



THE EVOLUTION OF WONDER THROUGH HISTORY:
REOPENING THE REALM IN SEVEN MYTHIC EXPERIMENTS OF TECHNOLOGICAL INTERCONNECTION

The Evolution of Wonder Through History: Reopening the Realm in Seven Mythic Experiments of Technological Interconnection

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by

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Figure 2 | Giza, photo credit | ytimg.com

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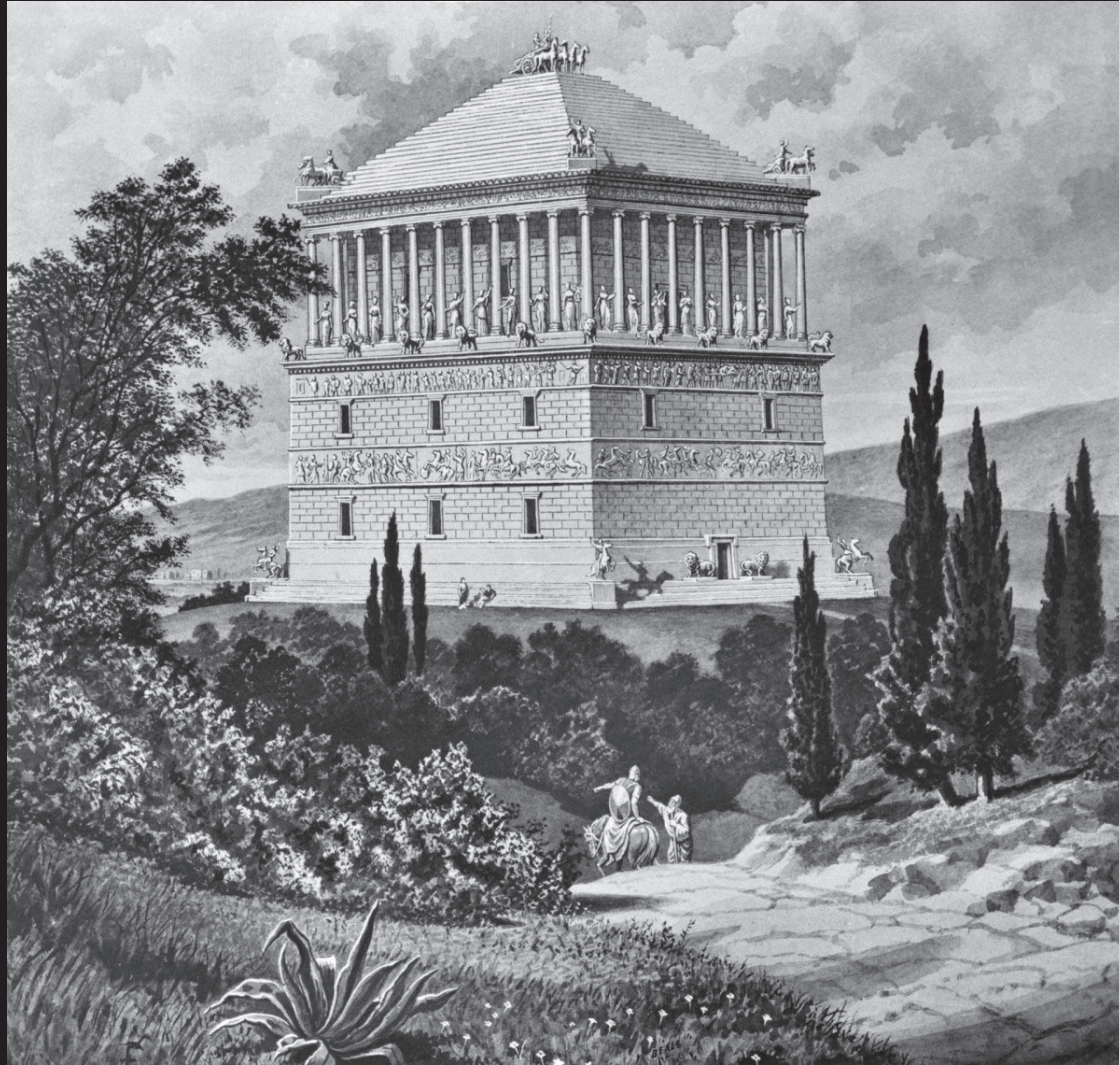


Figure 3 | *Halicarnassus*, photo credit | *history.com*

THESIS ABSTRACT

As Henri Frankfort suggests, the sense of interconnection between ancient people, nature, and the cosmos, was perceived as a living “Thou”. As humanity has advanced this emphasis on interconnection has faded from something perceived as alive toward a technologically driven society today that treats Nature as an externalized “It.” The Seven Ancient Wonders of the World were erected on the earlier mode of interconnection wherein imagination was interwoven in the world. Not only were many of the ancient Wonders resting places for mortals, they were places that connected the ancient people with the cosmos, their gods, and the nature of all things.

Such changes open an opportunity to explore the possibility of achieving wonder in architecture today. Questioning how we might implement technology in ways that reinvigorate a relationship to stories that reawaken the imagination as part of reality beyond efficiency and functionality. My thesis seeks to employ building as technology that opens a realm of wonder that has been greatly untapped after the seventeenth century.

Like the ancient myth of Osiris and Isis, this museum of myth and wonder is scattered across seven sites around the world – each known for their technological production.



Figure 4 | *Artemis*, photo credit | marmaristravel.net

NARRATIVE OF THE THEORETICAL ASPECT OF THE THESIS

Wonder is such a specific emotion, but such a complex concept. A concept that has undoubtedly evolved throughout the course of history. The seven ancient wonders of the world set this architectural standard of wonder that the modern world has attempted to replicate time and time again, however always falling short. The reason not being lack of knowledge, but the absence of consideration in the ways that these ancient wonders of the world were each interwoven into something greater. They meant something. They meant something much greater than themselves.

In studying the differences between the ancient Wonders of the World and the industrial Wonders of the World as well as the evolution of the machine throughout history I hope to establish an idea for when perceptions began to shift from a more ancient way of thinking to our modern way of thinking. By doing so I may be able to come up a better idea of what defines wonder and why it was such an integral part of ancient culture. This may also open a door to look toward the modern era to find a sense of what modern precedents relate closest to wonder in its purest sense.

THE PROJECT TYPOLOGY

The perception of wonder today differs greatly from how it was perceived prior to the seventeenth century. When we think of wonder in a modern sense, we often think of places like the Hoover Dam or the Panama Canal. However, in ancient cultures these structures would go against their ideas of wonder. For the ancients the connection between beings and nature was the root of all existence. When primitive people perceived the world, they did so in viewing every encounter as life confronting life. Coming to terms with this idea is a crucial aspect to my building typology as it will attempt to perhaps reawaken a sense of interconnection.

The typology of my thesis design is based throughout seven sites around the world; Berlin, Cairo, New York City, Sydney, Mexico City, Sao Paulo, and Tokyo. Each site will be home to a fragment of the Museum of Myth and Wonder. The project will implement ancient myths and mysteries into architectural elements that perhaps return open a realm of interconnection and emphasize nature and time throughout.

MAJOR PROJECT ELEMENTS

Mass and Void

- Usage of large, perhaps unfunctional masses and voids
- Small, tight tunnels transitioning between large spaces
- Similar physical elements throughout each site

Landscape

- Usage of public park spaces for each site
- Working with size of each site
- Above/Below ground datum for atmosphere

Myth

- Engraved text onto structures
- Fire and water
- Translations of the old to the new

Materiality

- Materiality emphasizes the old and the new
- Granite
- Concrete
- Polished materials to project and reflect light but also to ease transition from granite to concrete.

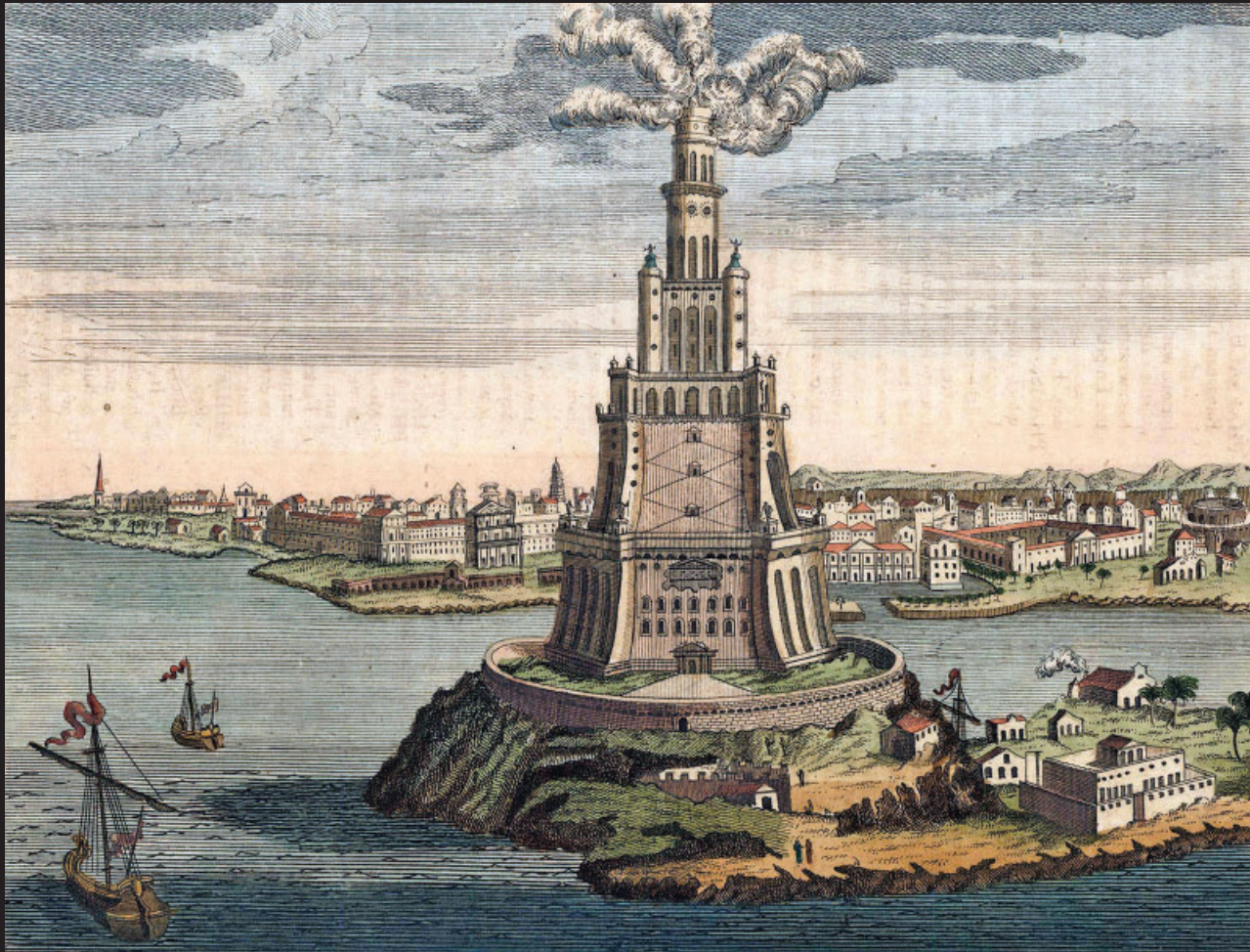


Figure 5 | *Pharos of Alexandria*, photo credit | Sergey Kamshylin/Fotolia

USER/CLIENT DESCRIPTION

USER GROUPS (Each Site)

Public Visitors	1 - 50 Total
City Janitorial Staff	1-5 (when necessary) Total

CONSIDERATIONS

Health and Safety:
Sanitary conditions
Medical responders
Rest areas throughout exhibit space
Garbage collection



Figure 6 | Site Map

THE SITES

Through a series of seven sites scattered throughout the world like the ancient myth of Osiris - betrayed and chopped into fourteen pieces that were scattered throughout the desert of Egypt. In order to ascend to the afterlife Osiris had to be sewn back together by Isis. The seven locations around the globe; Berlin, Cairo, Mexico City, New York City, Sao Paulo, Sydney, and Tokyo, each interconnected through a distance through the myths that they hold but also the myth linking them all together - the myth of Osiris. Placing the Museum of Myth and Wonder in technological nodes around the world is essential as the project challenges our willingness to use technology in ways that perhaps go against efficiency and functionality to return us to a more ancient mode of being where architecture was a means for evoking wonder.

THE PROJECT EMPHASIS

The emphasis of my design thesis is going to be focused on how wonder has evolved throughout history and how these changes in perception have affected the world we live in today. By researching numerous texts on phenomenology and technology I will look to understand these changes in being that humans have experienced throughout history. This process will aid me in determining what exactly is wonder and what does it mean to us today.

Another emphasis is going to be translating ancient myths and mysteries into architectural elements that tell a story in themselves. Through experimenting with different materials and forms that translate into raw myth and mystery I hope to emphasize experiences that open a sense of perception that is greatly forgotten.

GOALS OF THE THESIS PROJECT

In the academic realm, I wish to explore more in depth than ever before, a topic that has my most interest. Along with this deep exploration, I wish to become as knowledgeable as possible to maximize what I can get out of the educational experience. Academically, another one of my goals is to develop a deep understanding in the realm of philosophy and sociology, while focusing heavily on phenomenology. This focus will bring to life a very different way of viewing the world and how others have viewed the world, as well as themselves throughout the history of time.

In the professional realm, a goal of mine is to be able to develop a sophisticated analysis of my proposal. Research is a large aspect of the professional field, and throughout this thesis process I hope that my ability to do research and apply it to the field of architecture will expand my knowledge as I move into the professional realm. The professional realm is a big step coming right out of school; however, the goal is to be as prepared as possible for the field by the time I have completed the entire thesis process.

In the personal realm, I wish to improve in every aspect of my practice. The biggest goal, however, is to improve my ability to speak in front of others. Another personal goal of mine is to develop the skills to thrive in the next step of professional practice. The knowledge and hard work we have put in has set us up well to move on with our careers, however this can always be challenged even further, which this thesis process will surely push the boundaries of. Another personal

goal of mine is to grow in my understanding of the theoretical aspect of architecture. This aspect is a new and interesting aspect that I have little experience with throughout my time at NDSU and with the help of my professors I feel that I can expand my horizons of understanding to a whole new level.

Each of these goals will define my work ethic and push me to achieve what I believe I am capable of. I will need to keep these goals in mind to keep me on track throughout the year, but in the end if I can achieve these goals, I will come out of NDSU a better person and a better Architect.



Figure 7 | *Hanging Gardens of Babylon*, photo credit | Mondolithic Studios

A PLAN FOR PROCEEDING

The order in which I will proceed is beginning with the research conducted in the areas of wonder and how that perception has evolved throughout time. I will do so by researching the machine and architecture and establish an idea of where perception changed throughout history. The next step is researching different precedents of different natures that may evoke wonder in ways like ancient cultures. Looking into the sites of each location around the world is also an important step that will follow. I will determine the sizes and the surroundings of each of my sites in order to establish the scale of each museum.

The design methodology of exploring the question I have imposed is going to entail a mixed method/qualitative analysis on my thesis. This will entail implementing both quantitative and qualitative data gathering. I plan on gathering quantitative data by research methods of site analysis through my research, while the qualitative data will be studied by making observations of each site and translating mythical stories into each site.

The documentation of the design process will consist of me reading documents and texts not only on book but through the computer as well. At different intervals throughout the year I will document my design process by saving all of the important aspects that can be used to show my design process at the end of the year. Although I plan on documenting this information at the end, the emphasis of my design thesis is going to be focused on how wonder has evolved throughout history and how these changes in perception have affected the world we live in today. By researching numerous texts on phenomenology

and technology I will look to understand these changes in being that humans have experience throughout history. This process will aid me in determining what exactly is wonder and what does it mean to us today.

DEFINITION OF RESEARCH METHODOLOGY

The process to continue research toward a conclusion.

1. Understanding the Unifying Idea and Premise
2. Researching questions of the topic to discover new ideas
3. Testing these new ideas
4. Formulating a design solution
5. Apply design solution to context of cultural importance

DOCUMENTATION OF THE DESIGN PROCESS

DOCUMENTATION COMPILATION

Medium for design investigation

- Computer representation
- Sketching by hand
- Physical modeling
- Artefact

Software for design investigation / representation

- Autodesk Revit
- Rhinoceros
- Adobe Photoshop
- Adobe Illustrator
- Adobe InDesign
- Enscape

Design Preservation Methods:

- Create representations
- Keep communication with advisor
- Keep a list of all materials referenced
- Back up work weekly
- Continuously update thesis book to stay on schedule

Publication of Material

- Hard cover book format
- NDSU Institutional Repository

PRECEDENT RESEARCH

When selecting the following case studies for precedent research, four major factors were given consideration:

1. Ability to Evoke Wonder
3. Designing with Time
4. Cultural Impact

The following projects were given special consideration for precedent research:

- Smithsonian National Museum of African American History and Culture *Washington, United States*
- National Holocaust Monument *Ottawa, Canada*
- James-Simon-Galerie *Berlin, Germany*



Figure 8 | *SNM Grand*, photo credit | Darren Bradley

SMITHSONIAN NATIONAL MUSEUM OF AFRICAN AMERICAN HISTORY AND CULTURE (2016) */ FREELON ADJAYE BOND / SMITHGROUP*

TYPOLOGY: Museum

LOCATION: Washington, United States

SIZE: 420000 square feet

DISTINGUISHING CHARACTERISTICS:

Located adjacent to the Washington Monument and the National Museum of American History, the National Museum of African American History and Culture (NMAAHC), designed by Freelon Adjaye Bond and SmithGroup, has been placed in an ideal location that provides an abundance of meaning. The design of the NMAAHC incorporates three major elements; the “corna” form of the building, a porch, and a bronze envelope (Mena).

The form of the structure was designed to match the angles of the Washington Monument, and the beautiful bronze lattice represents the historical African-American craftsmanship. This envelope can also be adjusted to control the amount of light and transparency into the building (Mena).

Inside the museum, there are open, column less spaces that are enclosed by precast concrete, timber and glazing that all sits within the envelope. Below ground there are is a memorial space that brings light in through water into the contemplative area (Mena).

ABILITY TO EVOKE WONDER:

The beautiful NMAAHC is able to evoke wonder in spectacular ways. The bronze building envelope that can be modulated to change the amount of light and transparency into the building is fascinating, and quite capable to evoke wonder. On the inside I can only imagine the awe and emotion that I would experience below ground in the memorial space.

PROGRAM ELEMENTS:

- Exhibit Galleries
- Administrative Spaces
- Theatre Space
- Collections Storage Space
- Patio

CULTURAL IMPACT:

The location of the NMAAHC itself is a cultural significance being right among the Washington Monument and the National Museum of American History. The site establishes a powerful context of the deep African heritage in America.

The experience as visitors explore the museum is an emotional and historic journey. The design of the space deepens the cultural impact of the experiences by incorporating natural light and monumental spaces throughout (Mena).

ANALYSIS:

The museum is a truly wonderful design. Play of natural light as well as the circulation of space really is effective in creating an emotional experience for the visitor. The open space in the museum also allows for a very one in a kind, contemplative experience.

CASE CONCLUSION:

The NMAAHC’s design is spectacular in how it can evoke wonder from the inside and out. Being such a cultural significance and an emotional topic gives it a meaning beyond the architecture. I believe that this case is a strong example of how to proceed in my thesis research.

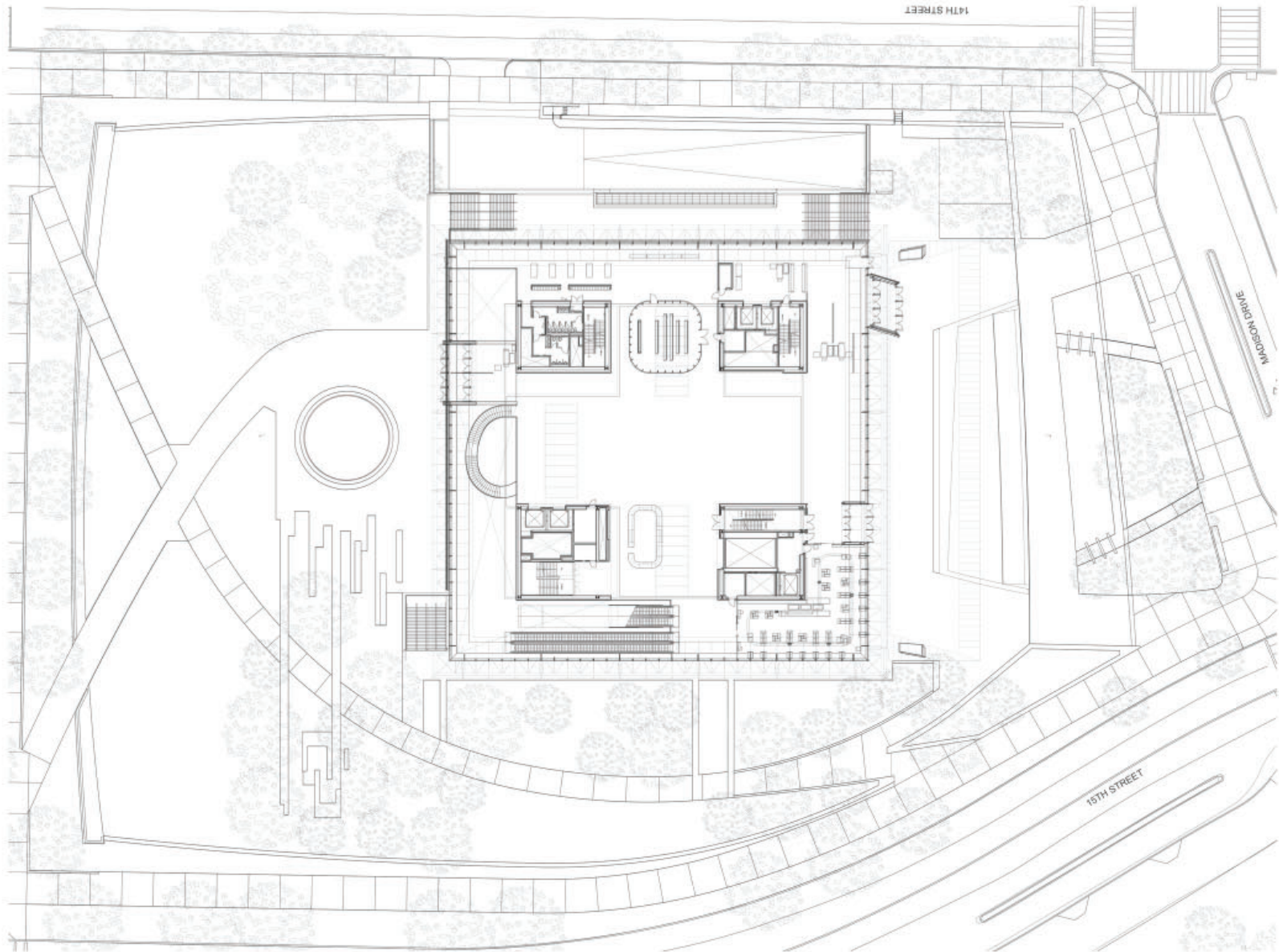


Figure 9 | SNM Site, photo credit | Freelon Adjaye Bond / SmithGroup

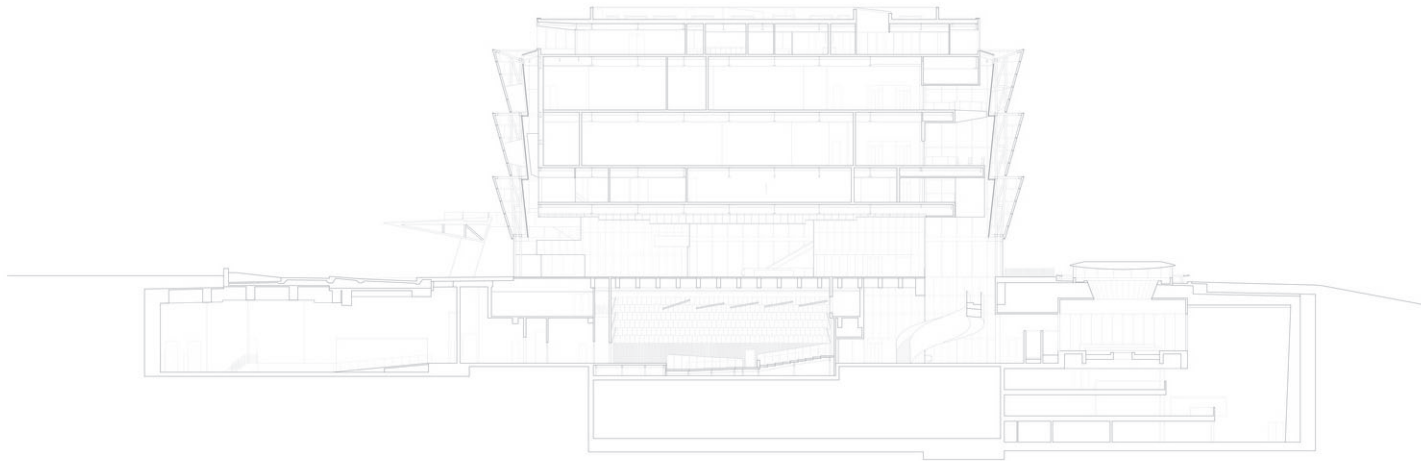


Figure 10 | *SNM Section*, photo credit | Freelon Adjaye Bond / SmithGroup

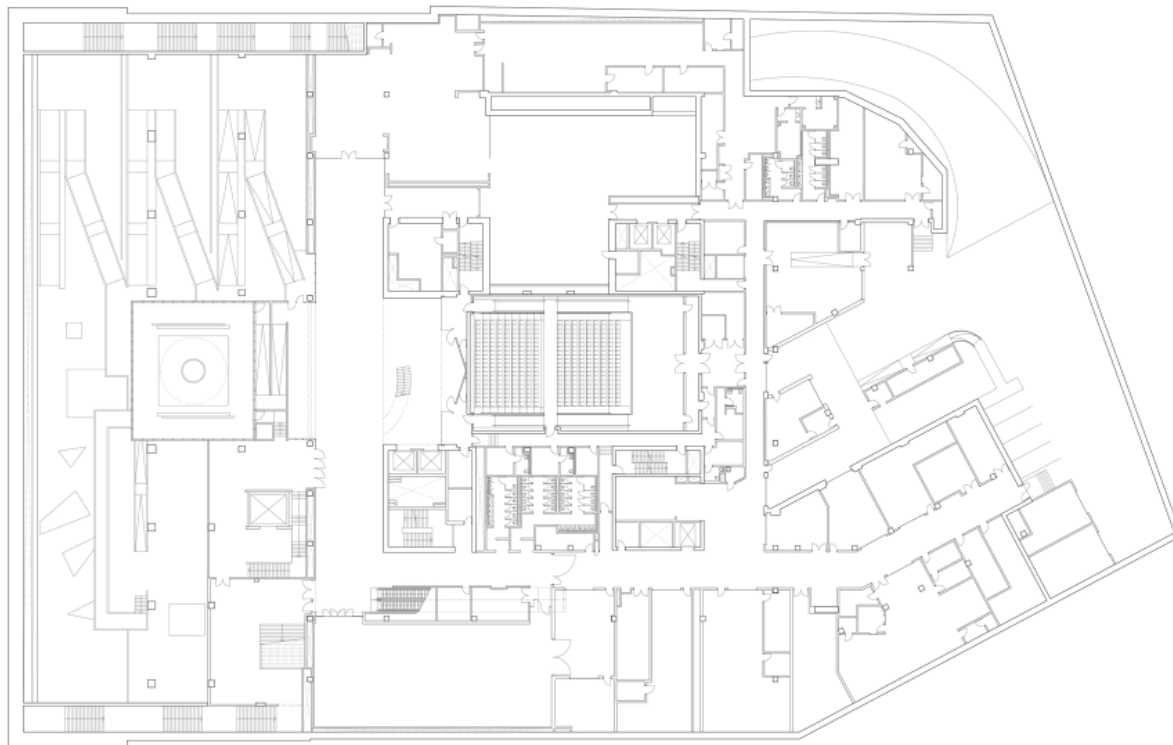


Figure 11 | *SNM Plan*, photo credit | Freelon Adjaye Bond / SmithGroup



Figure 12 | NHM Grand, photo credit | doublespace photography

NATIONAL HOLOCAUST MONUMENT (2017)

/ *STUDIO LIBESKIND*

TYPOLOGY: Monument

LOCATION: Ottawa, Ontario, Canada

SIZE: .79 acre site

DISTINGUISHING CHARACTERISTICS:

Designed by Daniel Libeskind's Studio, the National Holocaust Monument in Ottawa, Canada serves as a place of remembrance and acknowledgement toward the victims of the Holocaust. The monument is located across the street from the Canadian War Museum and is strictly of cast in place concrete (National).

The volumes of the design configure into a six-sided star in which is a symbol of the Holocaust that millions of Jewish people were forced to wear by the Nazi's. The monument is comprised of six different spaces whose function serves to promote contemplation and remembrance of the horrific actions during the Holocaust (National).

The monument also features a Stair of Hope that rises out of the gathering space. This stair cuts through a wall and points to the Parliament Buildings of Ottawa. This stairway acknowledges Canadian survivors of the Holocaust who contribute much to Canada (National).

ABILITY TO EVOKE WONDER:

Studio Libeskind's National Holocaust Monument represents something so much greater than itself. However, the monument is very successful in creating an experience full of emotion, and open of multiple ways of interpretation. The wonder of the monument seems to lie in the emotions that the design evokes. When one walks up the Stair of Hope, they cannot feel anything but a sense of wonder, rising up in representation of the survivors.

PROGRAM ELEMENTS:

- Contemplation Space
- Memento Space
- Gathering Space
- Orientation and Entry
- Interpretation Space
- Stair of Hope

CULTURAL IMPACT:

The cultural impact of the National Holocaust Monument lies in the experience of the visitor. Everyone interprets the spaces in their own interpersonal way, but one cannot walk through the monument without feeling a meaning of something greater.

The Holocaust affected much of the world, which places the cultural significance of the monument at a global scale. The cultural remembrance lives because of Studio Libeskind's National Holocaust Monument (National).

ANALYSIS:

The monument designed in such a way that you can almost feel how heavy your feet must seem as you walk through the space. The use of concrete implies a sense of coldness, while the spaces themselves force you to come to terms with such a cold and horrific time.

CASE CONCLUSION:

This case is a great example of how to evoke wonder even through such a devastating context. The Stair of Hope is the best example of this in how it rises up to the sky in remembrance of those who survived the Holocaust.

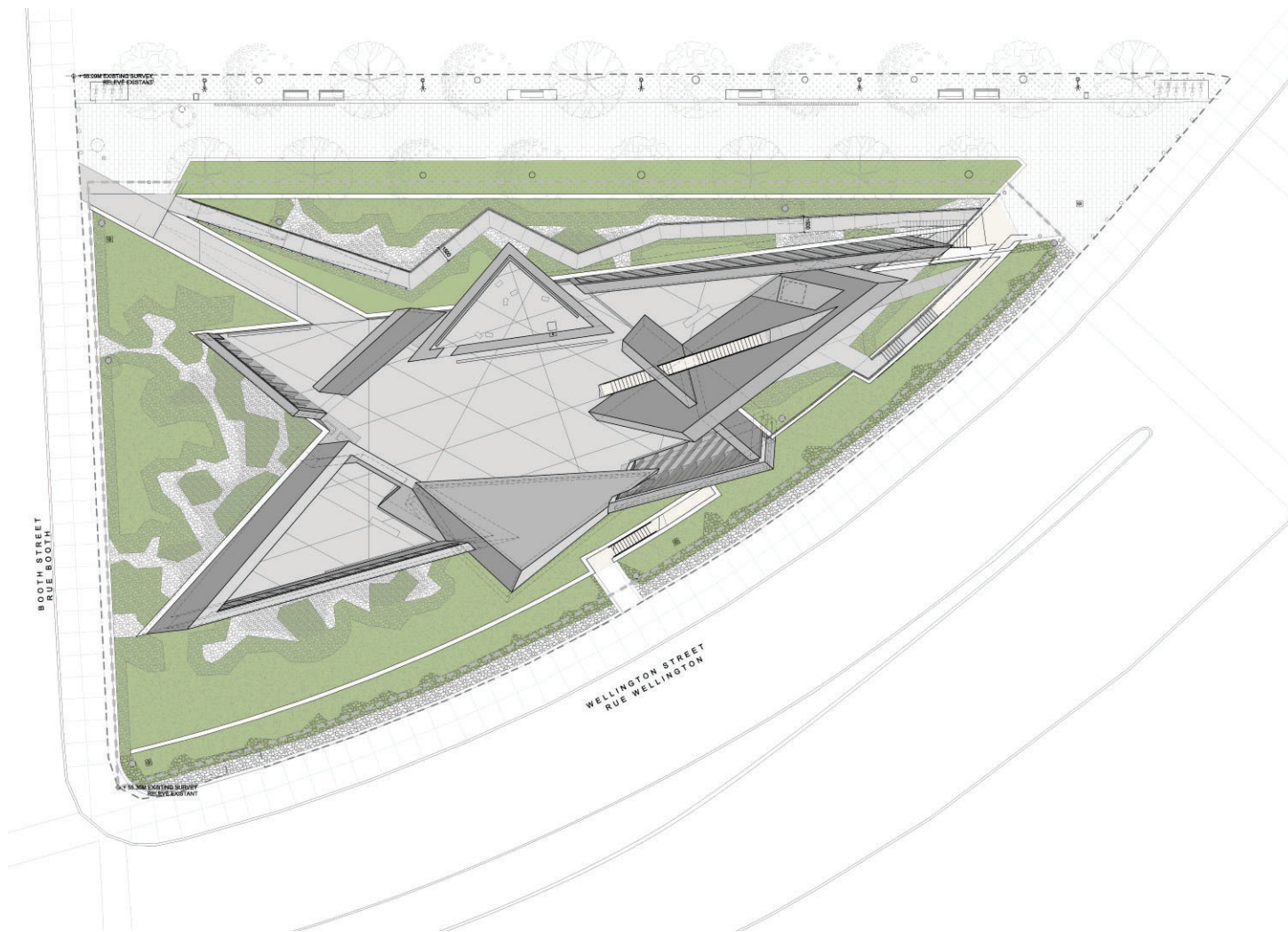


Figure 13 | NHM Site, photo credit | Studio Libeskind

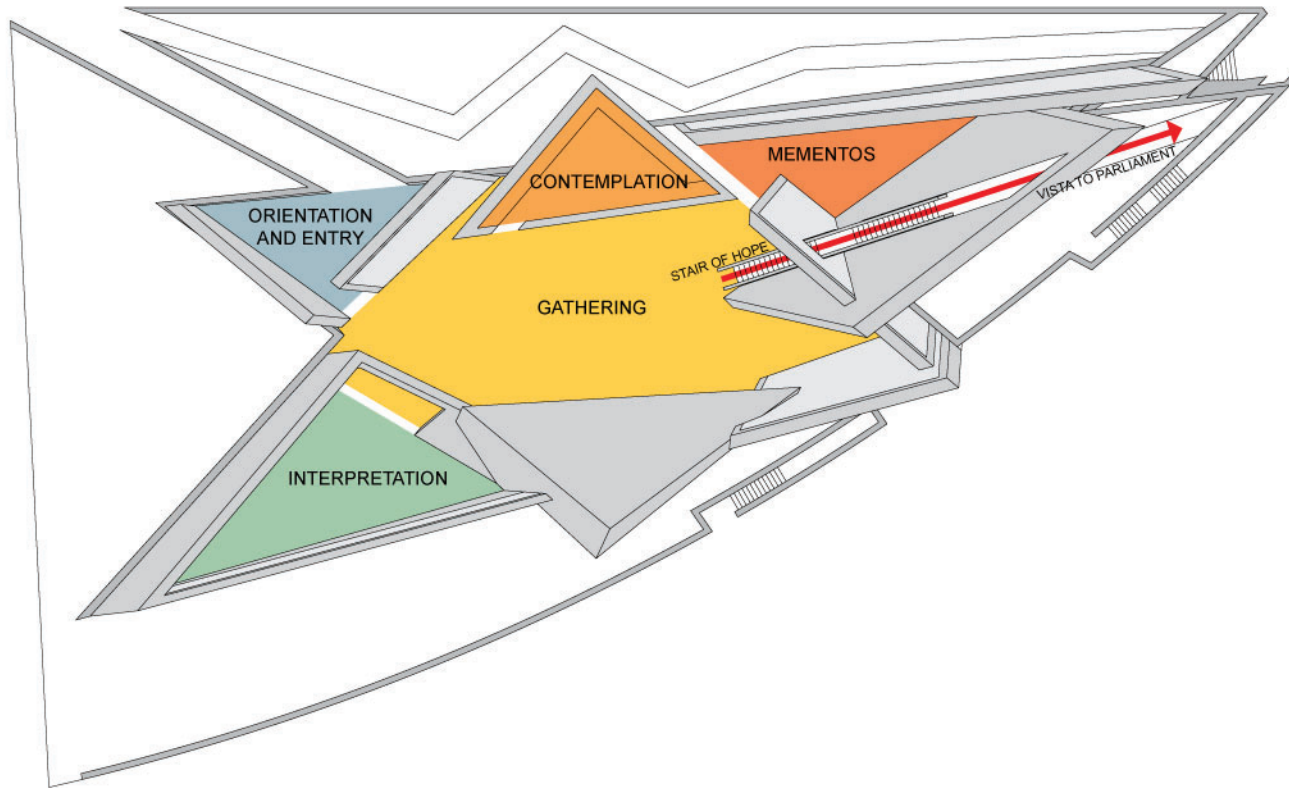


Figure 14 | NHM Diagram, photo credit | Studio Libeskind



Figure 15 | *View towards the main entrance*, photo credit | Simon Menges

JAMES-SIMON-GALERIE

/ DAVID CHIPPERFIELD ARCHITECTS

TYPOLOGY: Extension
LOCATION: Berlin, Germany
SIZE: 10,900 square meters

DISTINGUISHING CHARACTERISTICS:

David Chipperfield Architects, James-Simon-Galerie was designed as the new entrance building for Museum Island in Berlin. The project is the centerpiece of a masterplan of further developing the Museum Island (Chen).

The gallery adopts some of the elements from the existing old buildings into its own modern architecture. Columns and outdoor staircases share similar qualities although they are built from a different material palette. The material choice of the extension complements the rich materials that make up Museum Island (Chen).

The design of the James-Simon-Galerie is all revolved around German history and culture. From the slender columns to the site itself, it all was built in respect of the history of the city (Chen).

ABILITY TO EVOKE WONDER:

The James-Simon-Galerie evokes a sense of wonder through time. The way that the building is carefully designed to align with the older structures in an almost seamless way is incredible. However, it is designed in a way that wasn't trying to replicate the older buildings, but to complement them with a newer style of architecture. The sense of wonder is evoked through the play of time between the old and the new.

PROGRAM ELEMENTS:

- Foyer
- Cafeteria
- Terrace along Kupfergraben canal
- Mezzanine Floor - museum shop, cloakroom and toilets
- Auditorium

CULTURAL IMPACT:

The James-Simon-Galerie approaches culture in many aspects of the design. The site was once where the Neuer Packhof administration building was located until 1938. Also, the columns represent a part of Germany's history, as mentioned in the 'Distinguishing Characteristics' section (Chen).

ANALYSIS:

The David Chipperfield Architects gallery is interesting in how it uses the sense of time in the architecture. There is no mistaking the old from the new, yet the design is so deeply rooted in German culture and history that it seems to work. The materials and the design are much more contemporary and incorporate a void space along the canal that is aligned by columns which give the void a sense of enclosure.

CASE CONCLUSION:

Although this example evokes wonder in a sense, I am not sure that it is the kind of wonder that was once evoked through the ancient wonders of the world. Not to take away from the beautiful design and complementary nature of the old and the new, but it seems to come with a sense of disconnect.



Figure 16 | 1F and mezzanine floor plan, photo credit | David Chipperfield Architects

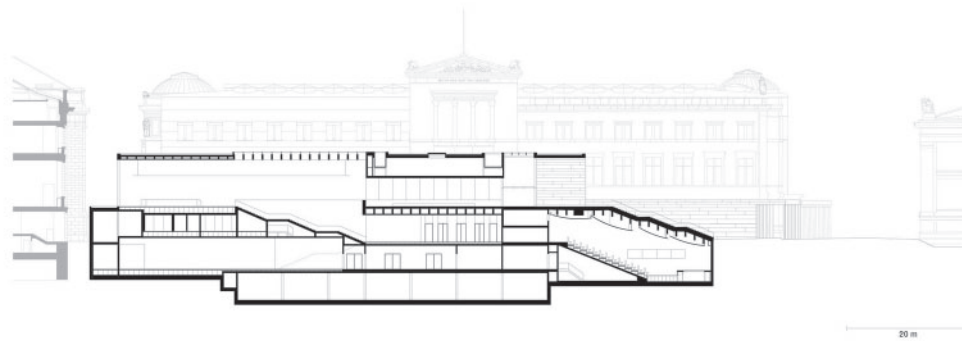


Figure 17 | *section*, photo credit | David Chipperfield Architects

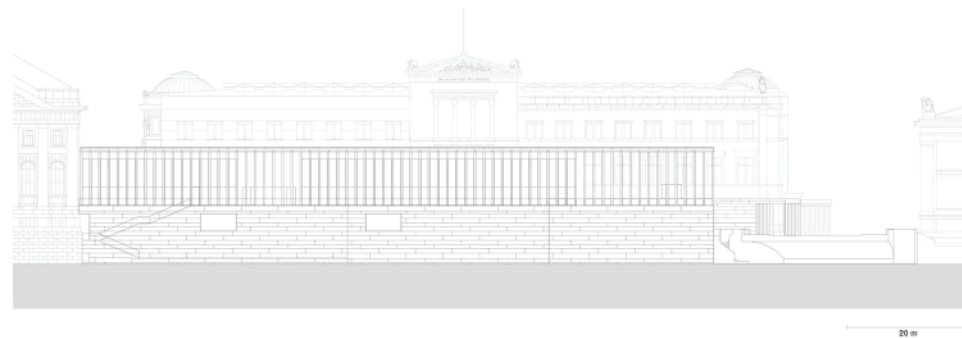


Figure 18 | *elevation*, photo credit | David Chipperfield Architects

CASE STUDY & TYPOLOGICAL RESEARCH SUMMARY

Each of the different case studies that I researched had their own intrinsic value. All of them were of different typologies, but each could evoke wonder in their own unique way. The sense of wonder that I felt as I was observing each of these specific case studies is the reason for me choosing them.

The National Museum of African American History and Culture designed by Freelon Adjaye Bond and SmithGroup approaches a very sensitive but important issue of our American history. The design of the museum evokes wonder in its location in the heart of our nation's capital. This makes it an unarguably cultural significance. However, wonder is also evoked as the visitor travels through the inside of the museum. The spaces promote remembrance and contemplation of the history of African Americans. It is so important that architecture is able to evoke emotion through the design, and the NMAAHC is successful in doing just that. In order to evoke wonder through architecture, I will constantly be in consideration of the emotion of the visitor just as this museum does so well (Mena).

The National Holocaust Museum that was designed by Studio Libeskind is similar to the National Museum of African American History in how the design provokes contemplation and remembrance of a history that is quite horrific. Although the National Holocaust museum is an outdoor monument, it still belongs in the realm of architecture because of its play between spaces. Every aspect of the monument is designed with a deep meaning. The contemplation spaces promote

self-exploration and remembrance. The ground plane is in itself a representation of time. But the Stairway of Hope is in my opinion the most effective aspect of the design. What better way to evoke wonder than to have a space where once can literally rise up toward the sky in respect to the survivors of the Holocaust (National).

Along with the previous two cases, the last case that I studied was the James-Simon-Galerie designed by David Chipperfield Architects. This case, like the previous cases, uses time in the form of architecture to resemble a deep connection into the history of German culture. The new building entrance is of the extension typology. It extends the existing older architecture in a way that respects the old but is symbolic of the movement toward the new. It is quite incredible how the design is similar as far as the proportions and spaces, but so much different in style. By analyzing the design, once senses wonder through the play on time (Chen).

Each case study uses a different way to design, but all are able to evoke wonder in one sense or another. The spatial relationships, function, and forms are all much different, however the cultural impact and sense of emotion that is embedded into each design is quite similar. Each case has an aspect of history that is being relived through the experience, and this is exactly how they relate to my theoretical premise of the search for wonder through architecture.

RESULTS FROM THEORETICAL PREMISE/UNIFYING IDEA RESEARCH

As Alberto Perez-Gomez states in *The Myth of Daedalus*, “for many centuries machines and buildings were regarded as thaumata, built to produce wonder rather than to dominate nature.” Wonder was interwoven into ancient culture, a part of them and everything they did. Myths and legends were used in these ancient cultures to interconnect themselves to the world around them, and this interconnection between themselves, nature and the cosmos was the most important aspect of all ancient life (Perez-Gomez). Henri Frankfort makes it clear when addressing this connection between primitive man and nature in *Before Philosophy*. The only thing that primitive people knew was their own experiences, and everything that they came across had to have life itself. Whether the rocks they walked upon or the storms in the sky, all was viewed in the perspective of, “life confronting life.” When exploring nature, the modern encounter ‘It’, while the primitive encountered ‘Thou’. To clarify this change in perception one must first understand the story behind the ancient Wonders of the World in contrast to the story, or lack thereof behind the industrial Wonders of the World (Frankfort).

The Seven Ancient Wonders of the World; the Temple of Artemis, Great Pyramid of Giza, Hanging Gardens of Babylon, Lighthouse of Alexandria, Colossus of Rhodes, the Statue of Zeus at Olympia, and the Mausoleum at Halicarnassus each evoke wonder in ways that are quite foreign to our modern understanding of wonder. Each of these wonders were erected with a deeper meaning in mind that was rooted in a realm of interconnection between humans, nature, and the

cosmos. As one acknowledges the Seven Industrial Wonders of the World, they begin to understand these changes in perception of wonder as well as the changes in perception of nature from a living ‘Thou’ to an externalized ‘It’.

These Seven Industrial Wonders of the World include; the Panama Canal, Hoover Dam, Brooklyn Bridge, Transcontinental Railway, the London Sewer System, the ‘Great Eastern’, and the Bell Rock Lighthouse. Each one of these industrial wonders address concerns of efficiency and functionality with often with little regard for nature. These wonders of our modern world are able to solve objective worldly issues, however, with little to no concern for nature, and that is precisely what separates the Ancient Wonders of the World from the modern.

The Temple of Artemis was constructed around the time of 560 BC. The temple was constructed in order to honor Artemis, the Greek goddess of hunting, nature, and chastity. Ancient Greek temples were designed as a connection between the heavens and the Earth. The temple was a means to worship the goddess of nature herself. In this sense the Temple of Artemis was quite literally a connection to the gods for the ancient Greeks, where the gods played the lead role in their daily lives. Their religious nature, encountering everything in respect of the gods, is precisely what Frankfort means when encountering ‘Thou’. To the Greeks, nature was sacred. When you construct a building so large and so divine out of materials that are themselves considered sacred, thaumata is evoked naturally (Cartwright).

On the contrary, when we look at the Hoover Dam, one of the Seven Industrial Wonders of the World, we sense a disconnect with nature, an encountering of 'it'. In blocking off millions of gallons of water that by nature wants to escape, this industrial wonder can produce enough power to light up the city of Las Vegas which is wonderous in itself, however this sense of wonder differs greatly from the wonder evoked from the ancient wonders of the world. The stories behind this industrial wonder go no further than efficiency and profit. Although the dam still seems to evoke wonder in its massive scale and engineering feats, the sense of wonder isn't rooted in nature as it always had been in ancient times.

In contrast, the Great Pyramid of Giza, the oldest, but last standing of the Ancient Wonders of the World, is similar to the Temple of Artemis in that it was built to honor the gods. The pyramid was built for the Pharaoh Khufu who reigned around 2,500 BC. The pharaohs of ancient Egypt were believed to have been chosen by the gods to serve as mediators on earth. The pyramids were constructed to keep the king's majesty intact even after their death as they become Osiris, the god of the dead. The pyramids themselves were a means of interconnection between the heavens and the Earth. The Egyptian society like the Greeks after them, viewed every aspect of the world as "life confronting life". They considered both the natural and supernatural worlds to be the greatest importance in their culture and their architecture was a means to interconnect these two worlds (History).

Another example of an industrial wonder of the world is the Panama Canal. The canal is an artificial waterway that connects the Atlantic and Pacific oceans. The canal is similar to the Hoover Dam in how it constricts nature in an unnatural way. Disconnecting us with the natural world in order to, again, promote efficiency and profit. The canal took no consideration of the natural habitat that once existed but was constructed to save time and money. This Industrial Wonder of the World almost seems to redefine our definition of wonder, even in a modern sense. Along with the Hoover Dam, it is a great engineering feat, but the wonder of the Panama Canal lies in commercial efficiency, with little regard to the human experience.

To really understand where the roots of this disconnect of human and nature come from and I will revisit further in depth later in the book, one must first understand the evolution of the machine since the beginning of its time, for as Alberto Perez-Gomez stated in *The Myth of Daedalus*, "machines and buildings were [both] regarded as thaumata, built to produce wonder rather than to dominate nature", for many centuries (Perez-Gomez). Alexander Tzonis in *The Machine in Architectural Thinking*, and Peter Olshavsky in *Situating Pataphysical Machines: A History of Architectural Machinations* educate us on the evolution of the machine from archaic to modern times.

The archaic form of the machine came before mechanization. Vitruvius, who lived in the first century AD stated that machines are, "moved by appropriate revolutions of circles", which are tied to the,



Figure 19 | Hoover Dam, photo credit | [history.com](https://www.history.com)



Figure 20 | Pyramids, photo credit | [britannica.com](https://www.britannica.com)

“revolutions of the universe”, in turn being, “generated by Nature.” “He did not include efficiency among the norms they obeyed.” During the same time period, the Hero of Alexandria’s machines also showed no concern for efficiency, but to design, “machines whose aim was to overwhelm the spectator with awe in the contemplation of the hidden powers at work in the world.” The key to design a functional machine that evoked thaumata, or wonder, in these pre-mechanization times was the analogical method. “What was seen to succeed in the design of an existing object, natural or manmade was transferred to the new one regardless of size and material.” “The idea of design was nothing but the pattern of the physical object constrained by its natural attributes. (Tzonis)”.

It isn’t until the end of the sixteenth century when we see the mechanization of architecture through Galileo Galilei. Tzonis explains, “Galileo took the step in the conceptual revolution which eventually shattered the archaic framework of design. Whether these events or his role were so unique is of no significance. The fact is that in the text of [his] *Due Nuove Scienze*, a new way of thinking was shaped and that it in turn shaped the thinking of architects for years, for centuries, to come.” “Indeed, with the advent of Galilean mechanics, proportion was no longer governed by the perfect “forms” of the world, by its divine “idea.” It was seen rather as something bound to matter that changes according to the size and material of an object.” “Thus, gradually the complete building fabric was seen in analogy with the machine. Its form did not follow the idea: instead it was determined

by the behavior of matter. The shape of its components depended on their material, their composition, and their size.” The main objective of the building or machine was no longer thaumata, but efficiency and function. Following the industrial revolution, we found our self in a world where, for the first time, the sciences overpowered nature (Tzonis). Although wonder may have evolved throughout time, it can be argued that thaumata still exists in some forms today, and Andy Goldsworthy’s work is a prime example.

Goldsworthy is a sculptor who expresses time and nature within his works. An example being a project where he stood in one place as the sun rose during a frozen dawn so that his frosted shadow would remain on the ground as he moved away. The play of time and nature in Goldsworthy’s works is, without a doubt, him encountering nature and time as “Thou”. The usage of time in art and architecture evokes a sense of wonder in how it is always in tension with the future, but also how it is a natural part of life and our essence as humans (Bordeleau). Daniel Libeskind also has an interesting approach to analyzing architecture throughout time.

Libeskind designed three different reading machines, each representing different eras throughout history as a lesson of architecture. The first machine is translated from the Medieval era. This machine, “teaches an almost forgotten process of building – a process which is in its own way not yet fully unfolded in architecture. The machine is made of solely wood, and consists of eight different architectural books that

revolve around the wheel structure in similar fashion to thaumaturgic medieval machines. No concern for efficiency, but full of wonder. The second machine is a memory machine. Representing the Renaissance mind, Libeskind states, “since the process of its construction remains in the classical arena, the subversive element of mechanics enters in only those places where memory has succeeded in retaining its surrogate authority.” The final machine is a writing machine that represents the modern industry. The machine combines both the reading and memory into data, and “teaches the artless and science-less making of architecture.” Libeskind’s machines themselves represent the loss of thaumata throughout time (Three). Along with Andy Goldsworthy and Daniel Libeskind, pataphysical machines which stem from Alfred Jarry’s pataphysical science also encounter ‘Thou’ but in a quite different way.

Jarry explores ‘Thou’ in a sense that “targets precisely where we live.” Including, “dreams, hallucinations, and other outpourings of the imagination that modern science does not regard as real.” “By suspending the functional aim of mechanics, these contentious pataphysical machines may seem “useless,” but instead they present “the semblance of machinery, of the kind seen in dreams, at the theater, at the cinema.” This allies them more closely to their earlier architectural heritage of wondrous and imaginative contrivances in search of meaning.” Jarry even states that the practice of pataphysics is allied deeply in the real practice of architecture because it “symbolically attributes the properties of objects, described by their brutality, to their lineaments.” The

“technology not of precision but suggestion.” Another similarity between pataphysical machines and architecture is seen in how they, “enrich the perception of reality by making room for the play between objects and the parts of construction, rather than limiting the design by defining tolerances among its parts.” The aim of these machines is to “suggest rather than to state,” and go against the common machine, that “is born in the ashes of the slave.” Jarry even came up with the character Ubu as a play of irony toward the modern machine who represents the upper class and lives in a greedy and self-infatuating domain. The text explains, “Ubu originates “nowhere” and is precisely he “who wants to erect his Will as sovereign law (Olshavsky).”

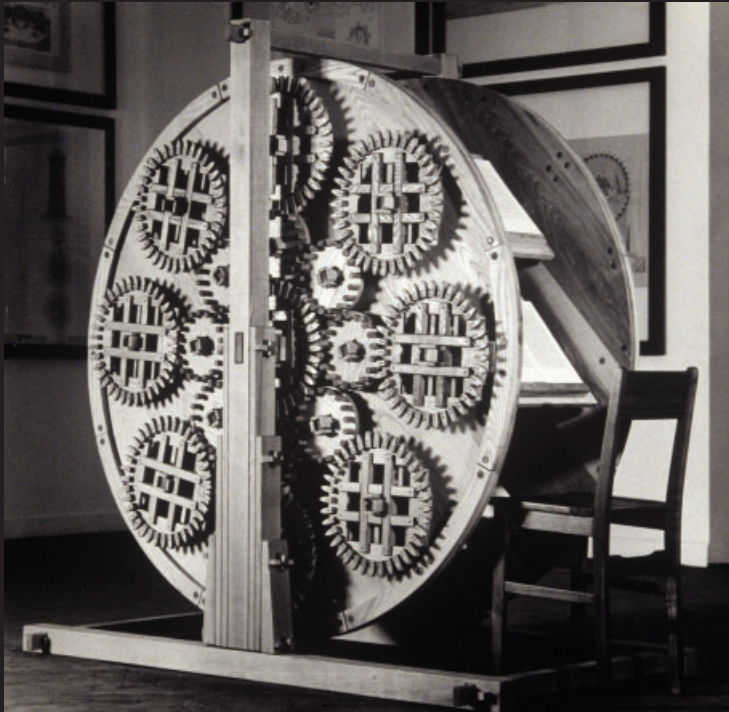


Figure 21 | *Ancient Machine*, photo credit | Libeskind

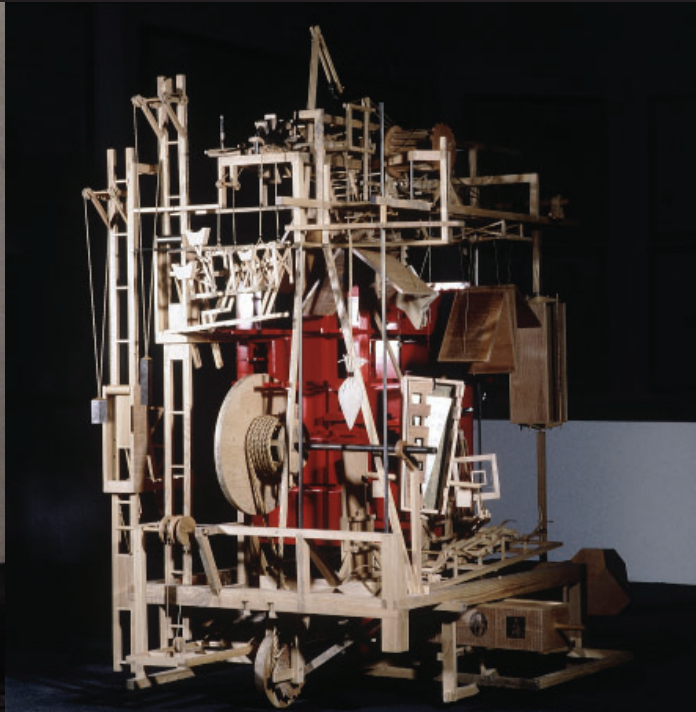


Figure 22 | *Renaissance Machine*, photo credit | Libeskind

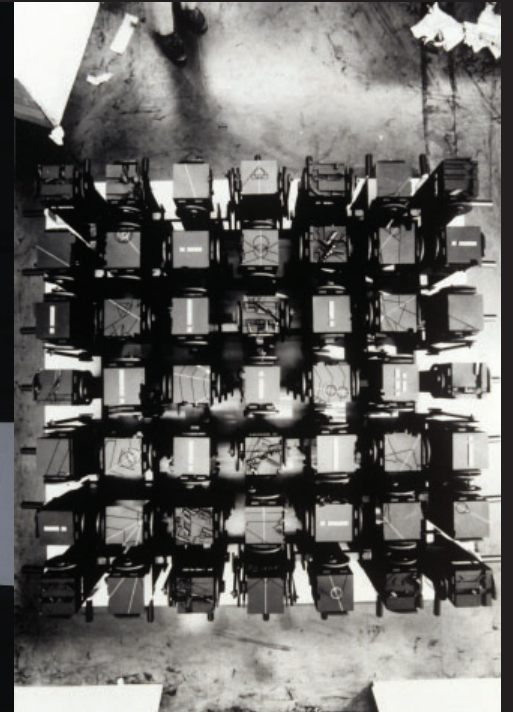


Figure 23 | *Modern Machine*, photo credit | Libeskind

PROJECT JUSTIFICATION

Why is the project that you have defined important to you as a person?

My thesis project is focused on a topic that relates to everyone in the world, and not just myself. Our perception of wonder as humans has adapted over time as technologies, religions, and cultures themselves have changed. I think that my thesis topic addresses some issues that have rarely been touched on by popular science and history, in turn making it an important project for not just myself but many.

Why is it important for you to do this project at this stage of your academic development?

This project has challenged me in many ways that I have never been challenged before. It has helped me grow my knowledge in topics that are very deep and complex. In using different sources of quite different information and being able to link their importance to one another to create a whole, my academic development has grown in the research and presentation of my research.

How is the project going to add to your knowledge base?

This project has and will continue to add to my knowledge base as I continue to research and learn about new and culturally significant topics that are important to furthering my research and design thesis.

Why is it important to do this project at this stage of your professional development?

The timing of this thesis project comes in a great point in my life because this is the transition between the educational setting to the professional practice setting. In deepening my knowledge of architectural theory and how to apply theory and practice together in design I think this is a great turning point in my professional development.

How is the project going to add to your set of skills?

This project has improved my set of skills, in particularly in my ability to research topics and make them relevant to a topic. My presentation skills have also improved throughout all of the presentations that I have made and participated in throughout the semester, and I will continue to grow in this aspect as the project progresses and I continue to present in front of audiences.

Why is doing the project important for the profession?

My project addresses an issue in how wonder is perceived, and how this perception has changed throughout time. I think that it is an important topic to the profession because wonder and architecture are two things that have worked hand in hand throughout history. Our perception of wonder has evolved throughout time, and so has the architecture.

Why is the project important as an academic exercise at this time?

The project that I am researching and will be designing is an important academic exercise because of I am exploring the essence of not only wonder but our mentality toward design and creating. The changes in our perception of wonder throughout time not only impacts architecture, but how we inhabit and view the world.

How can you justify expending the funds to implement the project?

The expenditure of funds for this project may not be justifiable because of the fact that I am not designing for an efficient and necessarily functional architectural structure, but to design an essence of wonder similar to its ancient sense of thaumata.

Is the technology to be used in your project justified considering all its aspects?

The technologies that are going to be implemented in my project are themselves going to interweaved into the comparison of wonder throughout history. The technologies themselves will radiate meaning and stories in themselves and create experiences that fulfill this comparison of modern and wonder in its ancient sense.

Why is the project important to be implemented in its social context?

The social aspect of my project is important to bring to light some of the changes of human life throughout history. The only way to fully understand humanity as we know it today is to look back through history and study how we ourselves have evolved throughout time. By amplifying these issues in the social context, the importance of the subject of my thesis will resonate through people.

Why is the project important to be implemented in its cultural context?

Similar to the social context of my project, the cultural context is aimed to address some potential issues of culture in modern times. As we look back at cultures throughout history, we find the changes in the perception of wonder. Cultures themselves once were rooted in wonder and by acknowledging these changes I find the importance of the cultural context of my thesis project.

Would your project contribute to the advancement of the profession?

I believe that my project can be related to many aspects of life, especially the architecture profession in particular. The design of wonder is something that we have been moving further and further away from, and perhaps by bringing to light the subject of wonder itself could help provide a foundation to further design in the future.

Can your project be left for someone else in the profession to solve? If so, why should you solve it?

I believe that my project could be left for anyone in the profession to solve. Perhaps reestablishing thaumata itself may be out of reach for our culture and society, but the essence of thaumata or interconnection can still be reached. Once one digs deeply into the research of my project with an open and eager to understand mindset, the essence of my argument is quite valid and could be picked up quite easily by anyone interested in solving further.

HISTORICAL, SOCIAL AND CULTURAL CONTEXT OF THESIS

The project that I am executing relates to many projects throughout history. Wonder has been interwoven into architecture as well as daily lives throughout all of our history and this interconnection is the backbone of humanity itself. In recent history, the changes in our view of wonder from thaumata to a more efficiency-based sense of wonder is based on the culture in which we live in. By acknowledging these changes throughout history, we can begin to understand the roots behind our perception of wonder.

Studying history and how machines have evolved throughout time gives us a backbone of understanding the parallel changes that have happened in architecture throughout time. As Peter Olshavsky states, “The fortunes of the architect have been tied to the machine for some time.” Olshavsky’s essay, *Situating Pataphysical Machines: A History of Architectural Machinations*, does just this by establishing a timeline (Olshavsky).

The study of the machine all started with Vitruvius who lived from approximately 80 BC to 15 BC, and was an ancient Roman architect/author/engineer. He stated that machines are, “moved by appropriate revolutions of circles”, which are tied to the, “revolutions of the universe”, in turn being, “generated by Nature.” Olshavsky quotes the text, *In The Mechanical Problems*, that, “The circle is not a neutral geometric figure drawn in homogeneous space; rather, it is a paradoxical figure composed of a single line with no beginning and no end. Still, the circle is not infinite because it is generated by contraries. It is

a line defined by one point that abides and another that moves. It is simultaneously convex and concave. When moving, it resolves two contrary motions, a geometric manifestation of *coincidentia oppositorum*.” Defining the circle in these terms gives us a deeper understanding of what Vitruvius meant when he stated that all machines were moved by circles and their relation to the universe (Olshavsky).

Hero of Alexandria, who lived from 10 AD to 70 AD in Roman Egypt, looked at the machine in a similar way. An example given was the water pump and how it, “moves water upward, for instance, it overturns the natural order of things.” He proposed that it was important to hide and make invisible the mechanical cause to produce wonder. To Hero, “wonder and utility are inseparable forms of knowledge (Olshavsky).”

Aristotle, a few hundred years earlier had already countered this idea, “knowledge could surpass the initial state of wonder and lead one out of ignorance. Wonder sparks philosophizing.” An example he gives is, “being astonished by the solstices.” The second we look at the stars, we begin to wonder. Which in turn, “sparks philosophizing.” Then, “leads one out of ignorance.” This cycle is now clear, but even Plato had doubts about the machine. Plato states, “they (the machines) conflated being and non-being, employed both the good and the bad, and thus neglected ethical virtue.” Olshavsky states, “In the ancient world, nonetheless, making was still steeped in ritual. Actions were not autonomous: one also had to curry the benevolence of the gods. Ancient machines belonged to a concept of nature as a living force

with generative power. Consequently, ancient technique was not reducible to instrumental operations imposed on dead matter (Olshavsky).”

In the Middle Ages, the same world view was adapted to newer concepts of the machine. Firstly, “Saint Augustine asks the Divine: “By what means did you make heaven and earth?” and “What tool did you use for this vast work?”” The idea of machine throughout the Middle Ages wasn’t necessarily a physical mechanism, but a mechanism of the mind that God had given them. Olshavsky explains, “The primary purpose of medieval machines was not to understand the cosmos as an objective entity but to demonstrate the wondrous workings of the Nature that God had created.” Another famous quote from Augustine states, “marvels are not “against nature” but “against what we know of nature.”” In this Medieval era, “wonder depended on the knowledge and experience of the observer: miracles were wondrous to all, but mechanical contrivances were wondrous only to the uninstructed.” And as Lorraine Daston and Katharine Park observed in respect to the wonders of mechanical art, “Like natural wonders, these heterogeneous creations were united by the psychology of wonder, drawing their emotional effects from their rarity and the mysteriousness of the forces and mechanisms that made them work (Olshavsky).”

It isn’t until the sixteenth century that the use of machines changed. Machines began to be introduced to daily tasks, and Leonardo da Vinci was at the forefront of this movement. He was prolific in making machines, however he still struggled with putting together a concise

system of modern science or engineering. E.J. Dijksterhuis explains it best, “One can realize no more clearly how difficult it was to pass from peripatetic to classical science than by seeing a man of his genius, diligence, interest, and high technical ability wrestling with the essential obscurities shrouding the foundations of mechanics.” Although this period of time shifted the machine, the ancient ideas of the cosmos was still reflected in the Renaissance mathematics, similar to Vitruvius (Olshavsky).

Galileo Galilei, who lived from 1564 to 1642, began to really shift the meaning of the machine. He, “declared that the essential structure of our world is mathematical: “It [the universe] is written in the language of mathematics, and its characters are triangles, circles, and other geometric figures, without which it is humanly impossible to understand a single word of it; without these, one wanders about in a dark labyrinth.”” In turn, the machine was turned toward the realm of engineering, divorcing it with its longtime partner, the cosmos. Galileo, “formulated clearly the problem of statics and strength of materials as part of the geometrization of human space: to determine, by means of a geometrical hypothesis, the dimensions of structural elements in relation to the weights they had to carry and the quantitative properties of the building materials.” Which developed the “indirect mathematization of reality.” Although the ideas of Galileo changed the way the world was viewed, the machine was still a tool throughout the seventeenth century to help them, “understanding and representation of movement in the created world. (Olshavsky)”

In the seventeenth century, Rene Descartes applied the machine metaphor to the body in a quite literal manner. The body “operated silently under mechanical laws.” “The body was ruled entirely by number. Shape, size, quantity, and motion were the only properties needed to describe or explain it.” “States of consciousness were excluded from the conversation as merely secondary qualities, with no bearing on truth.” After Descartes, in the late seventeenth and early eighteenth century, Isaac Newton built off of this idea and “explains the actions of the physical world in mechanical terms, replacing speculative metaphysics with “induction and experimentation (Olshavsky).””

Denis Diderot then pushes this idea forward in the Enlightenment age, he, “sought to “pull the mechanical arts up from the debasement where prejudice has held them for so long”, so that their technical knowledge could advance society.” However, there still remained a “separation between representation and realization”, in this period (Olshavsky).

The issue of “separation between representation and realization” was addressed by Gaspard Monge. He established a representation of the world in a set of two-dimensional planes that were the basis of mechanical drawings. This method is quoted as, “indispensable for the architect.” As time progressed, the mapping of machines in mathematical ways became the normal. Robert Willis in the 1800s sought out this idea, “for every machine will be found to consist of a train of pieces connected together in various ways, so that if one be made to move they all receive a motion, the relation of which to that of the first

is governed by the nature of the connexion (Olshavsky).”

The timeline concludes with a quote, “technology is not what is most visible, nor is it simply a tool that one has on hand. It is the knowledge that preexists the arrival of something, and the means with which it is manifested.” This essentially defines technology not as the literal idea of the machine in front of you, but the abundance of knowledge that existed before the technology, or where it all began (Olshavsky). Based on these ideas, we can consider the deeper meaning behind machines and architecture when looking through history. In George Hersey’s, *The Lost Meaning of Classical Architecture*, he explores more specifics into ‘tropes’ and their significance to sacrifice throughout history, especially through the classical orders of columns.

The original column was the tree. First temples were actually trees before many temples were constructed around these trees, because the trees resembled a connection between the gods and the people. However, as time moved forward, and the architecture of the column came into play, and mirrored rituals of the time, often sacrifice. We can see this by analyzing the ancient Greek columns. Each have a foot that are bound by rope, vertical flutes that represent the construction of the spear, and the capital, which is the most human aspect of the column, representing the soul, hair, plants, or even horns. A triglyph, which was a thigh bone of a sacrificial animal chopped in three, wrapped and drained, was represented in ancient architecture. They took literal representations of sacrifice and represented them in the ancient

architecture. Hersey is critical in this aspect of modern architecture, stating that when people slap these columns or triglyphs on a modern building, we no longer understand the real meaning behind them, and this meaning behind them has no relation to us today. The goal of the ancient architecture was to connect the process of sacrifice to the gods (Hersey).

SITE ANALYSIS

Thaumata may be absent in many aspects of our modern world today, however, wonder as an emotion will never leave us completely. In today's world we may only be able to understand the essence of thaumata through works that open a realm of wonder such as Goldsworthy, Libeskind, and Jarry have been able to do. My project through a series of seven sites around the world will search for this essence of wonder while also bringing to light many ancient stories and myths. Seven locations around the globe; Berlin, Cairo, Mexico City, New York City, Sao Paulo, Sydney and Tokyo, each separated by thousands of miles but interconnected through a distance into one fragmented Museum of Myth and Wonder. The significance of each site lies in the fact that they are located in technological nodes around the world. The myths and stories behind each museum along with physical similarities and similar materiality links each museum across the world. Like the myth of Osiris, each site separated but longing for interconnection as one travels to each site around the world.

The myth is based on Osiris, who came to Egypt to rule as king.

“He brought the Egyptian people new laws and taught them how to farm well and live peacefully in their villages. Unfortunately, his brother Seth, was very jealous of his brother's power in Egypt, and began to form a plan to kill Osiris and take over his throne.

Late one night, Seth tiptoed into Osiris's bedroom. Careful not to wake up Osiris, or his queen, the goddess, Isis, Seth measured Osiris's body from top to bottom and from side to side. The next morning, Seth took the measurements to a carpenter who made a beautiful wooden chest decorated with bright paint and sheets of gold.

That night, Seth threw a party, and invited Osiris as the guest of honor. The night was spent feasting, singing, dancing, and playing games. For the final game, Seth brought out the huge wooden chest. He announced that the first person to fit perfectly into the chest would be allowed to keep it.

One by one, each of Seth's friends climbed into the chest. Unsurprisingly, no one was able to fit into the chest, which was made perfectly for Osiris. Finally, Seth and his friends convinced Osiris to try his luck with the chest. Osiris stepped into the chest and lay down. The chest fit him perfectly, just as Seth had planned. Just as Osiris lay down, Seth slammed the lid and sealed it shut. Seth and his friends took the chest down to the Nile River and dumped it in, knowing that Osiris would never be able to survive.

When Isis heard the news of her husband's death she was extremely upset. She rushed to the riverbank, and after several days of searching, found the wooden chest. Isis opened

it and removed the dead body of her beloved Osiris. Crying, Isis hid Osiris' body in the river grass. She didn't want Seth to find Osiris's corpse before she could perform the proper rituals that would allow him to pass into the Afterlife.

Late that night, Seth returned to the Nile, to make sure Osiris's body had washed away. The chest was nowhere to be found, but after searching the riverbank grass, he found the body of his late brother. Furious, Seth cut Osiris's body into fourteen pieces. To make sure that the body was never found again, he hurled the pieces all over Egypt.

The next morning, Isis returned to the river with her sister, Nephtys and her friends, to perform the necessary rituals, only to find Osiris's body gone! Isis transformed into a huge bird and flew high over Egypt. Using her sharp vision, she was able to find all the pieces of the body to put Osiris back together. With the help of Nephtys, Thoth, and Anubis, Isis performed a great act of magic. Very carefully, they began to sew Osiris's body back together. They worked together night after night. When the body was whole once again, they wrapped it head to toe in strips of linen, creating a mummy.

On the night of the full moon, Isis used powerful magic to bring her husband back to life. Osiris embraced Isis, and thanked her sister and her friends. He told them he would not

be able to stay in the world of the living. He explained that having died; he needed to travel to the world of the dead, where he would become the King of the Afterlife (Albany)."

Each fragment of the Museum of Myth and Wonder, similar to the fragments of Osiris, will be linked together through a distance. The distance between just as important as the inhabited spaces themselves. As one experiences the spaces at each location, they will feel a tension and interconnection to the other sites around the world. Anselm Kiefer, a twentieth century artist, is known for his ability to establish an interconnection between each of his works. When describing the work of Kiefer, Markus Bruderlin states, "The cohesion of Kiefer's works adumbrates a basic cosmological structure in which spaces enclose each other like Russian dolls [where] from a center—the 'black hole'—everything appears spatially discrete and yet is simultaneously available for experience: the microcosm is reflected in the macrocosm; inside becomes outside, and vice versa. This simultaneity of the non-simultaneous, this concentration of space in a single space, is the true—and it must be said—metaphysical nucleus of Kiefer's artistic impulse (Bruderlin)."



Figure 6 | Site Map

3250 Vernon Blvd,
Long Island City, New York, United States

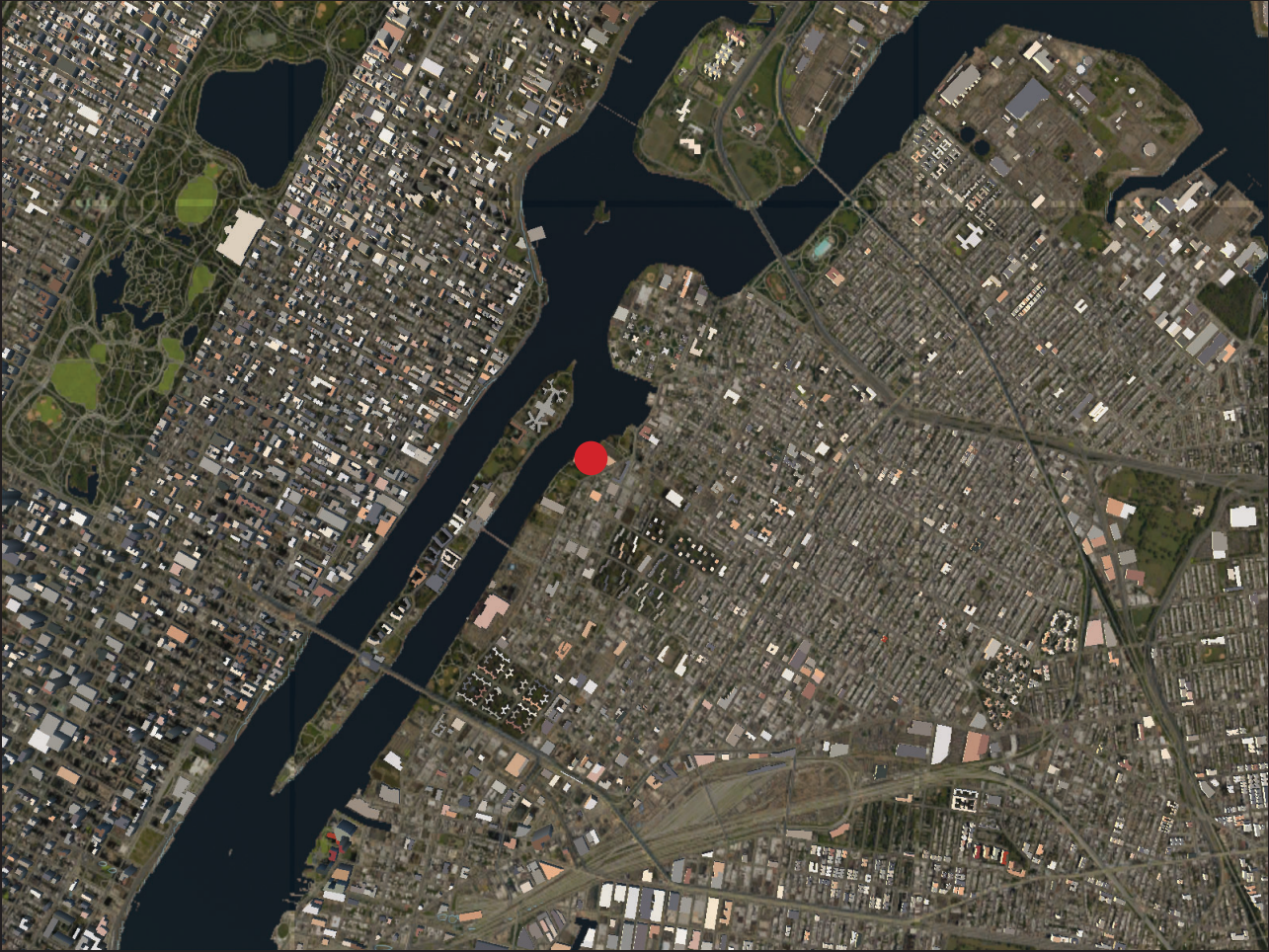


Figure 24 | NYC Site, photo credit | Autodesk InfraWorks



Figure 25 | NYC Site Small, photo credit | Autodesk InfraWorks



Figure 26 | NYC Site Diagram, photo credit | Autodesk InfraWorks

- Roads
- Buildings
- Water

Lomas de Santa Fe, Contadero, Cuajimalpa, 01219
Alvaro Obregon, Mexico City, Mexico



Figure 27 | Mexico City Site, photo credit | Autodesk InfraWor

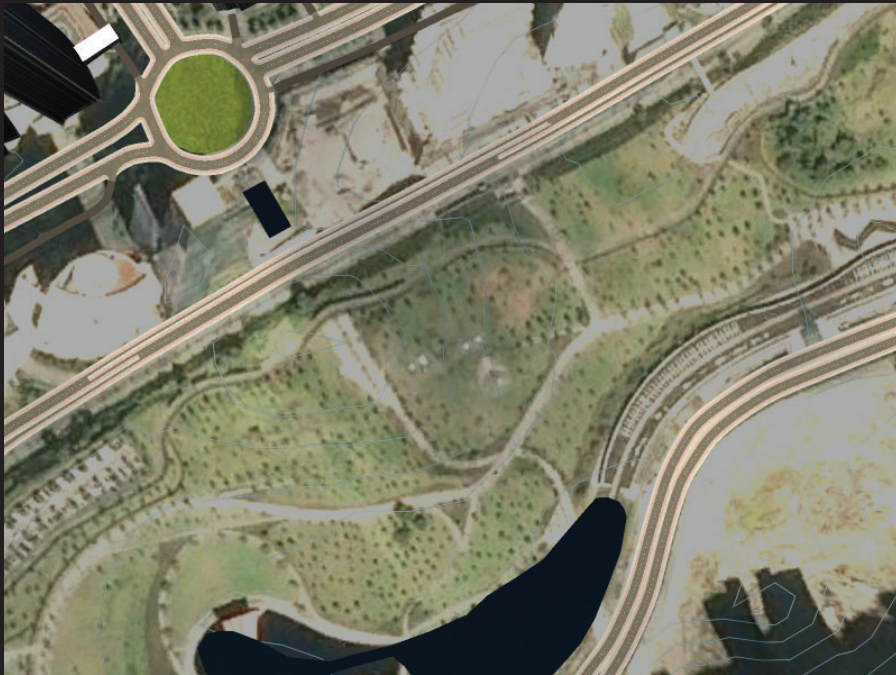


Figure 28 | Mexico City Site Small, photo credit | Autodesk InfraWorks

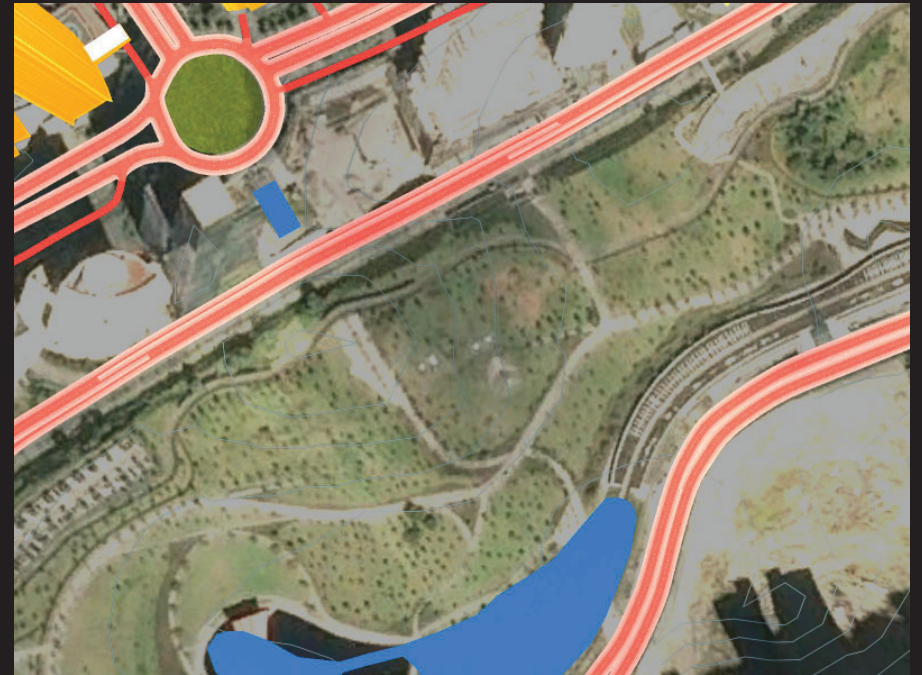





Figure 29 | Mexico City Site Diagram, photo credit | Autodesk InfraWorks

-  Roads
-  Buildings
-  Water

Ibirapuera Park, Av. Pedro Alvares Cabral -
Vila Mariana, Sao Paulo, Brazil






Figure 30 | Sao Paulo Site, photo credit | Autodesk InfraWorks



Figure 31 | Sao Paulo Site Small, photo credit | Autodesk InfraWorks



Figure 32 | Sao Paulo Site Diagram, photo credit | Autodesk InfraWorks

-  Roads
-  Buildings
-  Water

Tiergarten,
Berlin, Germany

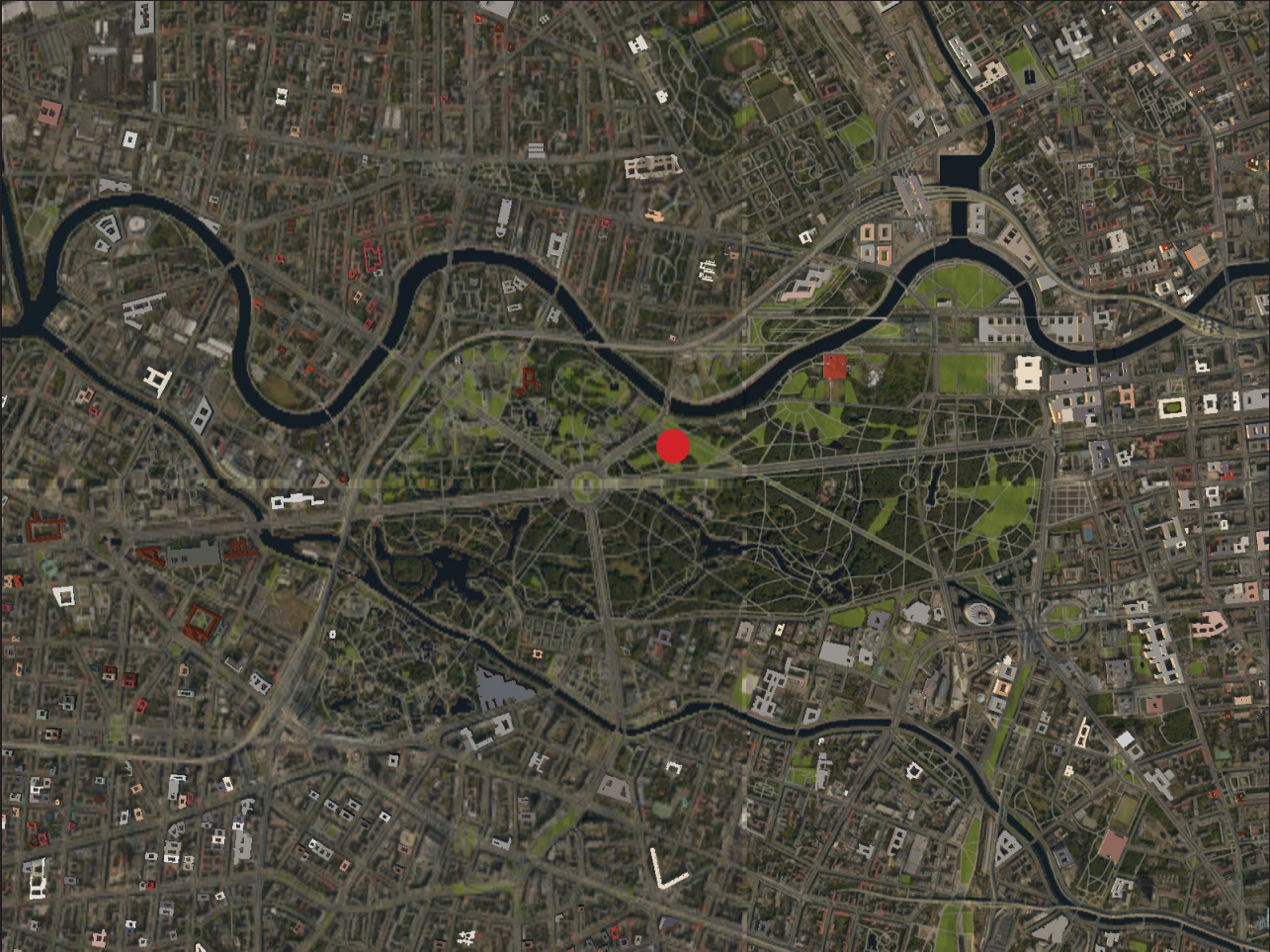


Figure 33 | Berlin Site, photo credit | Autodesk InfraWorks

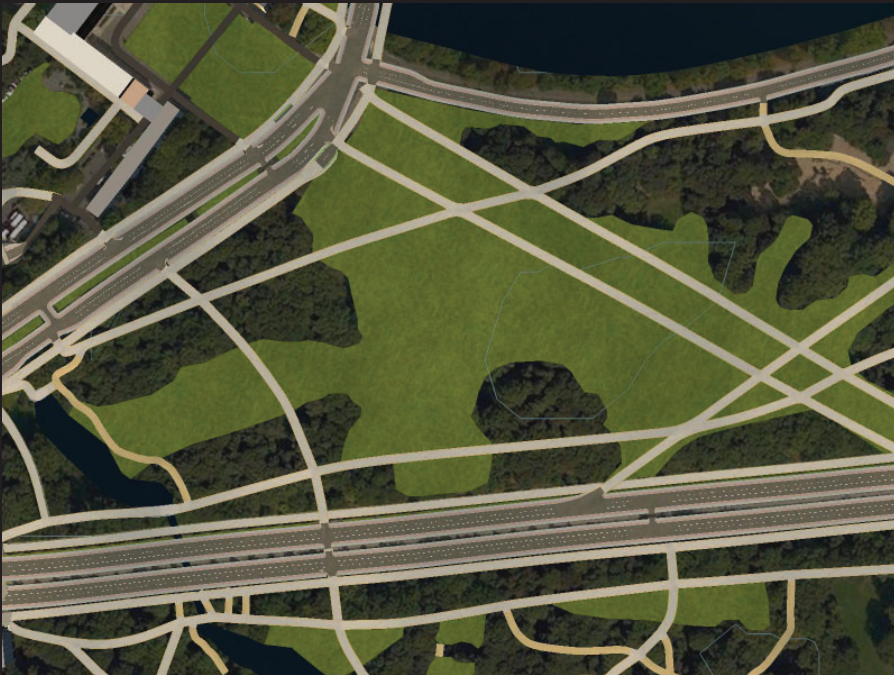





Figure 34 | Berlin Site Small, photo credit | Autodesk InfraWorks



Figure 35 | Berlin Site Diagram, photo credit | Autodesk InfraWorks

-  Roads
-  Buildings
-  Water

Kafr Nassar, Al Haram, Giza Governorate,
Cairo, Egypt

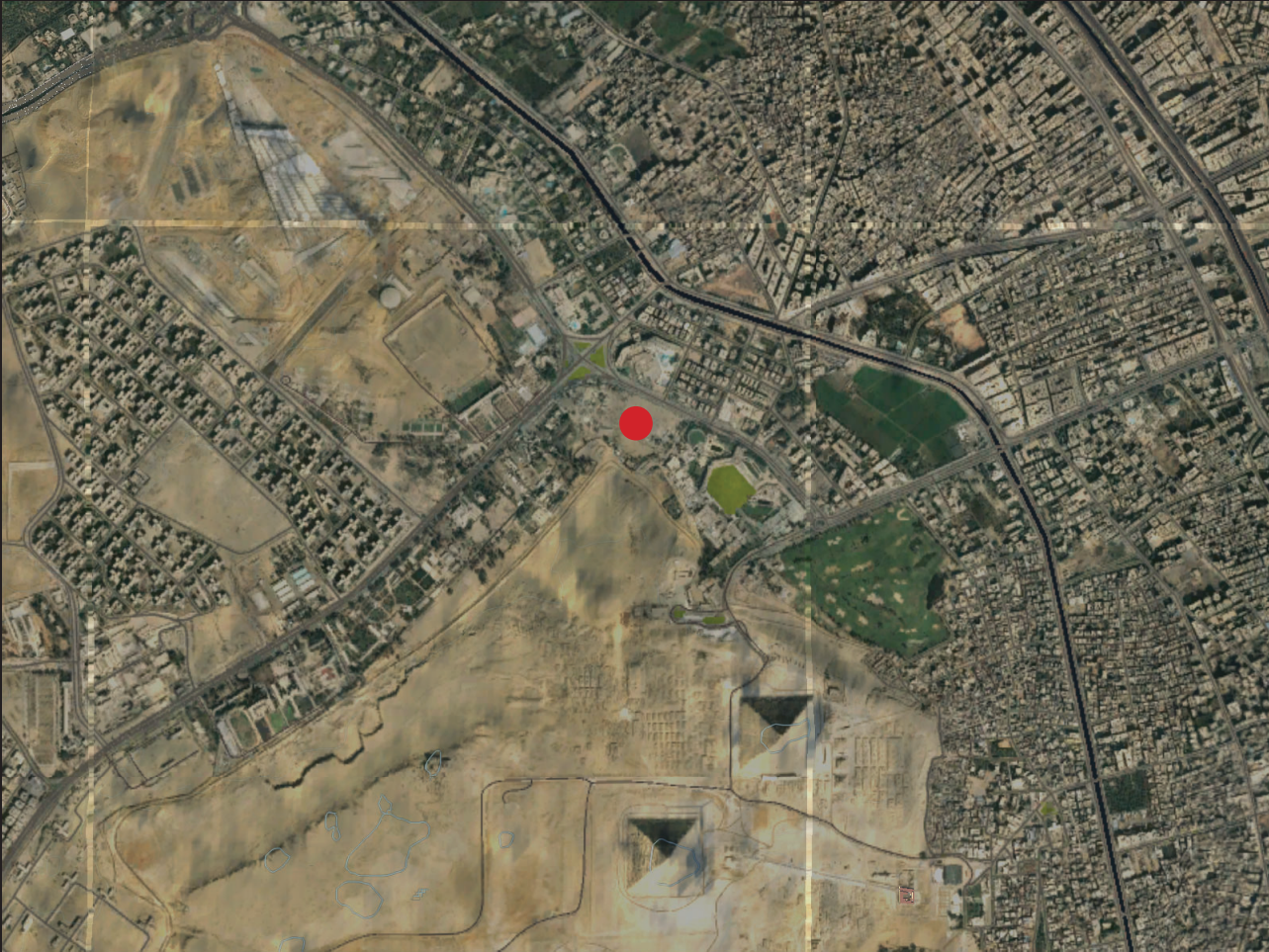





Figure 36 | Cairo Site, photo credit | Autodesk InfraWorks



Figure 37 | *Cairo Site Small*, photo credit | Autodesk InfraWorks



Figure 38 | *Cairo Site Diagram*, photo credit | Autodesk InfraWorks

-  Roads
-  Buildings
-  Water

1 Chiyoda, Chiyoda City,
Tokyo, Japan



Figure 39 | Tokyo Site, photo credit | Autodesk InfraWorks

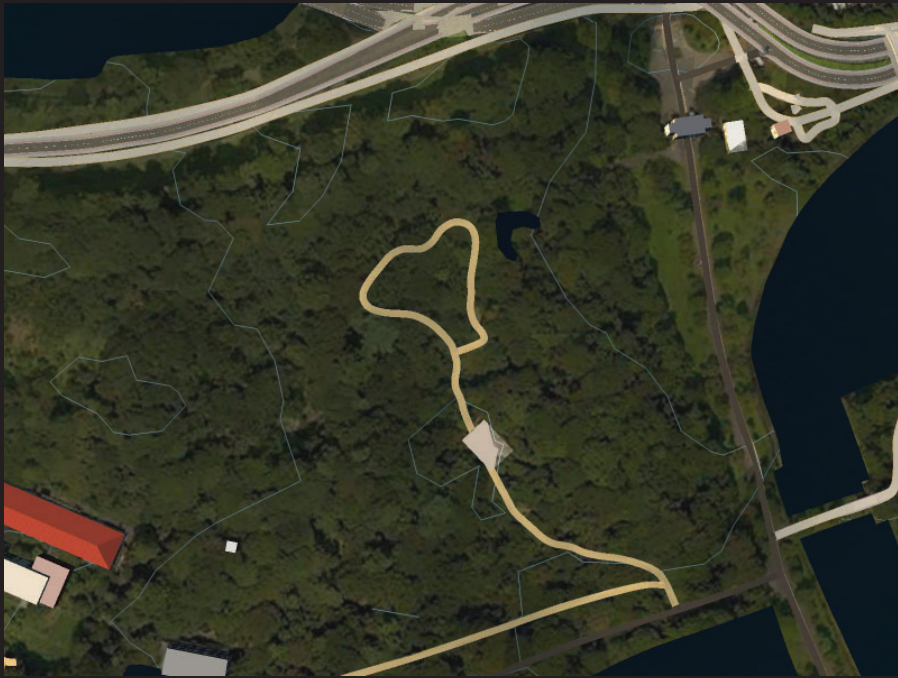





Figure 40 | *Tokyo Site Small*, photo credit | Autodesk InfraWorks



Figure 41 | *Tokyo Site Diagram*, photo credit | Autodesk InfraWorks

-  Roads
-  Buildings
-  Water

Mrs Macquaries Rd,
Sydney NSW 2000, Australia

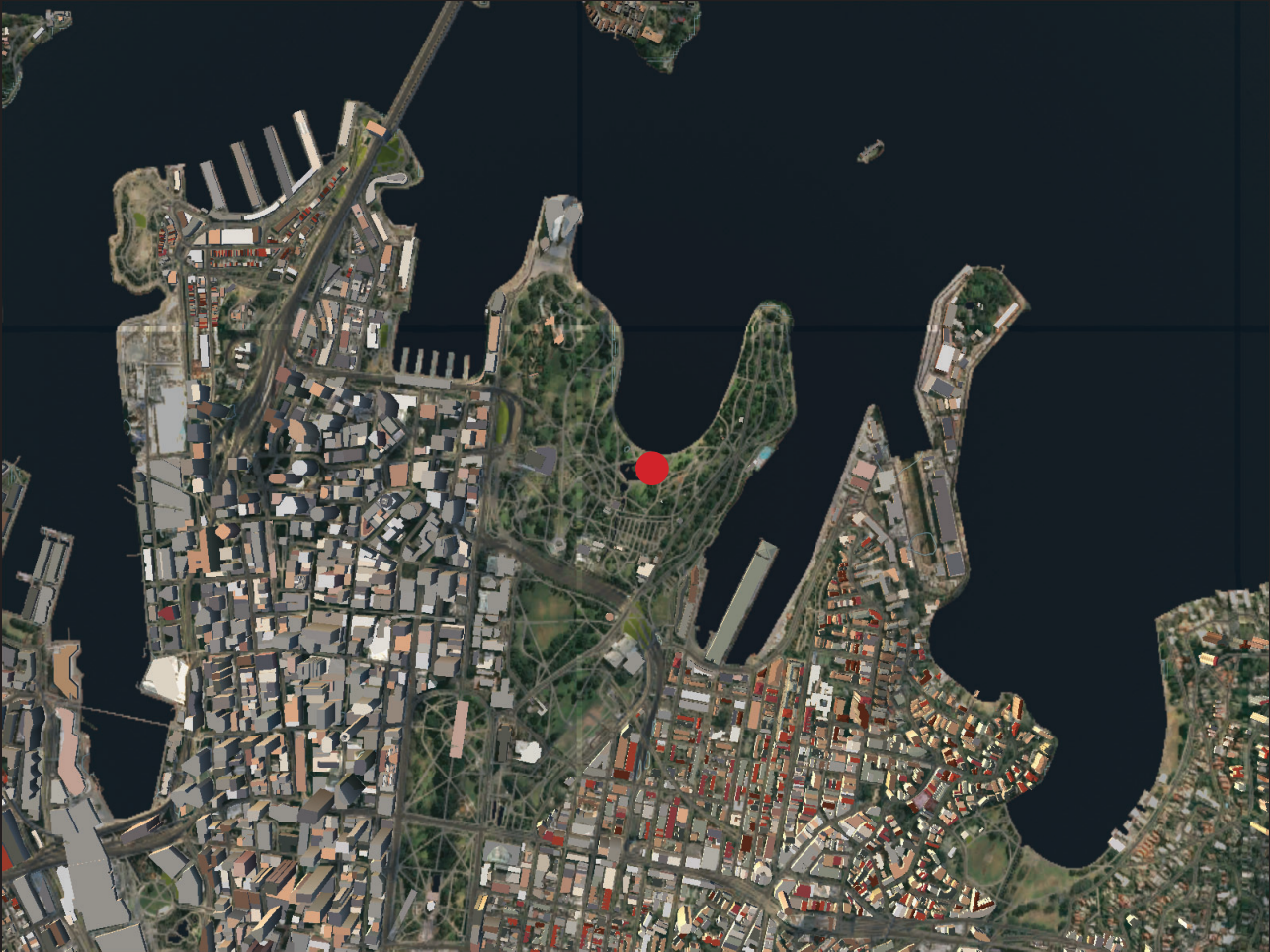





Figure 42 | Sydney Site, photo credit | Autodesk InfraWorks



Figure 43 | Sydney Site Small, photo credit | Autodesk InfraWorks



Figure 44 | Sydney Site Diagram, photo credit | Autodesk InfraWorks

-  Roads
-  Buildings
-  Water

PERFORMANCE CRITERIA

In my design the main aspects of performance that I will be measuring is space allocation, environmental performance, the behavioral performance and the psychological impact. Space allocation is an important aspect of my project because interconnectivity between each site around the world is paramount. The similarities between spaces will help interconnect them, however the mood of each site will differ. When measuring the environmental performance aspect of my project I will take into consideration the climate of each site location. Considering that the climate varies widely from site to site, this is going to be an important aspect that plays a big role in my design. As well as climate, lighting performance will play a big role in my design. The museums will each need to be designed uniquely to convey the myths translated into the architecture. The behavior performance, or the way that people interact and use the spaces will also be an important aspect to measure throughout my design. My design needs to establish an experience for the person visiting all sites around the world, but also for the visitor who only plans on experiencing only one of the exhibits. These behavioral patterns are important to my design to be all inclusive to visitors. The final measure, or the psychological impact is perhaps the most important performance measure. The transforming of one's mood throughout my design is what will drive the understanding of the evolution of wonder throughout history. As I design, the psychological impact is what will separate my design from many other exhibits around the world.

measurements will consist of many drawings and models to understand the spaces and enliven them in the case of space allocation. This aspect can be done through mass models and plans. The environment aspect will be analyzed through data that I have retrieved researching each site location. This as mentioned earlier is an important aspect due to the diverse climates of each site. For measuring behavior patterns, I will analyze through my artefact as well as drawings. By designing the behavioral experience, I hope to establish an environment where all feel welcome and are drawn into the spaces as they walk by. As for the psychological impact, my analysis will be mostly done through models, and language. The sensory experiences will be amplified to help the visitors feel the interconnection throughout the world.

In order for me to meet the performance criteria that I have established I will have to execute each of the processes that were mentioned previously. Although some of the objectives are not going to be based on quantifiable data, the climate research as well as sun studies will be an aspect that I will collect data for. The other aspects like the psychological impact will have to be met my furthering research by testing models and sensing the emotional impact of the spaces through trial and error.

Throughout my design process the analysis of these performance

SPACE ALLOCATION DIAGRAM

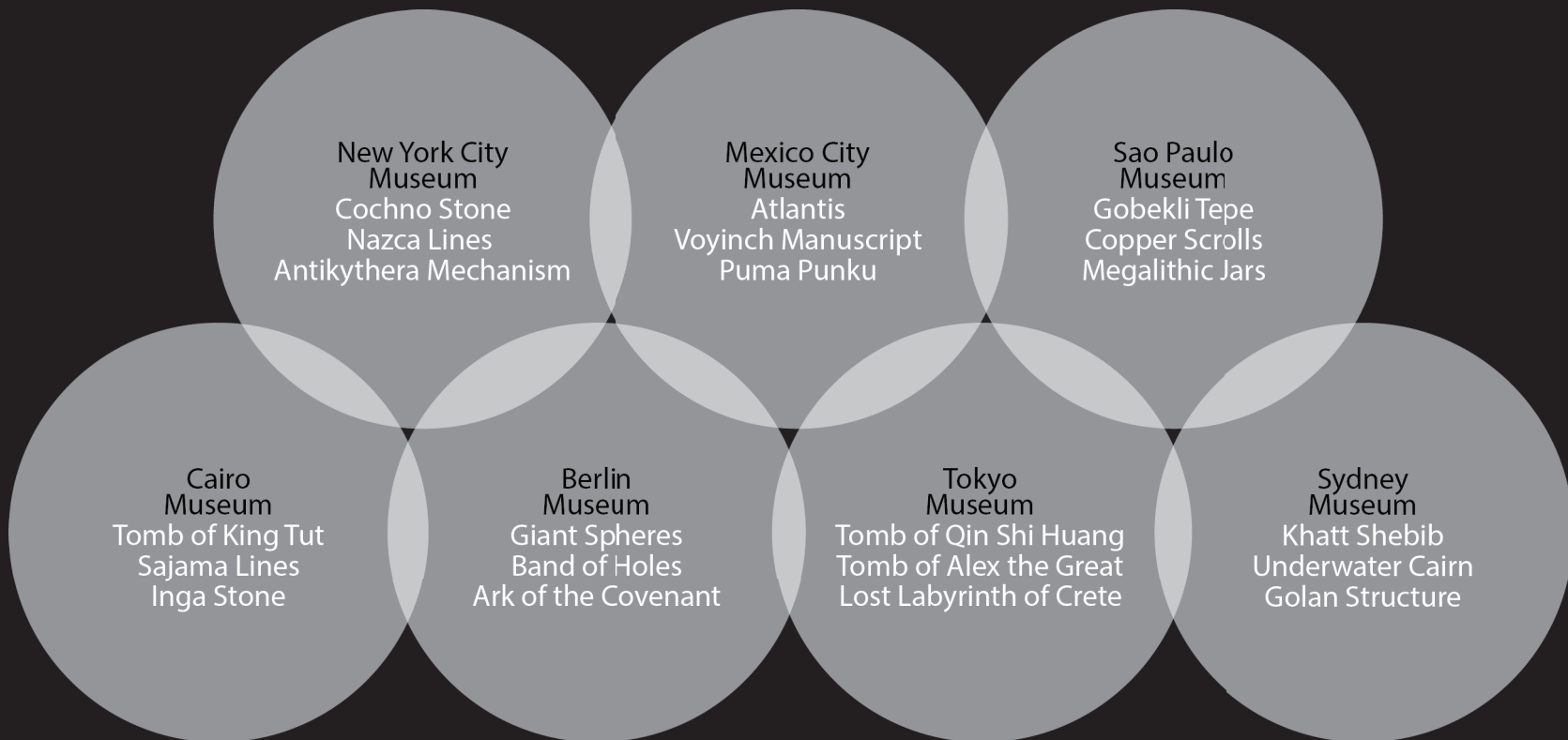


Figure 45 | Space Allocation Diagram



Figure 47 | *Artefact I*

PROCESS DOCUMENTATION

The design process began as soon as I began researching and working through presentations early in the Fall semester. Interconnection was the way of life for ancient cultures throughout time and it was evident that this was going to play a key role in my design. Exploring this sense of interconnection and wonder was the key factor when designing my artefact that was the transition between the research and the design of my Museum of Myth and Wonder. A series of two writings, one by Cyril and Liliane Welch and the other by Paul Ricoeur helped me in analyzing my artefact.

The main point that the Welch reading, *Reading Poetry and Philosophy* examines the participation of reading into a work, which turns us toward the human condition, evokes us to be ourselves, and changes the countenance of beings. In this activity, perceptions come together in an essence of changing our way of seeing and breaking through our normal way of being in the world. I believe my artefact achieves this participation as one, physically encounters the various material and spatial qualities that invite others “read” into the work.

In the sense of the turning us toward the human condition, my artefact was created to do just that; to evoke a situation that inspires a sense of wonder and interconnection that is central to my thesis topic which explores the architectural Wonders of the World. As one engages with the many facets of my artefact the human condition and sense of wonder is intended to become a part of the artefact itself. Casted shadows weave and bob freely over a sheet dotted with paint

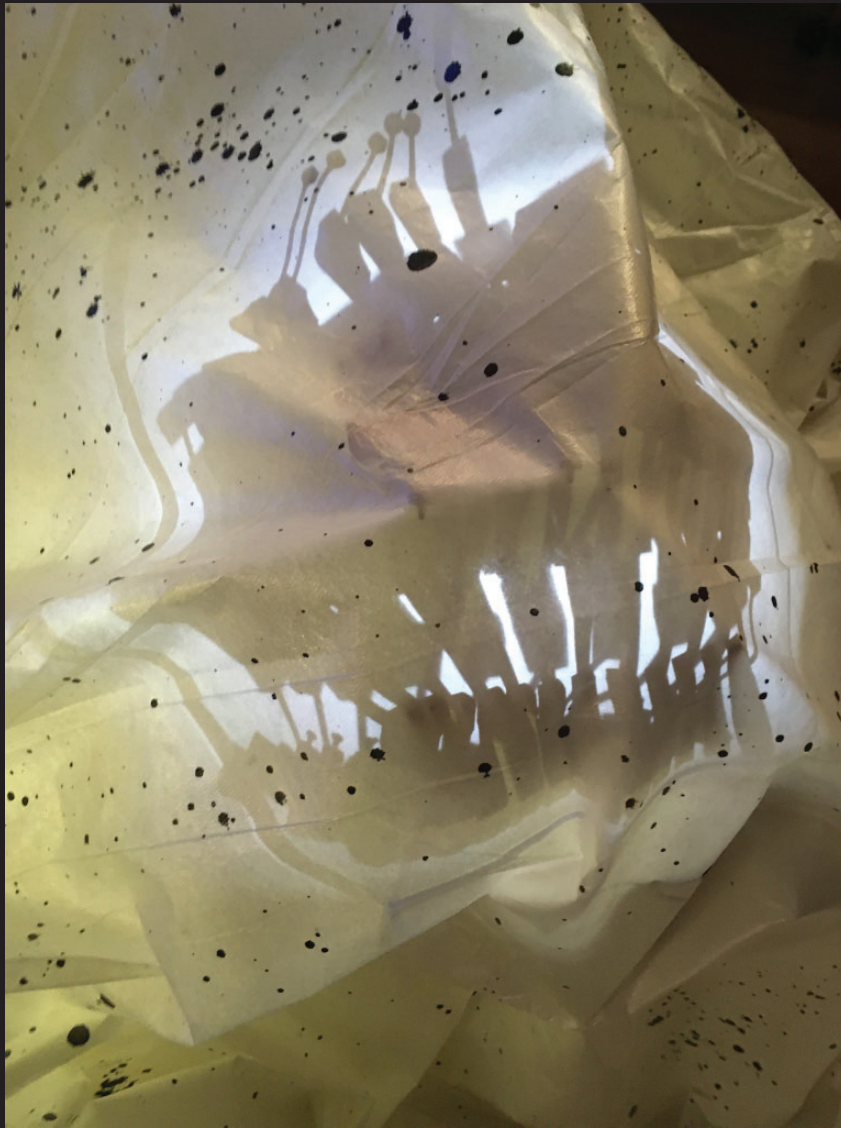


Figure 48 | *Artefact II*

that resembles star-like patterns, which itself covers mechanical-like fragments lit from below. As these mechanical fragments float and twirl, shadows projected onto the sheet merge and join with one another allowing one to sense interconnection, not only between the shadows but between ideas of cosmic interconnection which has always been central to the human condition over the course of Western civilization. Inspired by these origins, the artefact establishes its very own cosmos in which the human condition becomes an active factor in the artefact itself.

Also mentioned in the Welch reading is the idea of how a work must evoke us to be ourselves. I believe that the very nature of my artefact and the origins of the elements that have been put together allow the person interacting to be themselves as they read into the ambiguous space it creates. The large white canvas hanging off the walls creates a projection of mysterious dancing shadow-fragments from the outside. However as one enters into this activity the mystery behind the playful shadows becomes more clear and evoke even more connections. While walking amongst the fragments, whose shadows dance in connection with each other, you become an element of the artefact itself both from within the act of creating the movement of the sheet and from the perspective of the viewer looking at it from the outside. While one perceives the intricate detail and mysterious nature of the floating fragments, they perhaps ponder the origin of the complex fragments of technology since the pieces hidden beneath the sheet are mechanical-like, alien forms, intended to evoke a playful, rather

unknown mechanical essence. I believe it is in this very contemplation that the artefact is successful in evoking one to be themselves as they take part not only in an exhibition but help to evoke the experience and see many connections beginning to form in the atmosphere created by the work (Welch).

Another aspect the Welch's considered essential to "reading" into a work that relates to this project is how a work changes the countenance of beings. Meaning that it changes our way of being in the act of participating with the work. When contemplating the encounters with this artefact, experiences change drastically depending on whether one is located on the exterior or interior of the work. By making the work an interactive setting, where one is able to actually interact with it and walk through the work, I believe it emphasizes the human aspect in experience that indeed changes one's sense of being by going beyond an aesthetic experience. By entering the glowing cosmos populated with mysterious hanging fragments, it creates a cosmos that opens up a dimension of interconnection not only between each of the works as they interact with one another but also by bringing them altogether (Welch).

I found the dimensions of reading into the work to be quite helpful in substantiating the importance of the linguistic image and the deep nature of layering in my artefact, because what makes this layering so effective is the usage of metaphor as well as fiction that relates to a



Figure 49 | *Artefact III*



Figure 50 | *Artefact IV*

in substantiating the importance of the linguistic image and the deep nature of layering in my artefact, because what makes this layering so effective is the usage of metaphor as well as fiction that relates to many central myths and associations in the work itself, which occur in a variety of ways. When designing the artefact, I was in search of elements that I could incorporate into the project that were based on the evolution of wonder and interconnection as well as the evolution of technology. When I came across a piano it became quite obvious to me that an instrument whose sole purpose is to create harmony through music could potentially hold the answer to my artefact and dramatize the sense of interconnection even further. By deconstructing the piano, I became aware of the wonderful and mysterious mechanism that was made up of hundreds of hammers that connected the reaction of the keys and the strings to the whole function of the piano. The metaphor of interconnection and wonder and their relationship with technology runs deeply through my project, which itself functions as a form of harmonic interconnection between many parts that relate to the research of different myths and the central participation of metaphor that I sought to evoke.

Although the metaphor of wonder and technology was already active though the fragmented mechanisms of the piano it was evident that deeper metaphors emerged that connected the sensation of wonder to the very origins of technology and metaphor. To represent the Seven Ancient Wonders of the world which I have devoted much research

to throughout my thesis, I cut the complex piano mechanism into seven fragments. Each fragment unique to themselves in some aspect but undoubtedly evident that they once were a part of a whole that was itself a powerful metaphor of harmony that related to central participation of the work. The canvas or cosmos draped over the fragments is sprinkled and splattered with paint from the fragments themselves as I dipped them in paint then spattered and shook them about to create a sense of cosmos that could be projected on. This interconnection between the mechanisms and the canvas is seen as they both show remnants of an interaction between the two in their black paint marks. The shadows as they interact and dance with one another express a sense of wholeness from outside however a sense like walking through a cave full of markings from the inside. When researching ancient cultures, the ancient Egyptian myth of Isis and Osiris has in a way guided this sense of interconnection. In the myth, Isis searches for fourteen fragments of Osiris who had been chopped into pieces. Because Isis desires to put him back together so he may ascend to the afterlife this myth embodies the essence of metaphor discussed by Ricoeur, since metaphor itself is based on bringing separated pieces together into a new whole. It is this sense of interconnection and piecing together to find transcendence that resonate with the fragments of the piano mechanism and which underlies the many connections people have found in my project. The use of this ancient Egyptian myth opens a strong resonance with the dimension of metaphor and even fiction as Paul Ricoeur describes in *The Function of Fiction in Shaping*

Reality (Ricoeur).

Although each element is important in their own way the main goal of the artefact was to evoke a sense of wonder and interconnection as a whole work. Through the shortening and elongating of shadow projections, the sprayed, painted, constellation of dots on the surface of the interactive sheet, and incorporating the mechanism of the piano, the artefact establishes a connection not only between the fragments and the canvas but also a connection between the artefact, the observer and a series of interconnected myths and stories that have always been central to architecture. Such experiences evoke the very sense of interconnection and even wonder, referring back to more ancient experiences as well as our modern fascination with the universe by forming relationships between one another.

It is the interrelationship between each element of the artefact and how each element is interconnected with not only the other elements but the work as a whole that makes it a successful model, capable of evoking a sense of interconnection and wonder in relationship to technology. With the use of metaphor and the linguistic image the work becomes layered and primary in the sense that it requires a *breaking through* and relating to the human condition that can essentially change our way of “being in the world.” In doing so, it accomplishes what has always made architecture, architecture, namely by establishing a sense of interconnection between humans, the larger world and the cosmos.

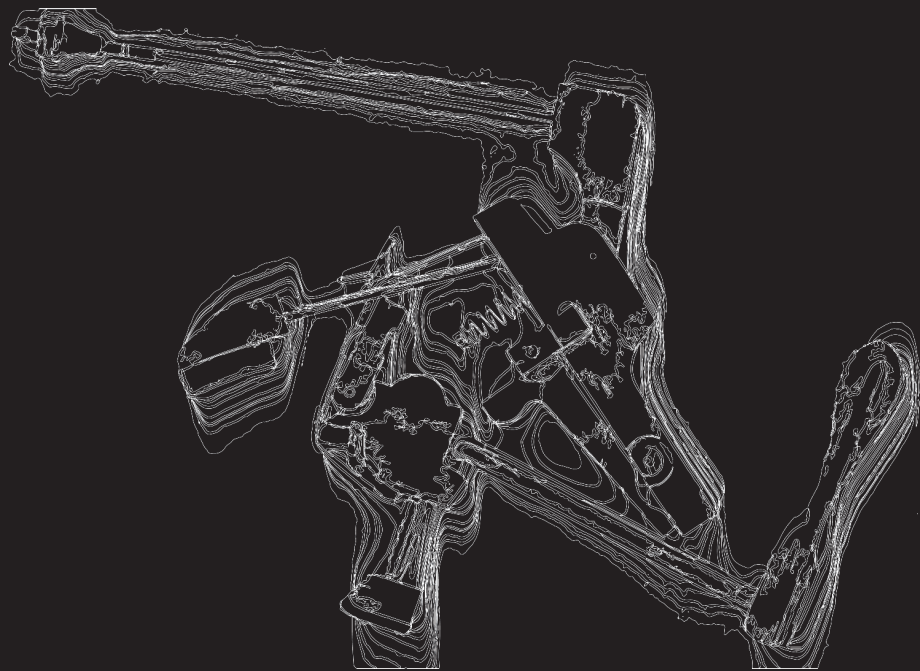


Figure 51 | *Piano Hammer*

After designing my artefact and reading into all of the inspirations of interconnection and wonder, I spent much time playing with the pieces and modeling different things in relation to these tiny mechanisms. Although this process didn't end up unfolding into my architecture in the end of the design process I feel it important to share the processes which led to the final design product.

While trying to make sense of the tiny mechanisms I was also working with my sites and their relationships to one another around the world. By researching the relationships of each different point on the Earth I established a series of axis that hypothetically ran through the earth connecting each site to each other. The idea in doing this process was to come up with a set of geometries that would have relationships to each site around the world. In doing so I came up with a series of models that depicted these axes. From this point I actually took the axis and the directions that they would hypothetically be pointing out of the Earth and 3D printed tools to model with that would create planes on each axis pointing directly to each other site around the world.

However, it was at this point where I began to feel a bit lost in the idea of physically linking my museums and decided to take on another route that I feel greatly benefited my design in the end. Deciding to work more intensely on translating myths into architectural elements instead of trying to link them together physically I was able to explore



Figure 52 | *Axes Models I*

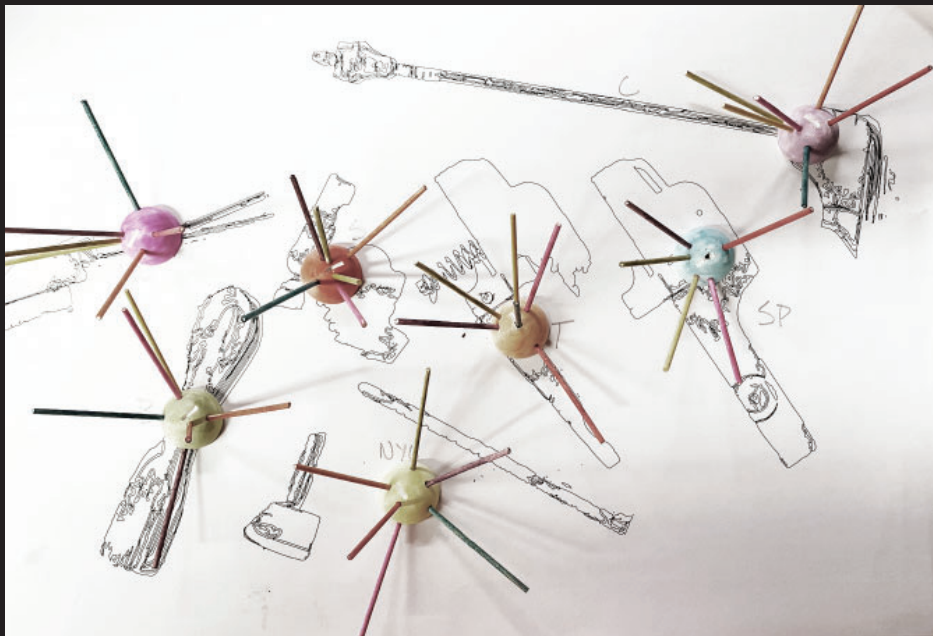


Figure 53 | *Axes Models II*

more creative solutions that coincide with the evolution of wonder and the critique of our dependence upon efficiency and functionality in architectural practice today. By exploring these myths deeper and experimenting with different architectural elements for each museum I was able to come to a design solution.

My design process involved working through section initially and exploring experiments with mass and void and their relationship to an above and below ground datum. I established a key design factor early in this process that was focused on challenging the efficiency and functionality of our sense of wonder today. By employing different design elements that walk the line between buildable and not buildable, the design inherently is intended for one to question its buildability and in fact open them up to the question as to why it perhaps wouldn't be built. In opening this realm of inefficiency perhaps unfunctional architecture I found myself in a much more creative place that allowed me to really push my design and the elements to their greatest potential - emphasizing the weight and meaningfulness of history.

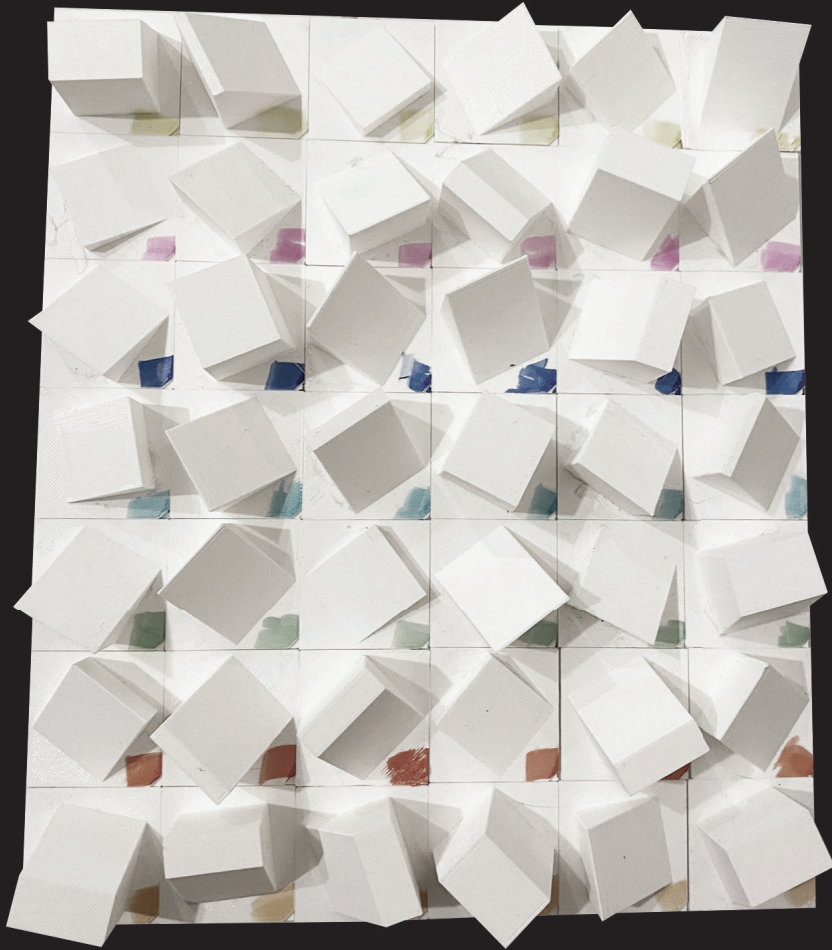


Figure 54 | Modeling Tools



Figure 55 | Process Model

THE EVOLUTION OF WONDER THROUGH HISTORY

REOPENING THE REALM IN SEVEN MYTHIC EXPERIMENTS OF TECHNOLOGICAL INTERCONNECTION

THE MUSEUM OF MYTH AND WONDER

CAIRO, EGYPT

SYDNEY, AUSTRALIA

MEXICO CITY, MEXICO

BERLIN, GERMANY

NEW YORK CITY, USA

TOKYO, JAPAN

SÃO PAULO, BRAZIL

As Henri Frankfort suggests in *Before Philosophy*, the sense of interconnection between ancient people, nature, and the cosmos was perceived as a living "Thou". As humanity has advanced, this emphasis on interconnection has faded from something perceived as real, toward a technologically driven society today that treats Nature as an externalized "it." The Seven Ancient Wonders of the World were erected on the earlier mode of interconnection wherein imagination was interwoven in the world. Not only were many of the ancient Wonders resting places for mortals, they were places that connected the ancient people with the cosmos, their gods, and the nature of all things.

Such changes open an opportunity to explore the possibility of achieving wonder in architecture today. Questioning how we might implement technology in ways that reinvigorate a relationship to stories that reawaken the imagination as part of reality beyond efficiency and functionality. My thesis seeks to employ building as technology that opens a realm of wonder that has been greatly untapped after the seventeenth century.

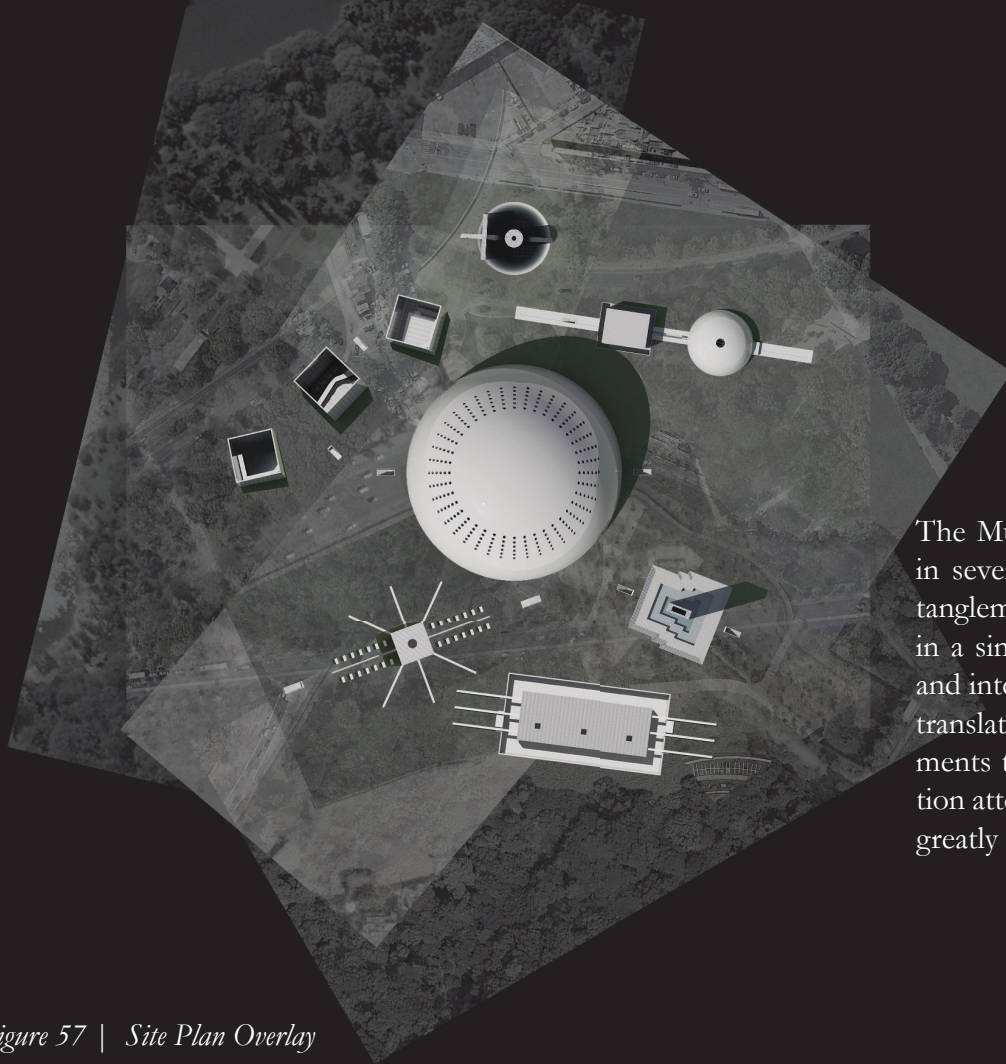
Like the ancient myth of Osiris and Isis, the Museum of Myth and Wonder is scattered across seven sites around the world, each known for their technological production. Placing the Museum in technological nodes around the world is essential to the project challenges our willingness to technology in ways that perhaps go against functionality to return us to a more ancient mode of being where architecture was a means for evoking wonder, through usage of modern technologies and implying them in perhaps unconventional ways, translating ancient myth into architecture. The Museum of Myth and Wonder has no exhibits, instead the architecture itself becomes the exhibit as one traverses through the spaces that perhaps return one to the ancient mode of perception, encountering nature and the cosmos as "Thou".

PROJECT SOLUTION

An intensive graphical representation of the Museum of Myth and Wonder (left). Designed separately but also as a whole the fragments of the museum hang from the whole above in similar fashion to the hanging fragments of the piano mechanism in my artefact. Separated by thousands of miles, the fragmented museums overflow with myth and mystery through the translated architectural elements that perhaps return one to the ancient mode of being - encountering nature as 'Thou'.

PERFORMANCE ANALYSIS: RESPONSE TO CONTEXT, RESEARCH, GOALS & PROJECT EMPHASIS

The following narrations, images, mythic stories, plans and sections each demonstrate a complete response and performance analysis to the research covered in great depth throughout the book. The design for the Museum of Myth and Wonder also demonstrates a response to the context of the sites scattered throughout the world as well as the goals and project emphasis established in the thesis proposal portion of the book.



The Museum of Myth and Wonder is located throughout the world in seven different technological cities however, the layering and entanglement of myth throughout each site interconnects each fragment in a similar fashion to the way the shadows of my artefact entangle and interconnect each fragmented mechanism of the piano. Through translation of myths and exploration of different architectural elements that challenge efficient and functional design, my design solution attempts to open a realm of wondrous architecture that has been greatly untapped since prior to the seventeenth century.

Figure 57 | Site Plan Overlay

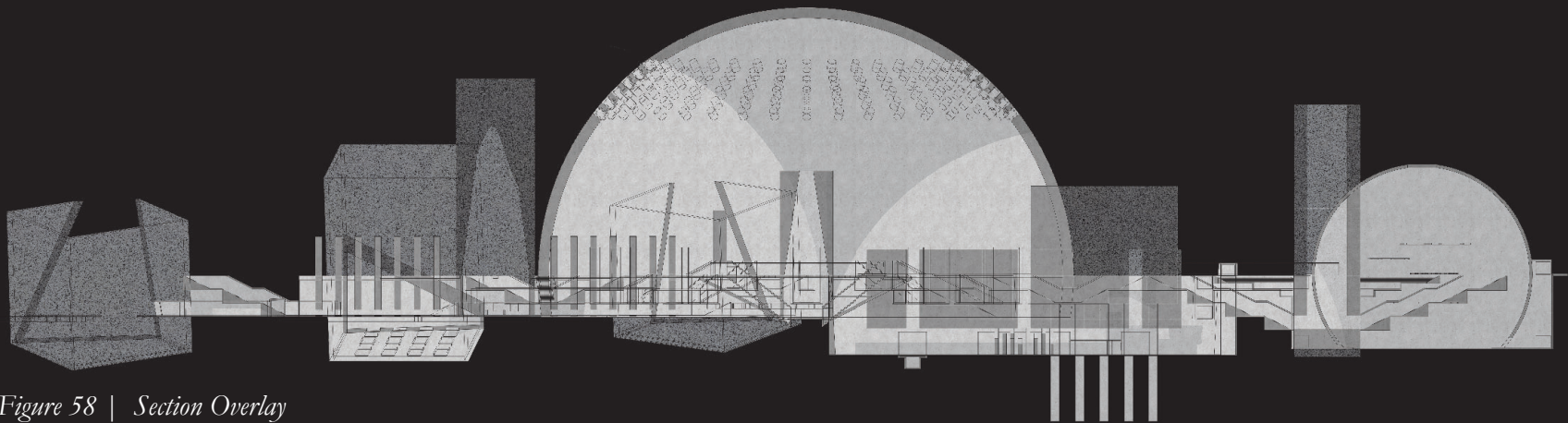


Figure 58 | Section Overlay

TOKYO, JAPAN



Figure 59 | *Qin Shi Huang*, photo credit | history.com

The tomb of Qin Shi Huang, the first emperor of Qin, is located just a few miles away from the wondrous Terracotta Army in Xi'an China. However, the mystery of Huang's tomb lies in the fact that he has been buried below a pool of mercury. Because of so, the mysteries of Qin Shi Huang's tomb have never been unearthed (Whipps).



Figure 60 | *Labyrinth of Crete*, photo credit | creativitypost.com

The Lost Labyrinth of Crete is known from myth to be designed by Daedalus for King Minos of Crete to trap a half man half bull, flesh eating minotaur from escaping. Daedalus himself could hardly navigate it, however once he could he was imprisoned to never reveal the secret (Perez-Gomez).



Figure 61 | *Alexander the Great*, photo credit | history.com

The Lost Tomb of Alexander the Great is a mystery still to this day. According to ancient myth the tomb has been transported to various locations throughout history, but its location remains unknown (Aprilholloway).

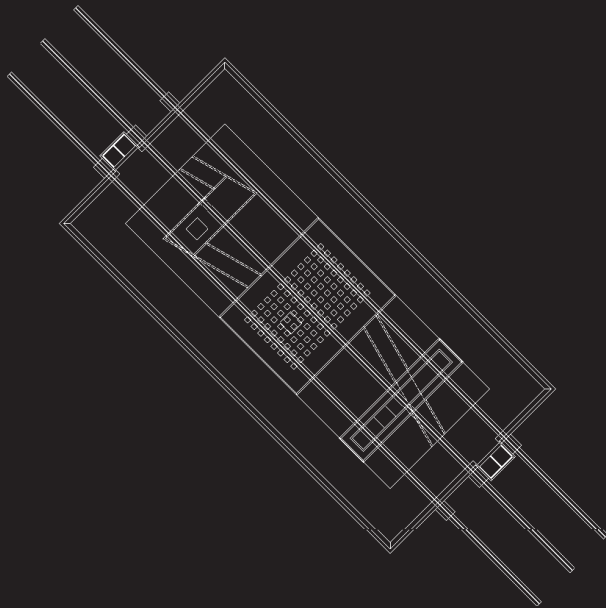


Figure 62 | Tokyo Plan

The Tokyo Museum perhaps more than any of the other sites translates the weight of myth and history through the materiality and mass of the museum in a way that challenges the functionality and efficiency of architectural practice today. As one approaches the structure, they are met by an unearthly mass of glossy granite mined directly from the Earth, hanging by massive iron beams incorporating cutting edge technologies in order to withstand the weight of the granite mass.

These massive iron beams tower over one's head as they advance toward the entrance of the museum - an elevator shaft that forces one to be confronted by the sheer size of the stone as they descend into the museum.

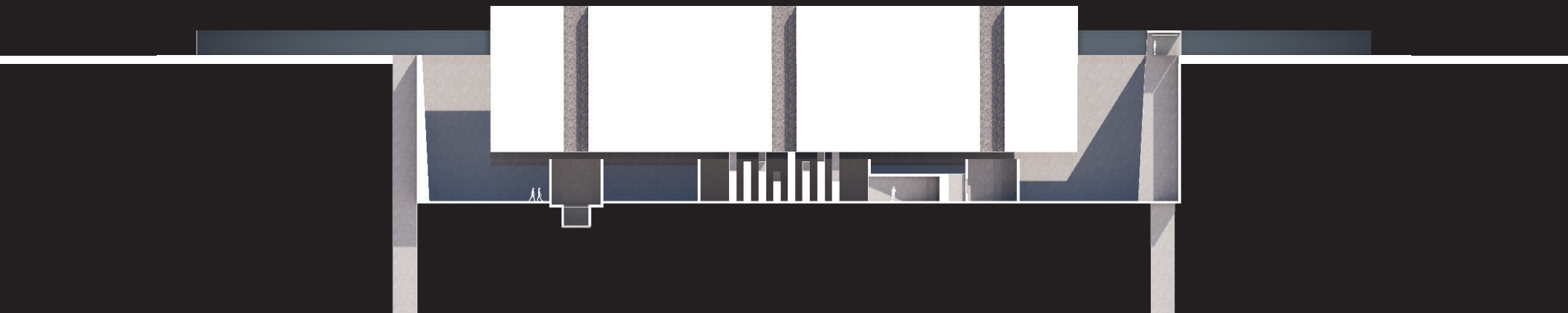


Figure 63 | Tokyo Section



Figure 64 | Transcending Beams - Tokyo

Once on the ground floor 80 feet below grade, the mass takes on another form. A wonderful sleek stone reflecting light and the sky in ways that feel almost transcendent.

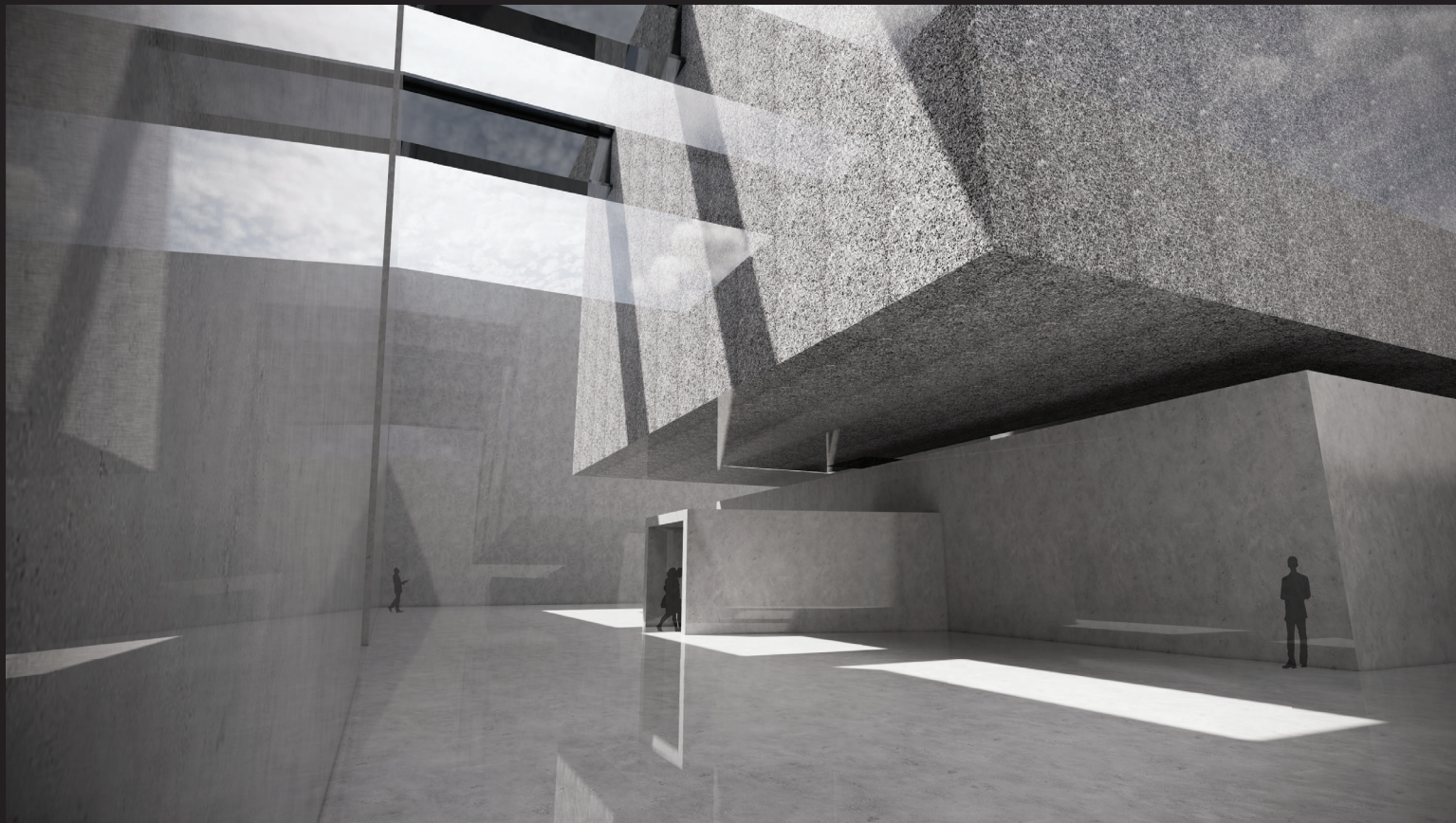


Figure 65 | Tunnel View - Tokyo

As one proceeds into the dimly lit tunnels and enters each of the three mythical spaces beneath the massive granite stone, they are opened to it once again, however this time becoming aware of the weight hanging above one's head. It makes you uncomfortable, however its floating nature over the walls inclosing each space speaks to the mysteriousness of the spaces about to be entered.

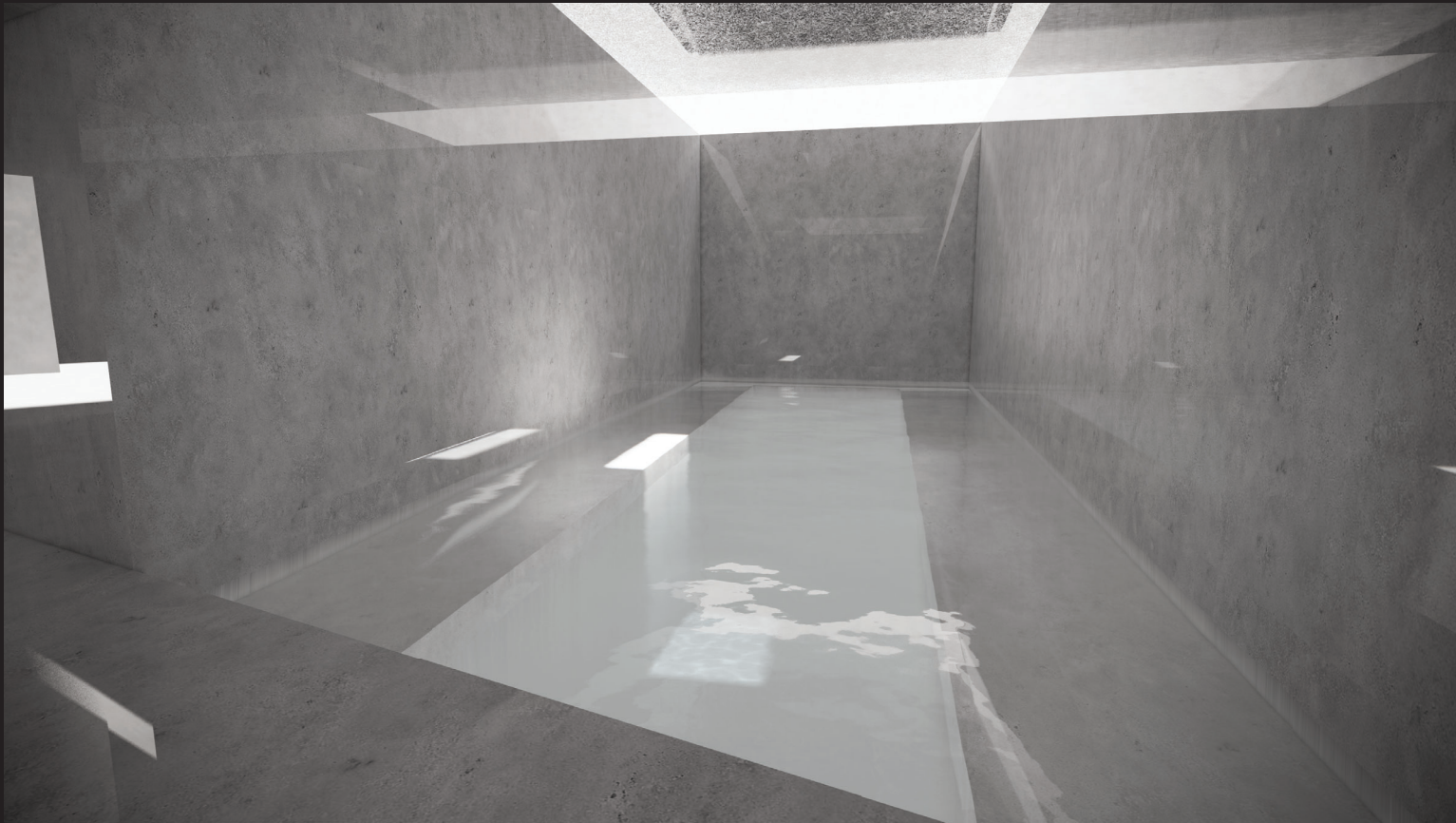


Figure 66 | Tomb of Qin Shi Huang - Tokyo

The first space, full of water just twelve inches below one's feet. A void in the pool goes deeper than one can see. However, a glowing projection transcending through a void of the mass overhead projects onto the bottom of the dark pool – The Tomb of Qin Shi Huang.



Figure 67 | Disorienting Tunnel - Tokyo

As one travels through another dimly lit tunnel, they exit in disorientation. A series of columns of all different heights glowing from the reflections of one another as well as from the light coming between the top of the glossy concrete walls and the sleek granite mass.



Figure 68 | Minotaur of Crete - Tokyo

Transgressing through the disorientating space, one comes upon another projection coming through a void of the mass above into the maze of columns. – The minotaur of the Lost Labyrinth of Crete.

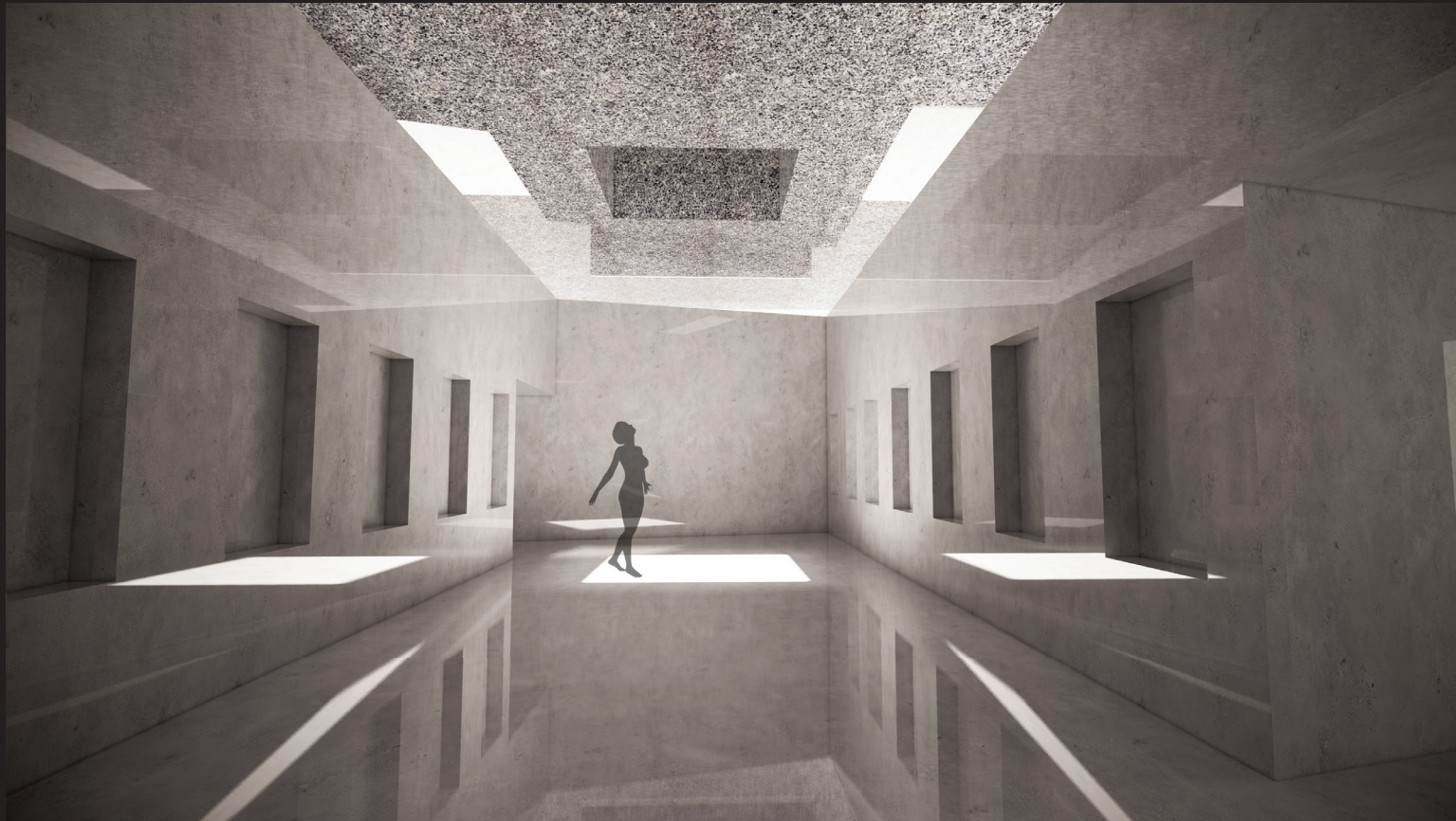


Figure 69 | Tomb of Alexander the Great - Tokyo

Disoriented, unsure if retracing one's steps or advancing into the next tunnel, one enters another narrow space. Lined with voids in the wall like those seen in ancient Egyptian catacombs, another bright projection paints the floor – The Lost Tomb of Alexander the Great.

SYDNEY, AUSTRALIA



Figure 70 | *Khatt Shebib*, photo credit | pbs.com

Khatt Shebib is a 93-mile long wall made of stone that once stood about 3 feet high. The purpose of the wall is still unknown; however assumptions have been made that link the wall to the separation of fertile and non-fertile lands for the ancients of Jordan (Whipps).



Figure 71 | *Underwater Cairn*, photo credit | summitpost.org

Located in the Sea of Galilee, this Underwater Cairn is believed to be a burial ground. The odd aspect of this mystery is the fact that it lies at the bottom of the Sea of Galilee. It is hypothesized that the cairn structure was once land based and possible rising sea levels have left it in the depths of the Sea of Galilee (Whipps).



Figure 72 | *Golan Structure*, photo credit | haaretz.com

Up to 5,000 years old the Golan Structure still baffles archeologists today. The structure is made up of small basalt rocks that together weigh over 4,000 tons. Nobody is sure as to who build the structure or why however it is assumed that the structure has some sort of astrological significance (Rabinovitch).

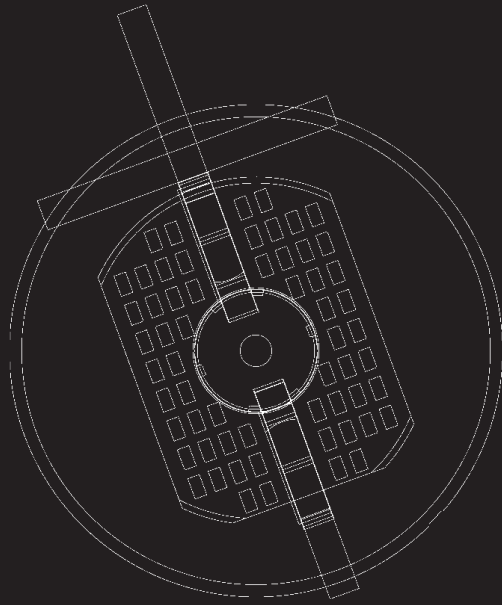


Figure 73 | Sydney Plan

The Sydney Museum incorporates water that is translated from the Khatt Shebib mystery. Separating land from water a massive granite wall towers over one as they enter the museum and descend on an inclined elevator encased in glass that allows one to witness the transition from above to below the surface.

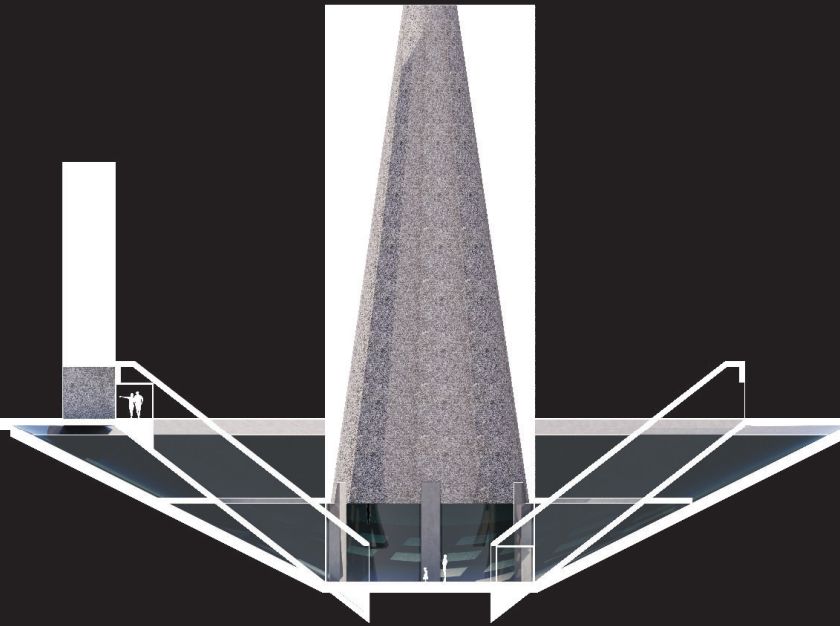


Figure 74 | Sydney Section



Figure 75 | Khatt Shebib Wall - Sydney

Entering the Museum in Sydney, one proceeds through a massive polished granite wall separating the mystery lingering below the depths of the pool and the land behind – Khatt Shebib.

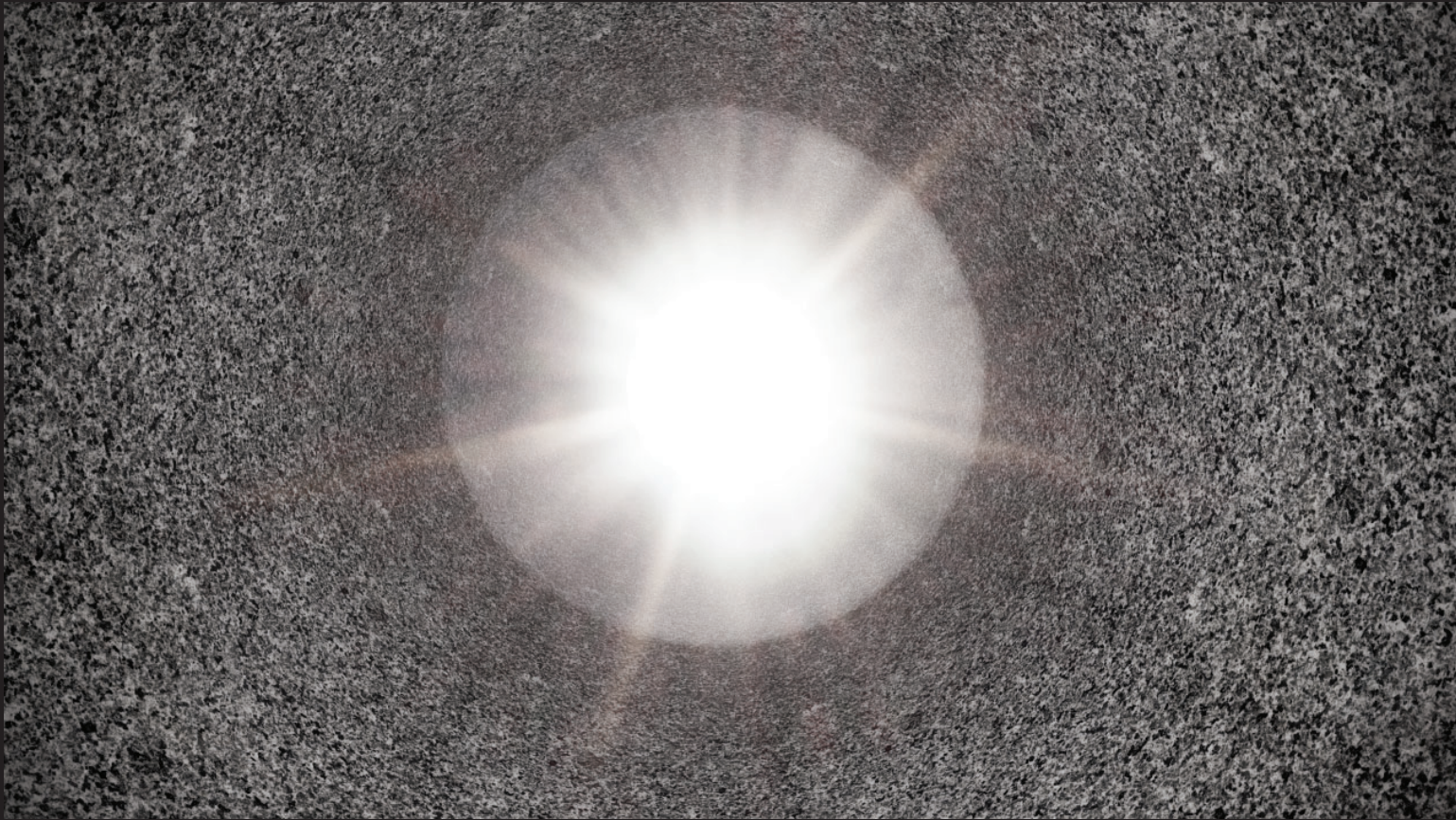


Figure 76 | Transcendent Tower - Sydney

Looking up, one feels an element of wonder, an almost transcendent experience as the light glows into the circular structure – the Golan Structure.

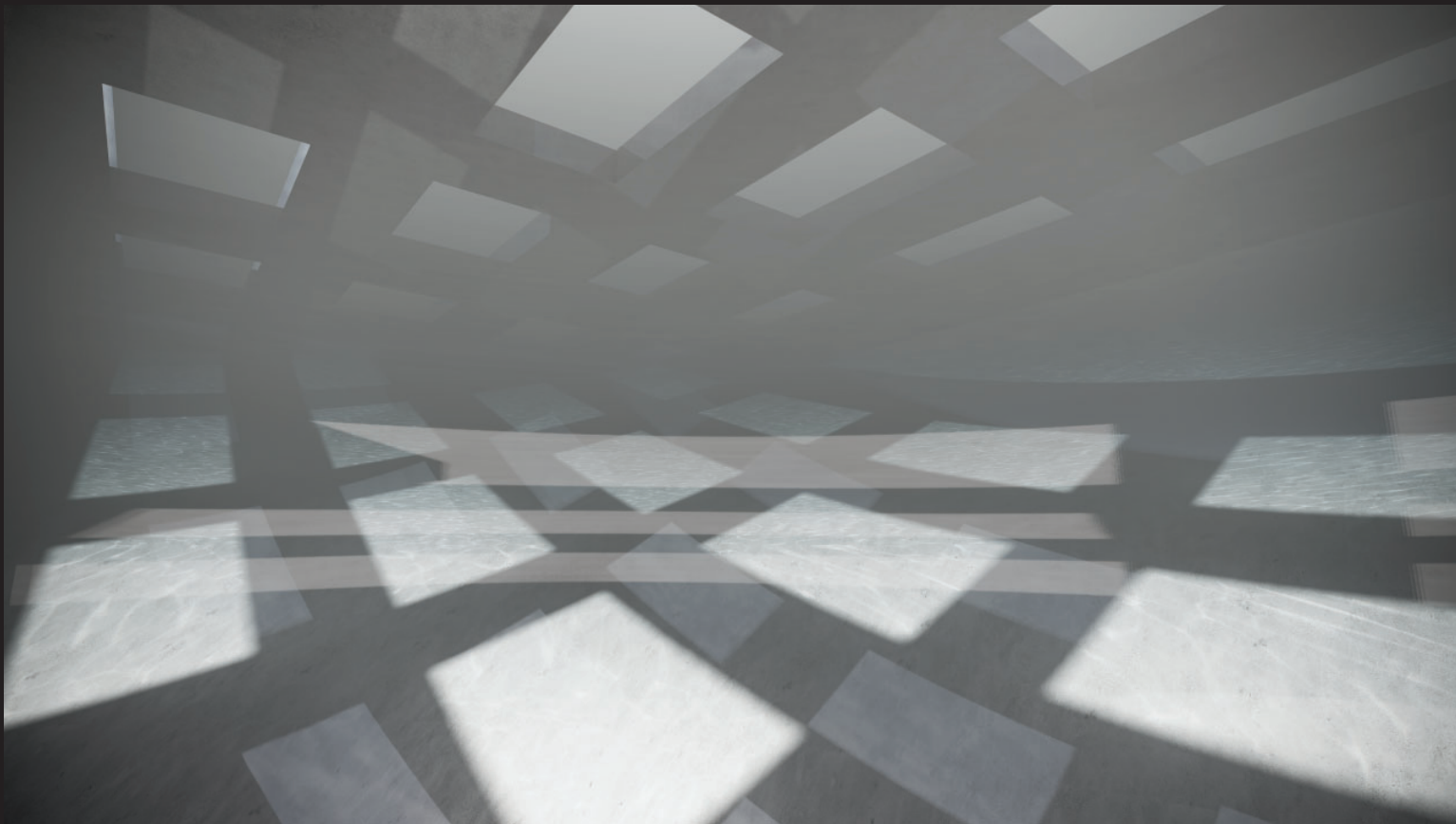


Figure 77 | Below the Depths - Sydney

Once entering the space, one confronted by a concrete plate seemingly floating below the surface full of voids projecting light to the bottom of the pool – the Underwater Cairn of the Sea of Galilee.

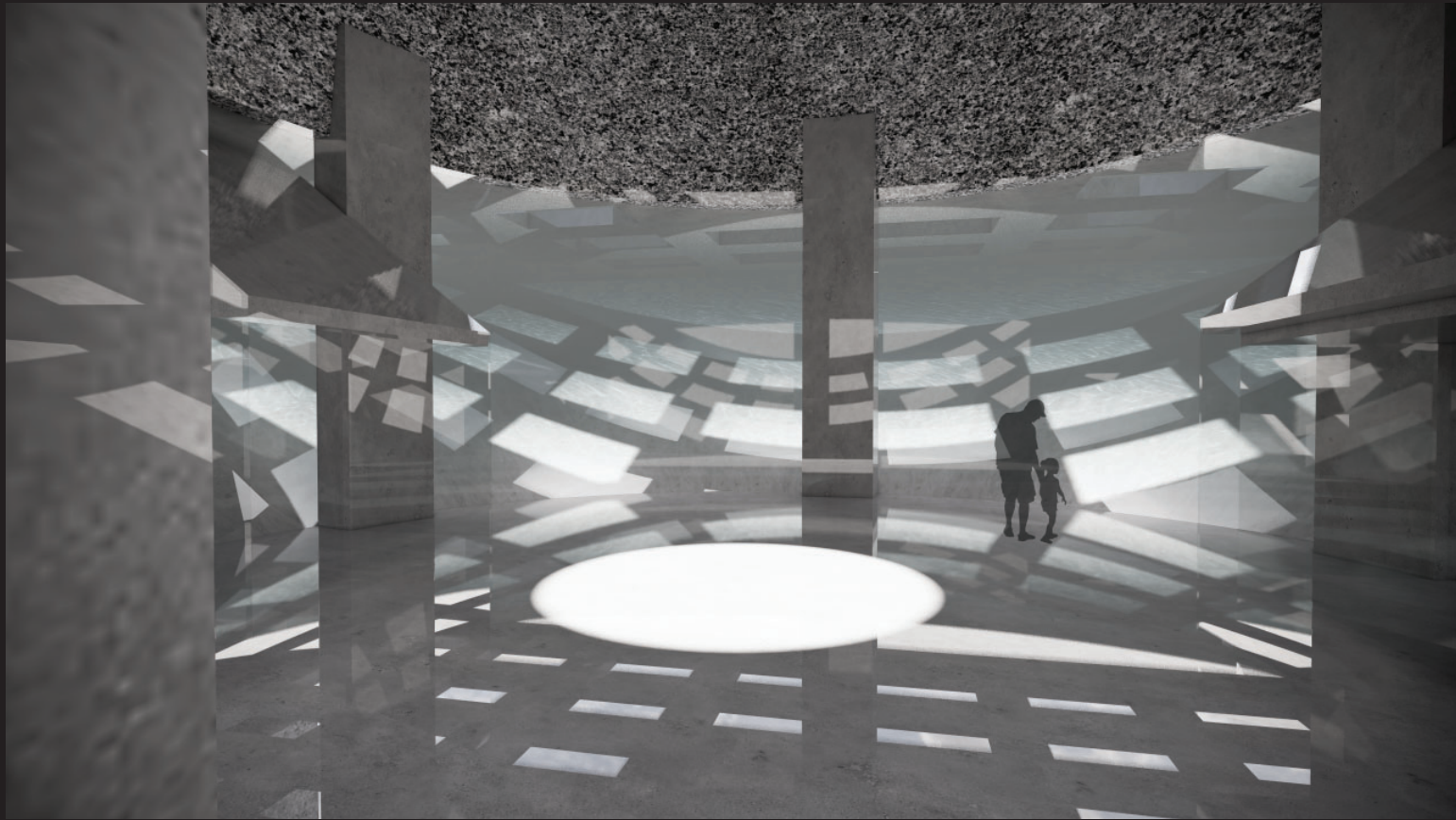


Figure 78 | *Underwater Projections - Sydney*

BERLIN, GERMANY



Figure 79 | *Giant Spheres*, photo credit | ancient-origins.net

The Giant Spheres of Costa Rica consist of around 300 granodiorite spheres. The purpose of these spheres eludes experts, but it can have been said that the spheres could have been navigational aids or perhaps even maps of the constellations of the night sky (Aprilholloway).



Figure 80 | *Band of Holes*, photo credit | thevintagenews.com

The Band of Holes is located on the Nazca Plateau in Peru. The 5,000 or so holes each measure around 3 feet in diameter and around 3 feet deep. Although the holes could be perceived as gravesites, experts have proven this theory wrong. It is believed that the holes were a storage system for the ancients of Peru (Archaeologists).



Figure 81 | *Ark of the Covenant*, photo credit | history.com

The Ark of the Covenant is said to be a gold-encrusted chest that contains the stone tablets of the 10 commandments, as mentioned in the Book of Exodus. The mystery of the Ark lies in the fact that it has never been found even though many have gone looking for it (Whipps).

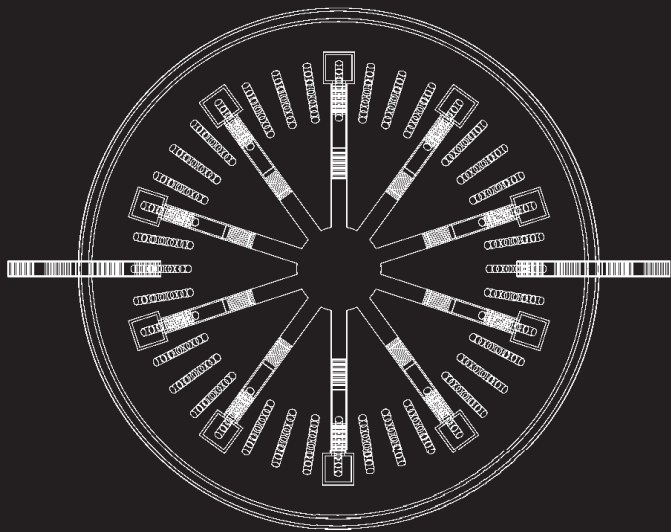


Figure 82 | Berlin Plan

The Berlin Museum, the grandest of all the fragments, translates the mystery of the Giant Spheres of Costa Rica directly into the massive void form that encloses the mythical spaces. The massive scale of the dome perhaps makes one feel small as they enter, bringing to light the extraordinary powers at work in the world that our modern culture often takes for granted. Emphasizing this atmosphere opens up a realm of perception where perhaps one returns to looking at the world in a way that our ancient ancestors once had.

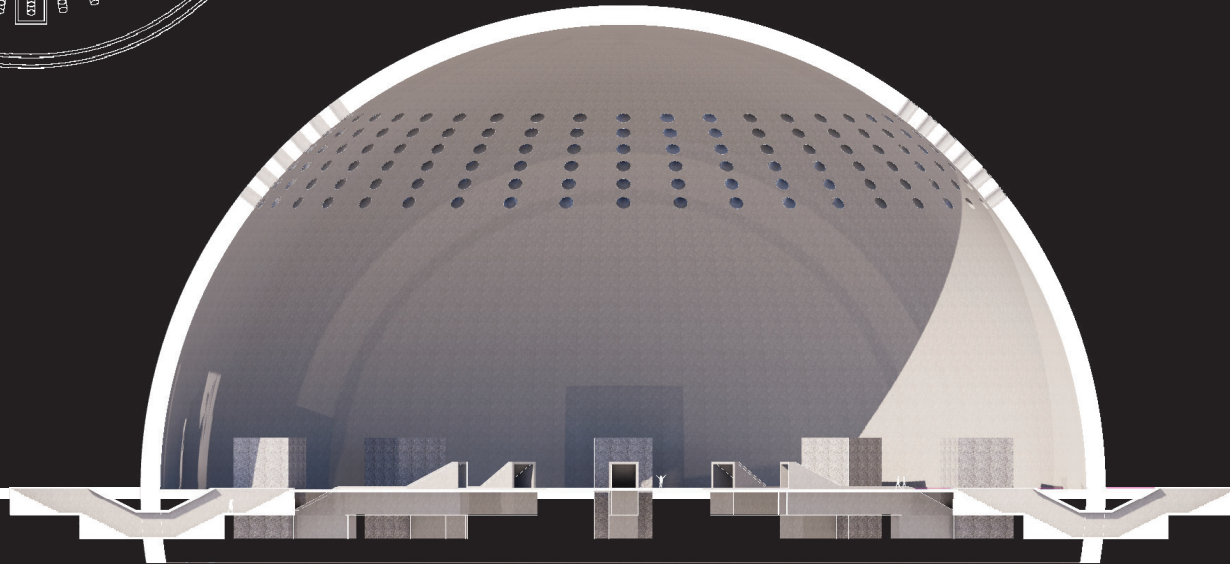


Figure 83 | Berlin Section

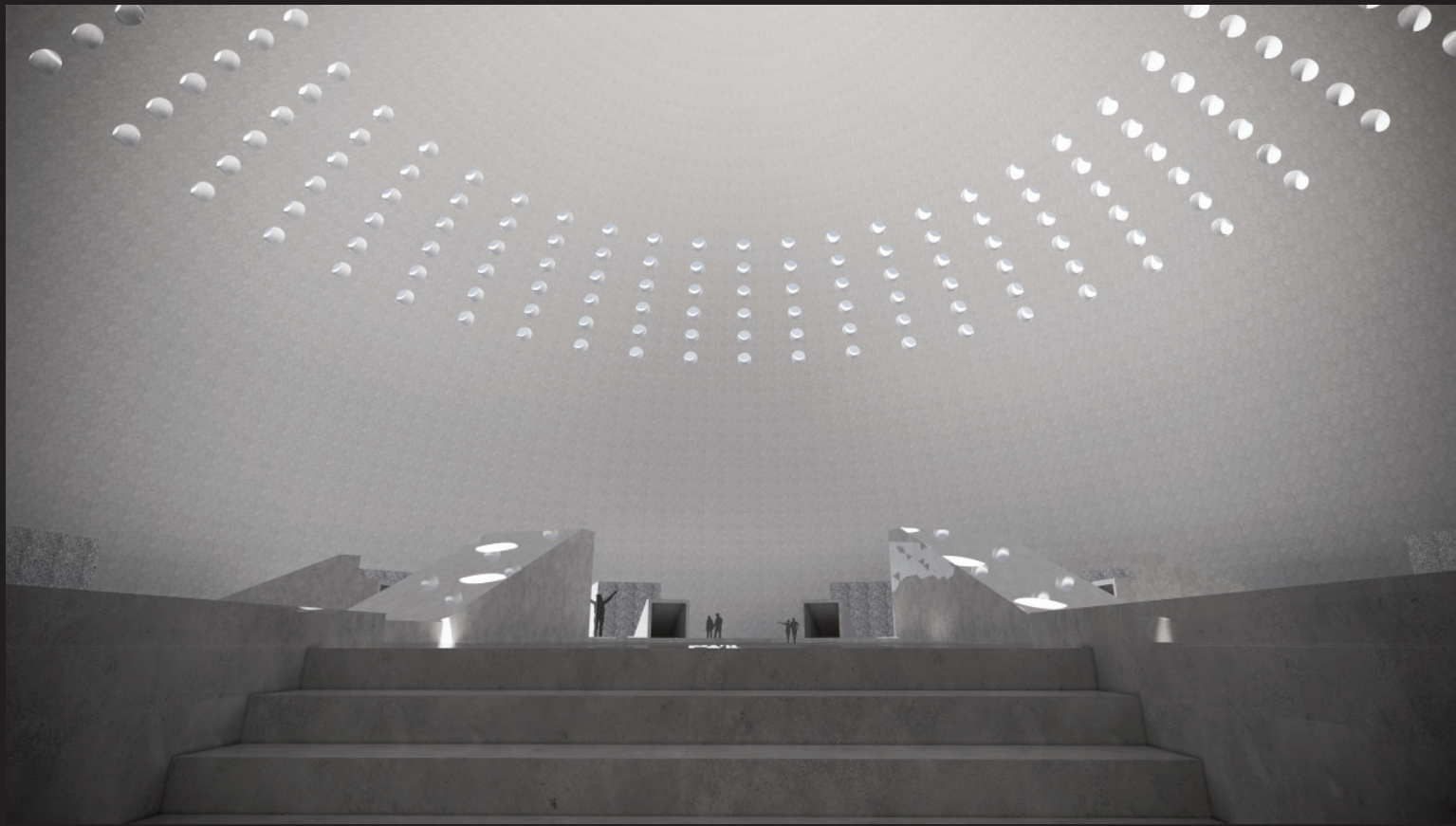


Figure 84 | Emerging from Below - Berlin

Descending and ascending through a dimly lit, yet glossy tunnel, one is opened to the interior of the incredibly empty, un-functional space, yet they sense hint of mystery in the massive void.



Figure 85 | Painted Projections - Berlin

Lining the dome is a series of massive holes projecting rays of light onto the spaces below – the Band of Holes of the Nazca Plateau.

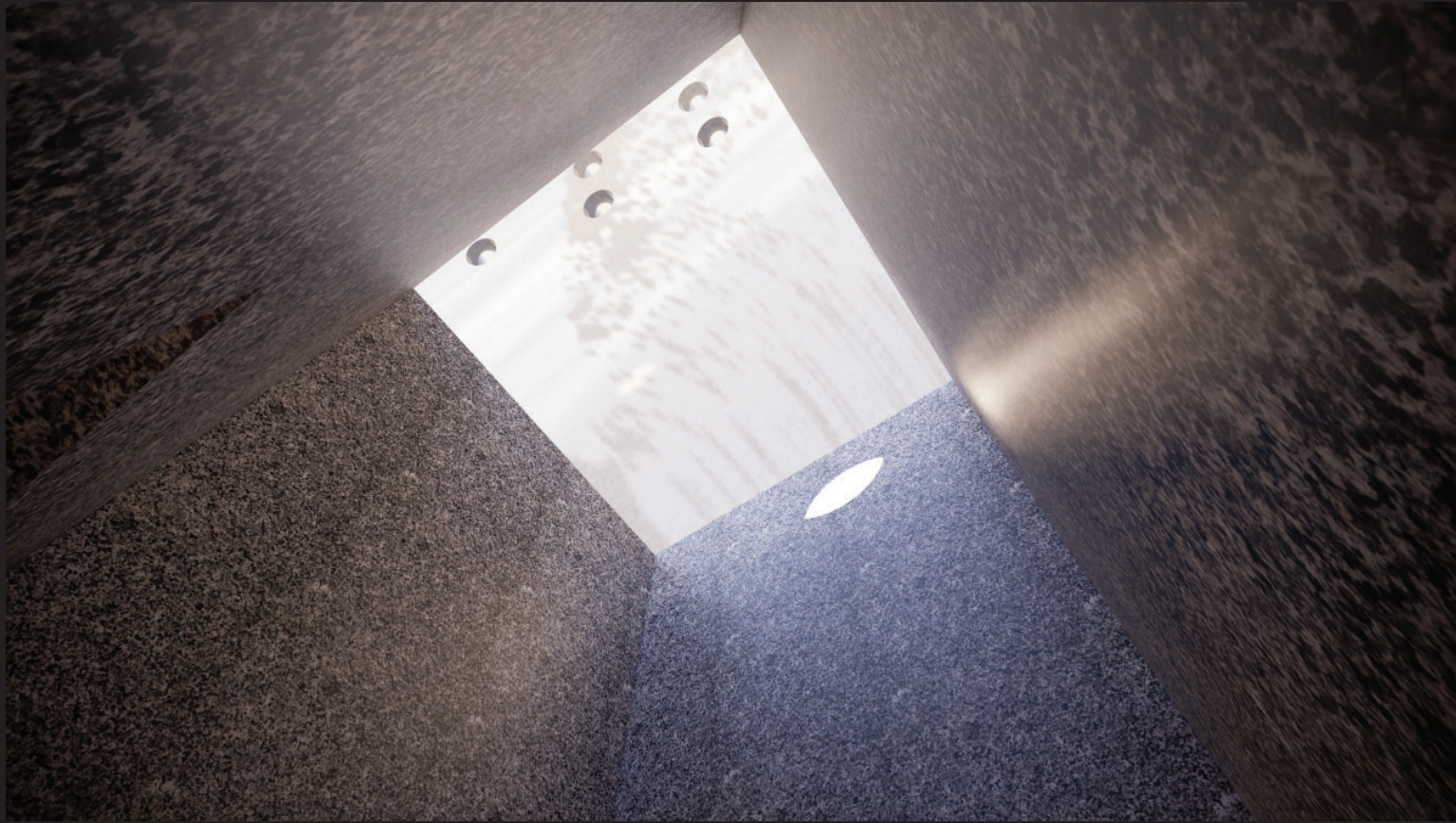


Figure 86 | The Ark - Berlin

Towering over one as they explore the void are ten polished granite blocks mysteriously connected to tunnel openings near the center of the dome – the contents of the Ark of the Covenant. As one descends through the tunnels, they are opened up to the space enclosed by the gleaming granite seen above marked with a roman numeral in the center of the base.

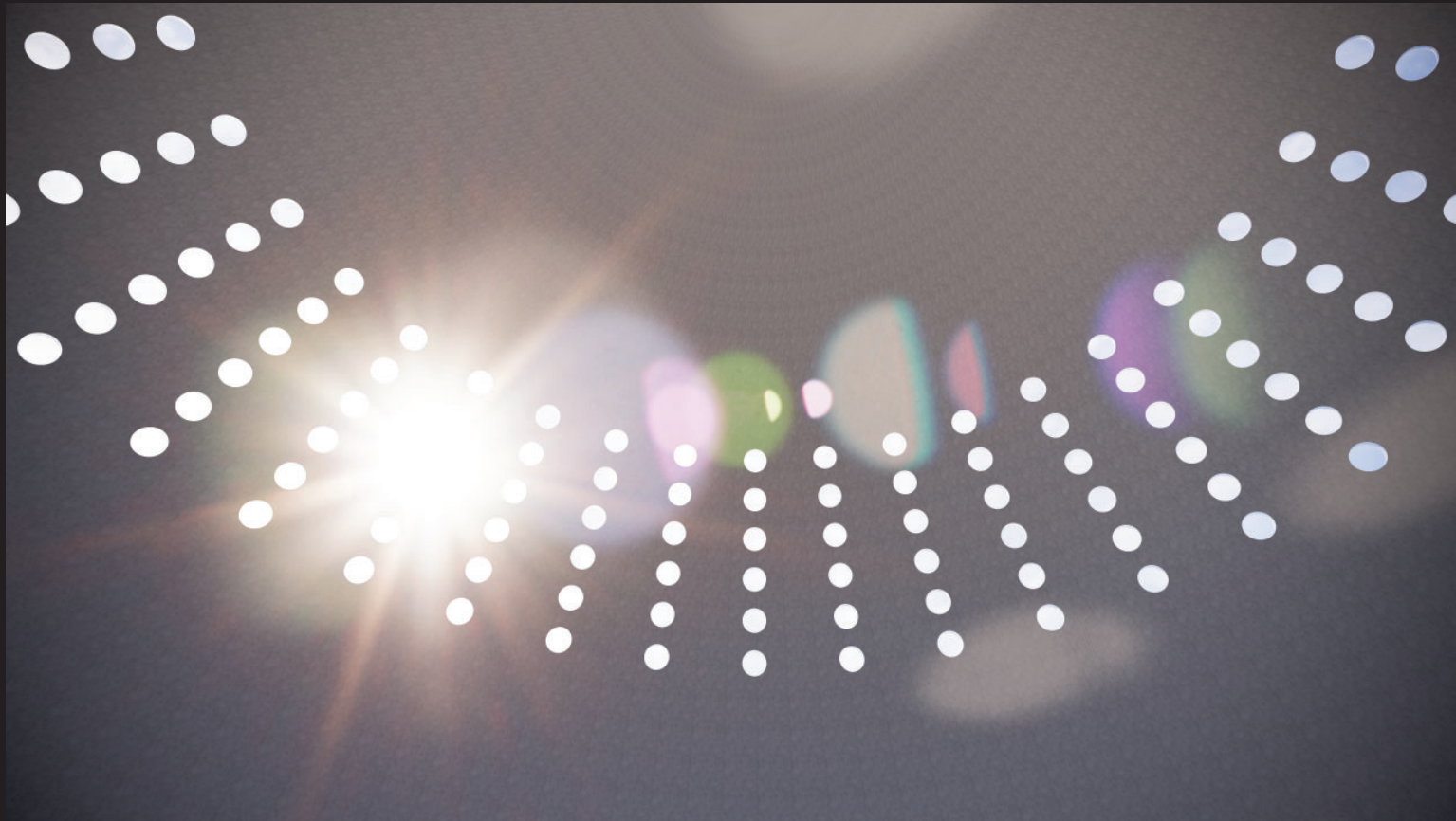


Figure 87 | Transcendent Band of Holes - Berlin

Throughout the year are particular moments in time where the rays from the holes of the dome beam and reflect into the granite voids – the lost tablets of the Ark of the Covenant.

MEXICO CITY, MEXICO



Figure 88 | *Puma Punku*, photo credit | ancient-origins.net

The ancient site of Puma Punku holds many mysteries however perhaps the most intriguing aspect of the site is the incredibly precise stonework that seemingly has been cut by a diamond tool. The stones on the site have been dated by some historians to be 17,000 years old (Aprilholloway).

Figure 89 | *Voynich Manuscript*, photo credit | livescience.com

Some 600 years old, the Voynich Manuscript is a text that no one has been able to read. The text is written with an unknown alphabet and drawings of herbs, zodiac signs and nude women are what make up the Voynich Manuscript (Whipps).

Figure 90 | *Atlantis*, photo credit | nationalgeographic.com

Although many have claimed to have discovered Atlantis the true location still leaves experts asking questions. First described by Plato around 400 B.C. the island was a naval powerhouse before sinking into the sea over 10,000 years ago (Whipps).

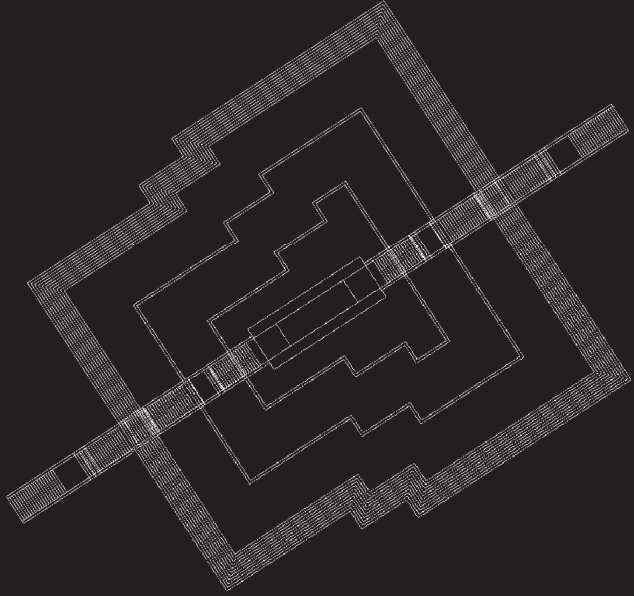


Figure 91 | *Mexico City Plan*

The Mexico City Museum incorporates an experience that allows one to enter a massive gleaming concrete form with perfectly clean edges that tiers into the depths of a pool – the stones of Puma Punku. As one approaches they notice a massive glossy granite form seemingly trapping the mystery in the depths of the water – the lost city of Atlantis.

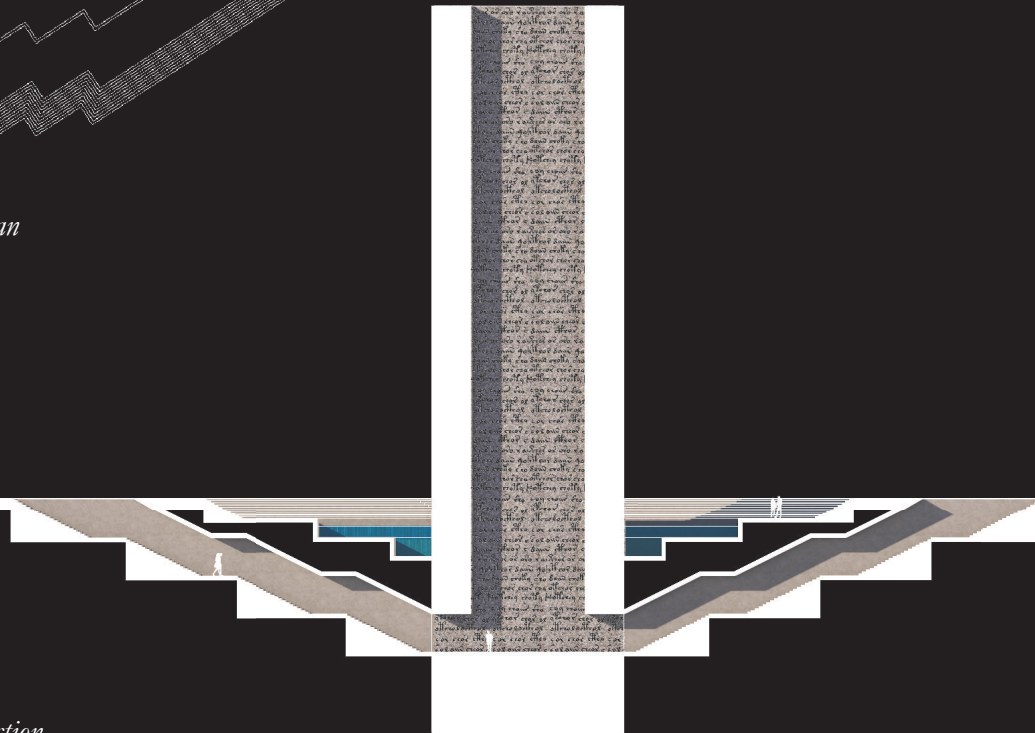


Figure 92 | *Mexico City Section*

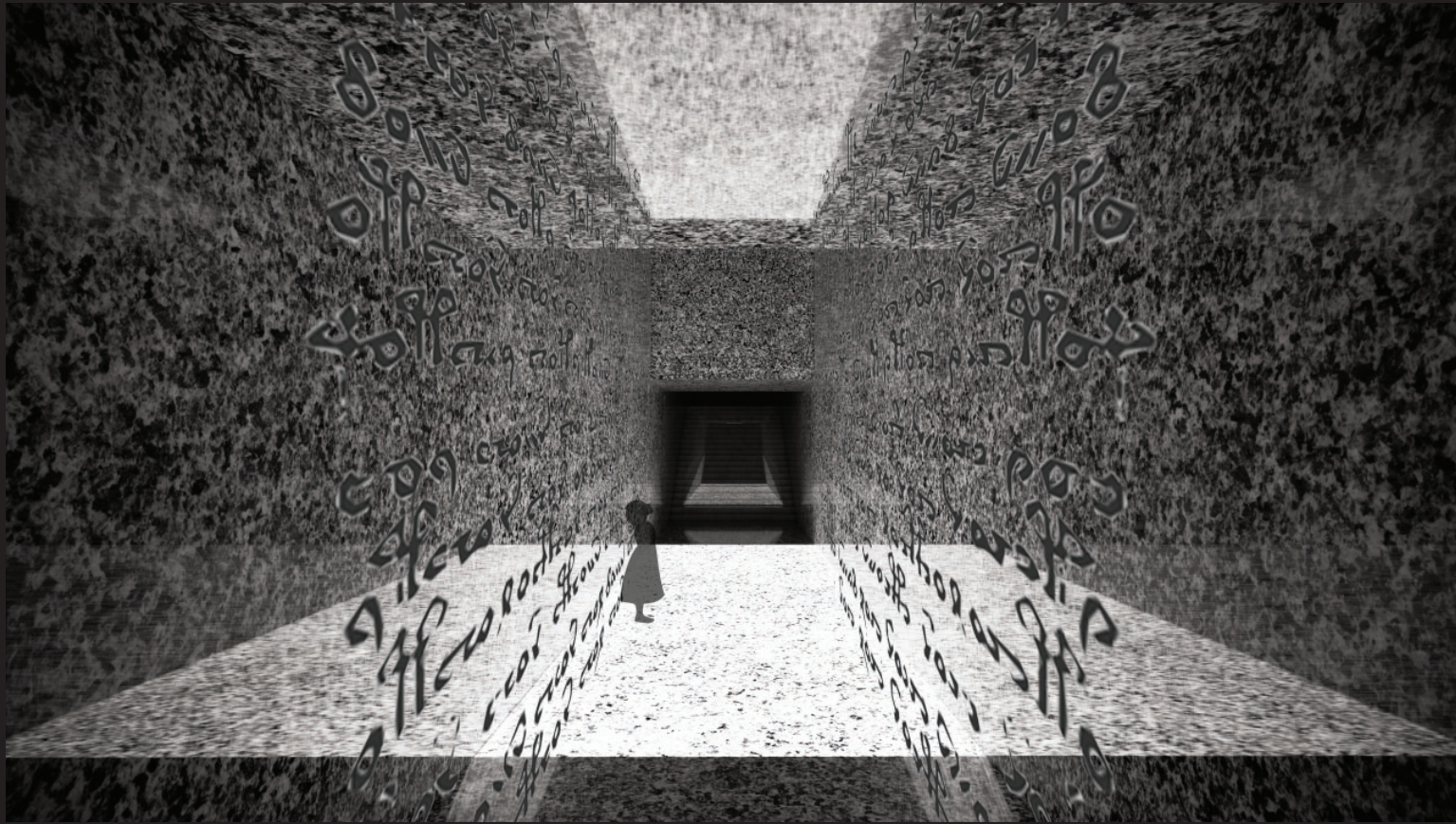


Figure 93 | Descending to the Tower - Mexico City

As one descends into the dark tunnels that lead beneath the pool they are opened up to interior of the granite stone, hollow yet full of mystery as mysterious text and figures are carved out of the column farther than the eye can see – the text of the Voynich Manuscript.



Figure 94 | *Glancing Up the Shaft - Mexico City*

The text covers the interior of the column in ways that cannot be deciphered. The text itself from the Voynich Manuscript, unreadable - full of mystery.

NEW YORK CITY, UNITED STATES

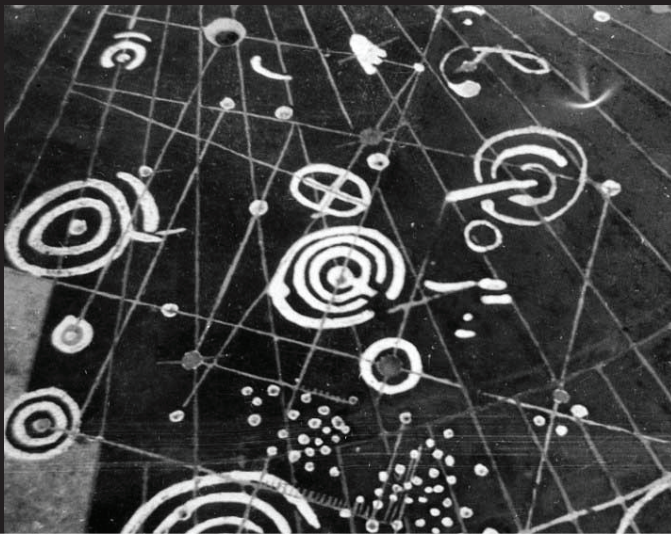


Figure 95 | *Cochno Stone*, photo credit | human-sarefree.com

The Cochno Stone is a 5,000-year-old stone that was found in Glasgow, Scotland in 2016. The stone measures 43 feet by 26 feet and is inscribed with many cup and ring marks that have been found at other prehistoric sites around the world. The stone is said to potentially be linked to astronomical phenomena however, nobody knows for certain (Whipps).



Figure 96 | *Antikythera Mechanism*, photo credit | vox.com

The Antikythera Mechanism was found among the Antikythera shipwreck that is at least 2,000 years old. The device contains many intricate gears and characters. The device is said to be an astronomical calendar. Preceding the next similar devices by over 1,000 years (Whipps).



Figure 97 | *Nazca Lines*, photo credit | thevintagenews.com

The geoglyphs of the Nazca Lines cover 450 km squared. They are known for their massive size only able to be made out from the sky. The forms of the Nazca Lines include living creatures, plants and imaginary beings (Aprilholloway).

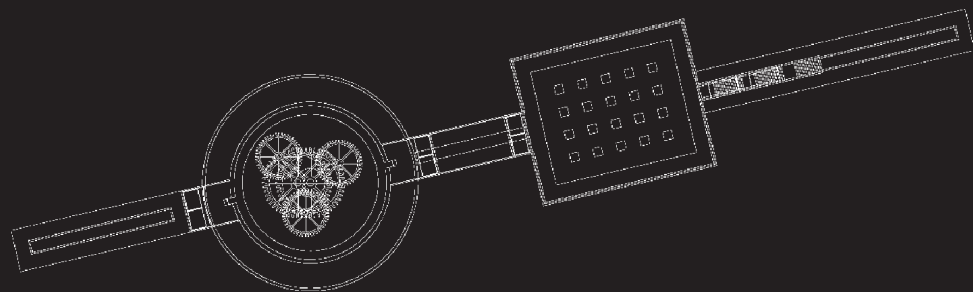


Figure 98 | *New York City Plan*

As one approaches the Museum in New York City, they notice a linear concrete pathway etched out of the Earth – the Nazca Lines. The pathways connect a massive granite block seemingly floating in a void of the ground and a spherical shiny concrete form poking out of the ground.

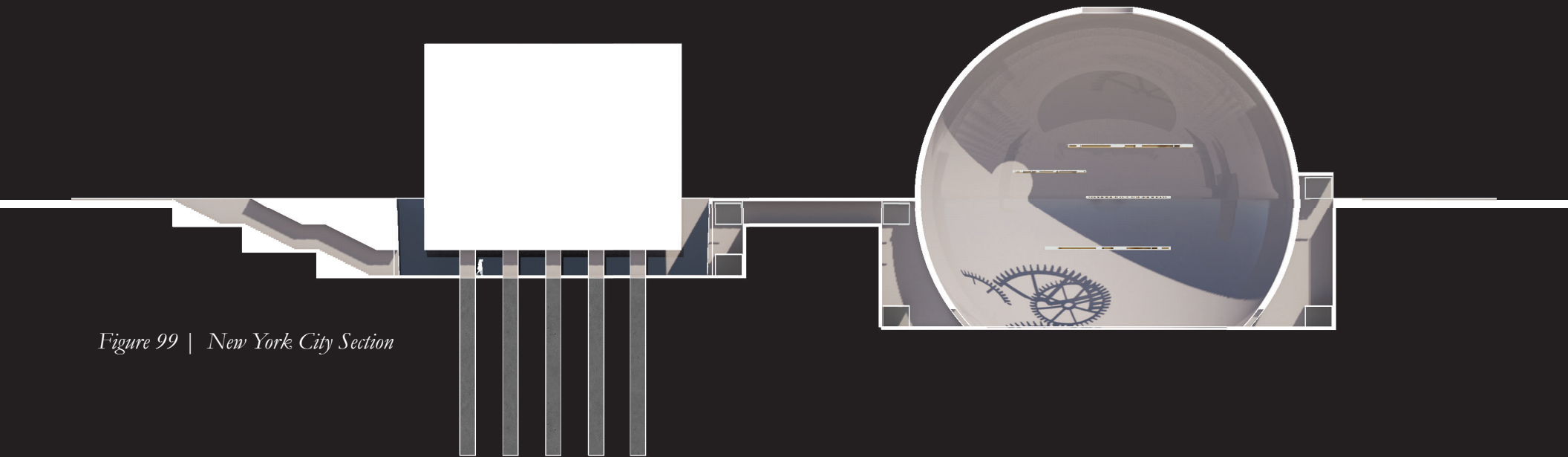


Figure 99 | *New York City Section*

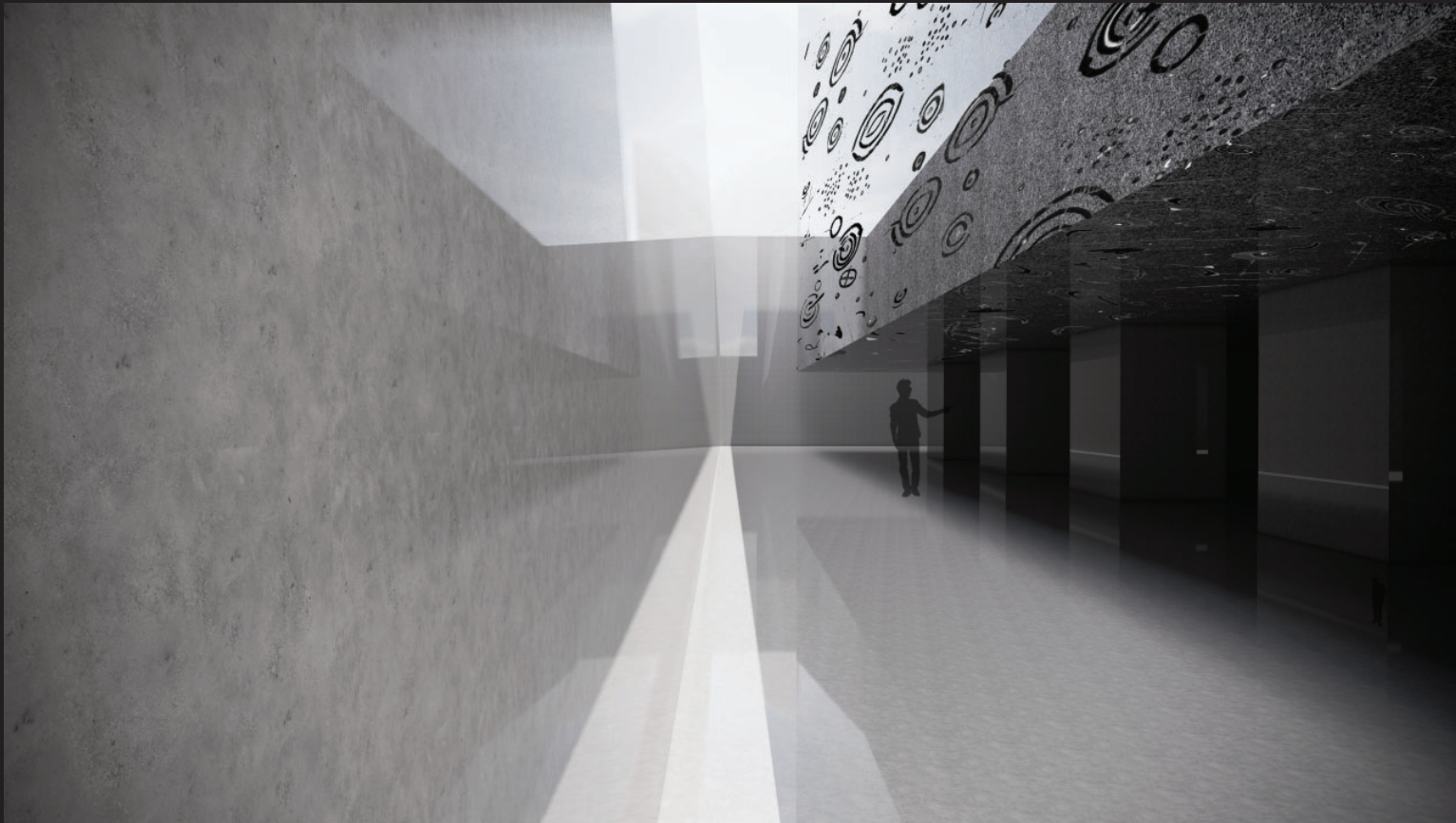


Figure 100 | Reflective Carvings - New York City

As one descends below the surface into the Museum, they enter the void holding the granite mass seen from above.



Figure 101 | Mysterious Columns - New York City

The mass held up by reflective but massive concrete columns beneath. On the surface of the massive granite block, carvings are made out in a mysterious cup and ring fashion – the Cochno Stone. In this moment one experiences the weight of myth and mystery behind these mysterious etchings.



Figure 102 | Through to Hole - New York City

Ascending to the next space, one returns just below the surface. Light projecting through the path etched out of the Earth above, one again descends. Confronted by the mass of the spherical form on the descent, exposing the bottom of the structure that was hidden from the surface. The dome is dark and empty, however floating above ones head are massive bronze gears painting their projections on to the reflective concrete walls from the hole cut into the top of the dome.



Figure 103 | Solar Calendar - New York City

The gears act as a calendar projecting the movement of the sun as it travels across the sky – the Antikythera Mechanism.

CAIRO, EGYPT



Figure 104 | *Inga Stone*, photo credit | curiosmos.com

The Inga Stone is a mysterious 46-meter-long stone that measures almost 4 meters high. It is inscribed with many indecipherable symbols, however, mentions of the Milky Way galaxy and Orion's belt on the stone have been recently translated (C, K).



Figure 105 | *Sajama Lines*, photo credit | pbs.com

The Sajama Lines of Bolivia are a network of thousands of straight lines etched into the Earth by the indigenous people near the volcano, Sajama in Bolivia. The lines are believed to indicate sacred pilgrimages that the indigenous people of Bolivia made to and from the volcano whom scraped paths into the Earth (Aprilholloway).



Figure 106 | *Tomb of King Tut*, photo credit | foxnews.com

King Tut's tomb, located just down the Nile river from Cairo, holds mystery that cannot be explained. The tomb of King Tut is said to hold a curse on all who enter it and ends up killing those who do. However, the curse isn't the only mystery surrounding the tomb. When King Tut was discovered, it became clear his mummified body caught fire while he was sealed in his tomb (Whipps).

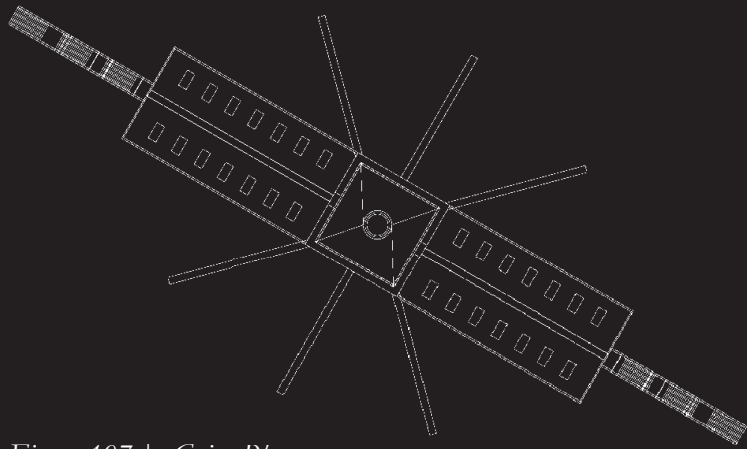


Figure 107 | *Cairo Plan*

In the case of the Museum in Cairo, the experience begins long before one steps foot on the site. Capable of being seen from miles away, the towering glossy granite rectangular prism gently spews smoke from its top – the volcano, Sajama. As one steps foot onto the site, they notice another twenty-eight gleaming concrete forms that can only mimic the grandness of the volcanic column.

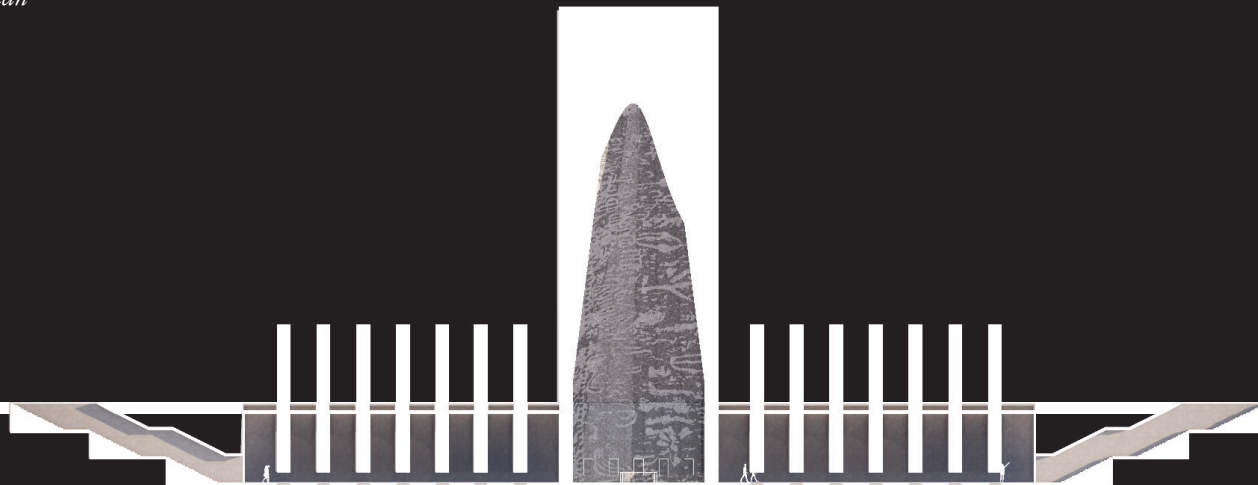


Figure 108 | *Cairo Section*



Figure 109 | Engraved Constellations - Cairo

A sleek concrete path etched into Earth's surface directs one straight toward the obelisk and as they near the larger than life stone mined from the very Earth one stands upon. Almost blinded by its reflectiveness, carvings begin to be made out on the surface that map out the constellations of the night sky – the Inga Stone.

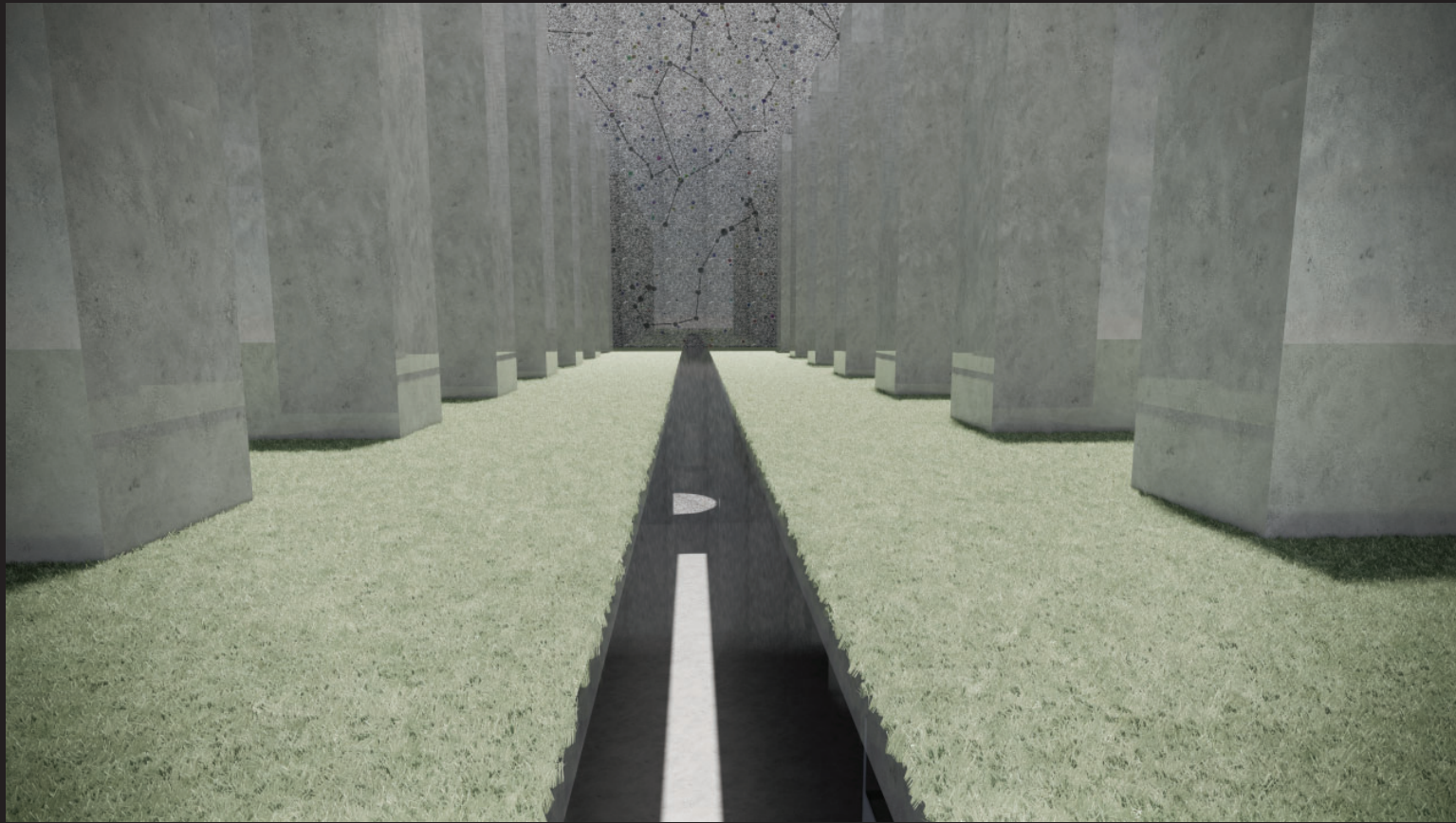


Figure 110 | Glass Pathway - Cairo

It is this moment when one realizes the multitude of radial pathways directed toward this mysterious glowing granite chimney. Two of which are glass, connecting the massive stone to two tunnels descending into the ground, begging one to enter the depths below.



Figure 111 | Cursed Tombs - Cairo

As one descends beneath Earth's surface, they find themselves in a mysterious crypt like space, however glowing from the sun radiating through the glass pathway that led them here. The materiality of the space matches the concrete pillars from above, sleek concrete. These columns continue downward through the space until halting only a few feet from the floor. Pressed below each suspended column, an imprint that shapes a void seemingly magnetized to the base of the column - the tombs of those cursed by entering King Tut's tomb.



Figure 112 | Charred Chimney - Cairo

As one moves toward the base of the granite mass from the crypt, they find themselves getting warmer. The fire, source of the smoke slowly spewing from the volcano – the charred sarcophagus of King Tut. Over time, the smoke of the smoldering fire chars the foreign text and symbols engraved throughout the entire interior of the volcanic chimney – the engravings of the Inga Stone.

SAO PAULO, BRAZIL



Figure 113 | *Megalithic Jars*, photo credit | [flickr.com](https://www.flickr.com/photos/14811111@N00/14811111)

The Plain of Megalithic Jars is located in Laos of Southeast Asia. The jars whom stand as high as nine feet tall were said by myth to be crafted by giants whom used them to store 'lau hai' an alcoholic beverage of sorts to celebrate a battle victory over an enemy (Aprilholloway).

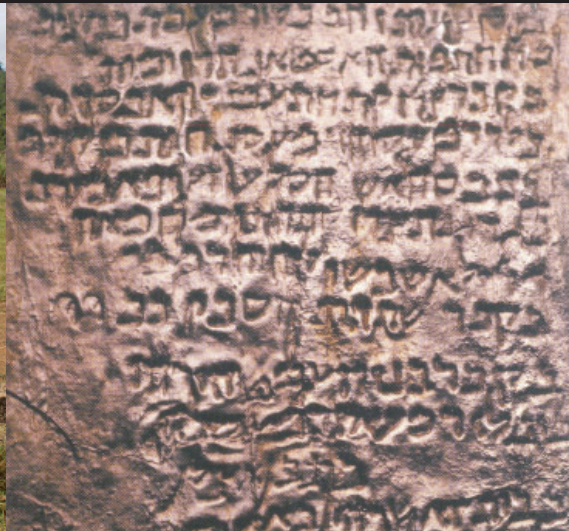


Figure 114 | *Copper Scrolls*, photo credit | [historywithjohn.wordpress.com](https://www.historywithjohn.wordpress.com)

The Copper Scrolls are a manuscript carved into a copper tablet, 8 feet in length, discovered in Qumran, Israel. The tablet has been translated to describe multiple unknown locations of hidden silver and gold (Whipps).



Figure 115 | *Gobekli Tepe*, photo credit | [phys.org](https://www.phys.org)

Gobekli Tepe is believed to be an ancient temple site. Dating back to 10,000 BC, hieroglyphs on the site have been translated that describe a global catastrophe that challenges history as we know it (Whipps).

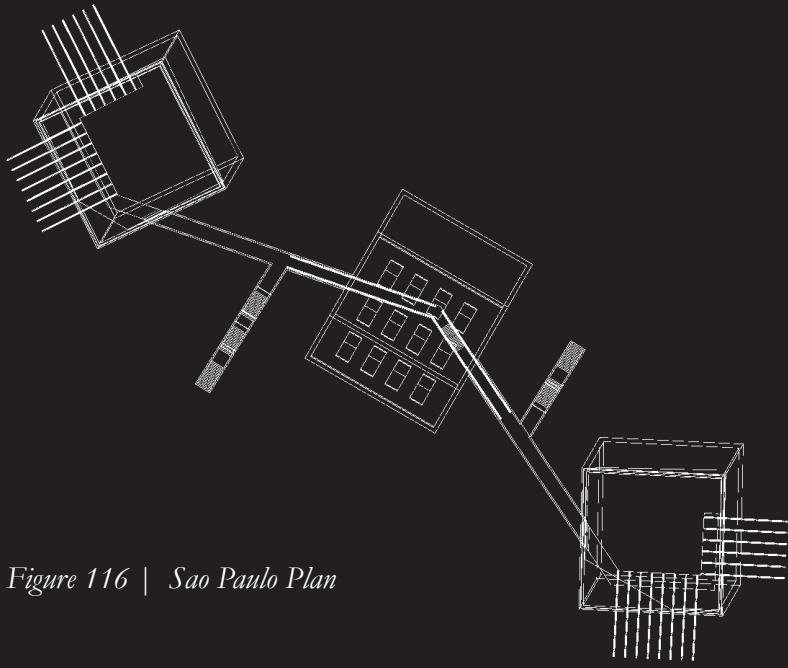


Figure 116 | Sao Paulo Plan

The journey of the Sao Paulo museum begins as one approaches three enormous sleek granite blocks dug into the earth as if they were tossed aside by giants themselves.

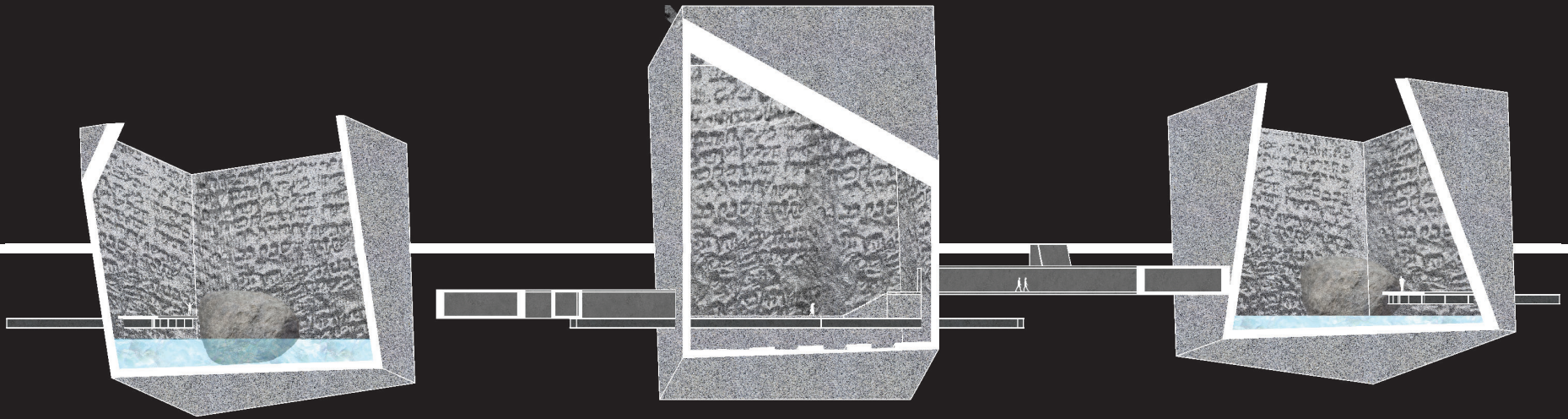


Figure 117 | Sao Paulo Section



Figure 118 | Reflective Tunnel - Sao Paulo

It isn't until one descends into the earth through a series of rather dark but reflective tunnels that they realize the forms are indeed not blocks, but massive voids encased in granite, overflowing with myth – The Megalithic Jars.

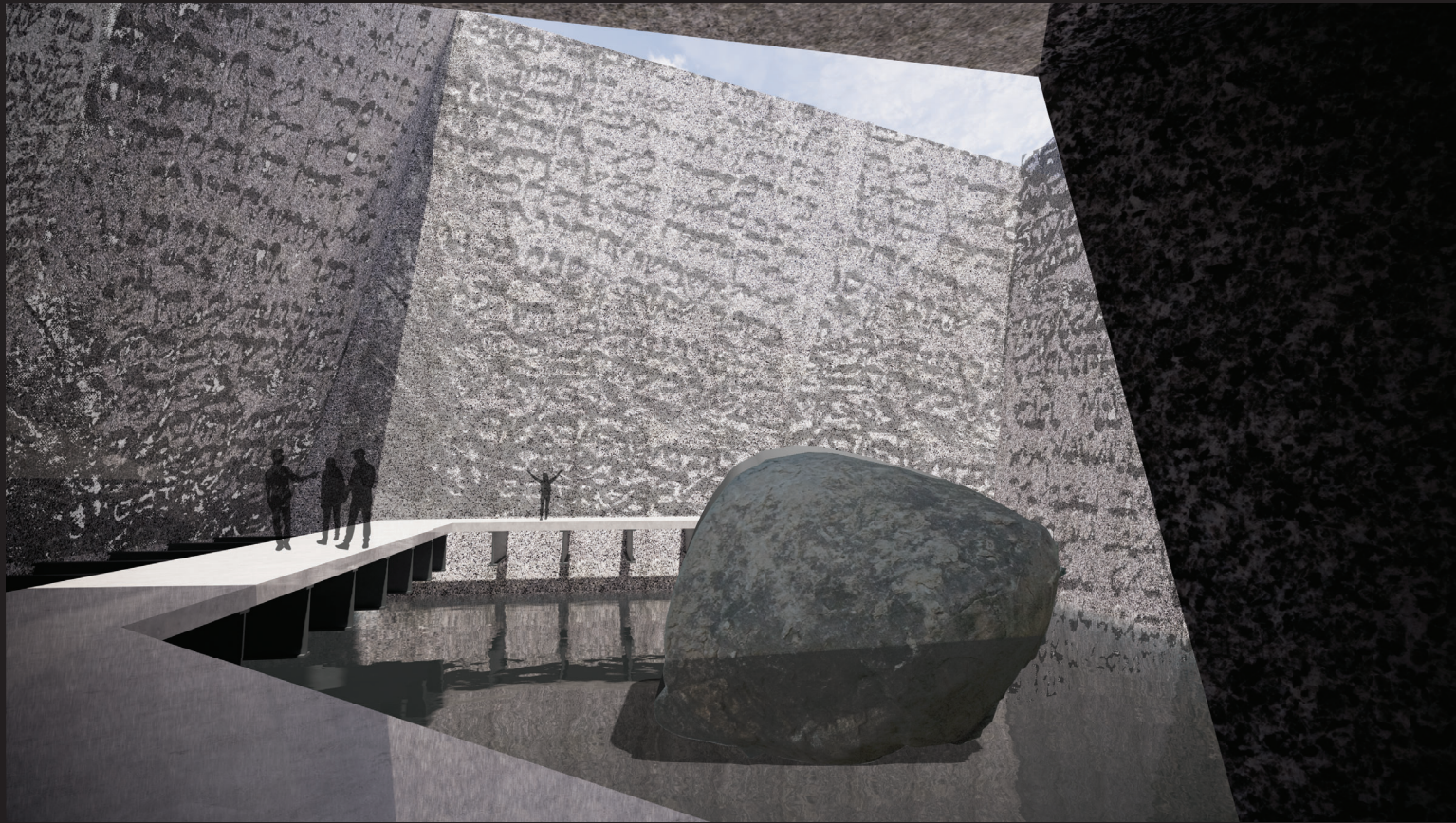


Figure 119 | Boulder in Pond - Sao Paulo

As one enters the first of the three spaces a giant boulder placed in a pool of water catches their attention. – The Catastrophic Event of Gobekli Tepe. Glistening beyond the enormous rock sitting stagnant in the pool of water, one finds themselves engulfed in foreign text inscribed on all four surfaces of the granite walls – The Copper Scrolls.

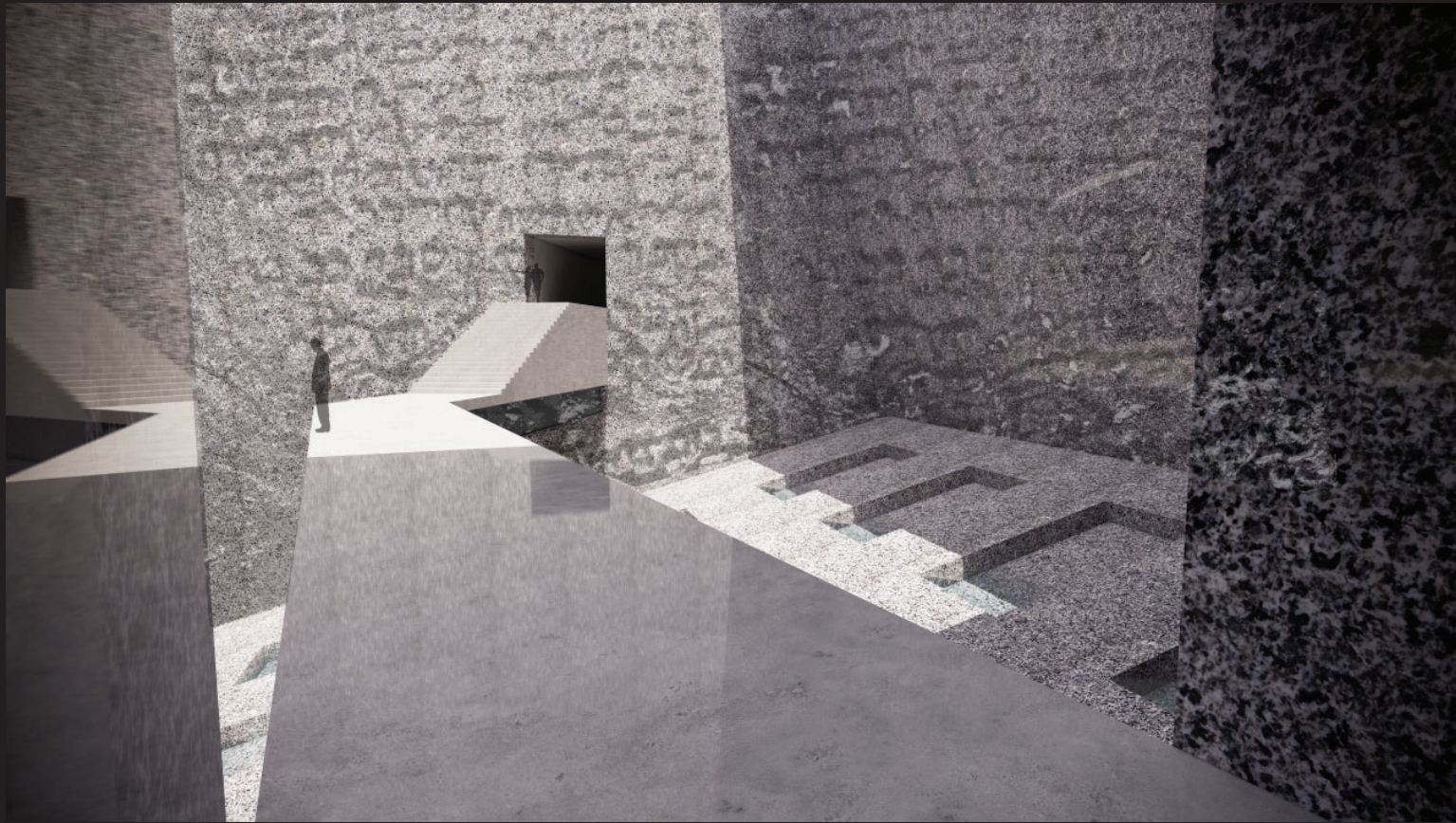


Figure 120 | Footprints of the Giants - Sao Paulo

Moving back through the dark, mystical tunnel, one enters the center void. Like the previous space, mysterious text covers the sleek granite walls. However, below, one notices a series of voids pressed into the granite, slightly filled with water as if pooling in the footprints left by a beast – tracks of the Megalithic Giants.

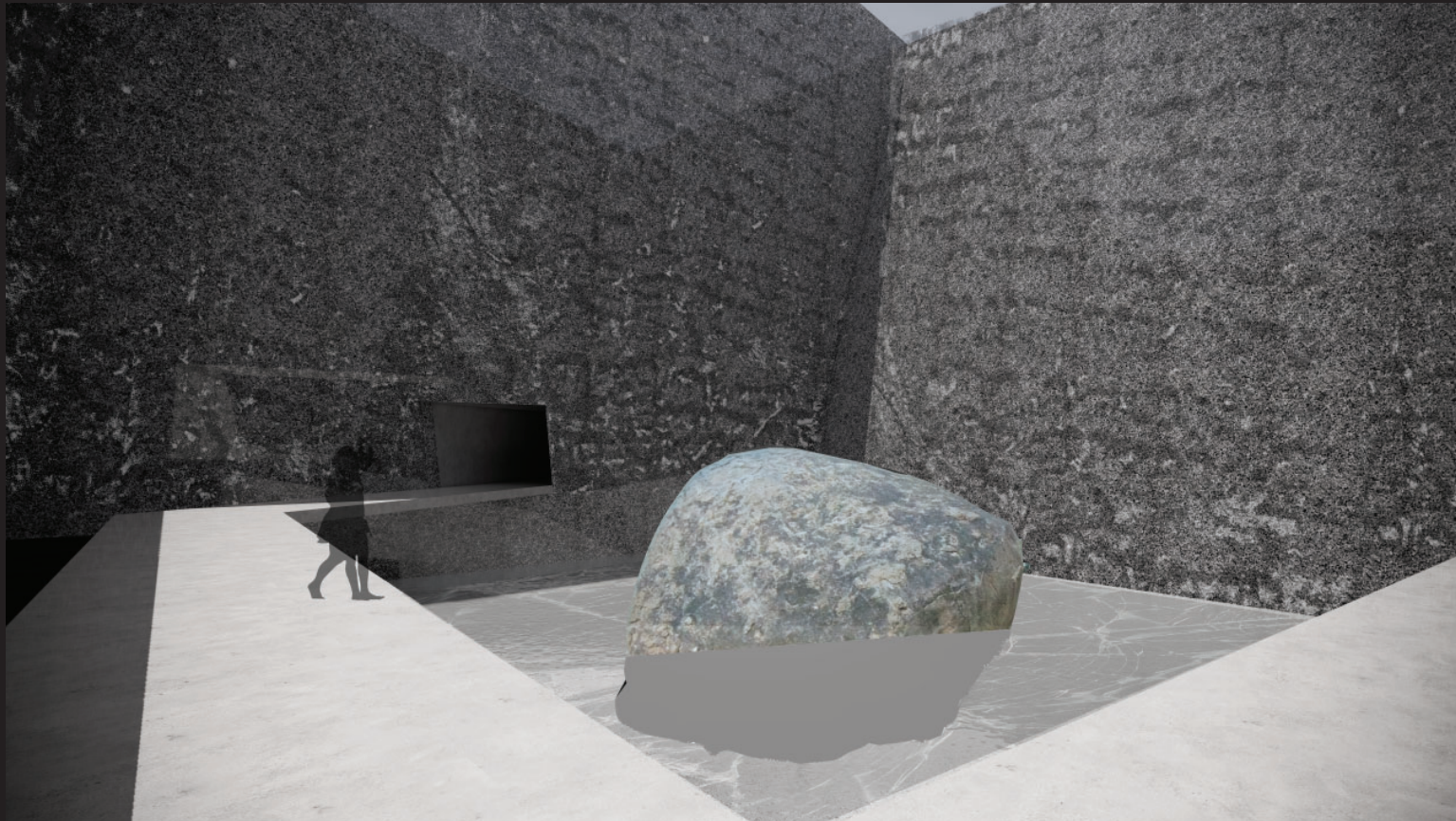


Figure 121 | Boulder Smashed in Ice - Sao Paulo

Finally, one transgresses through another tunnel into the last void. Like the first, this space also holds a boulder, however this time smashed into solid ice as if dropped from the sky – the Catastrophic Event of Gobekli Tepe. The two spaces translated from the mystery of Gobekli Tepe incorporate a sense of time, the potential shift of historical ages of the Earth.

The Evolution of Wonder Through History:

Reopening the Realm in Seven Mythic Experiments of Technological Interconnection

1

Wonder



2

'It' versus 'Thou'



thaumata: built to produce wonder rather than to dominate nature.

3

Seven Ancient Wonders of the World



Temple of Artemis



Great Pyramid of Giza



Hanging Gardens of Babylon



Lighthouse of Alexandria



Colossus of Rhodes



Statue of Zeus



Mausoleum at Halicarnassus

4

Seven Industrial Wonders of the World



Panama Canal



Hoover Dam



Brooklyn Bridge



Transcontinental Railway



London Sewer System



Great Eastern



Bell Rock Lighthouse

5

Great Pyramid of Giza



6

Hoover Dam



7

Evolution of the Machine

"machines and buildings were regarded as thaumata, built to produce wonder rather than to dominate nature." - Alberto Perez-Gomez



Ancient Water Wheel

8

Archaic Machine

"machines whose aim was to overwhelm the spectator with awe in the contemplation of the hidden powers at work in the world." - Alexander Tzonis



Vatican Obelisk machine

9

The Mechanization of Architecture

"Galileo took the step in the conceptual revolution which eventually shattered the archaic framework of design. Whether these events or his role were so unique is of no significance. The fact is that in the text of *Due Nuove Scienze*, a new way of thinking was shaped and that it in turn shaped the thinking of architects for years, for centuries, to come." - Alexander Tzonis

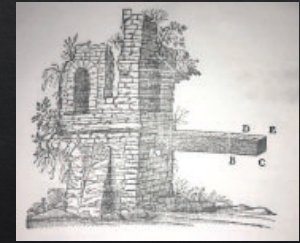


Diagram from *Due Nuove Scienze*

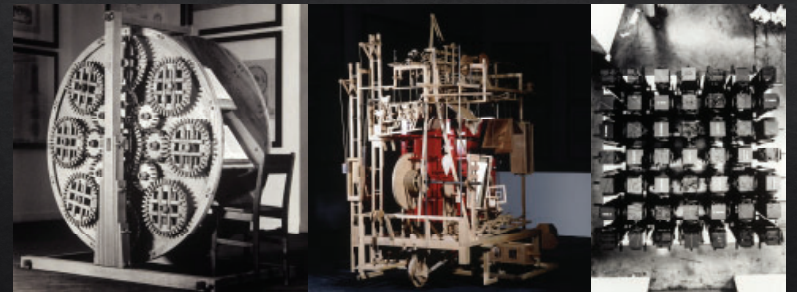
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Andy Goldsworthy



11

Daniel Libeskind



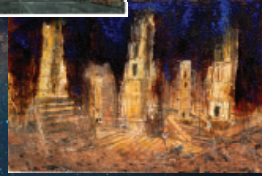
Lessons of Architecture through the Machine: Medieval (left), Renaissance (mid), Modern, (right)

12

Anselm Kiefer

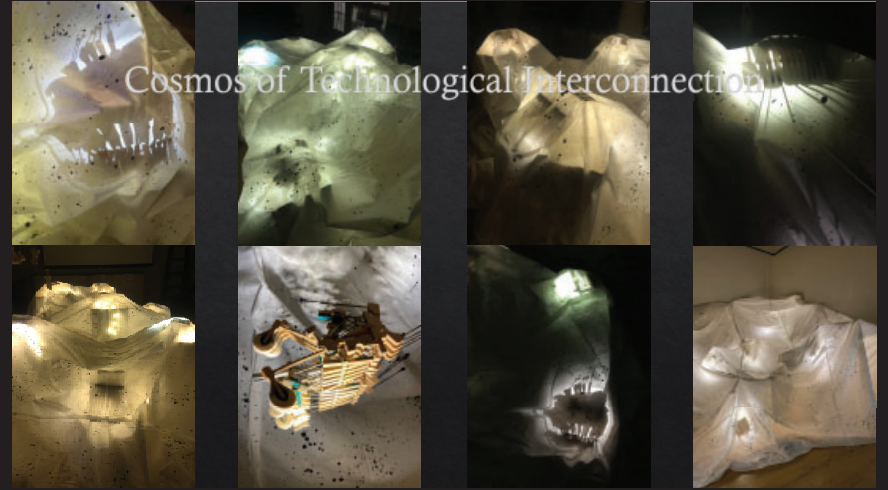
"The cohesion of Kiefer's works adumbrates a basic cosmological structure in which spaces enclose each other like Russian dolls [where] from a center—the 'black hole'—everything appears spatially discrete and yet is simultaneously available for experience: the microcosm is reflected in the macrocosm; inside becomes outside, and vice versa. This simultaneity of the non-simultaneous, this concentration of space in a single space, is the true—and it must be said—metaphysical nucleus of Kiefer's artistic impulse."

— Markus Bruderlin



13

Cosmos of Technological Interconnection



14

Museum of Myth and Wonder



15

Tokyo Museum



Tomb of Qin Shi Huang



The Labyrinth of Crete

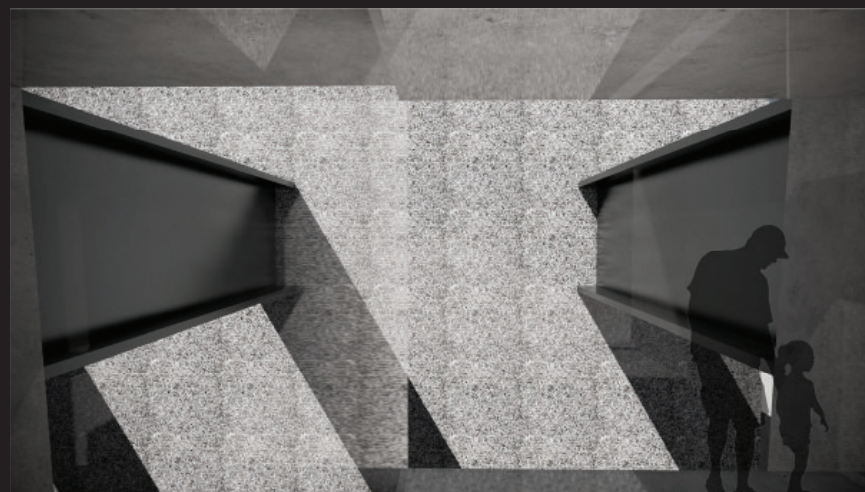


Lost Tomb of Alexander the Great

16



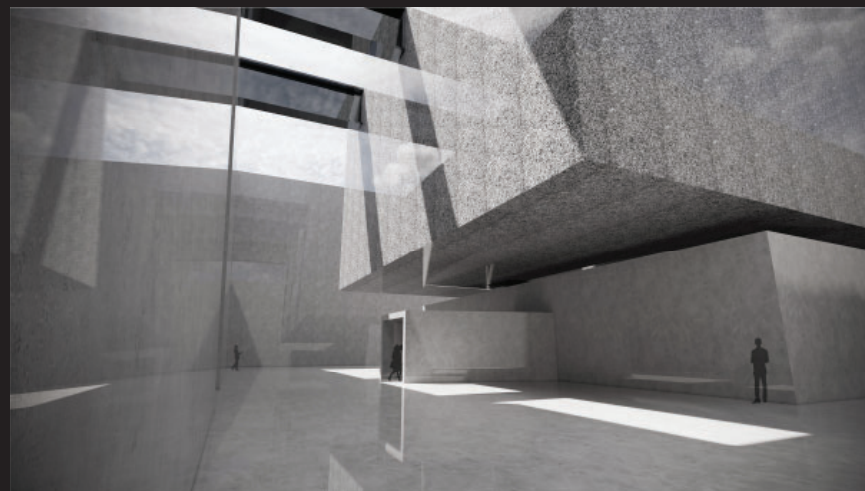
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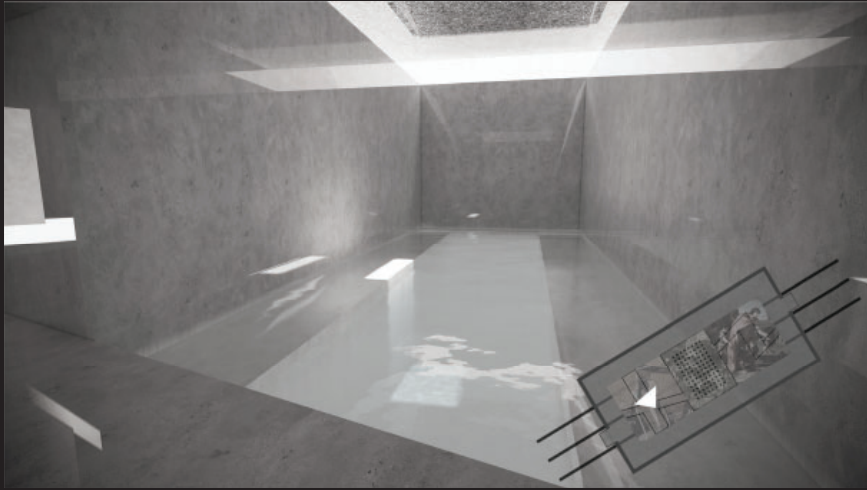
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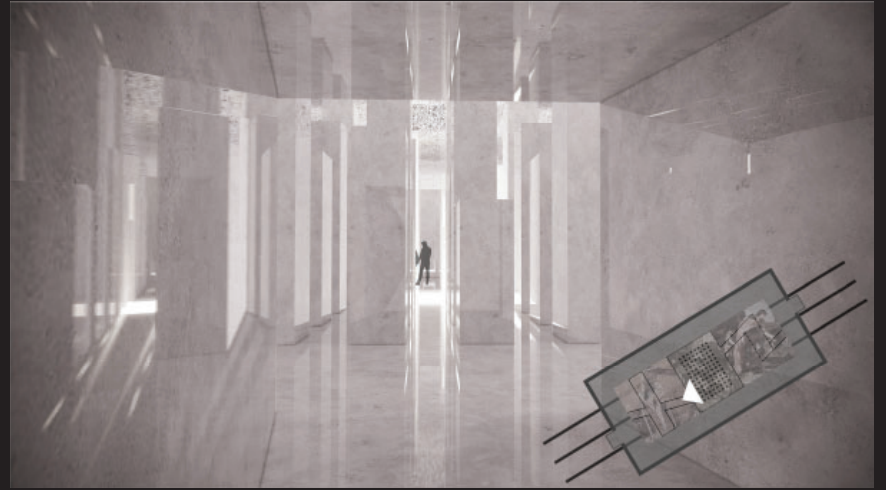
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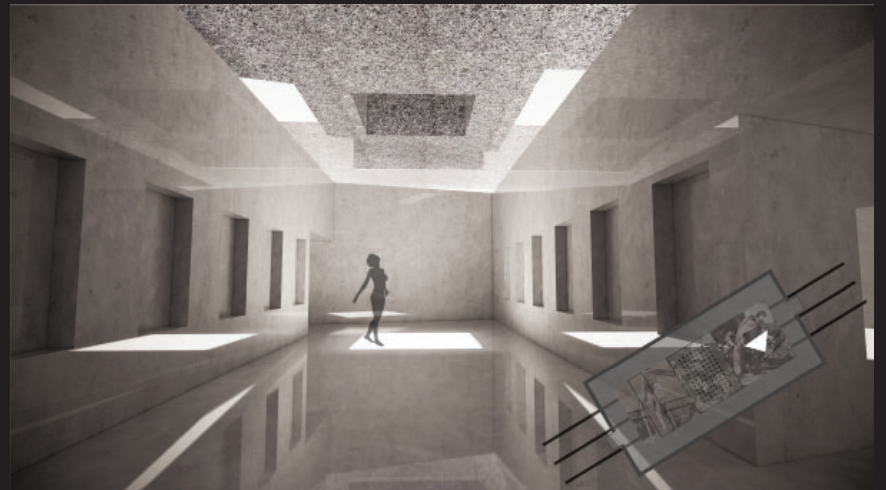
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Sao Paulo Museum



The Copper Scrolls

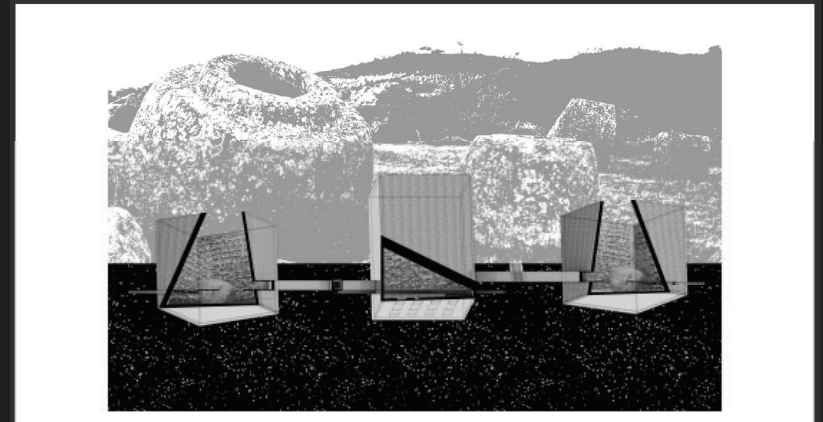


Plain of Megalithic Jars

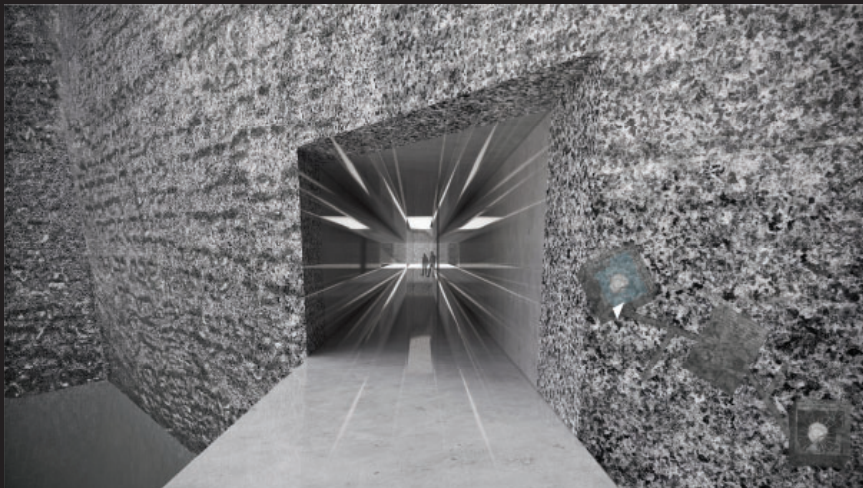


Gobekli Tepe

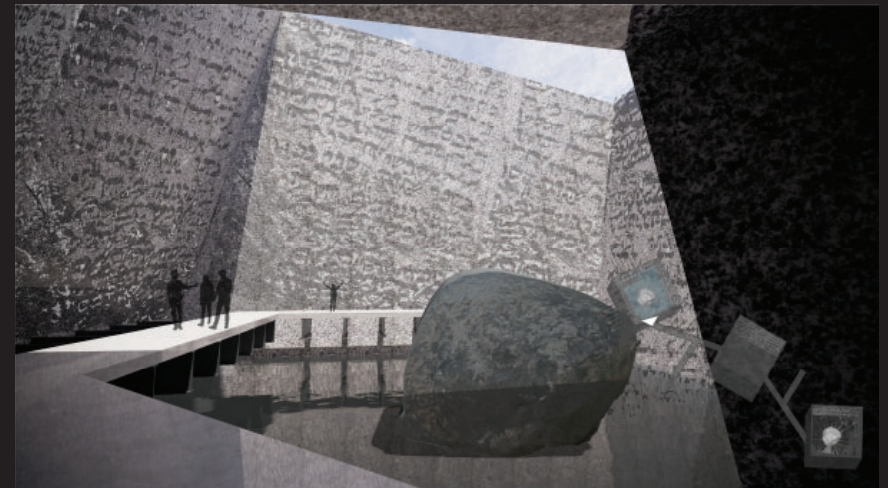
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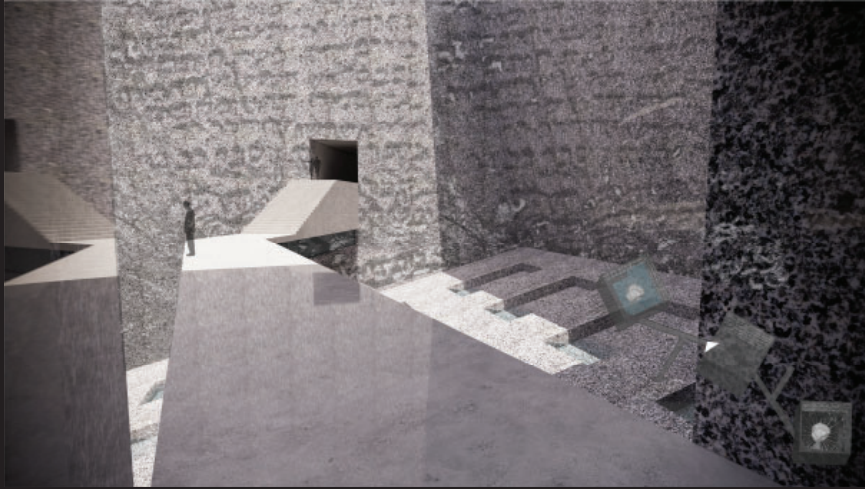
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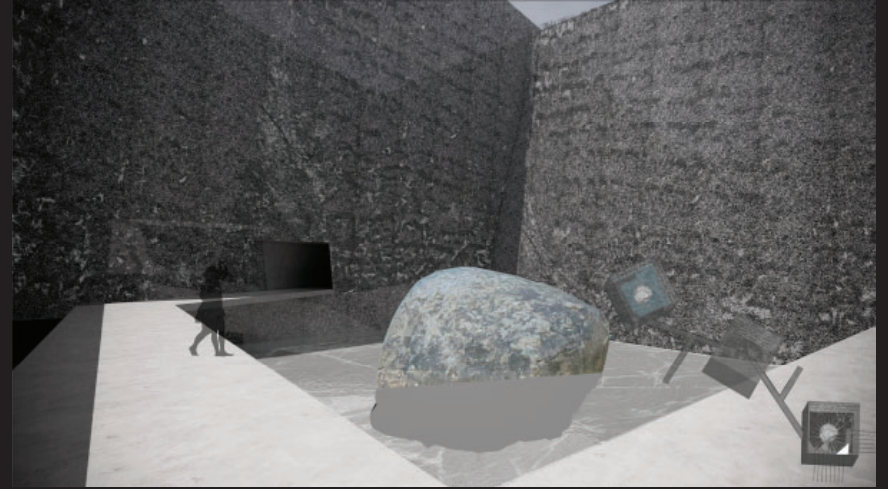
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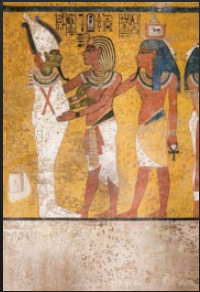


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Cairo Museum



Tomb of King Tut



The Inga Stone



Sajama Lines of Bolivia

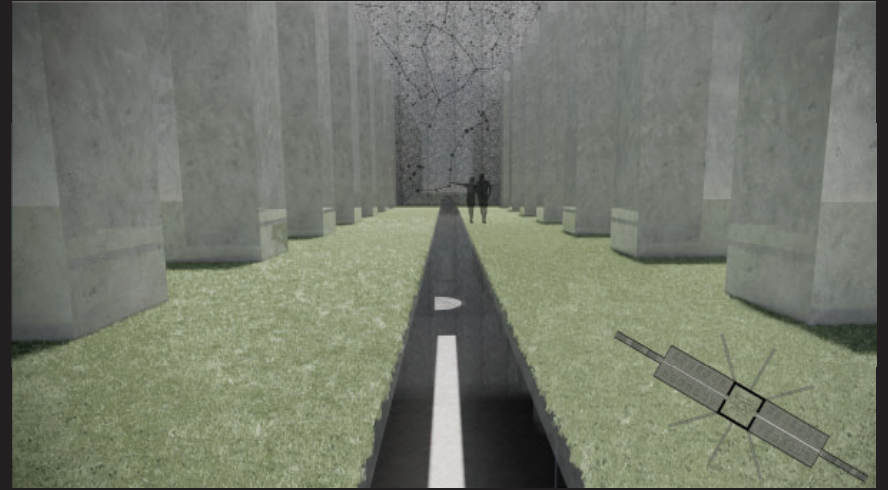
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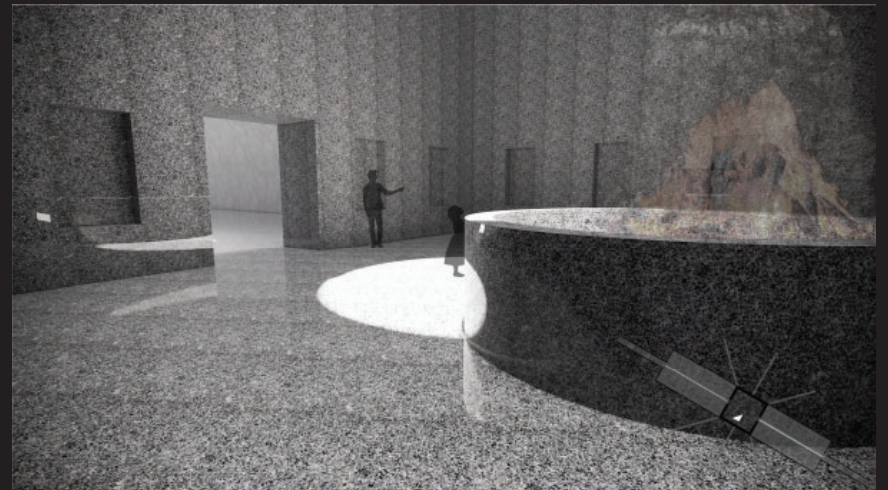
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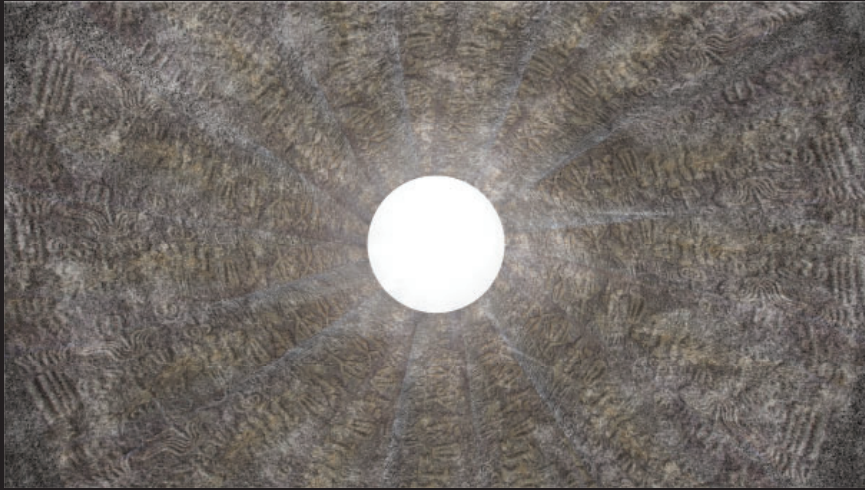
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PREVIOUS STUDIO EXPERIENCE

2ND YEAR (2016 - 2017)

Fall: Charlott Greub

Tea House | Moorhead, Minnesota

Montessori School | Fargo, North Dakota

Spring: Milton Yergens

Performing Arts Center | Fargo, North Dakota

Sustainable Community Design | Marfa, Texas

3RD YEAR (2017 - 2018)

Fall: Paul Gleye

Downtown Fargo Student Center | Fargo, North Dakota

Downtown Fargo Visitor's Center | Fargo, North Dakota

Spring: Mike Christenson

IIT Architecture Building | Chicago, Illinois

4TH YEAR (2018 - 2019)

Fall: Bakr Aly Ahmed

Capstone High-Rise | Miami, Florida

Spring: Mark Barnhouse

Urban Design Response to Sea Level Rise | Miami, Florida

5TH YEAR (2019 - 2020)

Fall: Stephen Wischer

Graduate Studio | Fargo, North Dakota