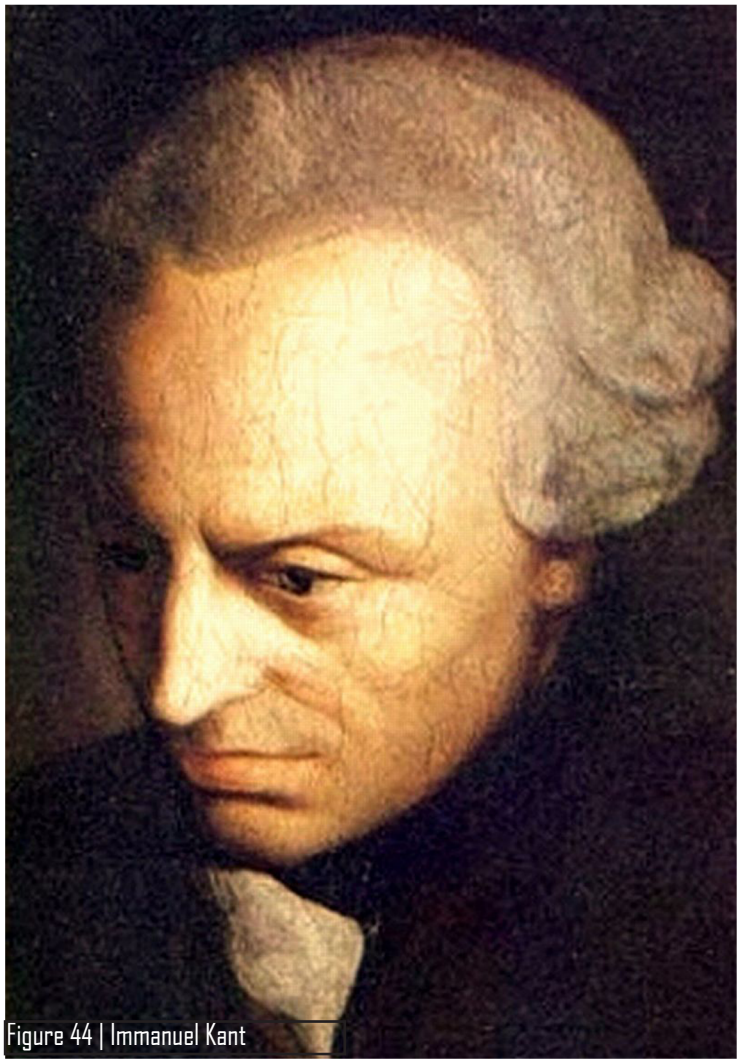


Figure 44 | Immanuel Kant

Kant describes the sublime in two forms: the ***mathematical***, and the ***dynamical***.

The mathematically sublime is experienced when we encounter an object that cannot be taken in whole by our senses, bringing us to the limit of our faculties of perception and understanding. This provokes an awareness of the existence of something beyond our senses, and of "the notion of absolute greatness not inhibited with ideas of limitations."

The dynamical sublime, is experienced from beholding an object whose force is far beyond resisting, prompting an awareness of one's physical limitations, and mortality. It is an aesthetic experience of terror that can only occur if the subject isn't in actual physical danger.

In both cases, the negative experience of limitation becomes a positive experience of awareness of our own existence.

PROJECT JUSTIFICATION

A sublime experience challenges all previous conceptions and we become aware on a different sensory level. The search to understand what this transformation is all about, and what causes it, has been present in philosophy since the beginning of time, especially the romanticist philosophers of the 18th century.

An experience that causes the realization a person's mortality while against the overwhelming presence of nature. A concept has been present in many myths and the beginning of religious rituals.

In today's day and age with the advancements of technology and science, it's hard to cause wonder or amazement outside man-made experiences. We can certainly be comfortable and block nature from our life, with our air conditioned homes and well-built structures designed to protect harsh weather. However, nature's presence and latent power can still be felt in certain parts of the world and it has become more prominent in recent years with massive earthquakes, storms and tsunamis that have taken us by surprise, reminding us that nature indeed is uncontrollable and that of our miniscule existence in the cosmos. It is true that terrible tragedies are happening every day, and we are somehow becoming accustomed to quickly digest all these tragic events.

However, the suffering and trauma experienced by those people involved is not easily forgotten, the moment is deeply engrained in a person's memory and it becomes part of the collective memory of a community and even a whole country. Most people can easily remember what they were doing when these major events occurred, thus becoming a milestone in their lives.

Looking specifically in Valparaiso, a city that has gone through tremendous catastrophes, the concept of the sublime in connection to memory, has immense potential, in the reinvention of its residents and reconstruction of the city after experiencing such traumatic events. This is a community dealing with traumatic history; in need of a place that can help its residents come together and use the experiences to keep moving forward.

The process of restoring and repairing something broken, erasing the trace of the fracture or damage, has been the typical approach taken on the aftermath of a natural disaster. So, I think it is important to study the aesthetic of breaks, the aesthetic of imperfections in connection to traumatic events. A space that embraces damage and the traces left, as part of the history and events of the place. Architecture that records memory in a way to inform the past, present and future.

"Transcending architecture turns us not toward the building or the world but rather toward ourselves, thus making our being opaque to realization. In other words, transcending architecture transcends itself by transferring all attention from itself to the visitors own existence."

"Since the ancient cultures, architecture has mediated between the macrocosm of the universe and the microcosm of human life."

Juhani Pallasma

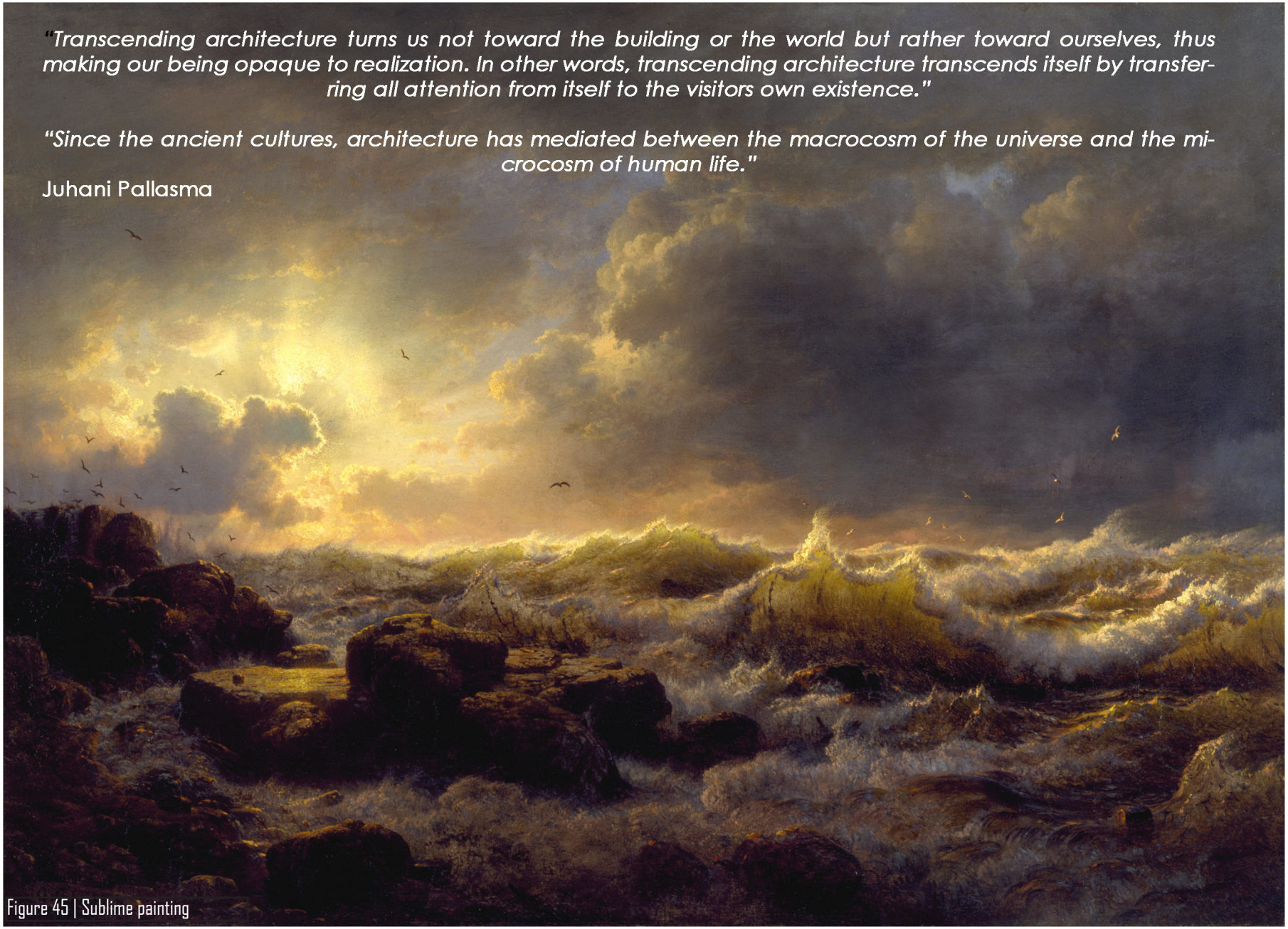


Figure 45 | Sublime painting

HISTORICAL, SOCIAL & CULTURAL CONTEXT OF THE THESIS

HISTORICAL CONTEXT

Located in South America. Valparaiso is one of the oldest cities in Chile.
It was conquered by Spain in 1536, and it was once a thriving sea port which attracted many immigrants, creating a culturally rich city with a strong character due to its unique topography.

The city grew so quickly and organically that in a way it can be described as chaotically beautiful. Things drastically changed in 1914 after the opening of the Panama Canal, as Valparaiso was no longer the main seaport of the pacific. The city was abandoned as the wealthier moved to other cities, thus having a big impact in the city's economy.

Valparaiso is a fractured city. This community has had to deal with many natural as well as man-made disasters throughout its history. From intense earthquakes, tsunamis and wild fires, to the aftermath of persecution, repression and censorship, which have caused immense damage and has scared the built and natural environment as well as the emotional state of the community, that is far less apparent and more subtle.

Valparaiso deteriorated and was abandoned for most of the 20th century and became a canvas and inspiration to numerous artists. Pablo Neruda, a Chilean poet, was one of its residents. He impeccably describes the city in his poem 'Ode to Valparaiso'

Figure 46 | Valparaiso

Figure 47 | Valparaiso

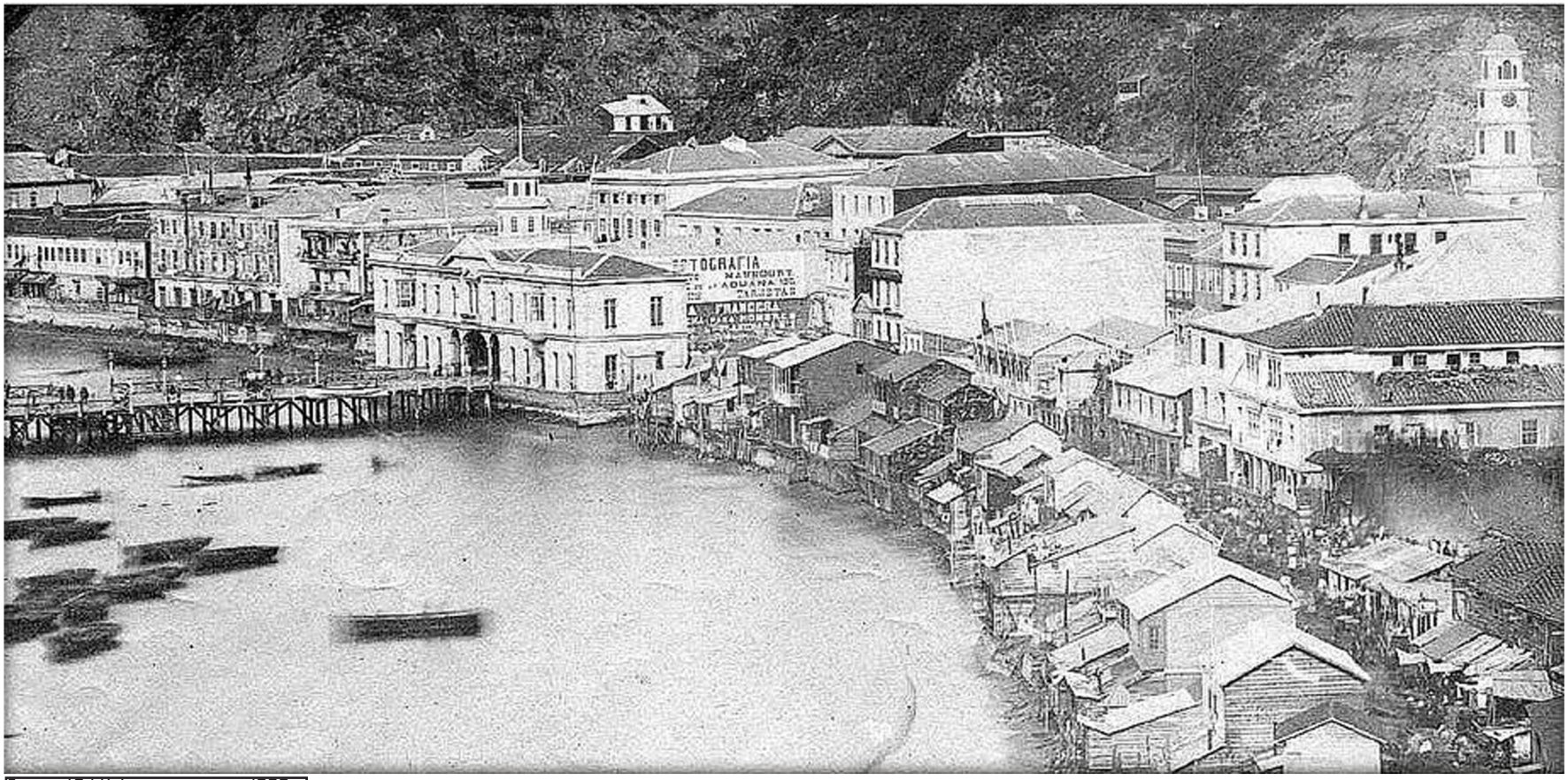


Figure 48 | Valparaiso port in 1863

Today its economy is characterized by the presence of a modern business sector, comprising large companies rather than medium size, which is observed high raising of capital, high levels of technology and management systems, with an emphasis on sustained improvement in productivity and competitiveness, and where production is oriented to external markets.

Among the factors that make up the heritage, it seems important to highlight its geographical aspect which was the basis for the decision of the Organization United Nations Educational, Scientific and Cultural Organization (UNESCO) to declare the city of Valparaiso as a World Heritage Site (2003). The privilege of this designation implies official recognition and that this universal right is a wealth of great significance for all mankind, from the urban point of historical, architectural, artistic, scientific, aesthetic, archaeological and anthropological.

ODE TO VALPARAISO
PABLO NERUDA

What nonsense
You are
What a crazy
Insane Port.
Your mounded head
Disheveled
You never finish combing your hair
Life has always surprised you
Death woke you
In your undershirt and long underwear
Fringed with color
Naked
With a name tattooed on the stomach
And with a cap
The earthquake grabbed you
You ran
Mad
Broke your fingernails
It moved
The waters and the stones
Sidewalks
And seas
The night,
You would sleep
In the ground

Tired
From your sailing
And the furious earth
Lifted its waves
More stormy
Than a tempest
The dust
Covered you
The eyes
The flames
Burned your shoes
The solid

Houses of bankers
Trembled
Like wounded whales
While above
The houses of the poor
Leapt
Into nothingness
Like captive birds
Testing their wings
Collapse

Quickly
Valparaiso,
Sailor,
You forget
the tears
and you return
to hanging your dwellings
to paint doors
green
Windows
Yellow,
Everything
You transform into a boat
You are
The patched bow
Of a small
Courageous
Ship
The crowns nest
With foam
Your rope lines that sing
And the light of the ocean
That shakes the masts
And flags
In your indestructible swaying

Dark star
You are
From far away
In the height of the coast
Shining
And soon
You surrender
Your hidden fire
The rocking
Of your deaf alleys
The naturalness
Of your movement
The clarity
Of your seamanship
Here ends this ode

Figure 49 | Valparaiso port now

HISTORICAL, SOCIAL & CULTURAL CONTEXT OF THE THESIS

SOCIAL CONTEXT

Chile is one of the countries most prone to natural disasters, due to its location within the pacific 'Ring of Fire', with active volcanoes and high earthquake risk.

One of the most powerful earthquakes in recent years took place in Chile. It was an 8.8 magnitude earthquake which has since prompted a series of powerful tremors. The unpredictability and frequency of these movements unnerve the whole community. The most powerful ones have prompted the early closures of school and workplaces, afraid that a powerful earthquake had being triggered. Scientists said that the string of tremors does not necessarily mean that a larger quake is imminent, but that such an event could not be ruled out; causing high anxiety in the community.
It is true that many natural disasters are escapable if you have been forewarned, such as using tornado shelters or by evacuating before floods, forest fires, or even tsunamis. But with an earthquake there is usually no previous warning and there's really no escape. The ground, which we normally perceive as stable, is now shaking. There is nowhere to go. It is one of the rare moments that 21st century man is absolutely powerless.

The largest and most devastating earthquake ever recorded took place in Chile in 1960 on the southern side of the country. The earthquake wrenched the seafloor 20 feet, creating gigantic waves that spread all the way to the coasts of Philippines and Japan. The quake had a magnitude of 9.5, killing thousands of people and leaving millions homeless and injured. The earth kept shaking up to a year later with intense aftershocks.

Figure 50 | Valparaiso's 1906 Earthquake

Figure 51 | Valparaiso's 1906 Earthquake

Figure 52 | 1973 Chilean coup d'état

Figure 53 | 2013 Valparaiso's Great Fire

CULTURAL CONTEXT

Along with the intense development of trade in Valparaiso during the twentieth century, the city's railway development intensified. The intense traffic due to port activities, demanded the expansion and creation of spaces dedicated to the transportation industry at the heart of the city. Thus, the construction of the turntable and warehouse began in 1930, in the site that previously gave shelter to the Fort Andes, built in 1886.

At the end of the first half of the twentieth century, due to the low production generated by the construction of the Panama Canal – which displaced the port of Valparaíso as the main port of the Pacific - much of the port's railway infrastructure was forced to close. The turntable and warehouse, were still partially used to maintaining the night train services, but activities completely stopped in 1996. Despite its appointment as a Historical Monument in 1986, the structures have been abandoned, suffering the deterioration that this implies.

Symbol of development and modernity in the early twentieth century, this building testifies to the productive and industrial processes of the 1900 and configuring a significant architectural and urban space for its shape and dimension, also bearing nostalgia of an entire national historical period.
My proposal aims for the recovery of these abandoned structures and to give them a new life, allowing its conservation over time.

The abandoned site was once a symbol of prosperity, such as port growth and open access to the city.
One of the main urban planning struggles for the city of Valparaíso today is the conquest of its coastal front. Thus, by re-introducing these abandoned structures to the community as a new symbol of prosperity, it would aid to consolidate its lacking sense of identity due to the extensive traumatic history.

Valparaiso's landscape is very alive. The unfortunate reality is that city is in constant transformation due to the never-ending natural disasters. Thus, these abandoned historical structures (train turntable and warehouse) can speak about living with this notion of permanence/impermanence, given its extreme and exposed location. It can reveal and embrace the way the city transforms and the fundamental relationship between humans and nature, and space and time.

I aim to develop a project that synthesizes Valparaiso's history and connects the city's past, present and uncertain future.

Figure 54 | Valparaiso's ocean ruins

Figure 55 | Turntable

Figure 56 | Turntable corridor

SITE ANALYSIS

GEOGRAPHICAL LOCATION

Figure 57 | Valparaiso panoramic view

The city has a population of about 300,000. Along with its sister city (Vina del Mar) they form a metropolis acquiring the appearance of a cosmopolitan city. The city was originated as a port city, therefore its urban development has been essentially conditioned by this activity. Its privileged situation allowed to have a strong presence in the foundational process of new lands granted by Pedro de Valdivia the King of Spain. The city was widely known by its pseudonym the "Jewel of the Pacific" because of the admiration that the natural charms caused over the sailors that stopped by the port.

The city of Valparaiso is located on a former sand beach covered by artificial fill, and the process of urban expansion has been achieved gained ground to the sea. Valparaiso is located set amidst a coastal plain in north-south direction. For its geographical position and its location is defined as a city port on the southwest coast of South America between latitude 33°01 'south and longitude 71°38' west and about 118 km northwest of the city capital Santiago. It has its own identity, whose greatest symbol is the natural environment, composed of a bay surrounded by a mountain range cordillerano type that bathes its foothills in the sea and makes it an amphitheater facing the Pacific Ocean.

As for its climatic conditions natural waterways from the hill down to the flat area of the city are supplied only by the rainfall, drastically reducing its flow in the summer. Location in an area of mild Mediterranean climate with winter rainfall that, on average, amounted to 480 millimeters per year, mainly concentrated between the months of May to October. The average temperature in summer reaches 20 ° C and 15 ° C in winter. The average temperature variation between maximum and minimum is 5 ° C. The relative humidity during the day summer reaches 65%.

SITE ANALYSIS

WINTER WIND DIRECTION

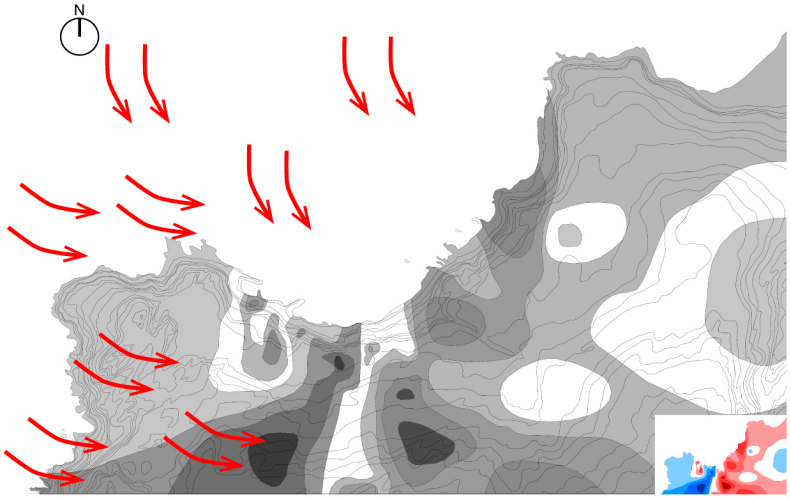
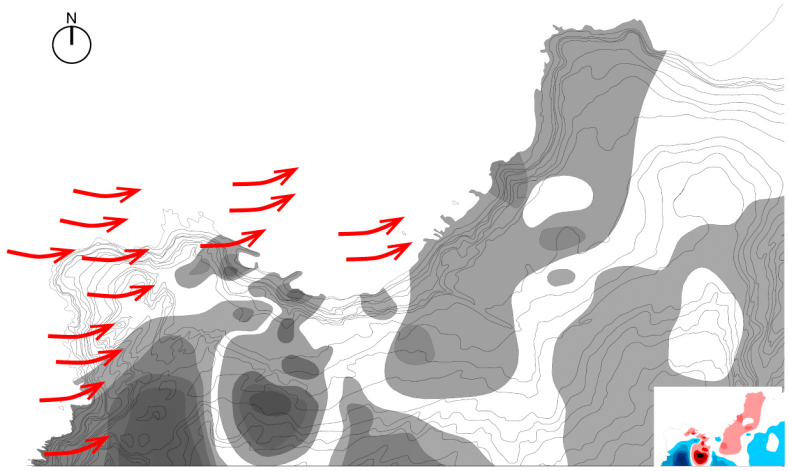


Figure 58 | Wind direction diagram

SUMMER WIND DIRECTION



As for its climatic conditions natural waterways from the hill down to the flat area of the city are supplied only by the rainfall, drastically reducing its flow in the summer. Location in an area of mild Mediterranean climate with winter rainfall that, on average, amounted to 480 millimeters per year, mainly concentrated between the months of May to October. The average temperature in summer reaches 20 ° C and 15 ° C in winter. The average temperature variation between maximum and minimum is 5 ° C. The relative humidity during the day summer reaches 65%.

The favorable climate with four seasons makes it a desirable place for human settlement. The city maintains moderate temperatures all year, which is explained by the influence the cold Humboldt Current and the sea breeze from the coast. Another unique geographic element of Valparaiso is the prevailing wind, blowing from the south west of the city away any threat air pollution. Finally in terms of environmental balance, Valparaiso still preserved in its ravines and peri-urban areas remains of biodiversity that characterized it from its foundation. A second important aspect of its natural landscape are its cliffs, which they lie to the west of the city and speak only in the Southern Cone of America, to the point that they were declared protected area.

The influence of climate on Valparaiso acquires its most critical phase with rainstorms in the winter season, which coincides with the generating swells that disrupt the coastline. Likewise the runoff water causes landslides especially in the cliffs and the highest terraces affecting buildings and generating loosening the soil to areas of the valley. This occurs when Rainfall is abundant and continuous.

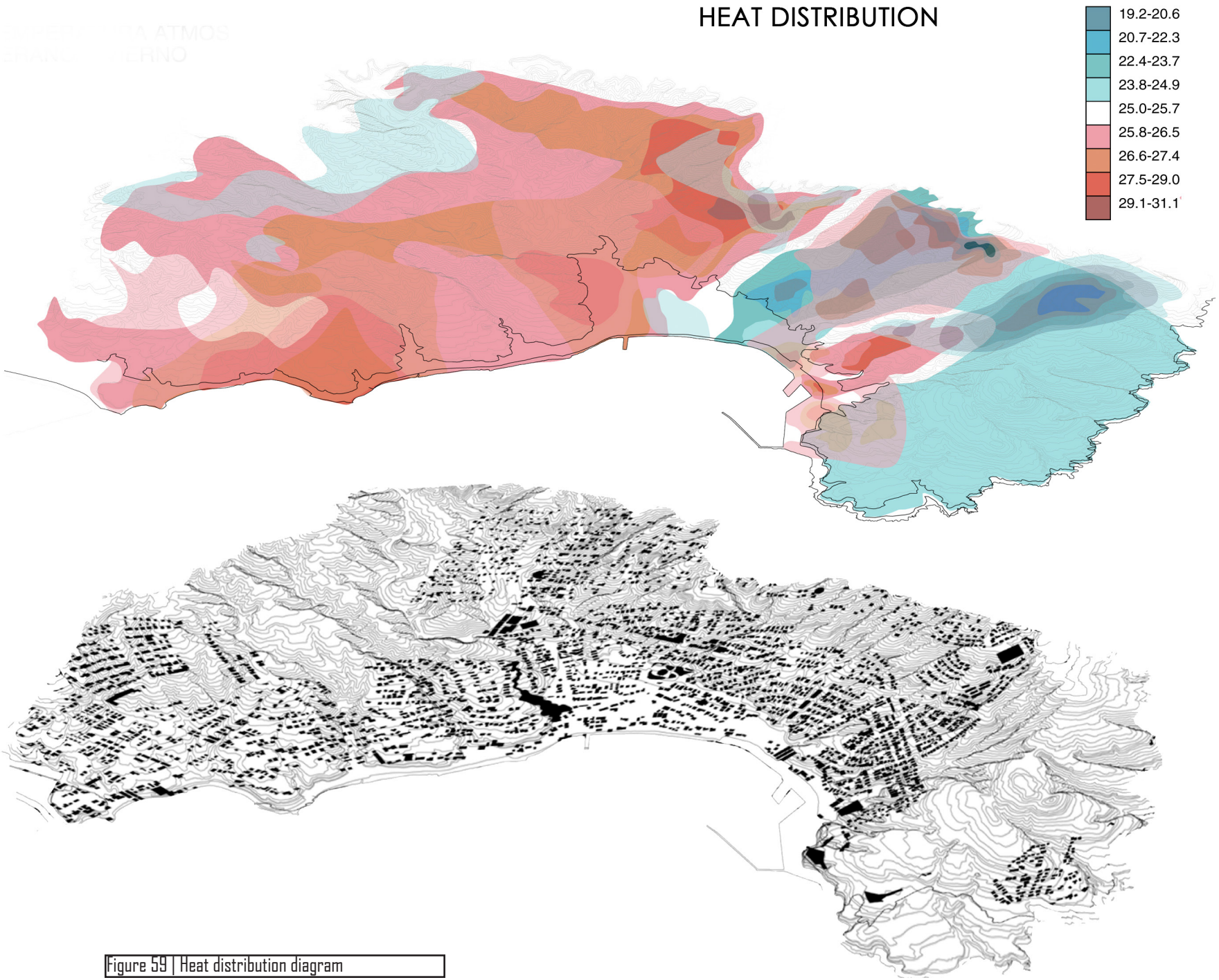


Figure 59 | Heat distribution diagram

Figure 60 | Educational institutions map

Figure 61 | Location of main public areas

In this particular cityscape where the city grows toward the hills, surrounding the bay, a situation that occurs with particularity in the housing erected on the hills. The buildings are perched on them giving rise to a morphology that is unique of this city.

Architects and engineers had ingenious and creative solutions to solve the structural issues given in this particular style of construction, according to the degree of adaptation of the buildings to the slope and orientation of the landscape.

The various passages, stairs and elevators move and communicate the valley with the hill, and it is the greatest symbol and identity of Valparaiso. Connections between the flat valley and the hills has always been difficult, disconnecting the population by different elevations. The installation of funicular elevators in different parts of the city between 1882 to 1930, made this commute a little easier.

Today the funiculars are still in use, for the most part- since its lack of proper maintenance makes it still a major problem for the community to facilitate the connections within the city.

Figure 62 | Port & coast line

Figure 63 | Markets & commerce

Figure 64 | Parks and green areas

Figure 65 | Cultural landmarks

LANDMARKS

Nicknamed "The Jewel of the Pacific", Valparaíso was declared a world heritage site based upon its improvised urban design and unique architecture.

In 1996, the World Monuments Fund declared Valparaíso's unusual system of funicular lifts (steeply inclined carriages) one of the world's 100 most endangered historical treasures.

In 1998, grassroots activists convinced the Chilean government and local authorities to apply for UNESCO world heritage status for Valparaíso. Valparaíso was declared a World Heritage Site in 2003.

Built upon dozens of steep hillsides overlooking the Pacific Ocean, Valparaíso boasts a labyrinth of streets and cobblestone alleyways, embodying a rich architectural and cultural legacy.

Figure 66 | Site context

Figure 67 | Site context

Figure 68 | Site context

DESIGN SOLUTION

Process Documentation

Project Solution Documentation

Performance Analysis

Digital Presentation

Project Installation

Figure 69 | Memorial Union Gallery Exhibition

PROCESS DOCUMENTATION

THE ARTEFACT

The creation of an artefact was used to explore and discover different aspects of the project. It helped as a medium to generate and anticipate the future experience of my architecture, by creating a physical representation of the ideas developed earlier in the design process. Testing my ideas in a tangible reality gave me the opportunity to discover critical aspects of my thesis which I wouldn't have discovered otherwise. Furthermore, the artefact gave front to a deeper understanding of the materiality, the tectonics and semiotic aspects of my thesis.

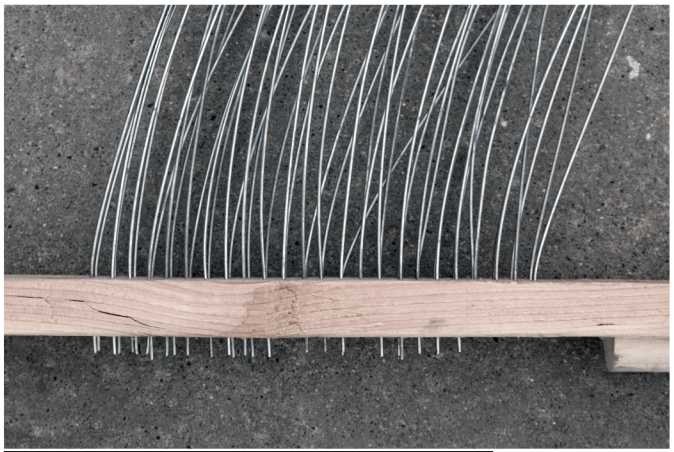


Figure 70 | Artefact

My artefact reflects on our relationship to nature and our false authority towards it. Many ancient civilizations were highly focused in keeping nature in balance. They were more attuned to everything that exists and believed and worshipped many Gods and Goddesses which they perceived to be all around them and many of these were related to the forces of nature. One false step could lead to angry the Gods, thus causing a natural disaster.

While our perception today is that we can indeed control nature, it is true to a certain extent. When we experience a natural disaster, it throws everything off balance and it is a reminder of natures' latent power over us and the notion of Earth as a living being.

When our lives become shattered we seek for the sacred, a connection to the Other -something to ground us back- and rituals were vital in providing people a way to recuperate this balance, harmony and sense of wholeness.

Figure 71 | Artefact

I created a ritual in which the artefact acts as a mediator - bridging humans and nature. While appearing as a static sculpture, it activates as soon as you grab its handle, becoming an extension of your arm - 'extension of yourself'.

The ritual performance consists in grounding or lowering the handle to the floor; as tension builds up, it releases accumulated energy, generating powerful vibrations as in an earthquake.

With our busy modern lives, we are constantly battling ourselves to maintain a sense of "groundedness" as we are often pull in a million different directions, none of which are pulling us back to being in the present moment. Thus, lowering the handle is like grounding yourself as it brings your attention to the present moment – trying to balance and control the trembling.

Trying to balance and maintaining control of the trembling eventually becomes too difficult, forcing you to let go before the artefact takes over and collapses on the floor. In an earthquake, this shuddering can be powerful enough to leave fractures and traces on the earth and built environment, as well as within ourselves - in our memories.

After a disaster happens, the traumatic experience is often immortalized in the collective memory of the people affected by it. Memory is inherently unstable, it is subject to revisions and corrections; in a way, healing is about rediscovering new meanings in past memories (re-writing them), which is a destruction and recreation of our past.

We often feel that we exist separate from the world around us but in reality, we are all connected and are individual parts of one system. Ancient civilizations were more attuned with their environment, so these connections were obvious to them. As Mircea Eliade states "Every Microcosm, every inhabited region, has a Centre; that is to say, a place that is sacred above all."

Figure 72 | Artefact

Figure 73 | Artefact

Figure 74 | Artefact

Though one can never truly capture or recreate the experience of an earthquake or the sublime, my artefact reflects on the idea of letting go in order to restore our sense of balance. Healing is about letting go of things or situations that no longer serve you or that you can't control, and refusing to do so often leads to sickness or depression.

Thus, the artefact embodies the experience of releasing and letting go, tracing and erasure - bridging traumatic history with future events.

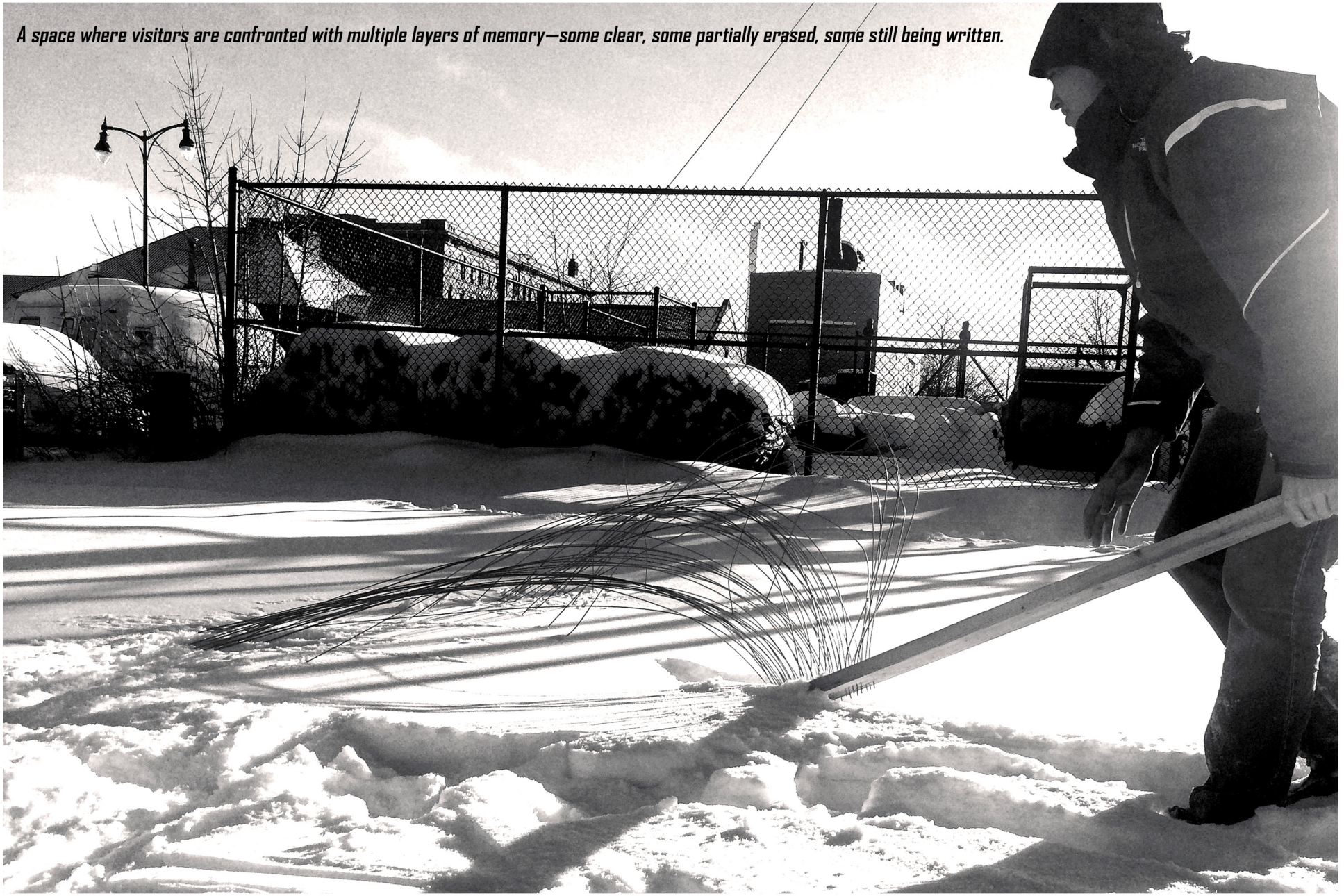


Figure 75 | Artefact

Figure 76| Artefact

Releasing and letting go of - to make room for transformation and healing.

Figure 77 | Artefact

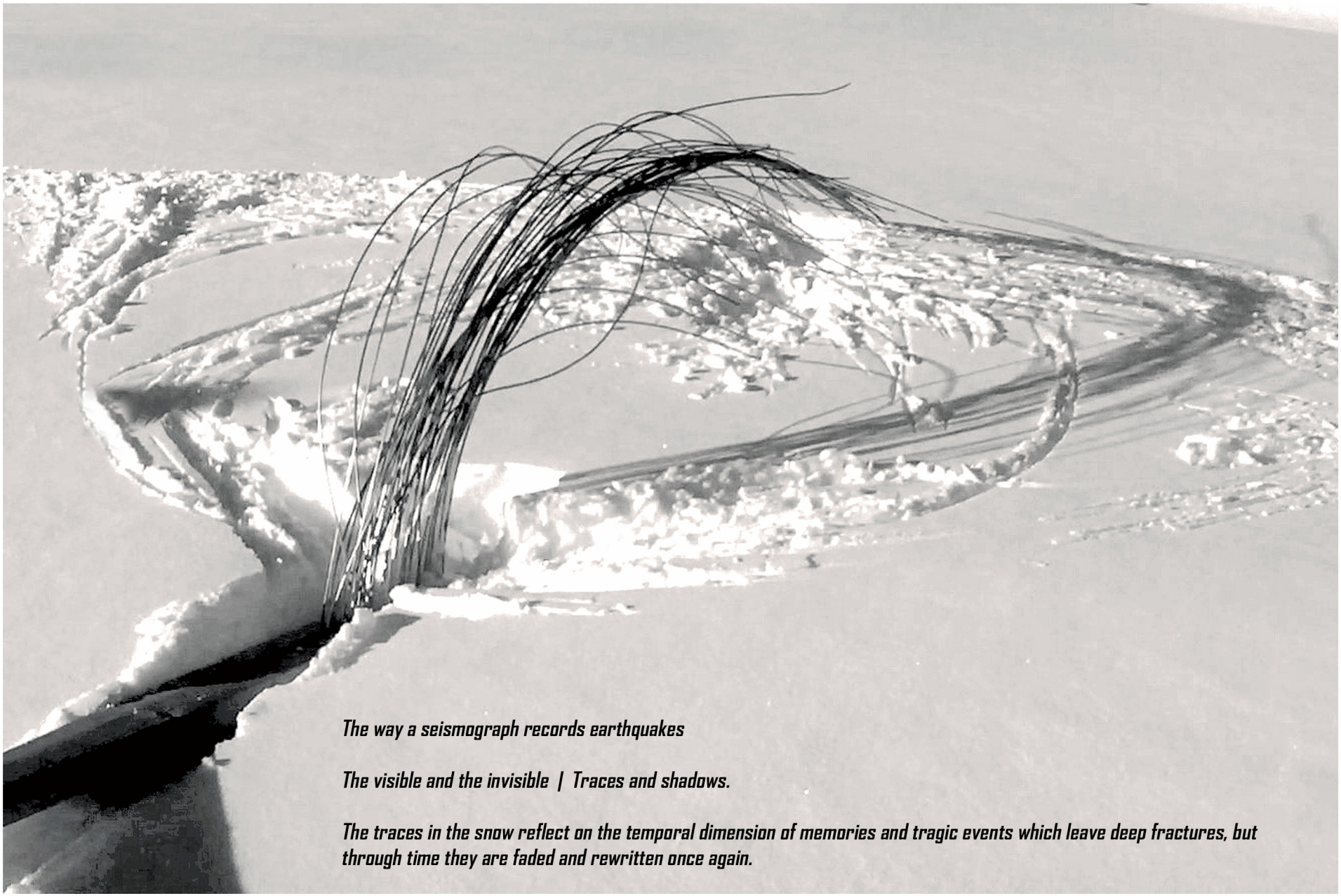


Figure 78 | Artefact

Figure 79 | Artefact

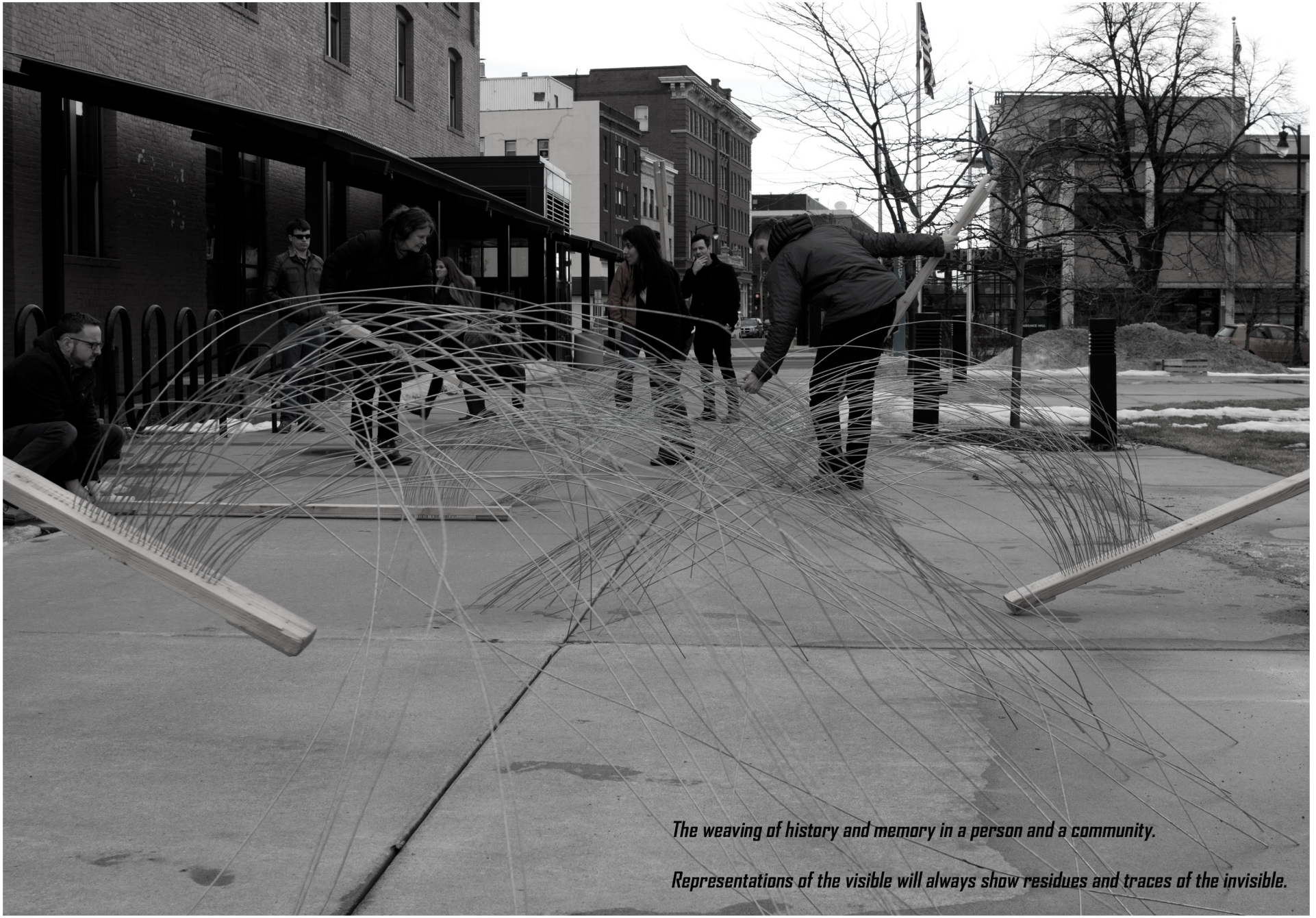


Figure 80 | Artefact

PROCESS DOCUMENTATION

PROCESS MODELS

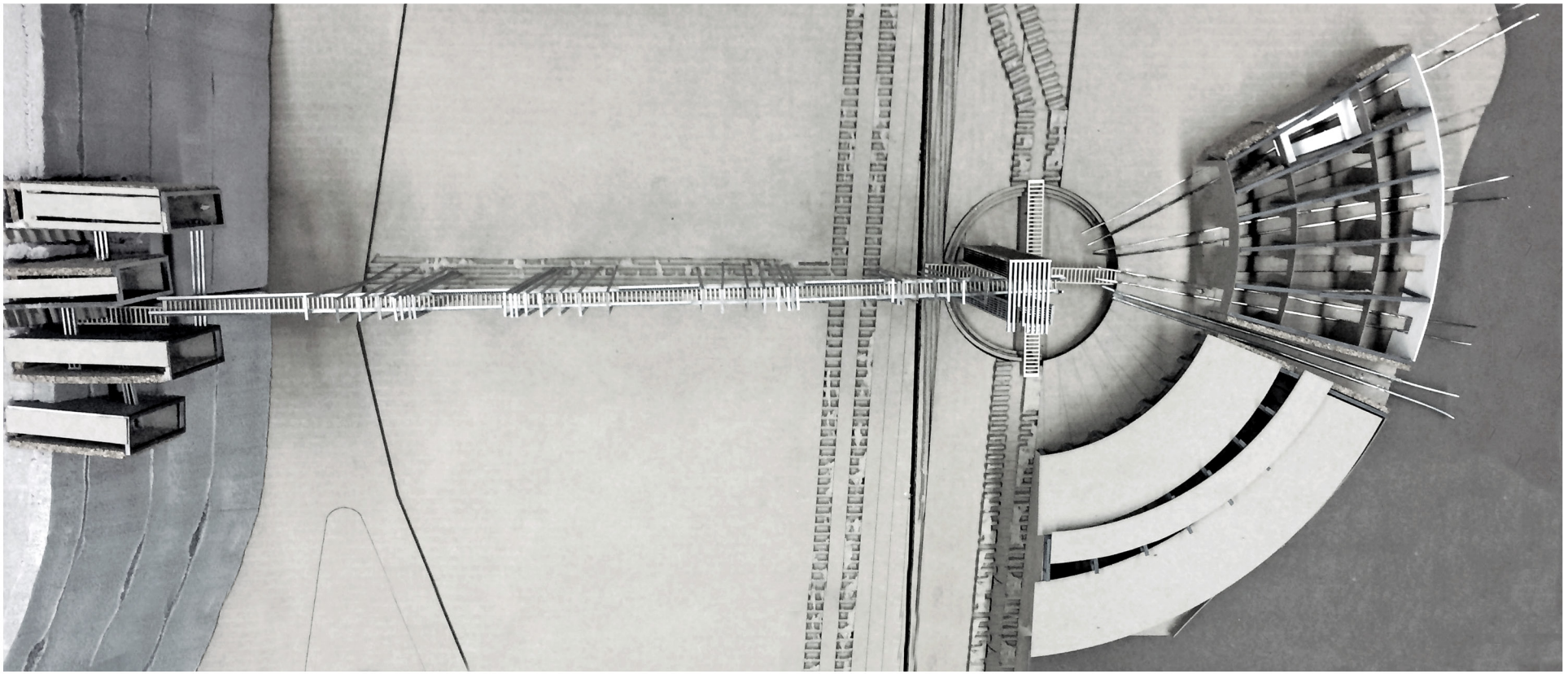


Figure 81 | Process Model (plan view)

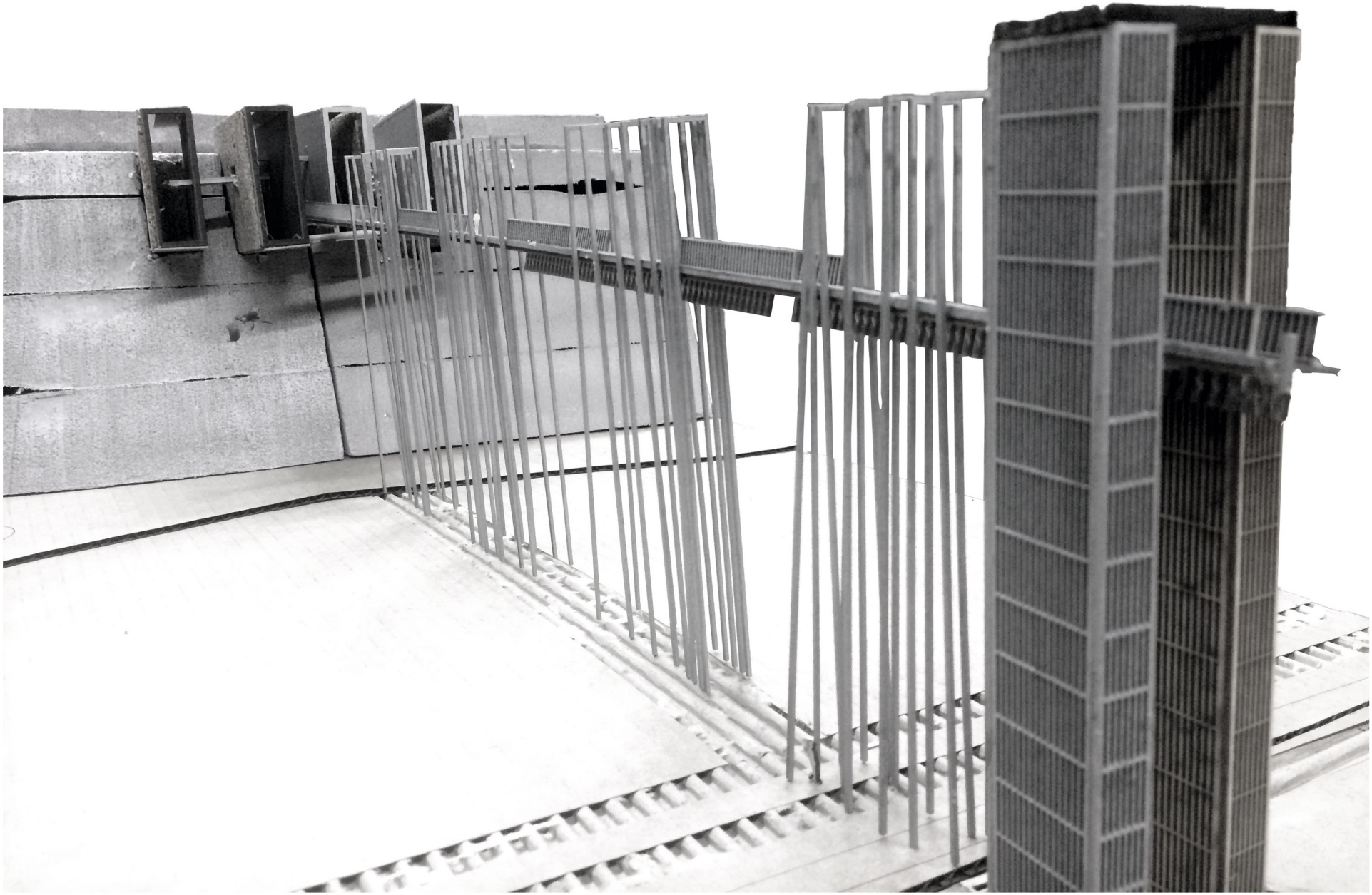


Figure 82 | Process Model

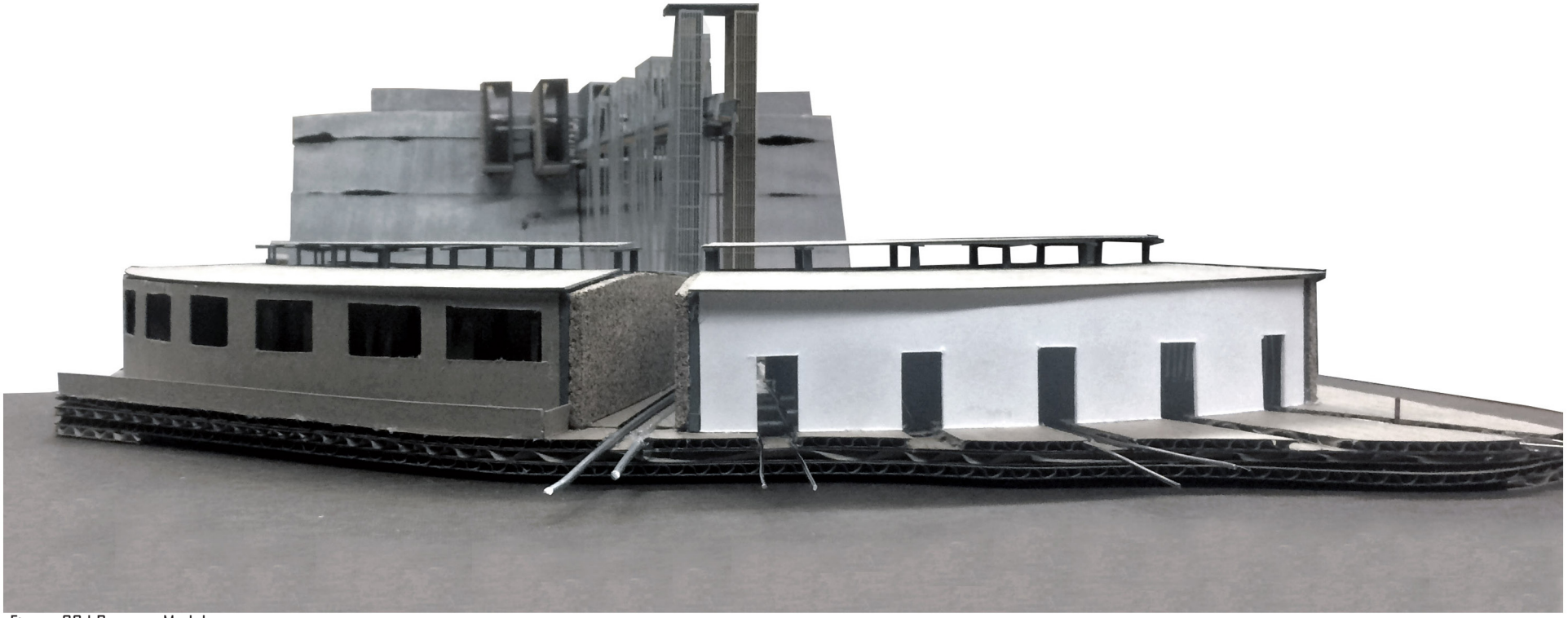


Figure 83 | Process Model

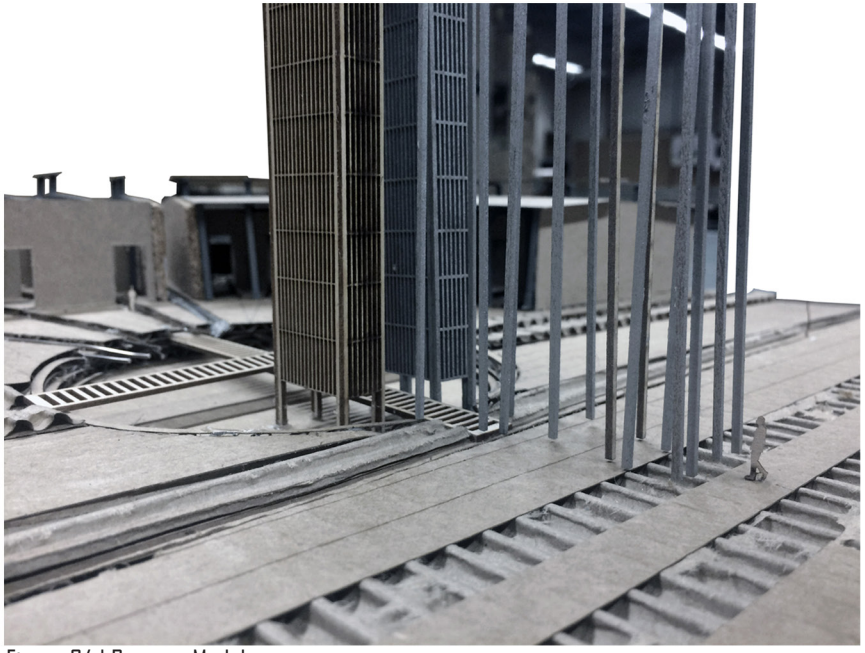


Figure 84 | Process Model

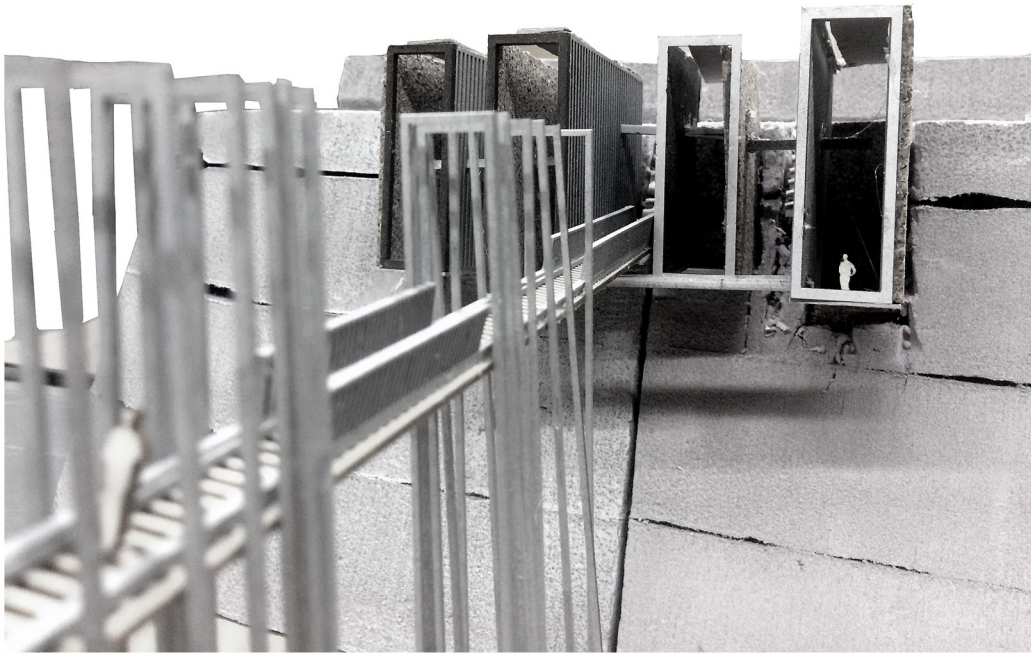


Figure 85 | Process Model

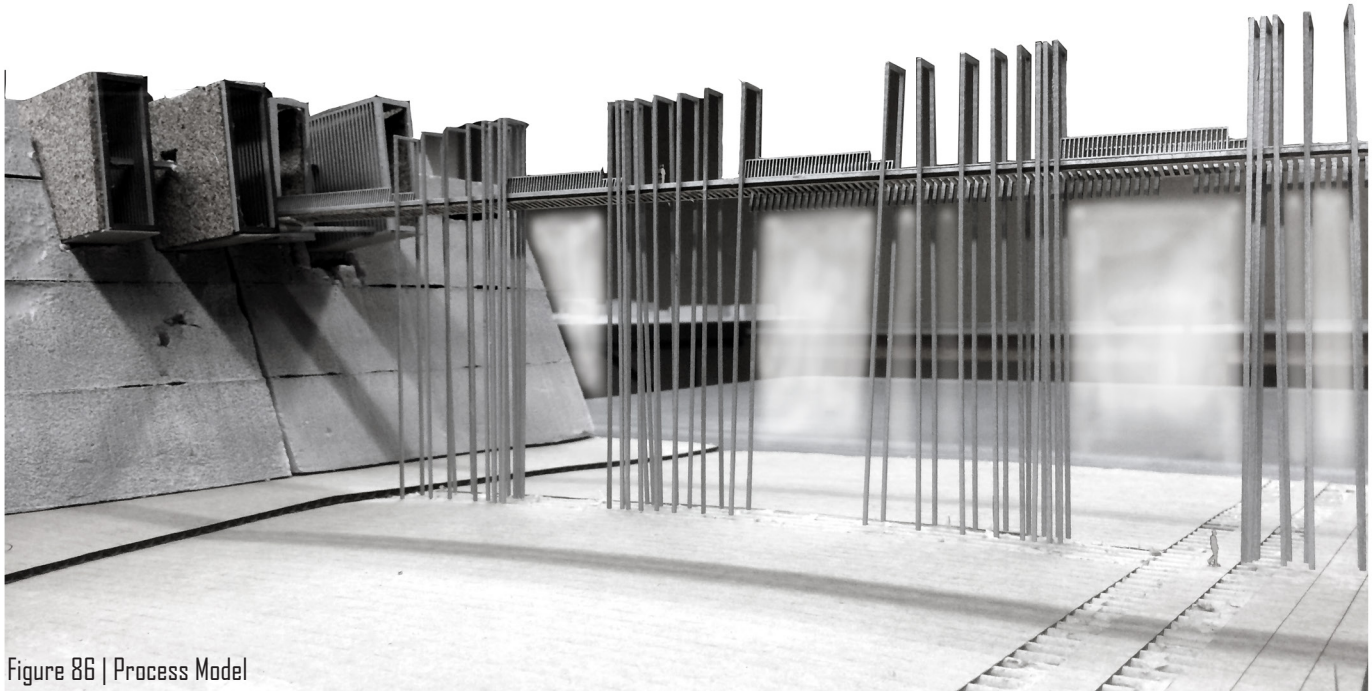


Figure 86 | Process Model

PROJECT SOLUTION

THE SITE

The site for this project is located along the coast of Valparaiso. Stretching from the hills, where the community now resides, into the ocean. Since the city was once a main seaport, the areas and structures by the sea were devoted to the industry, pushing the community towards the hills. Most of these structures now lay abandoned.

Figure 87 | Site perspective

Figure 88 | Site perspective

Figure 89 | Site [turntable]

Figure 90 | Site [turntable]

Figure 91 | Site [turntable]

Figure 92 | Site [turntable]

Figure 93 | Site [warehouse]

Figure 94 | Site [turntable]

My architectural intervention seeks to embrace the precarious landscape of Valparaiso and to resurrect the forgotten structures by the sea. Bridging the community physically and symbolically from the hills to the ocean, from past to present. Bridging chaos and order, sacred and profane, creation and destruction.

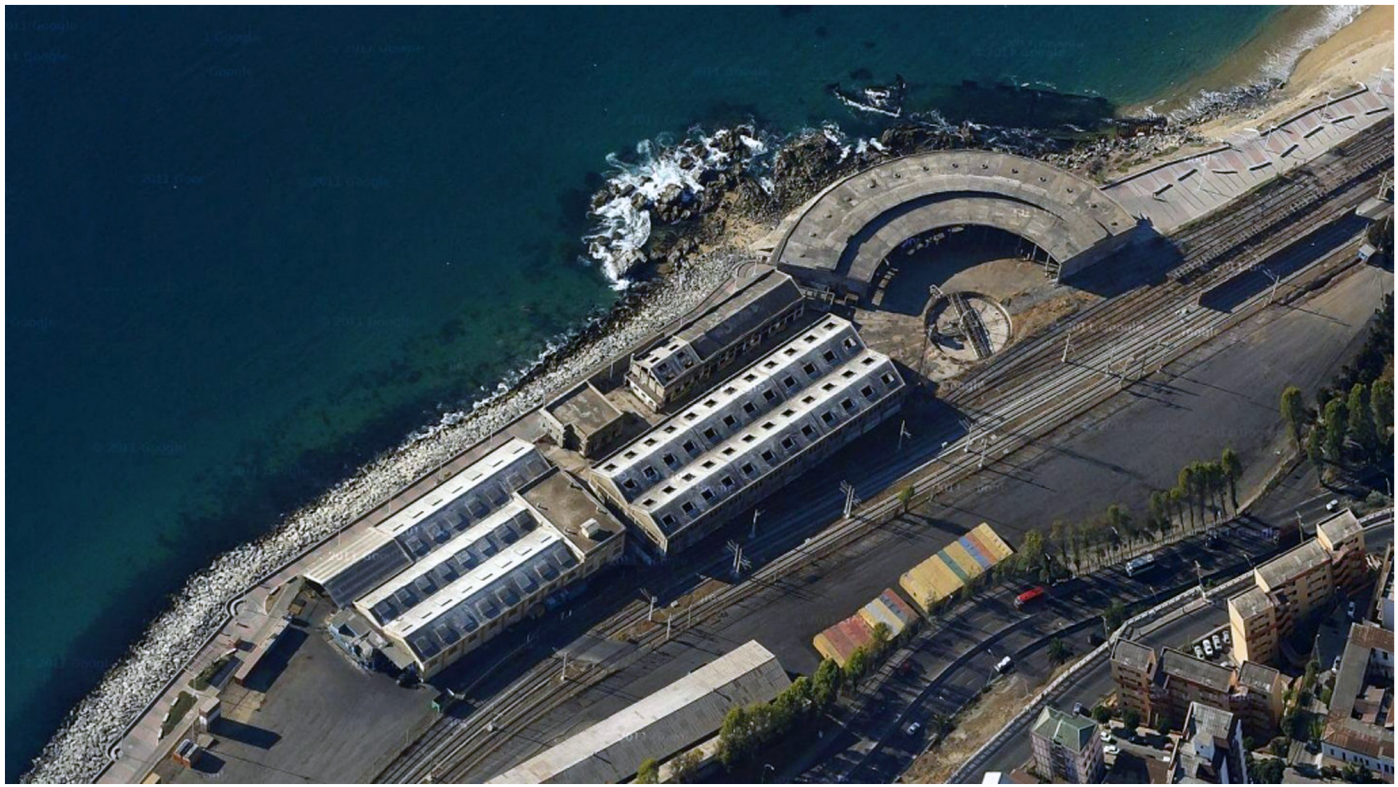


Figure 95 | Site [plan view]

Pablo Neruda, a Chilean poet who resided in Valparaiso wrote that,

"The Pacific Ocean wasn't on the map. There was nowhere to put it. It was so big, messy and blue that it could not fit anywhere. That's why they left it in front of my window "

Valparaíso was originally founded as a sea port and from there, it extended towards the hills where most of the community now resides. Thus, making the sea a distant spectacle.
The city has forgotten the fragility and potentiality of a place that is in constant transformation. With its moving ground, and coastal area constantly being bathed by the Pacific Ocean. The coastal area has been devoted to business, privatizing the essence of the city. Placing structures dedicated to the port and railroad industry by the ocean, which now lay abandoned.

Thus, my architectural intervention seeks to embrace the precarious landscape of Valparaiso and to resurrect the forgotten structures by the sea. Bridging the community physically and symbolically from the hills to the ocean, from past to present. Bridging chaos and order, sacred and profane, creation and destruction.

Figure 96 | Design solution (perspective)

Bringing awareness to the elements present on the site, to develop a different relationship between nature and the community. Allowing nature to be fully present in the spaces. Exhibiting 'time' as a design feature – the patina of the aging structure. The program includes places where people can go before, during and after an earthquake or other natural disasters.

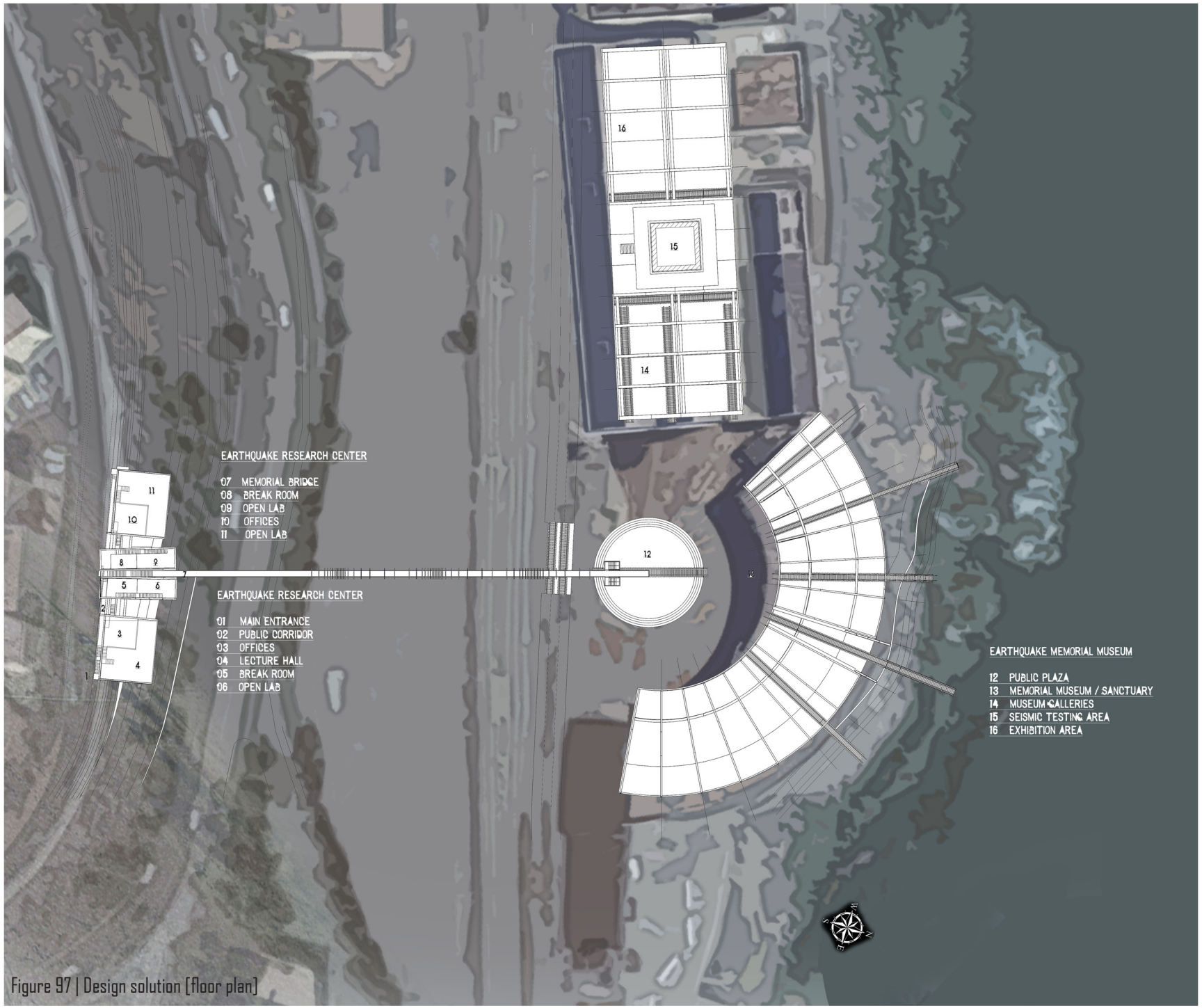


Figure 97 | Design solution (floor plan)

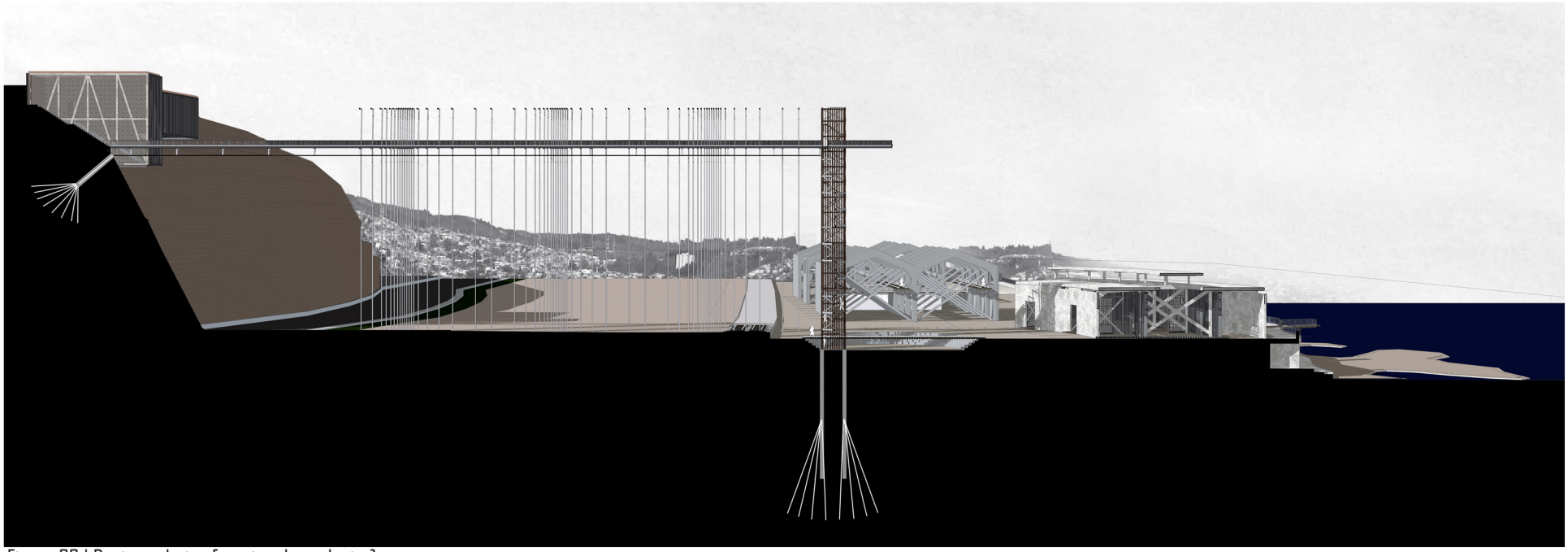
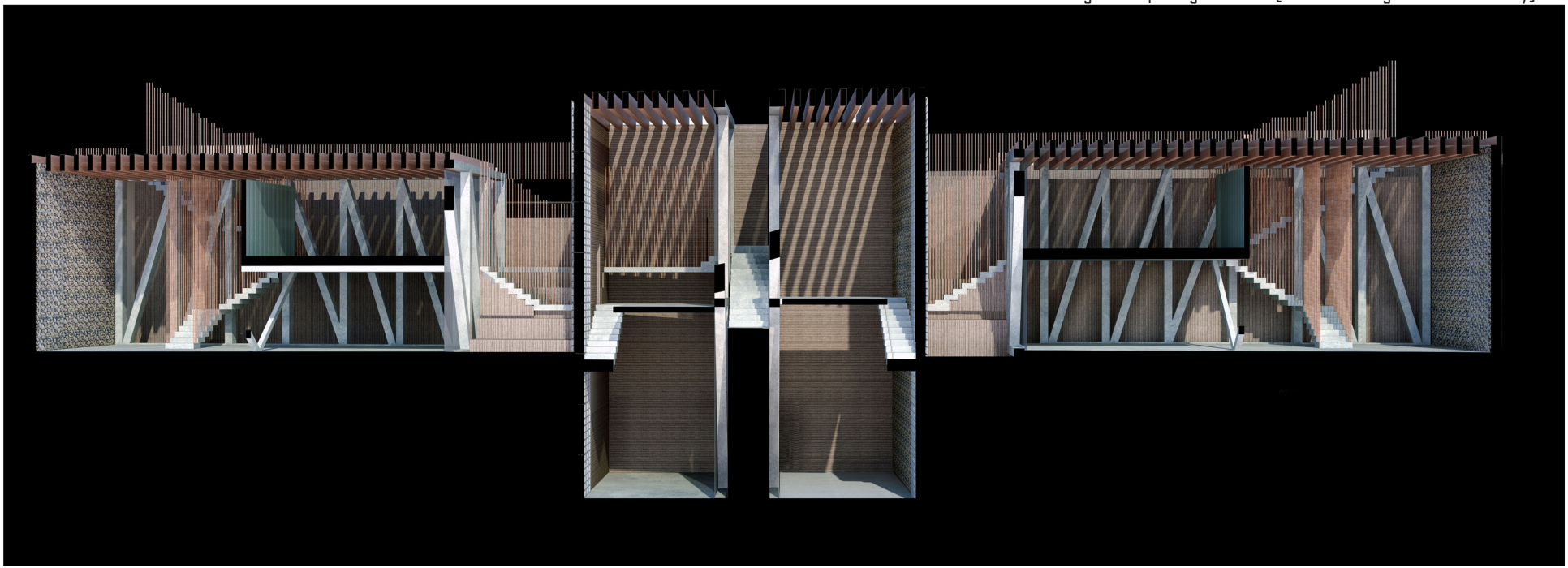


Figure 98 | Design solution [section through site]

Figure 99 | Design solution [section through research facility]



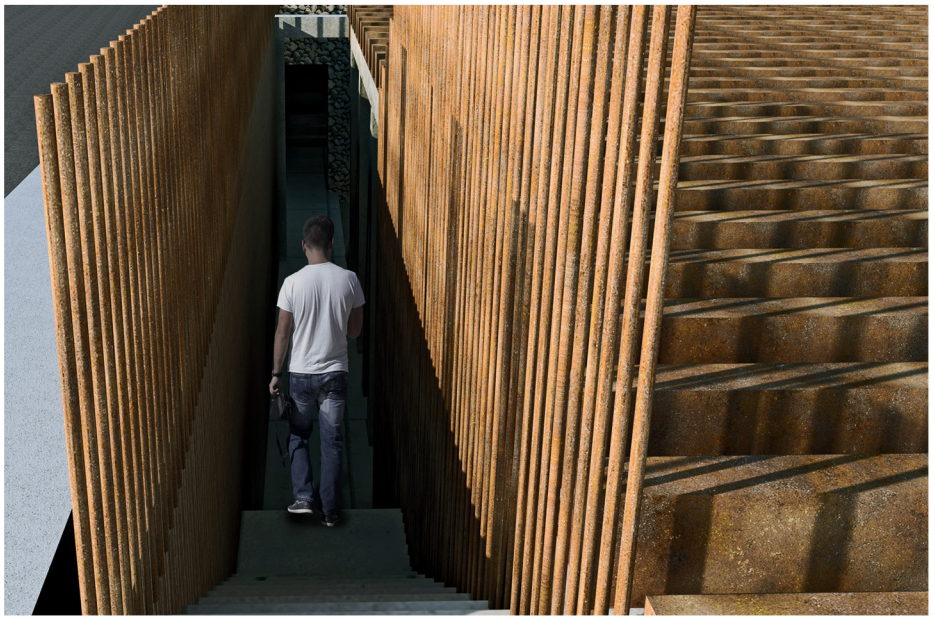


Figure 100 | Design solution [entrance]

THE ARCHITECTURE

The Earthquake Research Center, is a place dedicated to study earth's tectonic movements. Exemplary seismic resistance architecture is displayed throughout the facility, while creating a strong connection to the community as visitors are encouraged to witness the current experiments through different viewing paths along the site. As well as being a place where the community can learn more about how to react when a disaster happens.

Steel reinforced concrete is used for the bones of the structure, as it satisfies the strength and seismic requirements while steel and copper add contrast with their ability to acquire different patinas through time.

A visitor's journey starts on top of the hill entering the site through a crack, a path created between the earth and the structure.

Copper rods appear to be emerging from the earth, indicating the public entrance.

Copper has a strong cultural significance, it is extracted within the region and can acquire a distinct patina with time.

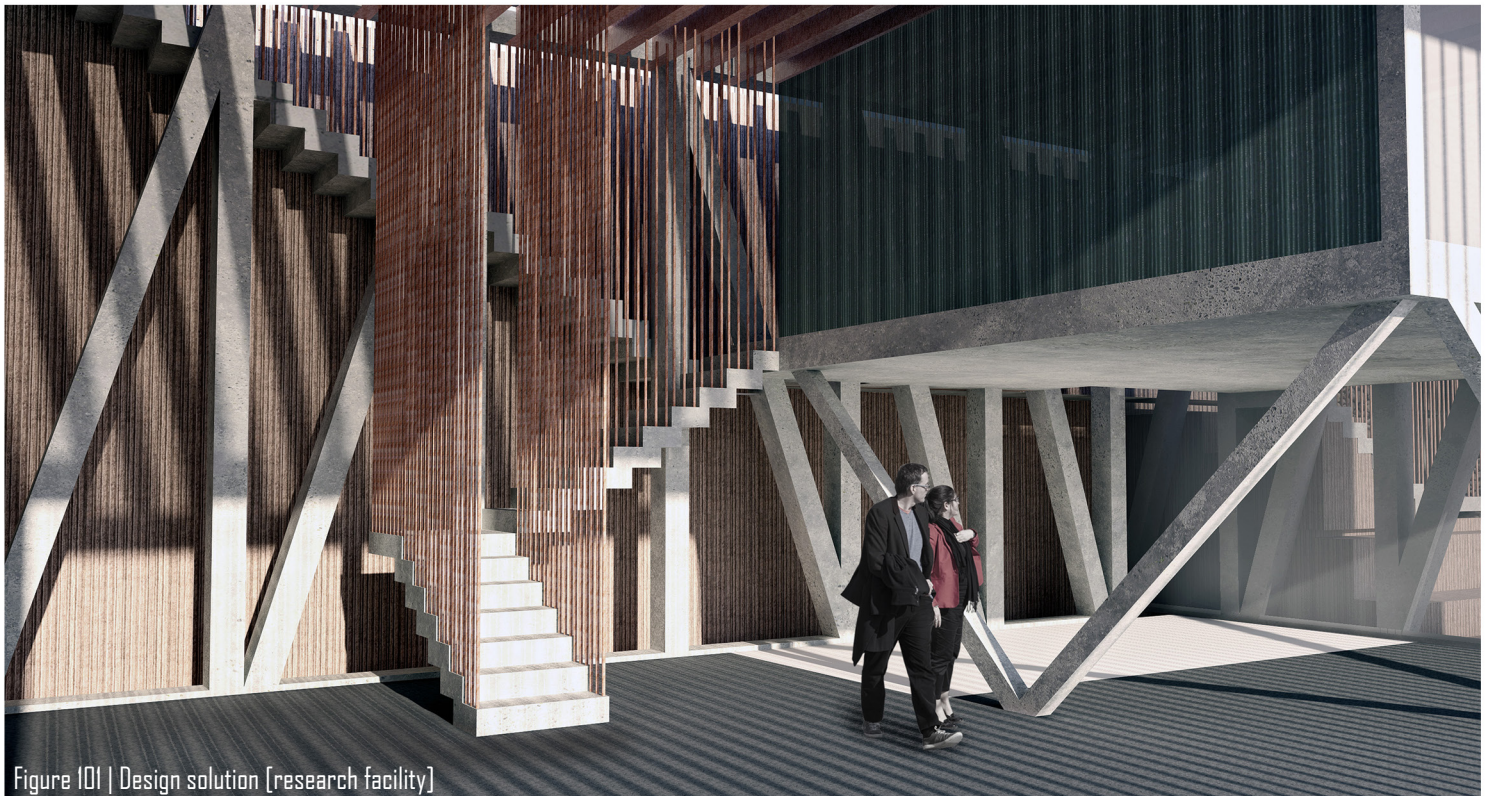


Figure 101 | Design solution [research facility]

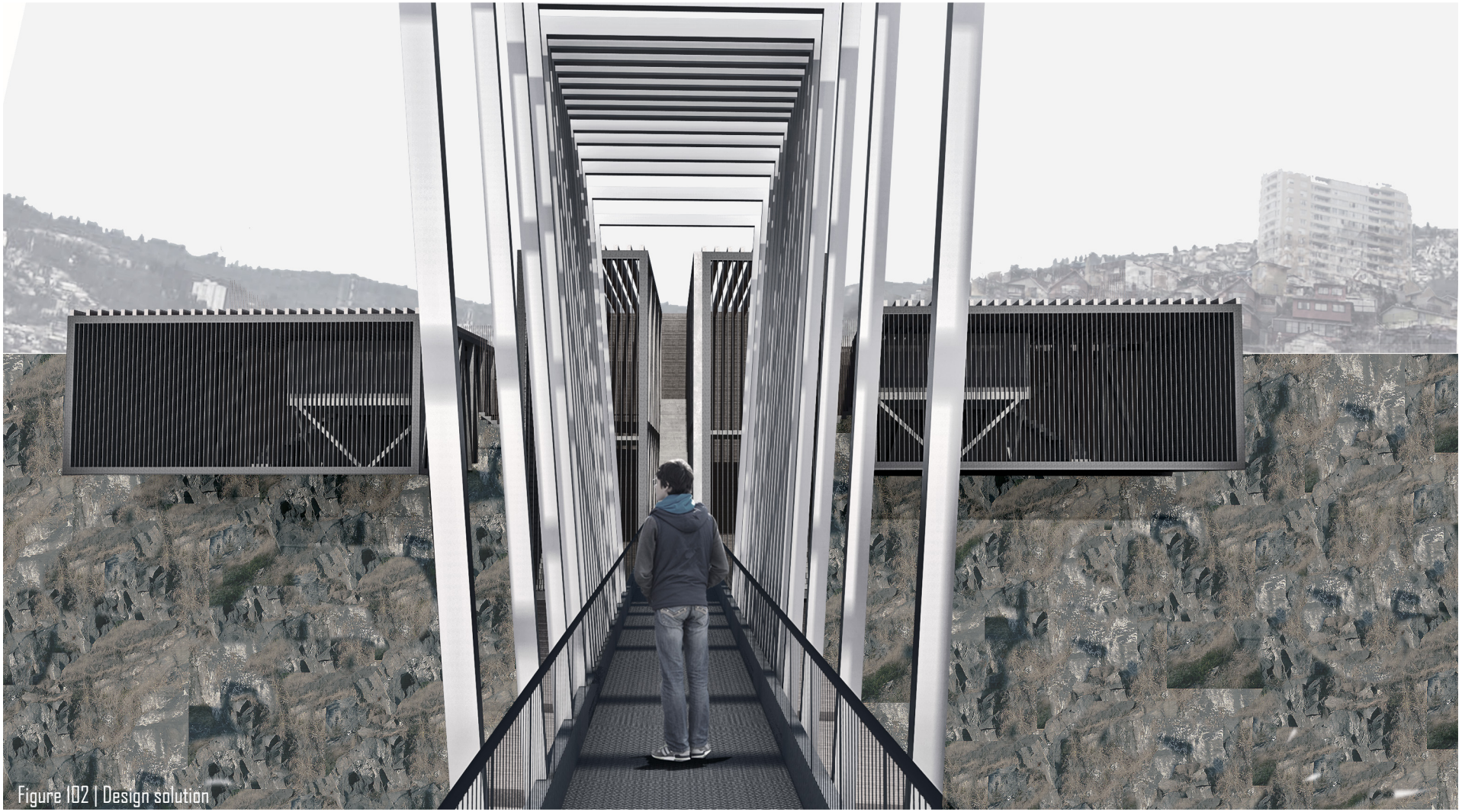


Figure 102 | Design solution

The Earthquake Research Facility's structures are connected through pathways between them.
During an earthquake, all the structures will release and detach from one another, engaging and dancing with the earth.
The different spaces are designed to allow program flexibility, allowing them to be used as temporary emergency shelter when needed.

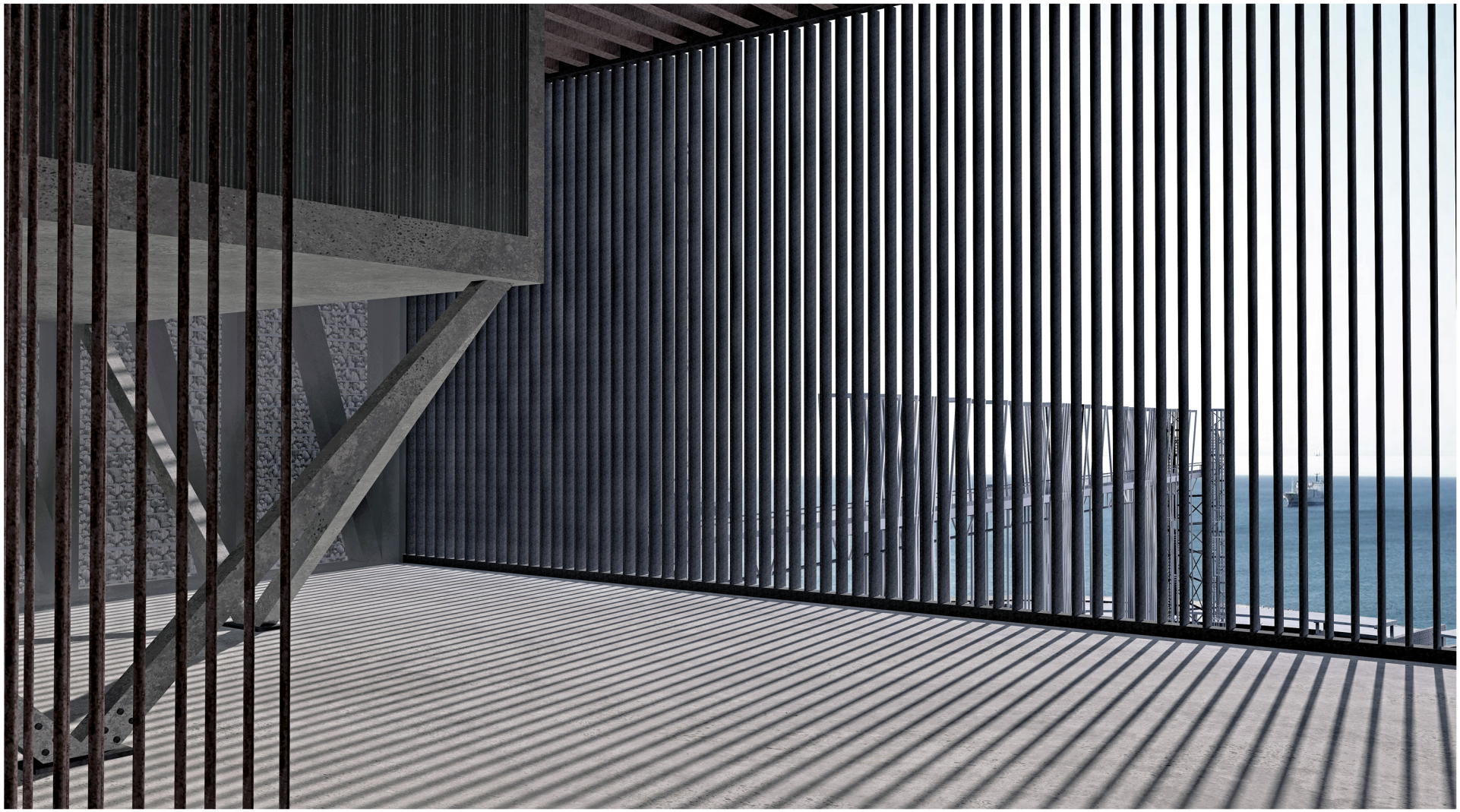


Figure 103 | Design solution [research facility]

Figure 104 | Design solution [research facility]

Figure 105 | Design solution [in-between bridge]

Figure 106 | Design solution

The bridge starts on a path in-between two structures which are part of the Earthquake Research Facility. It embodies the tension between the two imposing elements of the site gesturing a fault line.

The bridge will incorporate seismic radars that monitor seismic activity in the area; and behaving like a seismograph, becomes activated with movement. Producing subtle vibrations that are felt by the visitors on the bridge as well as people walking underneath.

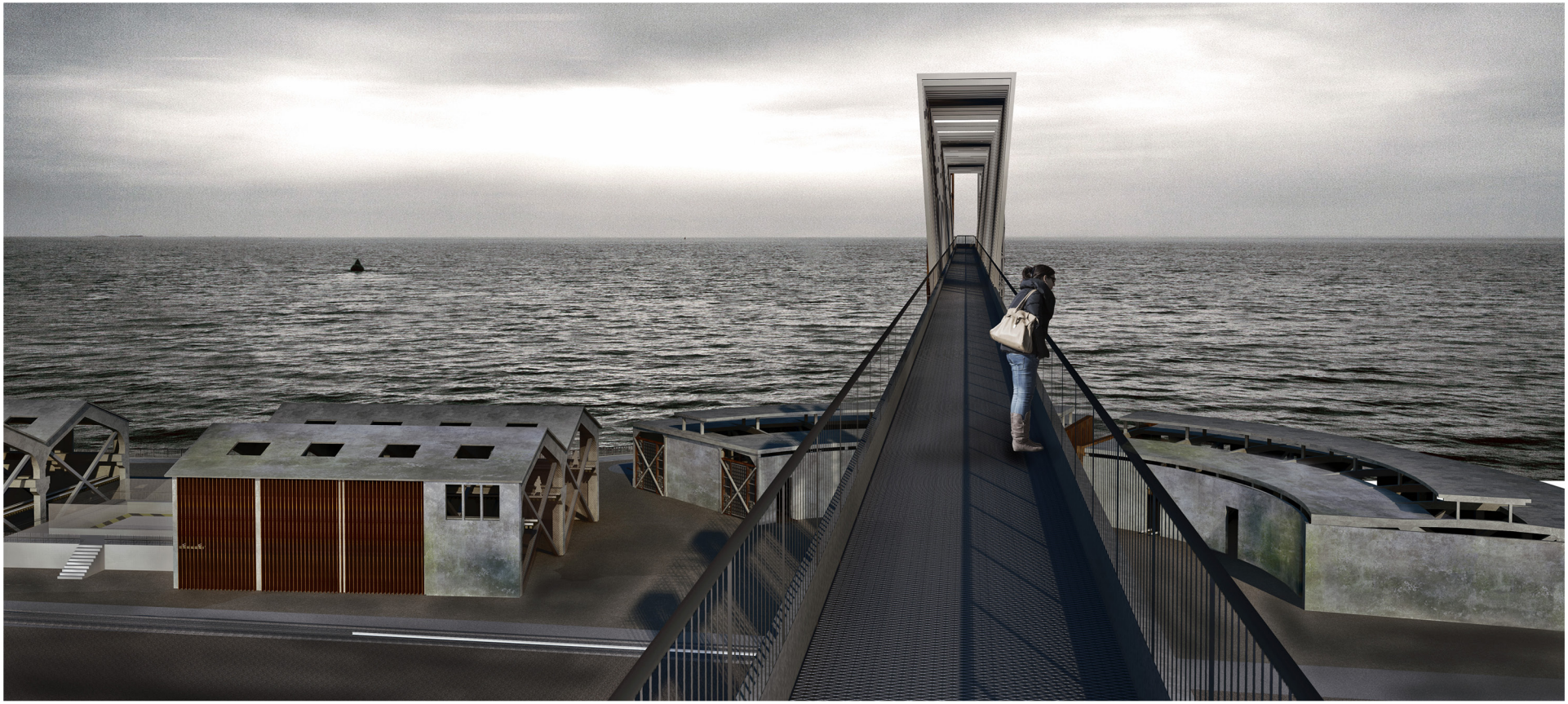


Figure 107 | Design solution

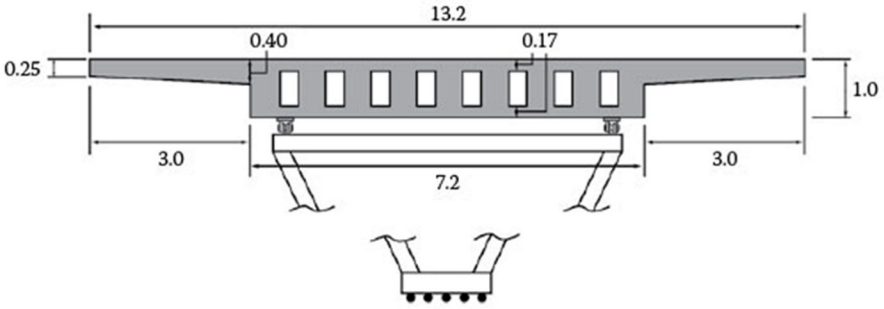


Figure 108 | Design solution [bridge_deck cross-section]

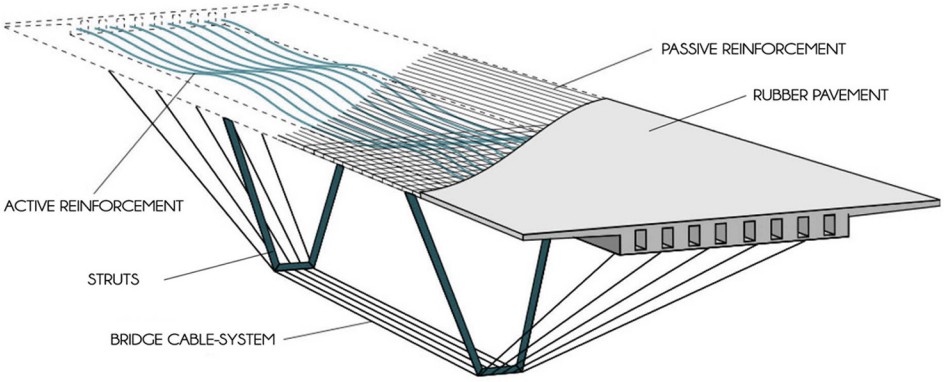


Figure 109 | Design solution [under-deck cable stayed system]

Figure 110 | Design solution [bridge walk]

The bridge implements a tension system – an underdeck cable-staying system. Securely anchored on the hill and steel towers.

Figure 111 | Design solution [thresholds]

The visitor journeys through a series of thresholds, leaving visible and invisible traces like the movement of tectonic plates.

The bridge would become a landmark for the city.

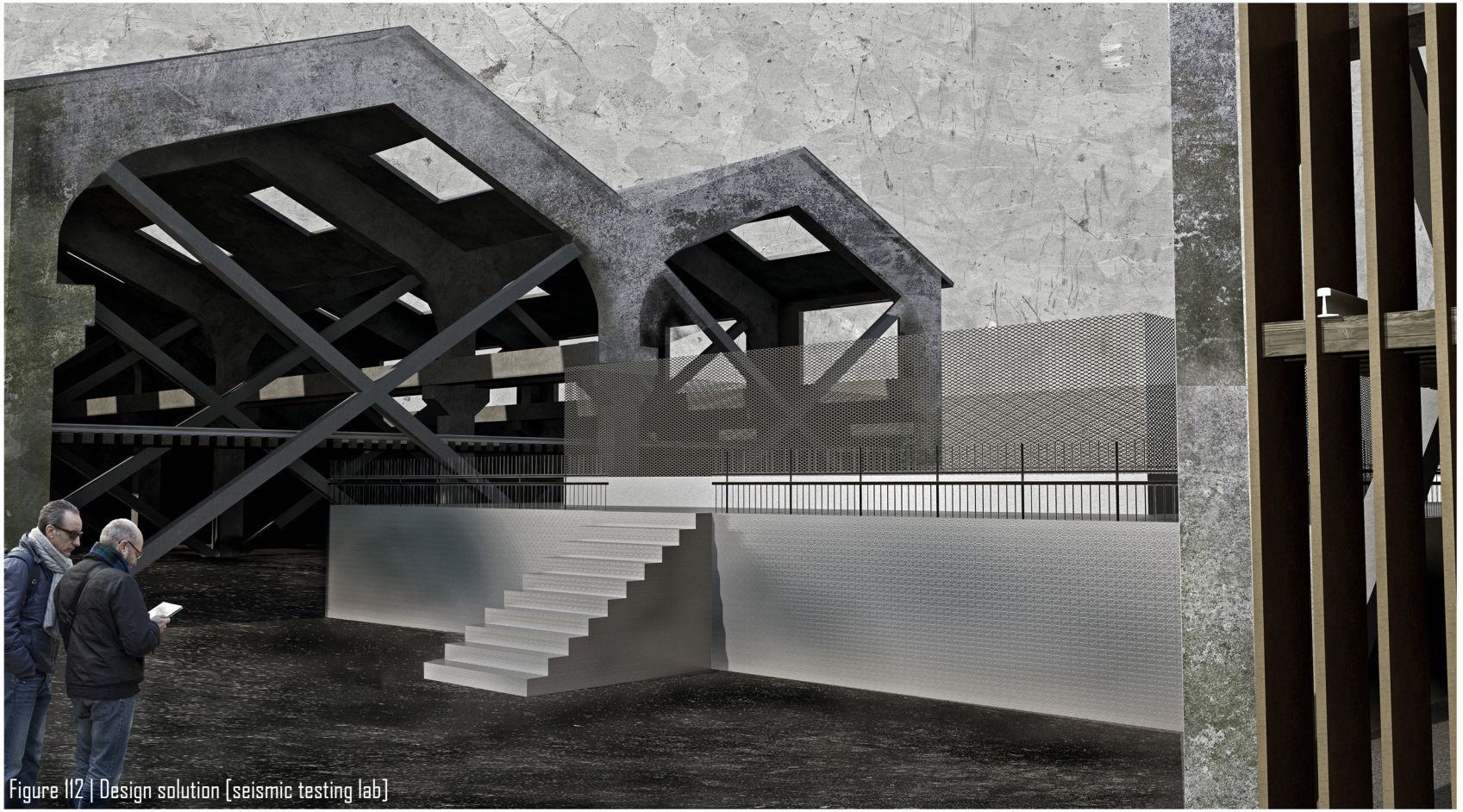


Figure 112 | Design solution [seismic testing lab]

The seismic testing lab is located at the former train maintenance facility, to be an active laboratory to test seismic solutions. Paths and viewing areas are implemented around the lab, encouraging visitors to witness the experiments.

Public exhibition areas to display art related to different disasters, to engage the community and artists who live in the city. Art has a way to communicate in a deeper level and reveal emotions that a person may not be aware of. The flexibility of the space allows the display of experiential art exhibitions and large installations, as well as providing public spaces for community gatherings.

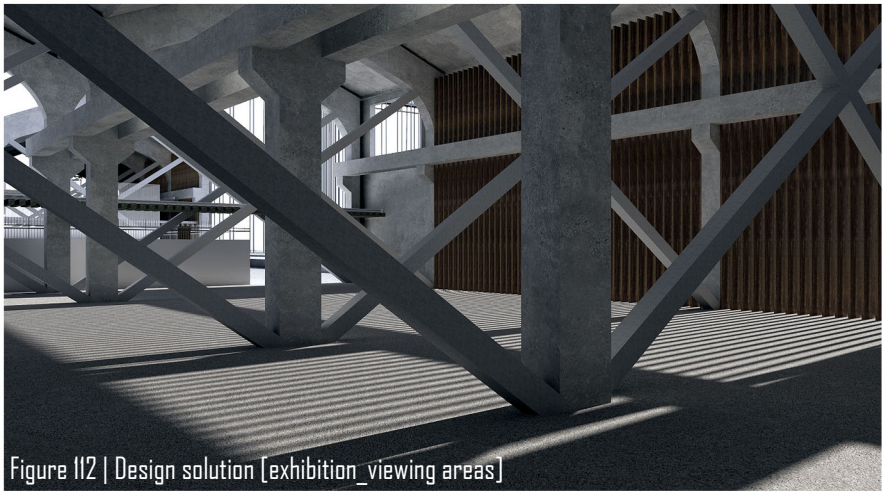


Figure 112 | Design solution [exhibition_viewing areas]

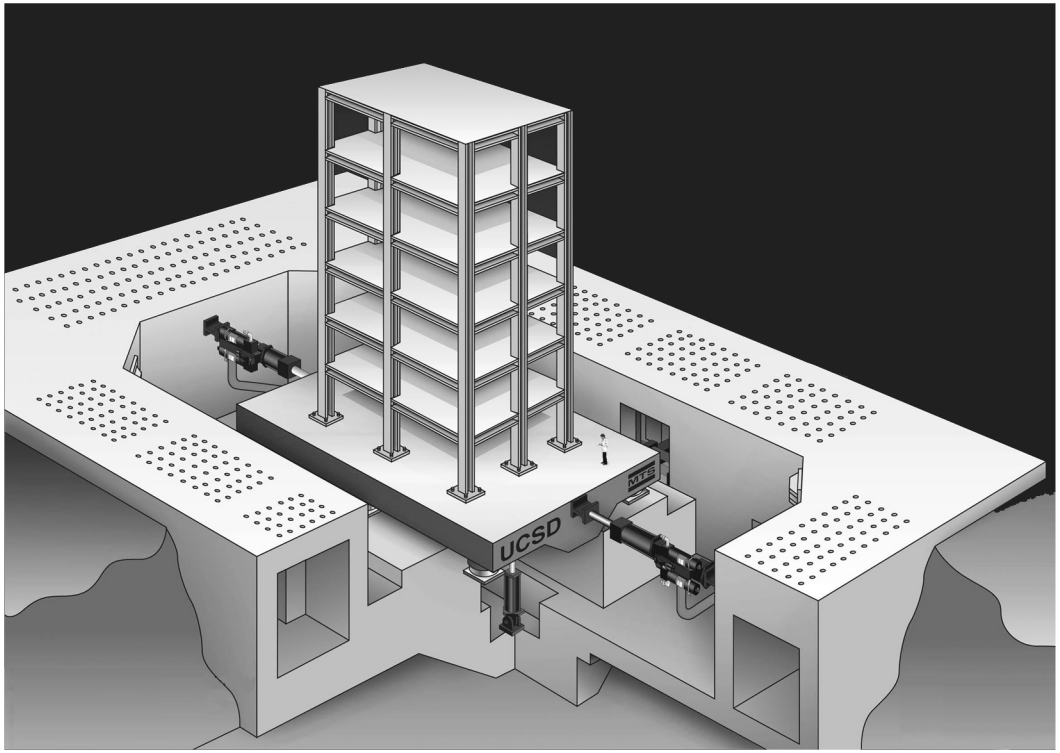


Figure 113 | Design solution [seismic shake table diagram]

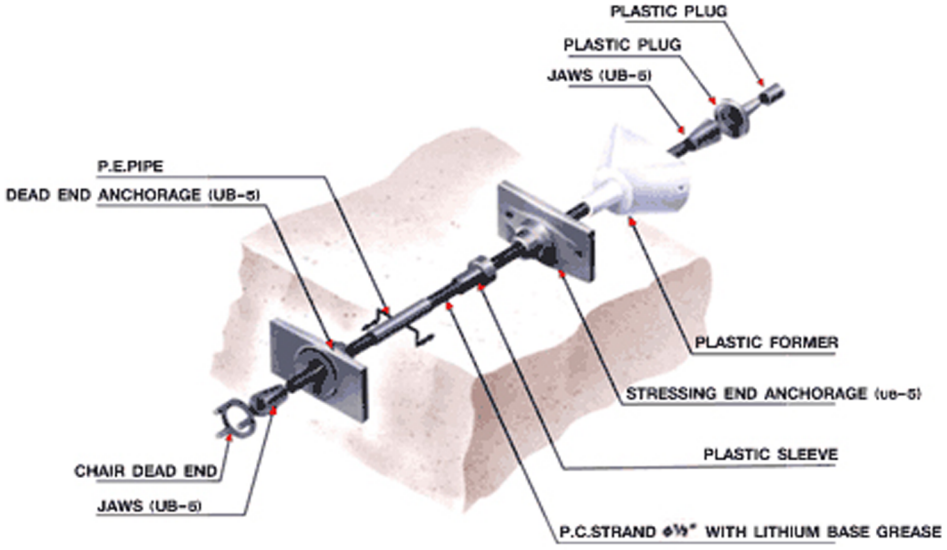


Figure 114 | Design solution [bridge anchor diagram]

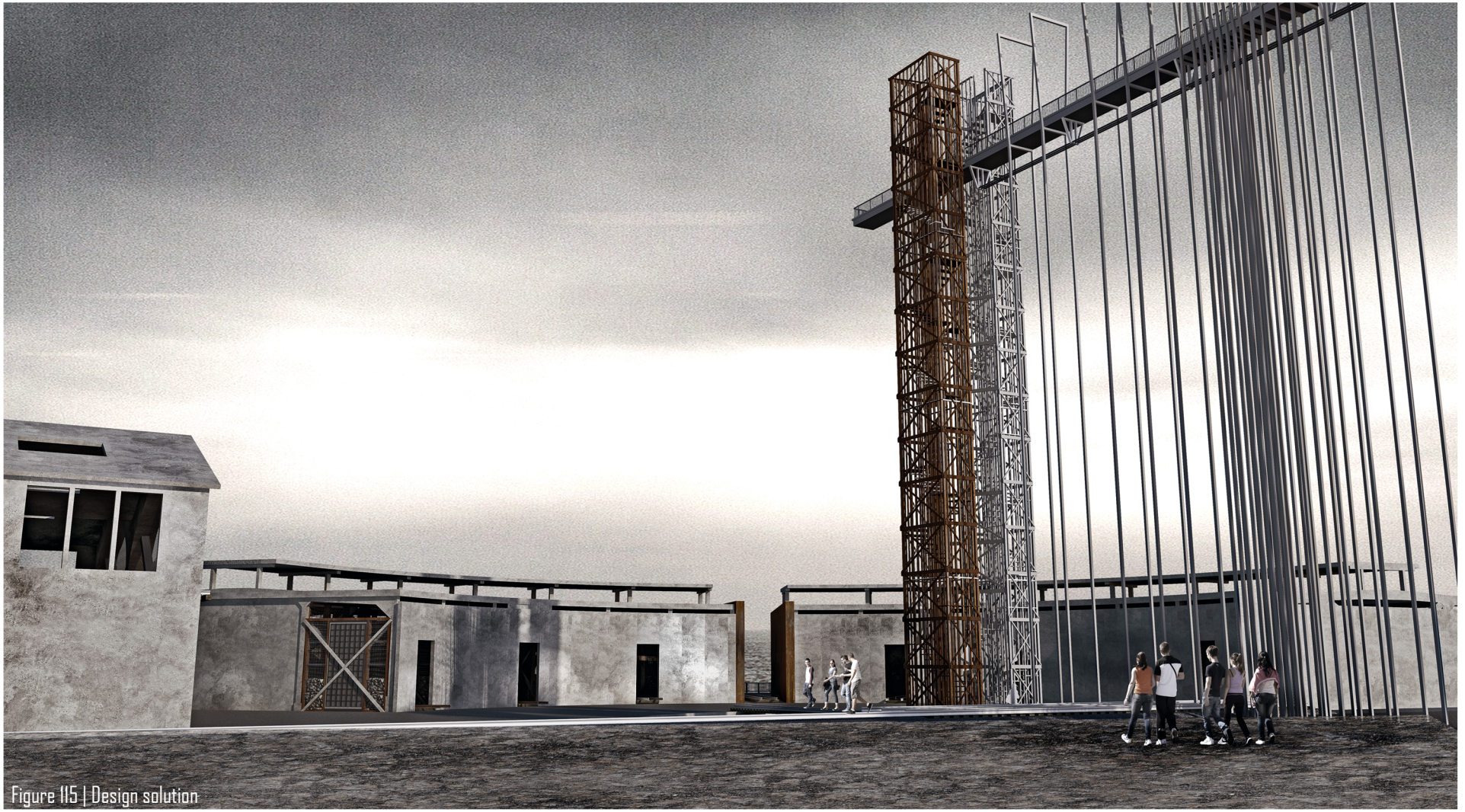


Figure 115 | Design solution

The train turntable original purpose was the storage and re-direction of trains. Thus, my intervention resurrects and re-invents its original function - storing the history and collective memories of the community.

The memorial will serve as a "threshold" between the profane and the sacred. Becoming both a landmark and a meeting point; a place where a person can engage in introspection and contemplation

In the aftermath of a disaster, people often experience a major loss of place and loss of memories. The loss of a home has a big impact in a person's life. The home is often seen as an extension of the self, containing objects that symbolize past events, relationships, and elements that define and reveal communal and personal identities. Thus, providing a place to acknowledge these losses is extremely important.

Figure 115 | Design solution (memorial museum)

The relationship of the memorial museum and the site seeks to move away from trying to domesticate the natural environment; as the common approach is to shield, or to romanticize nature into a commodity or landscape. The building instead, allows the elements of nature to move through it. Letting the physical forces of the site into the space, allowing the sea to mark its presence.

Moving through this space visitors are confronted with multiple layers of memory—some clear, some partially erased, some still being written. The gabion walls of the sanctuary will contain fragments of the site and debris from past disasters. Memory vessels are incorporated within, encouraging people to collaborate in the creation. The walls, in a symbolic way, will encapsulate the fragmented history of the site and its people to create something new.

Figure 116 | Design solution [memorial museum]

The act of letting go, sharing stories, donating artifacts and releasing possessions is part of the ritual and healing process which transcends the experience of an earthquake, as it relates to loss in a general sense.

The memorial will remain and ongoing process; a collective memory project, constantly transforming itself – becoming a symbol for seismic memory.

Figure 117 | Design solution [memorial museum]

A journey through the memorial offers an opportunity for self-reflection. Sensory experience has the possibility to trigger the most vivid memories with the possibility of healing. At their departure, the visitor takes something with them… and leave something behind.

The visitor has the possibility to discover and experience various layers of meaning in the space created. The architecture does not impose a specific meaning but it seeks to facilitate the process through perception and discovery. Thus, meaning is not prescribed or fixed, but instead, it moves and migrates.

PERFORMANCE ANALYSIS

RESPONSE TO THE SITE

The site for this project is located along the coast of Valparaiso. Stretching from the hills, where the community now resides, into the ocean. Since the city was once a main seaport, the areas and structures by the sea were devoted to the industry, pushing the community towards the hills. Most of these structures now lay abandoned.

RESPONSE TO THE TYPOLOGICAL RESEARCH

RESPONSE TO GOALS & PROJECT EMPHASIS

THESIS DISPLAY

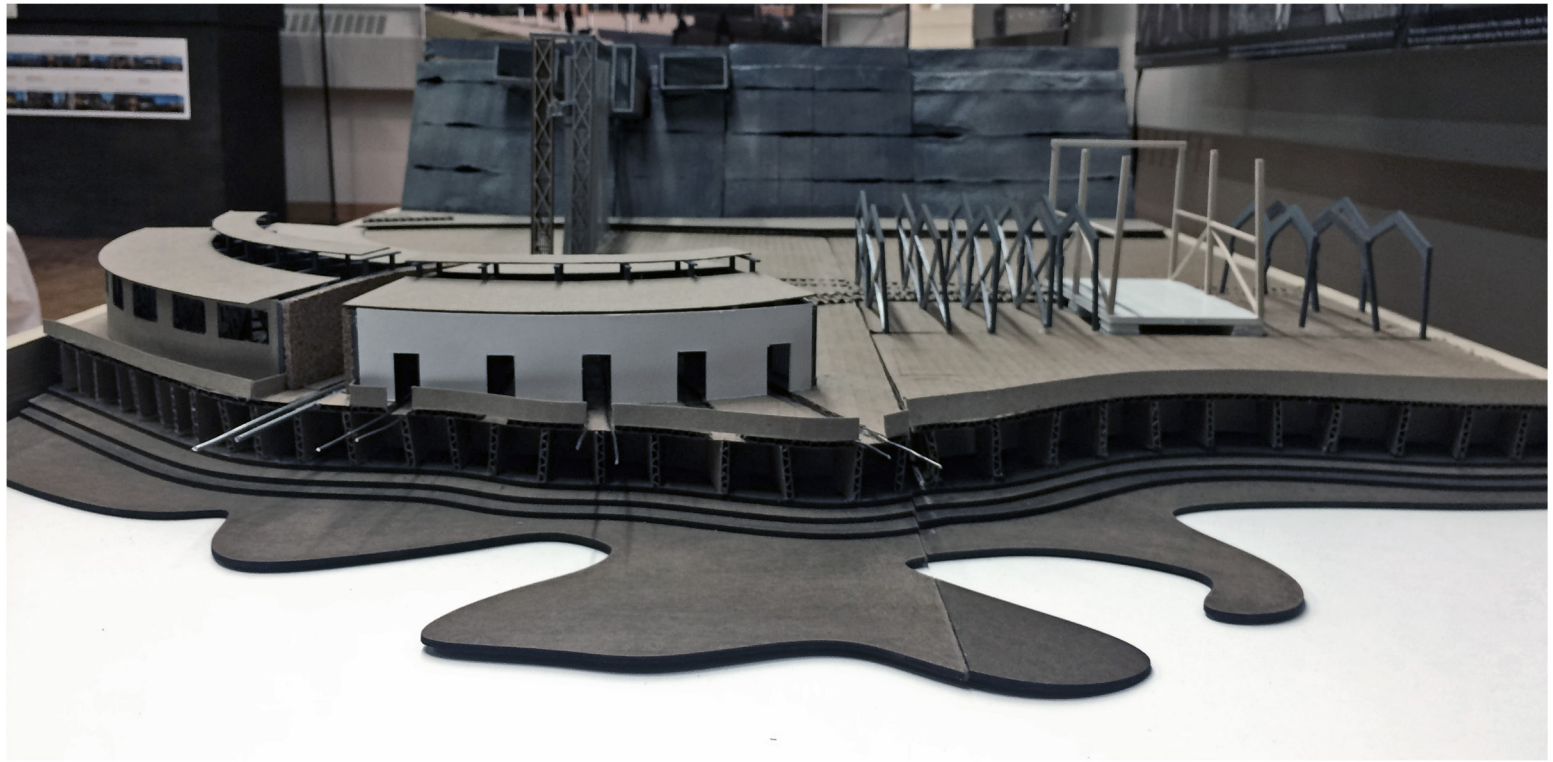


Figure 118 | Final Model

Figure 119 | Final Model

Figure 120 | Thesis Display

PROJECT INSTALLATION

Figure 121 | Final Presentation Display

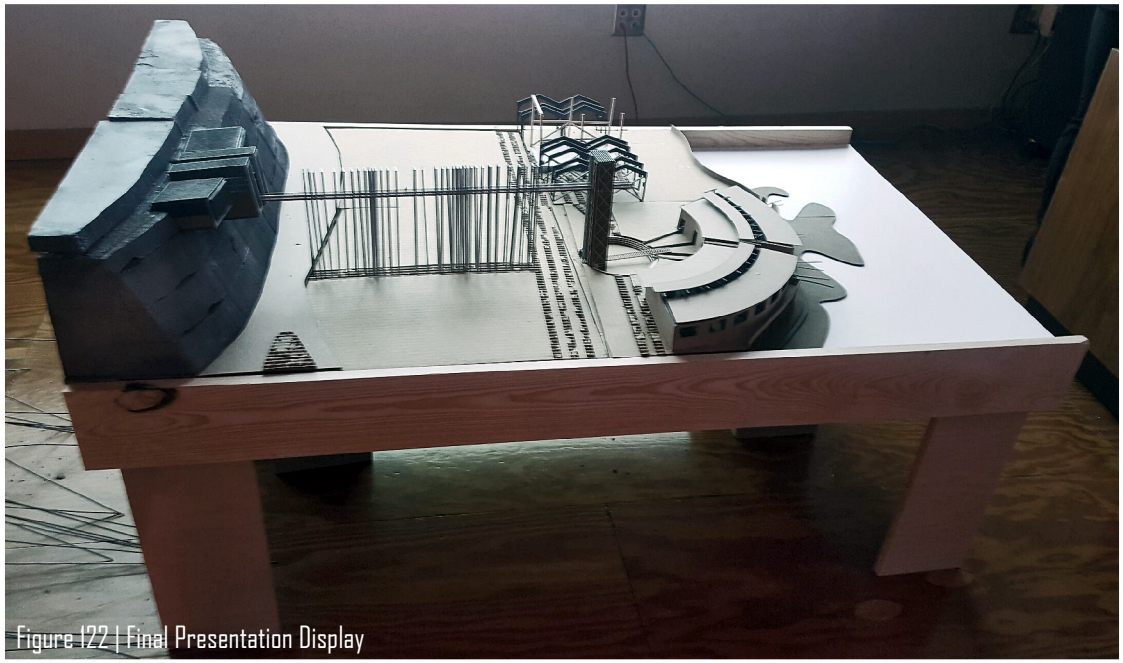


Figure 122 | Final Presentation Display

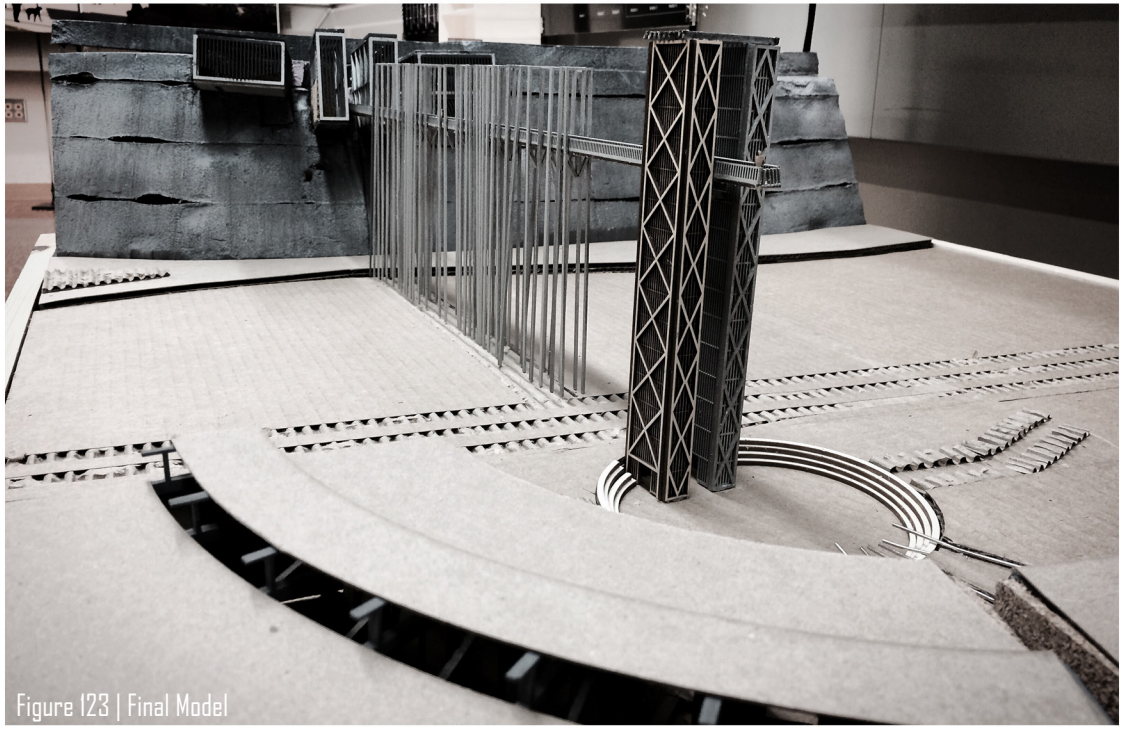


Figure 123 | Final Model

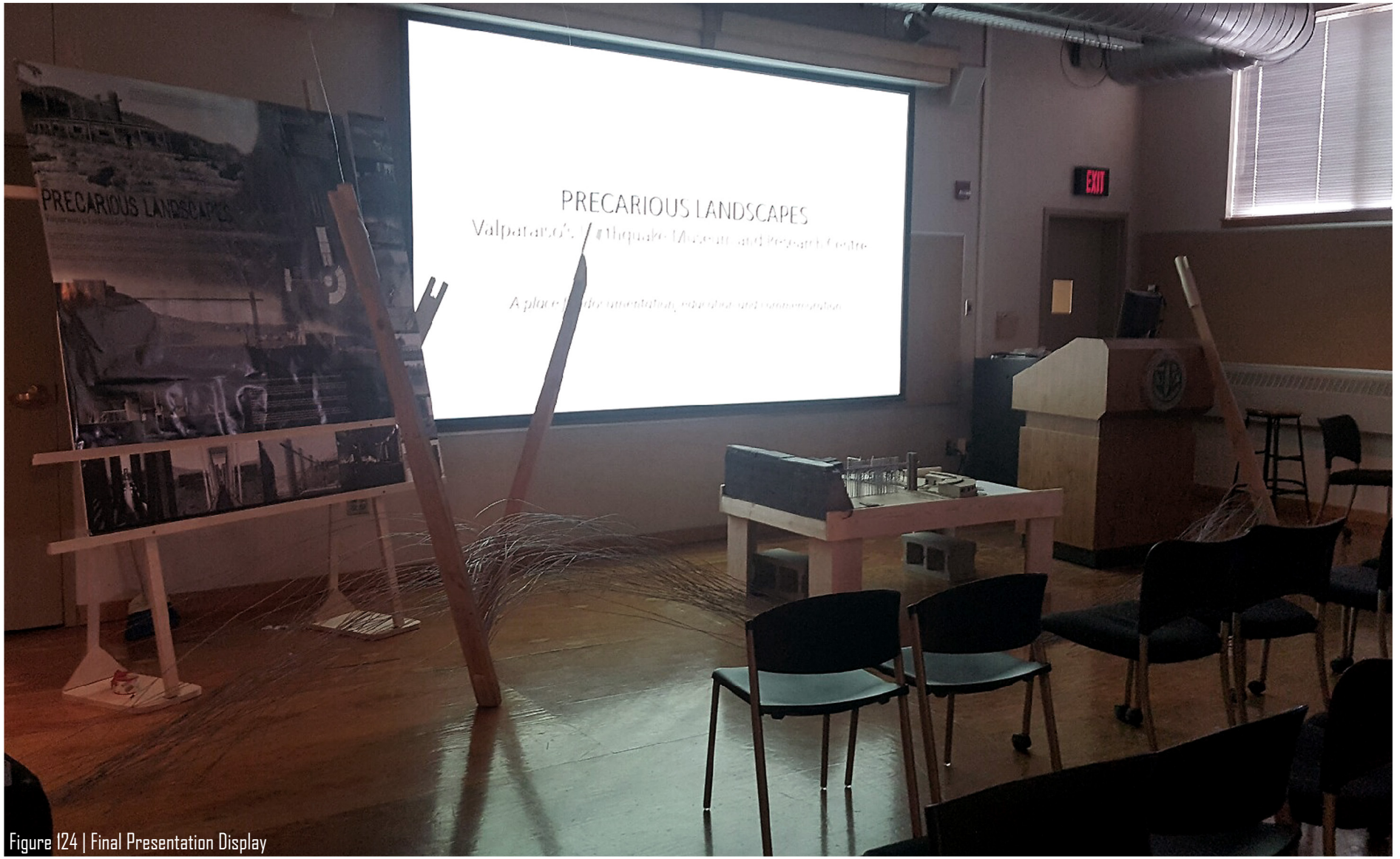


Figure 124 | Final Presentation Display

THESIS APPENDIX

Reference List

Previous Design Studio Experience

Personal Identification

REFERENCES

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Pallasmaa, Juhani. Eyes of the skin : Architecture and the Senses. New York: John Wiley, 2005.

Bermudez Julio. Transcending Architecture. Catholic University of America Press, 2015.

PREVIOUS DESIGN STUDIO EXPERIENCE

FALL 2014

Professor: David Crutchfield
Project: High-rise | San Francisco, CA

SPRING 2015

Professor: Don Faulkner
Projects: Marvin Windows Competition | Fargo, ND
Urban Design Project | Minneapolis, MN

FALL 2015

Professor: Stephen Wischer
Project: Thesis Research & Artefact

SPRING 2017

Professor: Stephen Wischer
Project: Thesis | Valparaiso, Chile

PERSONAL IDENTIFICATION

Name: Natalia Andrea Jara
Hometown: Santiago, Chile
Phone: 701/318-8954
Email: nataliaajara@gmail.com

APPENDIX

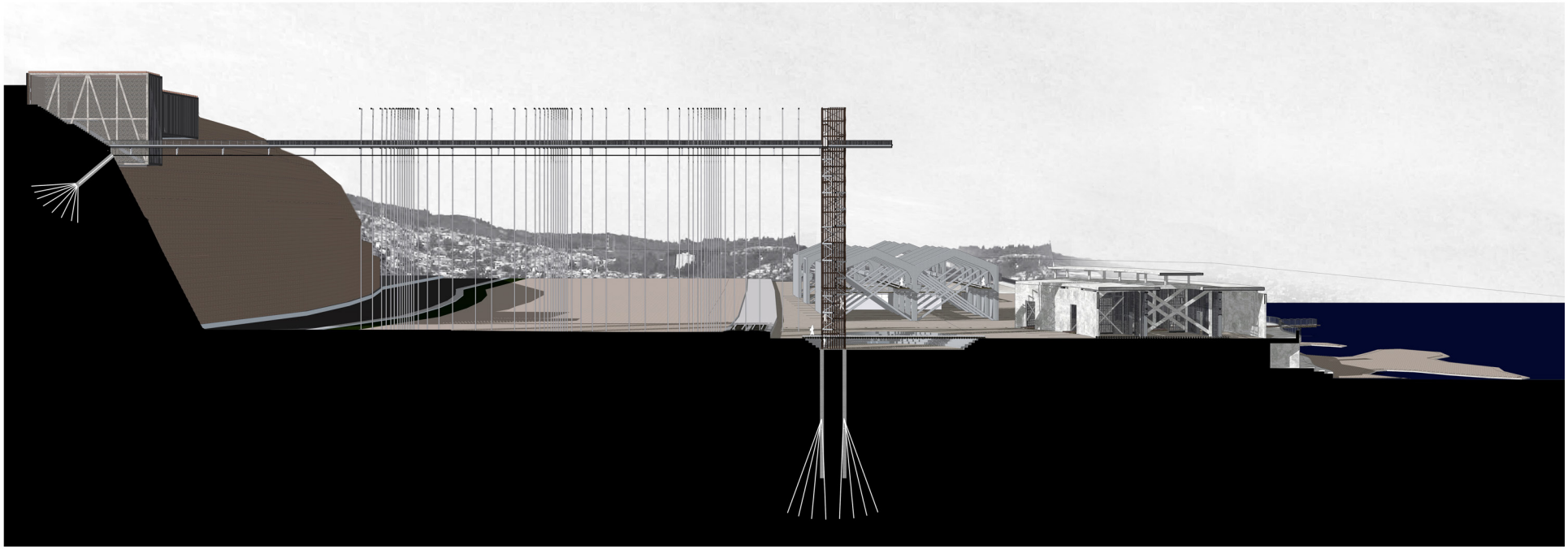
SPC Document

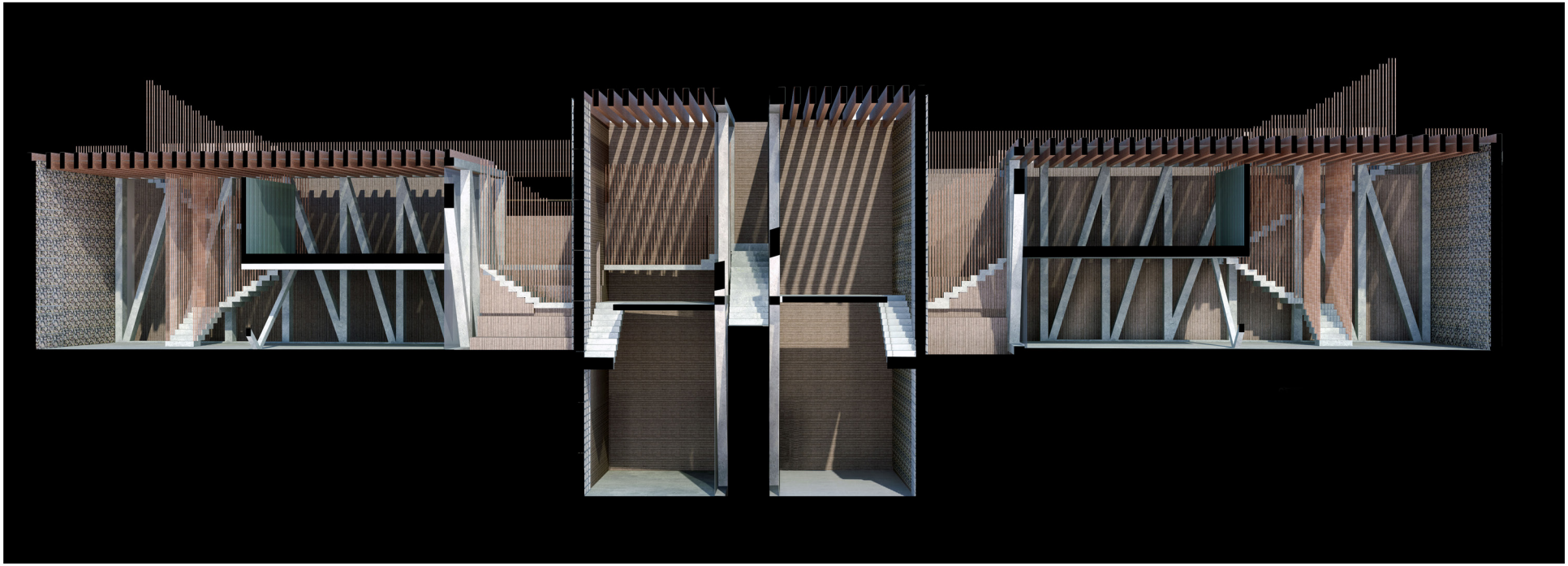
NAAB Criteria

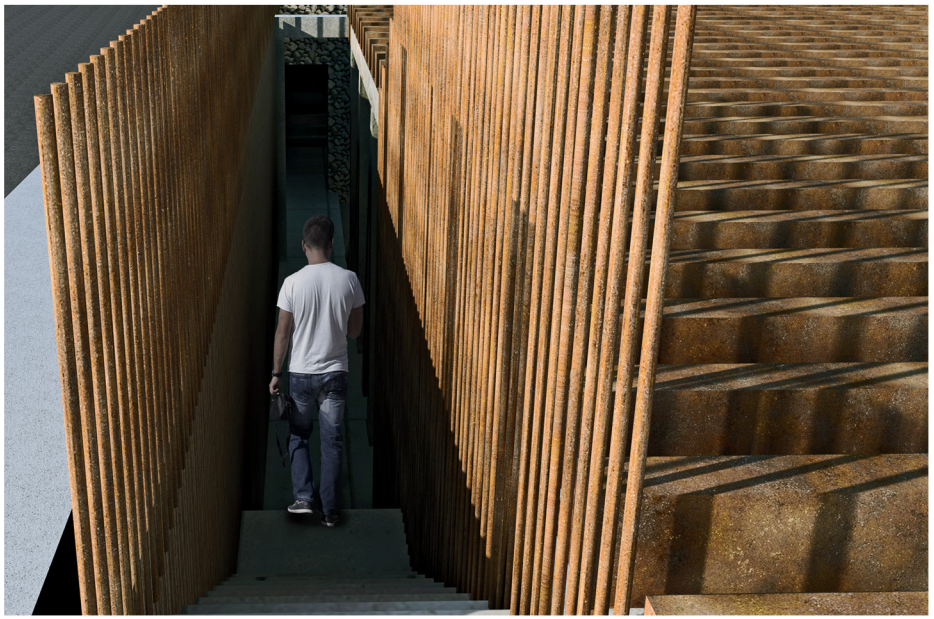
A.1 Professional Communication Skills- Ability

- Write and speak effectively.
- Use representational media appropriate for both within the professional and with the general public.

The artefact, which was created as part of the design process of my thesis, was exhibited at the Memorial Union Gallery. The exhibition was open to the public. Subsequently, an artist talk and interview was conducted to further explain the methodology and conceptual ideas that inspired the project.







THE ARCHITECTURE

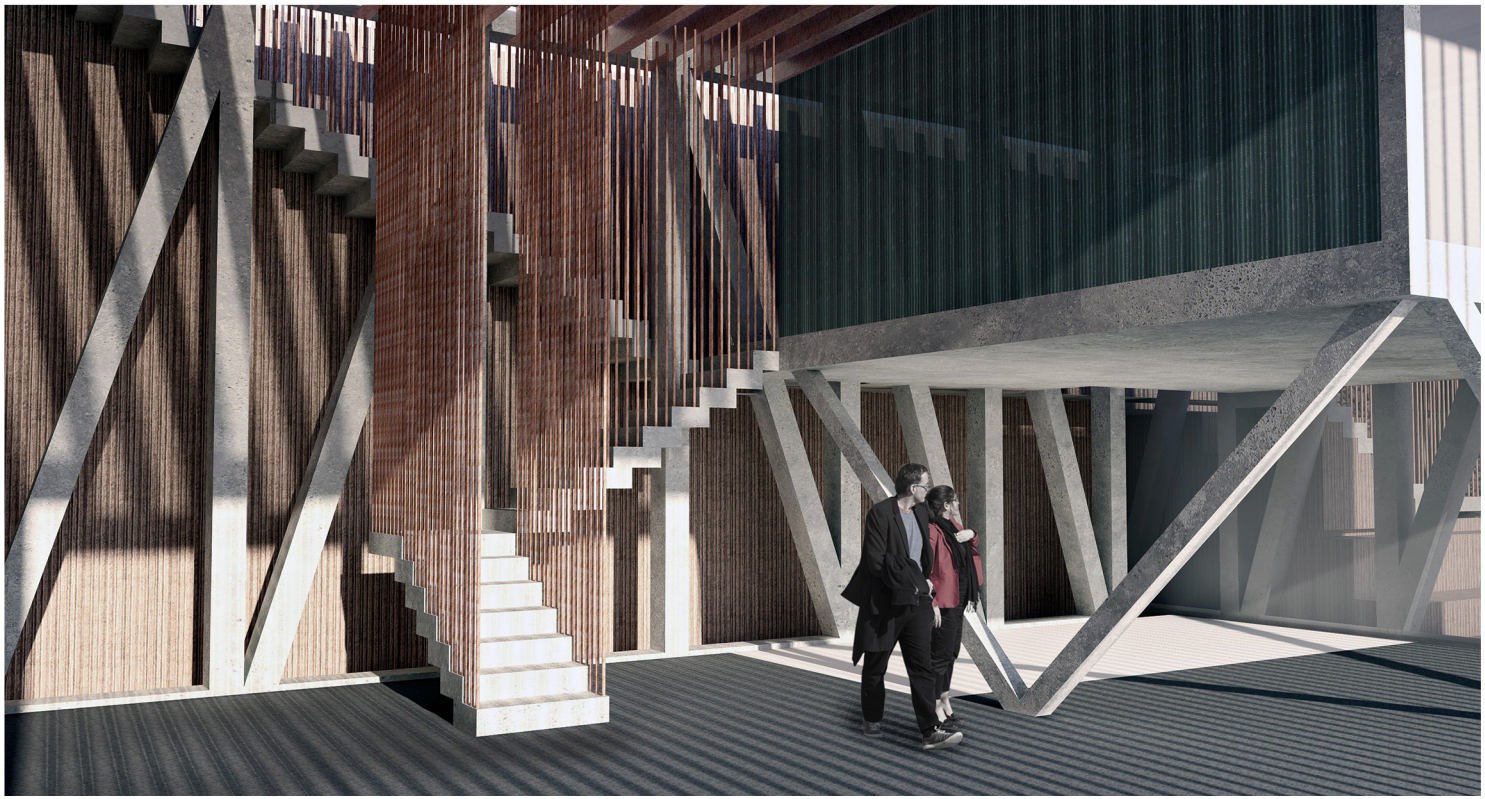
The Earthquake Research Center, is a place dedicated to study earth's tectonic movements. Exemplary seismic resistance architecture is displayed throughout the facility, while creating a strong connection to the community as visitors are encouraged to witness the current experiments through different viewing paths along the site. As well as being a place where the community can learn more about how to react when a disaster happens.

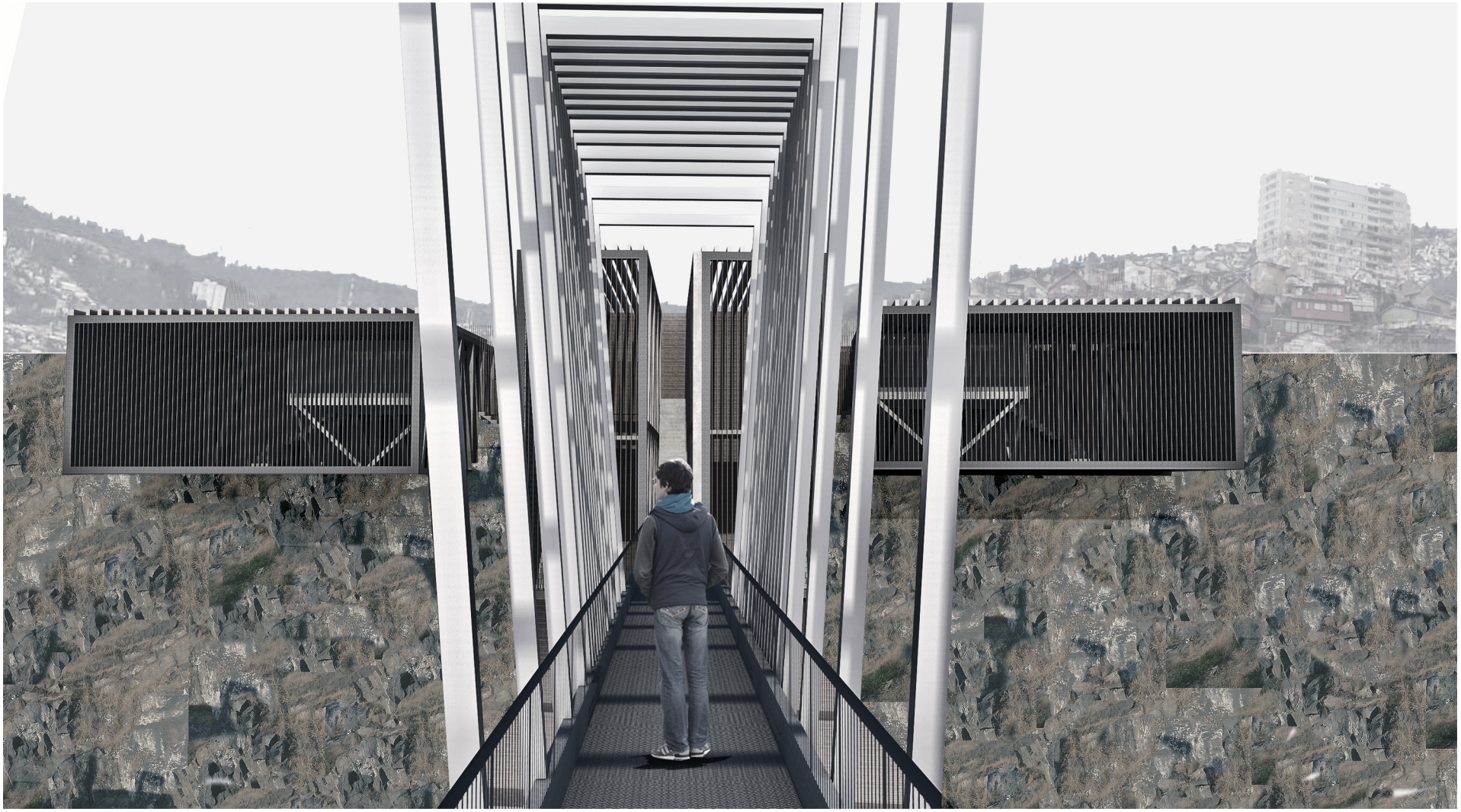
Steel reinforced concrete is used for the bones of the structure, as it satisfies the strength and seismic requirements while steel and copper add contrast with their ability to acquire different patinas through time.

A visitor's journey starts on top of the hill entering the site through a crack, a path created between the earth and the structure.

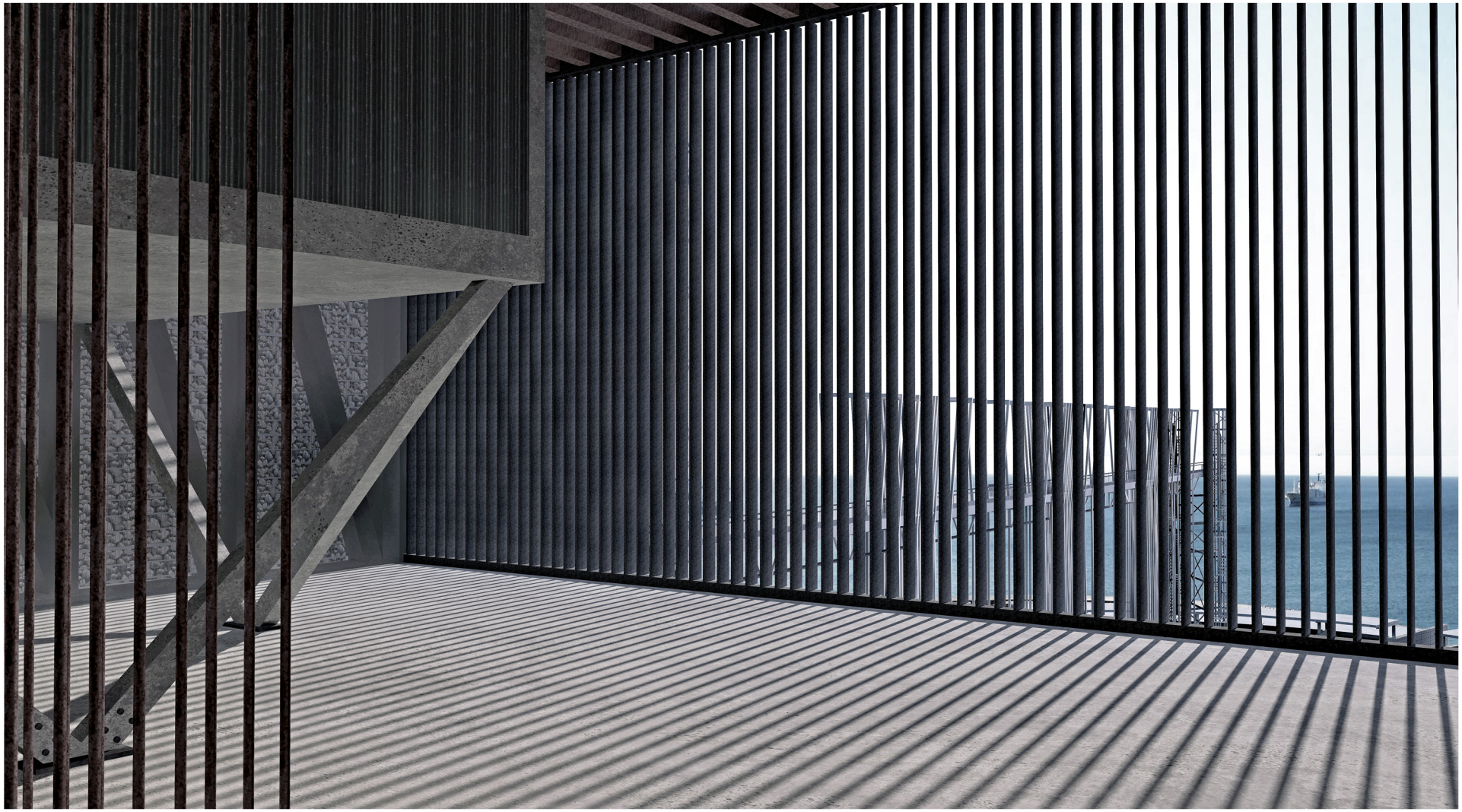
Copper rods appear to be emerging from the earth, indicating the public entrance.

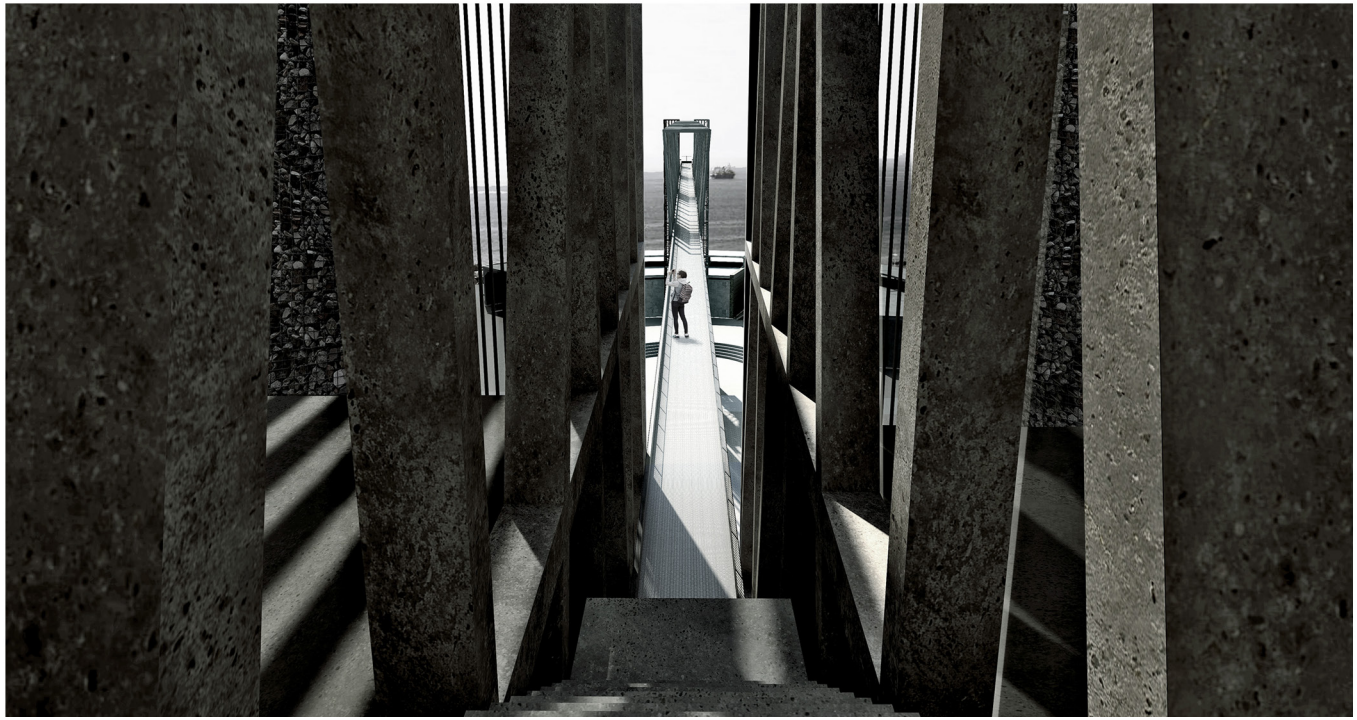
Copper has a strong cultural significance, it is extracted within the region and can acquire a distinct patina with time.





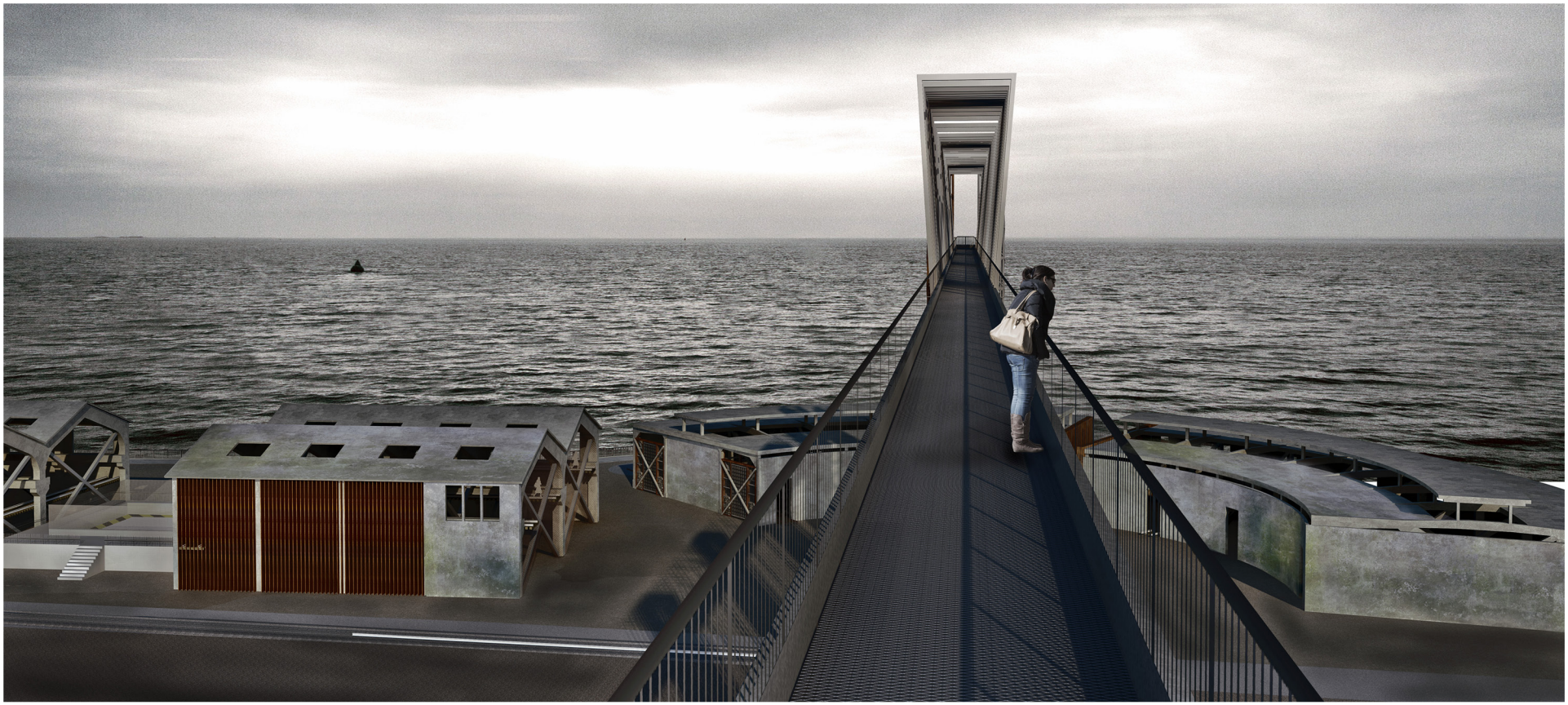
The Earthquake Research Facility's structures are connected through pathways between them.
During an earthquake, all the structures will release and detach from one another, engaging and dancing with the earth.
The different spaces are designed to allow program flexibility, allowing them to be used as temporary emergency shelter when needed.

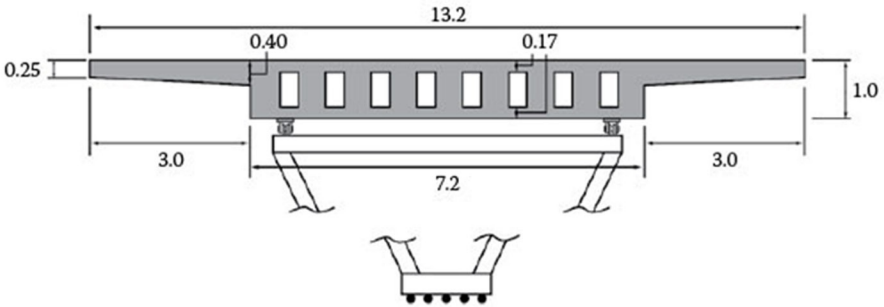




The bridge starts on a path in-between two structures which are part of the Earthquake Research Facility. It embodies the tension between the two imposing elements of the site gesturing a fault line.

The bridge will incorporate seismic radars that monitor seismic activity in the area; and behaving like a seismograph, becomes activated with movement. Producing subtle vibrations that are felt by the visitors on the bridge as well as people walking underneath.

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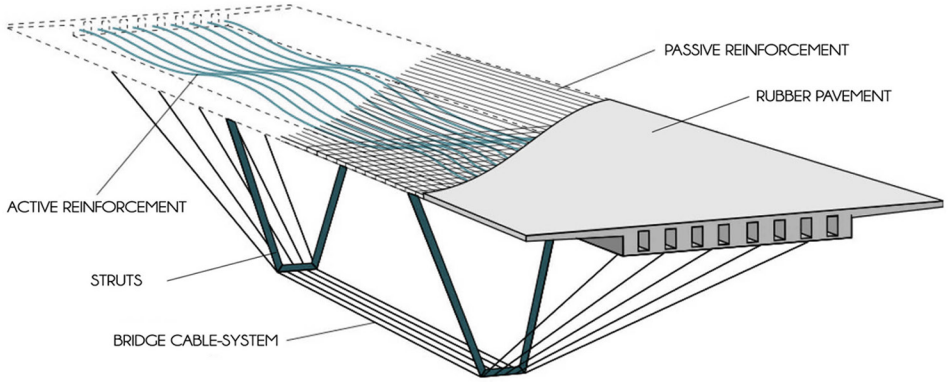
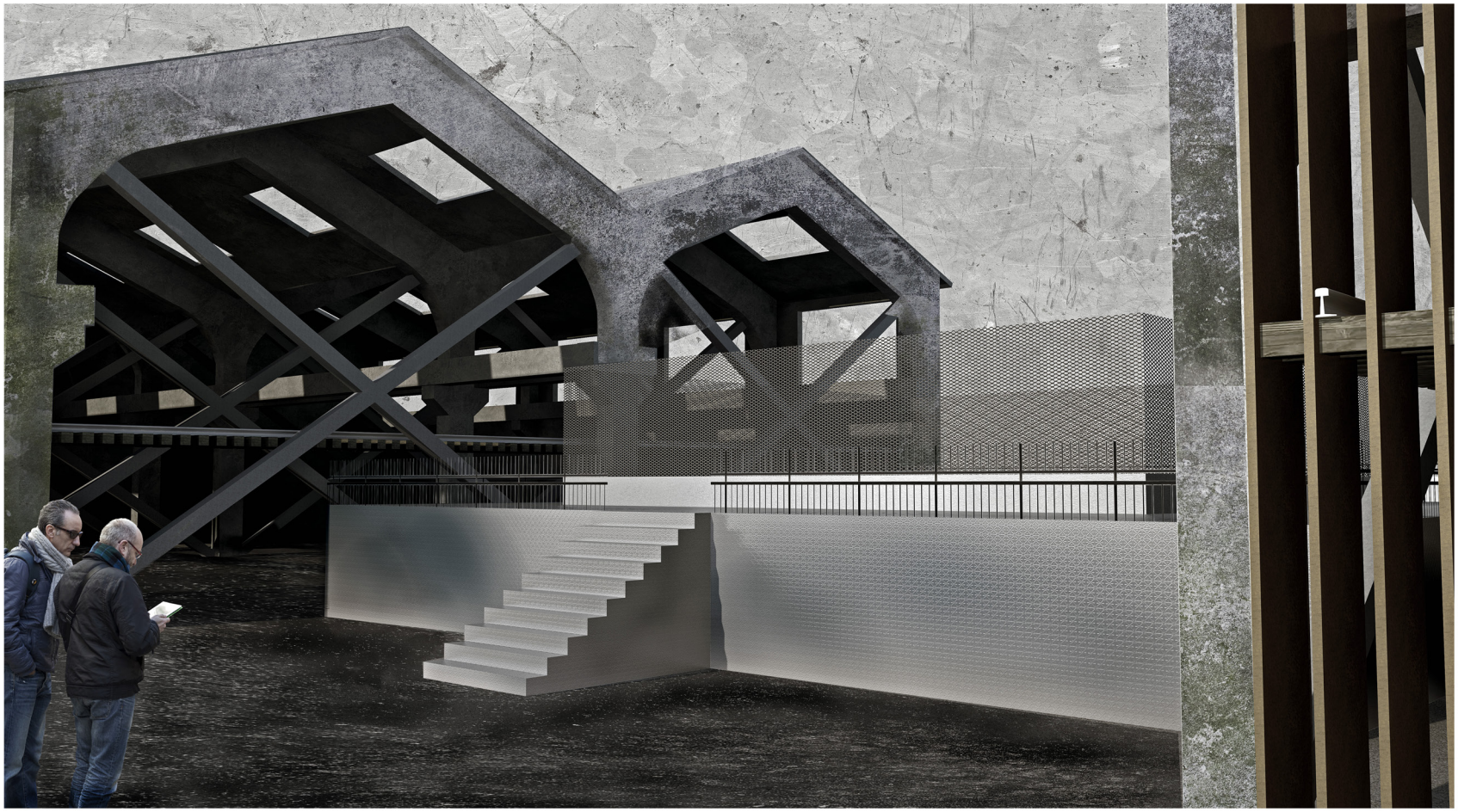

PASSIVE REINFORCEMENT
RUBBER PAVEMENT
ACTIVE REINFORCEMENT
STRUTS
BRIDGE CABLE-SYSTEM

The bridge implements a tension system – an underdeck cable-staying system. Securely anchored on the hill and steel towers.

The visitor journeys through a series of thresholds, leaving visible and invisible traces like the movement of tectonic plates.

The bridge would become a landmark for the city.



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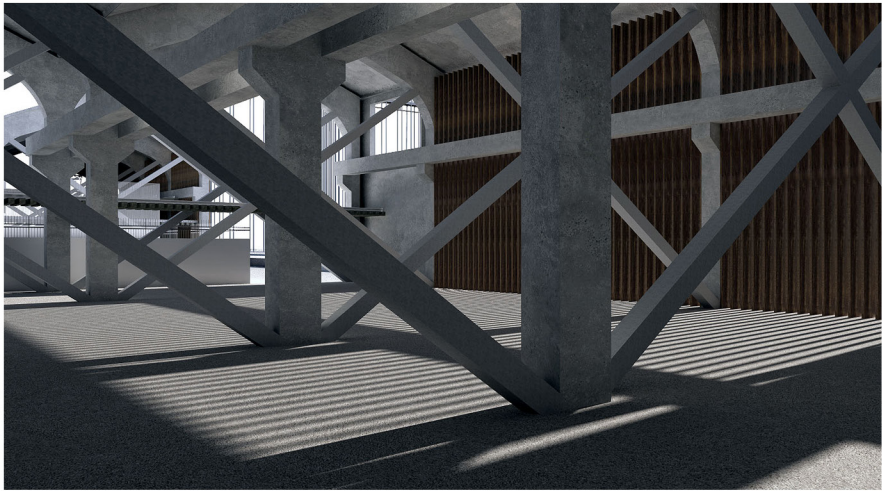

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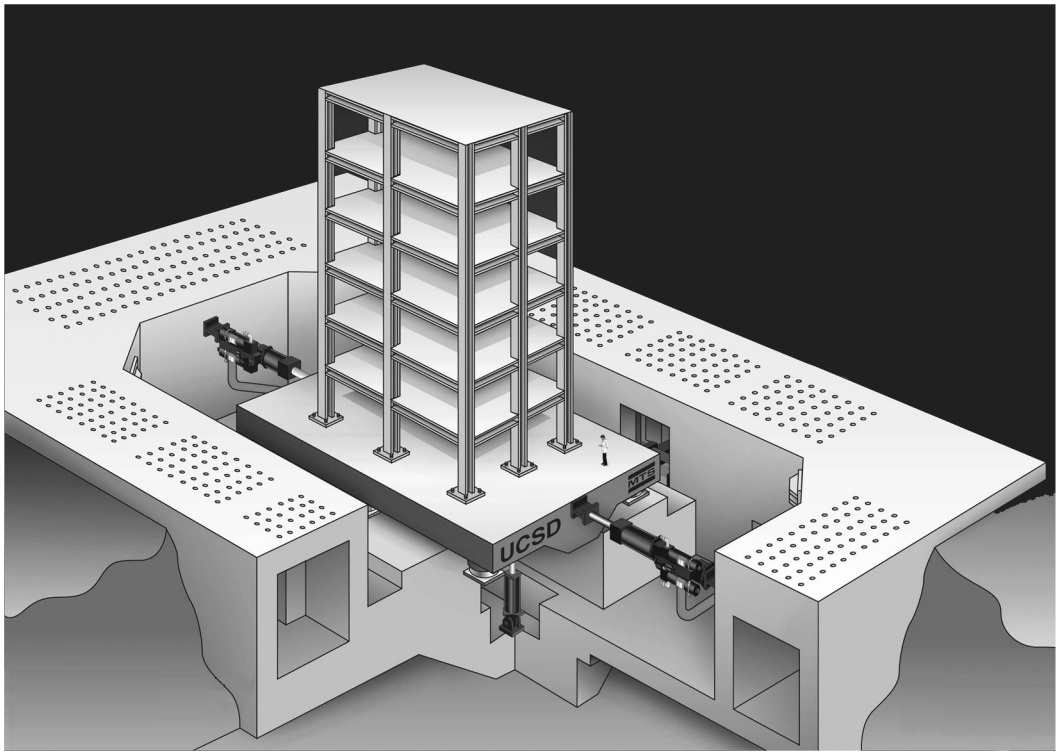
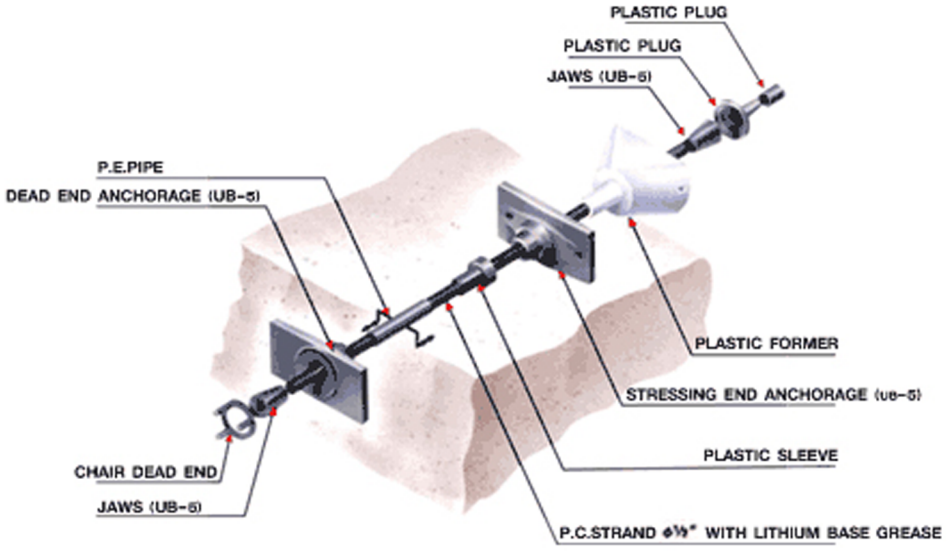
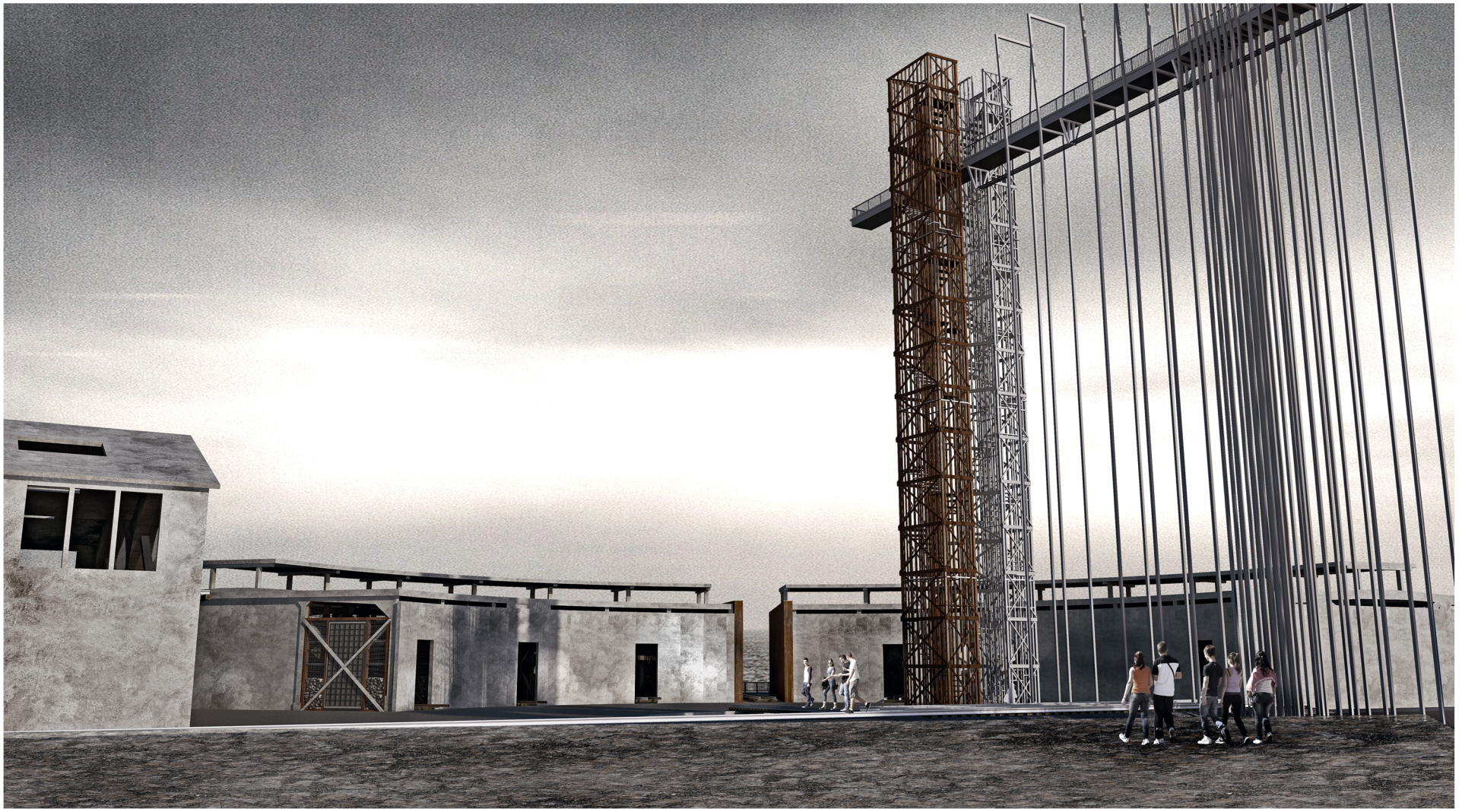

UCSD


PLASTIC PLUG
PLASTIC PLUG
JAWS (UB-5)
P.E.PIPE
DEAD END ANCHORAGE (UB-5)
PLASTIC FORMER
STRESSING END ANCHORAGE (ub-5)
PLASTIC SLEEVE
CHAIR DEAD END
JAWS (UB-5)
P.C.STRAND ϕ½" WITH LITHIUM BASE GREASE



The train turntable original purpose was the storage and re-direction of trains. Thus, my intervention resurrects and re-invents its original function - storing the history and collective memories of the community.

The memorial will serve as a "threshold" between the profane and the sacred. Becoming both a landmark and a meeting point; a place where a person can engage in introspection and contemplation

In the aftermath of a disaster, people often experience a major loss of place and loss of memories. The loss of a home has a big impact in a person's life. The home is often seen as an extension of the self, containing objects that symbolize past events, relationships, and elements that define and reveal communal and personal identities. Thus, providing a place to acknowledge these losses is extremely important.

The relationship of the memorial museum and the site seeks to move away from trying to domesticate the natural environment; as the common approach is to shield, or to romanticize nature into a commodity or landscape. The building instead, allows the elements of nature to move through it. Letting the physical forces of the site into the space, allowing the sea to mark its presence.

Moving through this space visitors are confronted with multiple layers of memory—some clear, some partially erased, some still being written. The gabion walls of the sanctuary will contain fragments of the site and debris from past disasters. Memory vessels are incorporated within, encouraging people to collaborate in the creation. The walls, in a symbolic way, will encapsulate the fragmented history of the site and its people to create something new.

The act of letting go, sharing stories, donating artifacts and releasing possessions is part of the ritual and healing process which transcends the experience of an earthquake, as it relates to loss in a general sense.

The memorial will remain and ongoing process; a collective memory project, constantly transforming itself – becoming a symbol for seismic memory.

A journey through the memorial offers an opportunity for self-reflection. Sensory experience has the possibility to trigger the most vivid memories with the possibility of healing. At their departure, the visitor takes something with them… and leave something behind.

The visitor has the possibility to discover and experience various layers of meaning in the space created. The architecture does not impose a specific meaning but it seeks to facilitate the process through perception and discovery. Thus, meaning is not prescribed or fixed, but instead, it moves and migrates.

A.6 Use of Precedents – Ability

- Examine and comprehend the fundamental principles present in relevant precedents.
- Make informed choices about the incorporation of such principles into architecture and urban design projects.

PROJECT TYPOLOGY

Valparaiso after going through so many tragedies can benefit of a place that can identify its residents, and at the same time needs a place where the community can rely on after a disaster.

The program includes places where people can go before, during and after an earthquake or other natural disasters happen.

MEMORIAL MUSEUM –LANDMARK BRIDGE– EARTHQUAKE RESEARCH CENTER

Before a Disaster – An Earthquake Research Center and Museum, a place to study and learn about earth's tectonic movements and earthquake prevention; where the community can learn more about how to react when a disaster happens. Exemplary seismic resistance architecture will be displayed throughout the facility, creating a strong connection to the community as visitors are encouraged to witness the current experiments through different viewing paths along the site.

During a Disaster - The research center facility will incorporate seismic radars that allow to monitor seismic activity in the area. During a disaster, the facility will also be able to serve as temporary shelter in case people need a safe place during a catastrophe.

After a Disaster - Providing a sanctuary for the community to serve as a "threshold", A bridge between the profane and the sacred. Becoming both a landmark and a meeting point; a place where a person can engage in introspection and contemplation.

In the aftermath of a disaster, people often experience a major loss of place and loss of memories.
The loss of a home has a big impact in a person's life. The home is often seen as an extension of the self, since it contains objects that symbolize past events, relationships, and elements that define and reveal communal and personal identities. Thus, providing a place to acknowledge these losses is extremely important.

TYPOLOGY RESEARCH

When considering precedents and case studies that would help develop my project, it was important to select buildings that had a strong relationship to its context, especially nature. Another important aspect in my project is a building to act as a sanctuary, and a sanctuary doesn't necessarily mean a religious institution, a sanctuary as a mean of relief in our chaotic lives.

The first case study selected is Mosche Safdie 'Yad Vashem', the Holocaust History Museum, located in Jerusalem – Israel.
This building has a very strong relationship to its context as it is immerse in the hill, dramatic cantilevers that create a strong connection to nature, and the city, as well with a dramatic view of modern-day Jerusalem.

My second case study is Louis Khan, 'The Salk Institute', located in La Jolla, California.
The monumental presence of this building hasn't diminished since it was built in 1959, which is what I intend to do with my architecture, create a symbol or landmark for the city of Valparaiso. What is most interesting to me about this building is that, even though this isn't a religious building, it is a building that encourages contemplation.
This building has been described as a gracious place for reflection and discovery.

My third case study is the 'Museum of Memory and Human Rights', located in Santiago – Chile,
and was designed by 'Estudio America' architects.
This building is simple and powerful at the same time, and it is full of metaphors in every corner creating rich and deep experiences for its visitors. This museum deals with a very sensitive topic in Chile, which is the dictatorship that has divided the country since then.
This is a building that stimulates thinking and introspection by leading its visitors on a journey, and the use of materiality to create different abstract metaphors makes this building very interesting.

B.1 Pre-Design – Ability

Prepare a comprehensive program for an architectural project that includes:

- An assessment of client and use needs.

Clients

The clients are a mix of private and public entities. The project is divided in a city owned building (government funded), as well as private investors.

Monument Visitors

Either local, regional or international visitors would find interests in visiting this project. In order to recognize the city's identity, this project aims to create a monument for the community. This building will be city/community owned for ends to identify the vast history of Valparaiso, and show visitors and residents what the forces of nature have done to shape it – the creation and destruction of nature.

Educational Institutions

As a matter to inform people about the natural disasters such as their causes, consequences, prevention and response.

Geology & Nature Enthusiasts

Interactive learning experience about natural disasters, especially earthquakes. Learning about the aftermath, the destructiveness of earthquakes and the recovery process.

- An inventory of spaces and their requirements.

MAJOR PROJECT ELEMENTS

Sanctuary
Monument/Landmark
Museum
Contemplation
Exhibition Spaces
Circulation
Gathering Areas
Lecture Halls
Storage
Laboratories
Offices

- An analysis of site conditions (including existing buildings).

EXISTING SITE CONDITIONS

Along with the intense development of trade in Valparaiso during the twentieth century, the city's railway development intensified. The intense traffic due to port activities, demanded the expansion and creation of spaces dedicated to the transportation industry at the heart of the city. Thus, the construction of the turntable and warehouse began in 1930, in the site that previously gave shelter to the Fort Andes, built in 1886.

At the end of the first half of the twentieth century, due to the low production generated by the construction of the Panama Canal – which displaced the port of Valparaíso as the main port of the Pacific - much of the port's railway infrastructure was forced to close. The turntable and warehouse, were still partially used to maintaining the night train services, but activities completely stopped in 1996. Despite its appointment as a Historical Monument in 1986, the structures have been abandoned, suffering the deterioration that this implies.

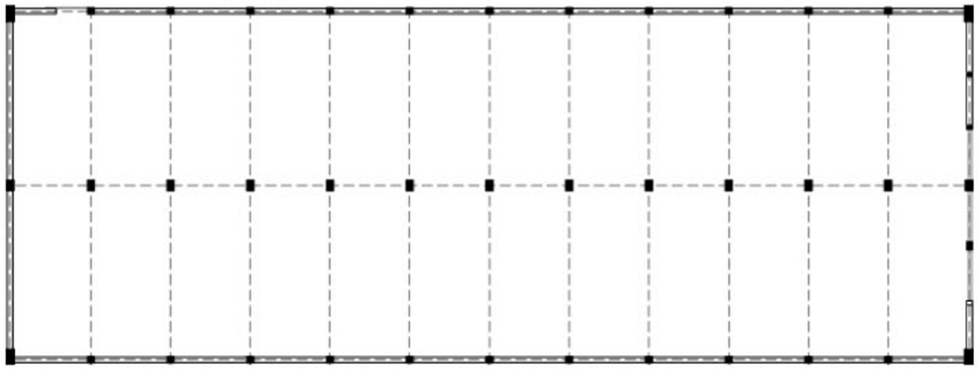
Symbol of development and modernity in the early twentieth century, this building testifies to the productive and industrial processes of the 1900 and configuring a significant architectural and urban space for its shape and dimension, also bearing nostalgia of an entire national historical period.
My proposal aims for the recovery of these abandoned structures and to give them a new life, allowing its conservation over time.

The abandoned site was once a symbol of prosperity, such as port growth and open access to the city.
One of the main urban planning struggles for the city of Valparaíso today is the conquest of its coastal front. Thus, by re-introducing these abandoned structures to the community as a new symbol of prosperity, it would aid to consolidate its lacking sense of identity due to the extensive traumatic history.

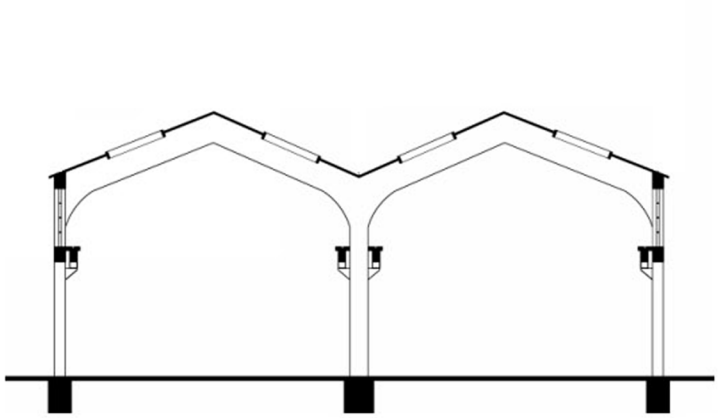
Valparaiso's landscape is very alive. The unfortunate reality is that city is in constant transformation due to the never-ending natural disasters. Thus, these abandoned historical structures (train turntable and warehouse) can speak about living with this notion of permanence/impermanence, given its extreme and exposed location. It can reveal and embrace the way the city transforms and the fundamental relationship between humans and nature, and space and time.

I aim to develop a project that synthesizes Valparaiso's history and connects the city's past, present and uncertain future.

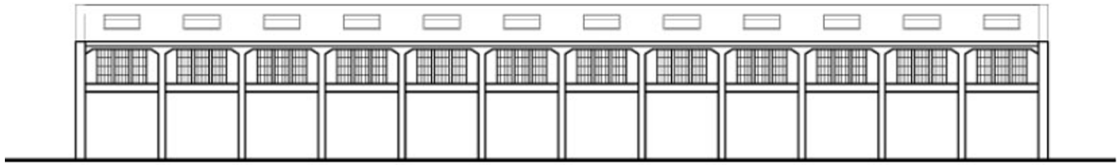
EXISTING WAREHOUSE/MAINTENANCE FACILITY FOR TRAINS



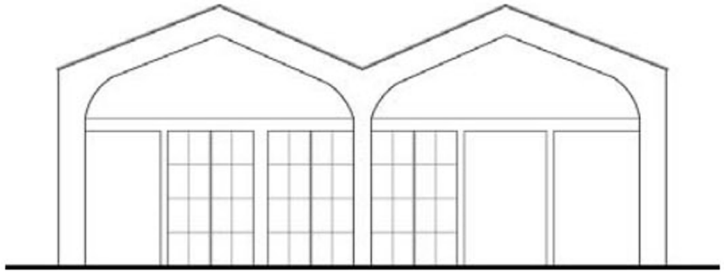
Floor Plan



Building Section

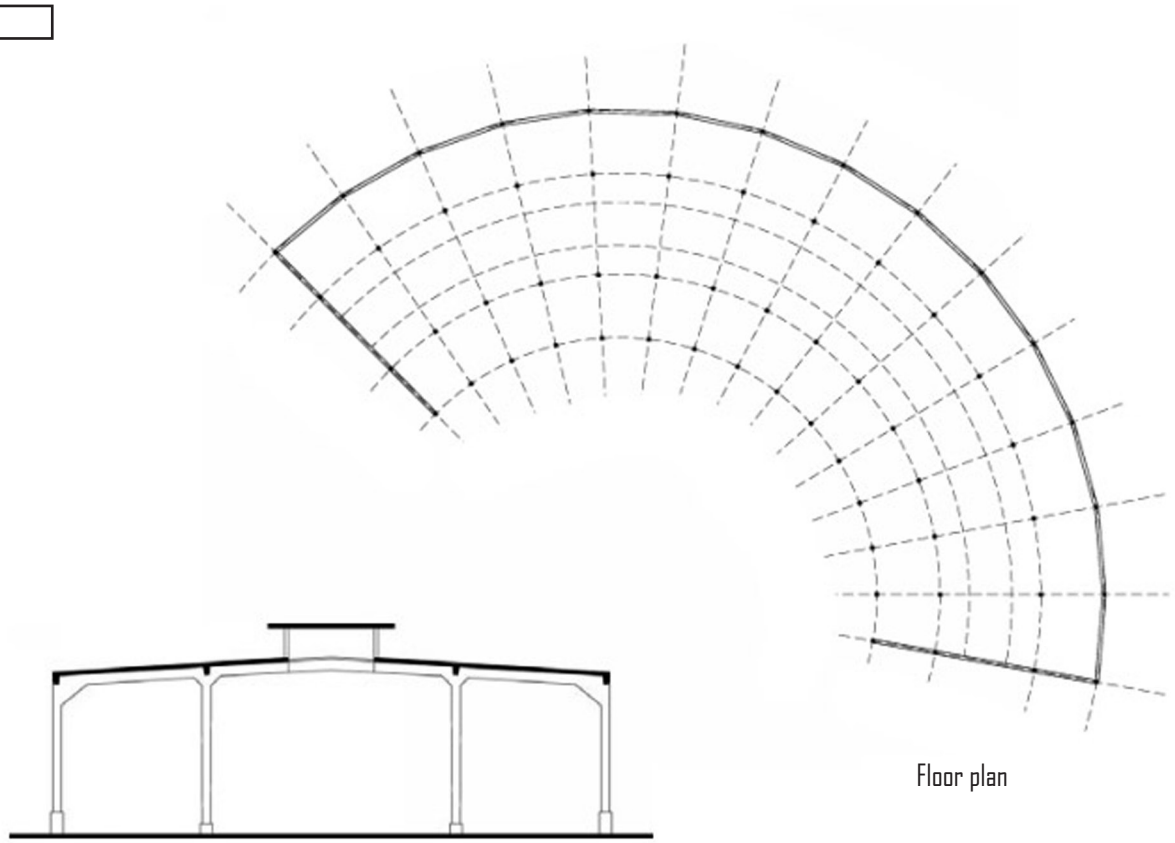


Side Elevation



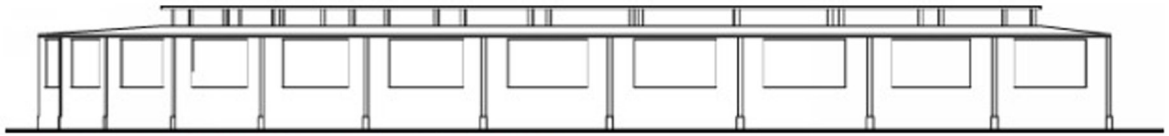
Building West Elevation\ Facing turntable

EXISTING TRAIN TURNTABLE

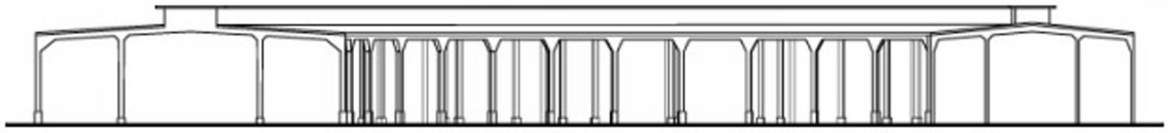


Floor plan

Building Section



Building Elevation | Facing ocean

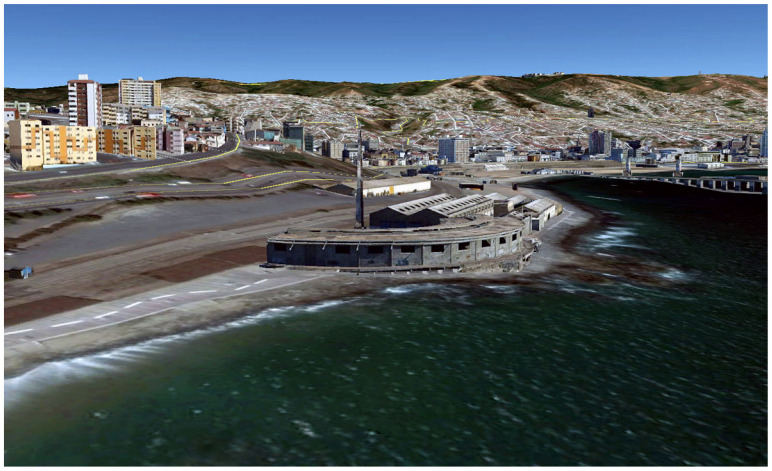


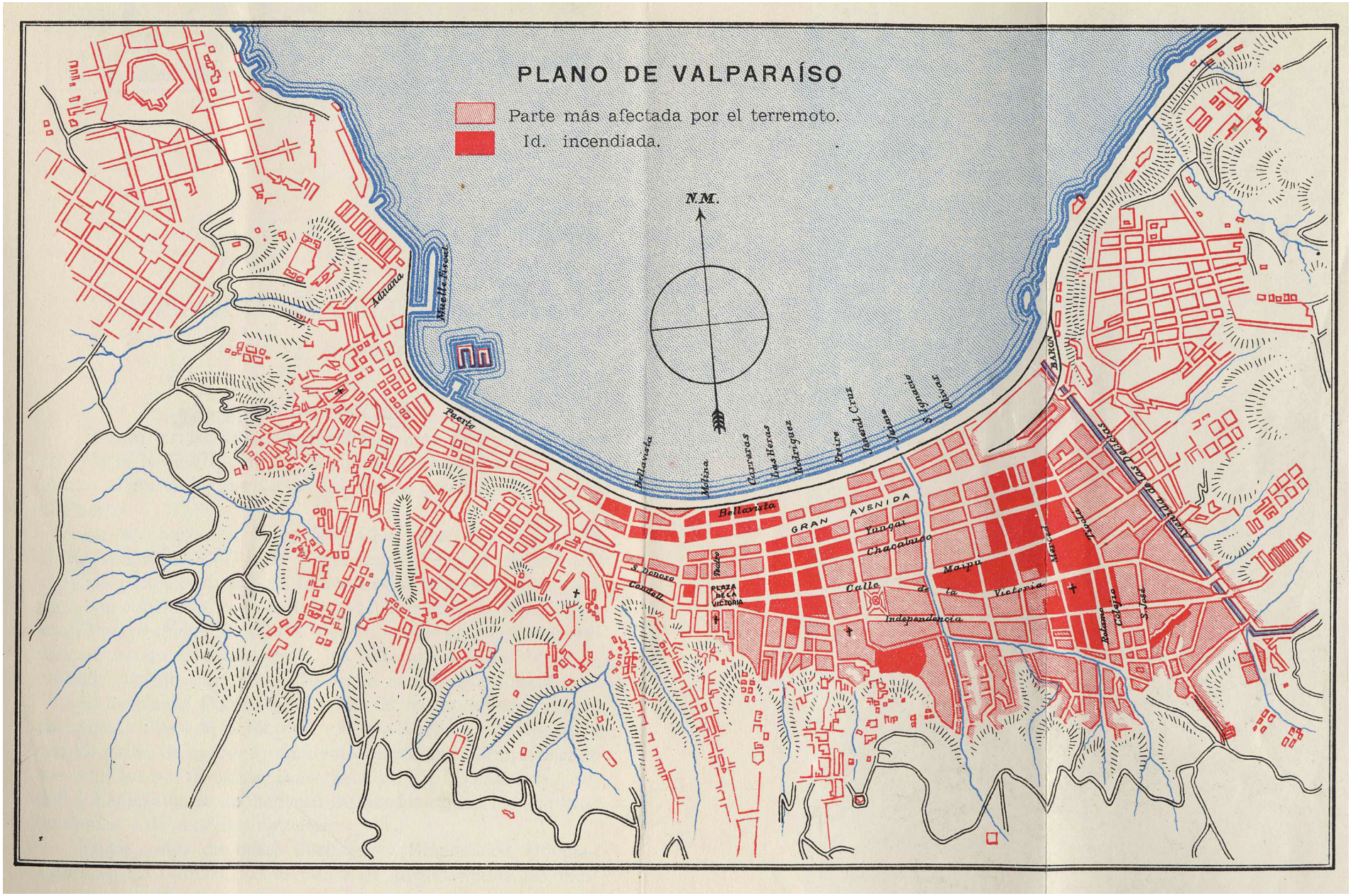
Building South Elevation

- A definition of site selection and design assessment criteria.

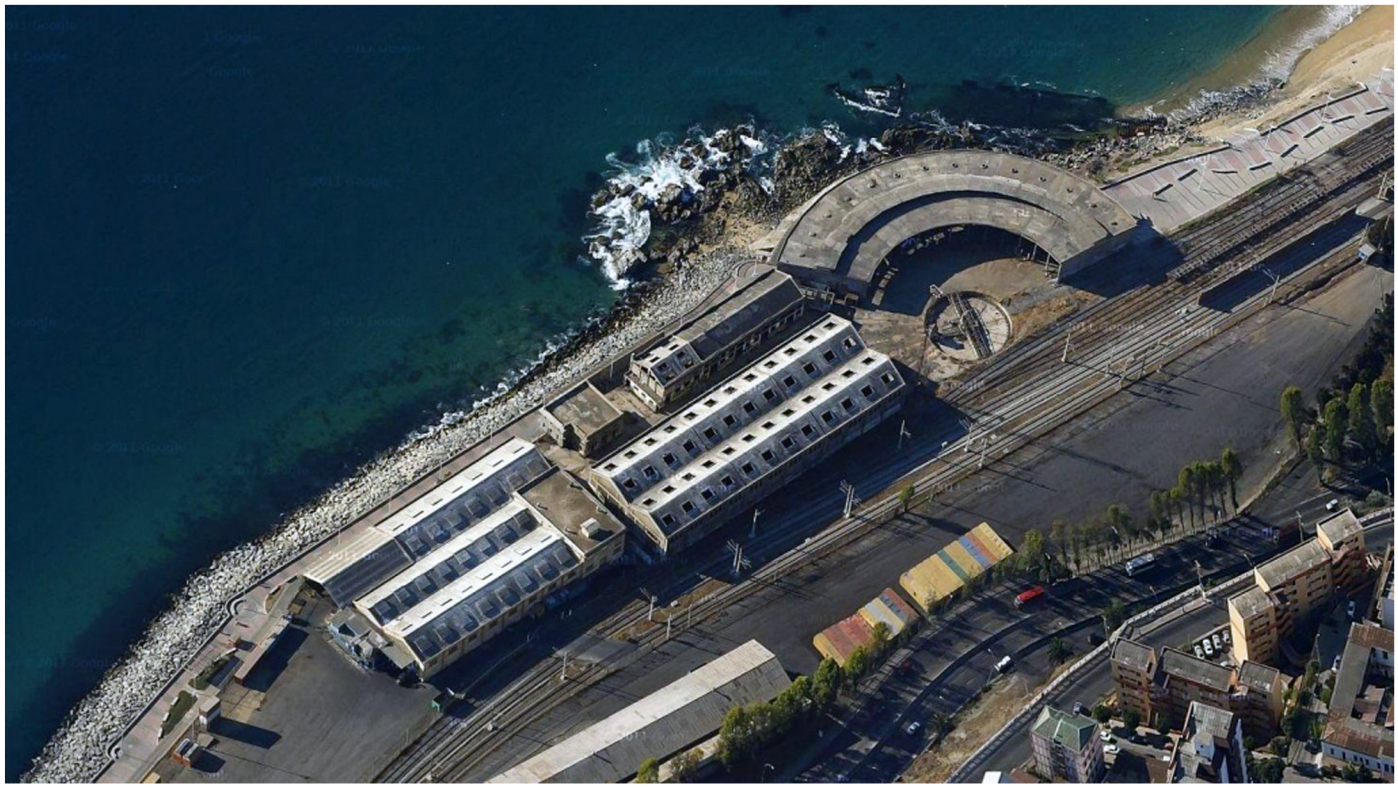
SITE SELECTION

The site for this project is located along the coast of Valparaiso. Stretching from the hills, where the community now resides, into the ocean. Since the city was once a main seaport, the areas and structures by the sea were devoted to the industry, pushing the community towards the hills. Most of these structures now lay abandoned.




PLANO DE VALPARAÍSO
Parte más afectada por el terremoto.
Id. incendiada.
N.M.
Aduana
Muelle Fiscal
Puerto
Bellavista
Molina
Carreras
Las Heras
Rodriguez
Freire
General Cruz
Jaime
S. Ignacio
Olivar
BARON
Bellavista
GRAN AVENIDA
Yungai
Chacabuco
Maipu
Calle de la Victoria
Independencia
Mercado
Tijuela
Avenida de las Delicias
Rolando
Colegio
S. José
S. Donoso
Condell
Teatro
PLAZA DE LA VICTORIA

My architectural intervention seeks to embrace the precarious landscape of Valparaiso and to resurrect the forgotten structures by the sea. Bridging the community physically and symbolically from the hills to the ocean, from past to present. Bridging chaos and order, sacred and profane, creation and destruction.



Pablo Neruda, a Chilean poet who resided in Valparaiso wrote that,

"The Pacific Ocean wasn't on the map. There was nowhere to put it. It was so big, messy and blue that it could not fit anywhere. That's why they left it in front of my window "

Valparaíso was originally founded as a sea port and from there, it extended towards the hills where most of the community now resides. Thus, making the sea a distant spectacle.
The city has forgotten the fragility and potentiality of a place that is in constant transformation. With its moving ground, and coastal area constantly being bathed by the Pacific Ocean. The coastal area has been devoted to business, privatizing the essence of the city. Placing structures dedicated to the port and railroad industry by the ocean, which now lay abandoned.

Thus, my architectural intervention seeks to embrace the precarious landscape of Valparaiso and to resurrect the forgotten structures by the sea. Bridging the community physically and symbolically from the hills to the ocean, from past to present. Bridging chaos and order, sacred and profane, creation and destruction.

C.2 Integrated Evaluations and Decision-Making Design Process – Ability

Demonstrate the skills associated with making integrated decisions across multiple systems and variables in the completion of a design project, including:

- Problem identification.

The relationship of humans and nature has changed over time due to the advancement of technology and science, which has led us to believe that everything in the world can be somehow explained and controlled. However, a drastic unpredictable change, such as a natural disaster, alters that perception.

How does a disaster change the identity of an individual and a community?
Can architecture help these victims find themselves in the world after such distressing experience?

This thesis explores architecture's role in a community dealing with catastrophic trauma; the physical and psychological needs of the people. While we can't really predict or stop a disaster, the reaction to and recovery from these devastating events, can be improved to better facilitate the survival and recovery process of the community, and its victims.

Through the creation of an Earthquake Research Center and a Memorial Museum, in the city of Valparaiso, Chile (a city that has gone through tremendous catastrophes); the architecture will explore the placing and displacing of memory, becoming a place for documentation, education and commemoration. The intended experience is a bridging between chaos and order, sacred and profane, creation and destruction.

- Setting evaluative criteria.
- Analyzing solutions.
- Predicting the effective of implementation.