

"Shadows of Tragedy"

The Role of Architecture in Commemorating and Remembering Historic Tragedies

"Shadows of Tragedy"

Rathvik Janardhan Reddy

Dissertation submitted to the faculty of the Virginia Polytechnic Institute and
State University in partial fulfillment of the requirements for the degree of
Master of Architecture

James Jones, Chair
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Abstract

The architecture of tragedy is a complex and emotive topic that explores the ways in which design elements can be used to commemorate and remember significant events. This thesis aims to examine the role of architecture in the representation of tragedy, with a specific focus on how design elements such as light, shadow, materiality, and spatial arrangement can evoke emotions and tell a story.

The thesis will begin by examining the historical context of architecture and tragedy, looking at examples from ancient civilizations to contemporary times. It will then move on to explore the ways in which tragedy has been represented in architecture, examining key design elements and their impact on the viewer. Case studies will illustrate how architecture has been used to commemorate tragedies such as the Holocaust, 9/11, and Fukushima disasters.

The thesis will also explore the ethical implications of using architecture to represent tragedy, including questions about appropriateness, respect, and memory. It will examine the potential for architecture to create a sense of healing and closure for those affected by tragedy and the potential to be misused or exploited for political or commercial gain.

Ultimately, this thesis aims to comprehensively examine the relationship between architecture and tragedy, highlighting the importance of design elements in telling a story and commemorating significant events. It will explore the ways in which architecture can be used to create a sense of empathy and understanding while also acknowledging the complex ethical issues involved in representing tragedy through design.

"Shadows of Tragedy"

The Role of Architecture in Commemorating and Remembering Historic Tragedies

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General Abstract

The relationship between architecture and tragedy has long been intertwined, serving as a means of expression, storytelling, and commemoration. The role of design elements such as light, shadow, materiality, and spatial arrangement in evoking emotions and telling a story has been significant in depicting tragedy in architecture.

This thesis explores the ways in which architecture has been used to represent tragedy, examining key design elements and their impact on the viewer. Case studies, including the Holocaust Memorial in Berlin, the 9/11 Memorial in New York, and the Fukushima Memorial in Japan, illustrate how architecture has been used to commemorate and remember significant events.

The thesis also delves into the ethical implications of using architecture to represent tragedy, including questions around appropriateness, respect, and memory. It explores the potential for architecture to create a sense of healing and closure for those affected by the tragedy and the potential to be misused or exploited for political or commercial gain.

Acknowledgments:

To James Jones,
For his constant support and encouragement.

To Aki Ishida and Kay,
For their never-ending guidance and enthusiasm.

To Naana,
For believing in me.

Prologue

Architecture has always been intertwined with human history and culture, serving as a means of expression, storytelling, and commemoration. One of the most profound ways in which architecture has been used to express collective memory and evoke emotions is through the representation of tragedy. From ancient ruins to modern memorials, architecture has been utilized to commemorate, remember, and honor tragic events that have shaped human history.

The relationship between architecture and tragedy is complex, as design elements such as light, shadow, materiality, and spatial arrangement can evoke different emotions and tell a story. However, using architecture to represent tragedy raises ethical questions around appropriateness, respect, and memory. Despite this, architecture continues to play a significant role in how we remember and interpret tragic events.

To Amma,

to the women who stood by me at every step of
my life

Shadow of T

Tragedy - *an unwritten document*

The Meaning

Shadows of Tragedy refers to the potential in architecture where a building or a public space where the tragedy occurred. The impact of these events can also have an effect on individuals and communities.

The word 'shadow' represents the idea of a shadow being cast over a building or space. As architects and designers, we have the responsibility to address this shadow by ensuring safety, resilience, and a conducive environment for healing and recovery in the aftermath of a tragedy.

Someone can find more personal examples of architecture, such as the construction of monuments or memorials for individuals who have died. These structures serve as a way to respect and honor the memory of the affected and provide closure for those left behind. In these cases, tragedy leaves a shadow in architecture showing the fragile memory of human life.

India- a

in early page



STREET IN BENARES.

India has a rich and diverse history that has shaped the country into what it is today. From the ancient Indus Valley civilization to the modern-day India, the country has seen many kingdoms, empires, and rulers who have left their mark on the land and its people.

The Mauryan Empire was one of the most significant empires in Indian history and was known for its stable centralized government. The Gupta Empire, often referred to as the "Golden Age" of India, was a time of significant achievements in art, literature, mathematics, and science.

The Islamic invasions in the 8th century led to the establishment of the Delhi Sultanate, which was followed by the Mughal Empire. The Mughal Empire was known for its patronage of the arts and architectural achievements, such as the Taj Mahal.

The period of colonialism by the British East India Company led to significant social, economic, and political changes in India. The struggle for independence was led by figures such as Mahatma Gandhi and Jawaharlal Nehru, who became the country's first Prime Minister.

Since gaining independence, India has undergone significant changes and has emerged as a rapidly developing economy and the world's largest democracy. The country's rich and diverse culture is reflected in its art, music, dance, literature, and cuisine, making it a fascinating and unique destination for travelers and scholars alike.

India- a

page later

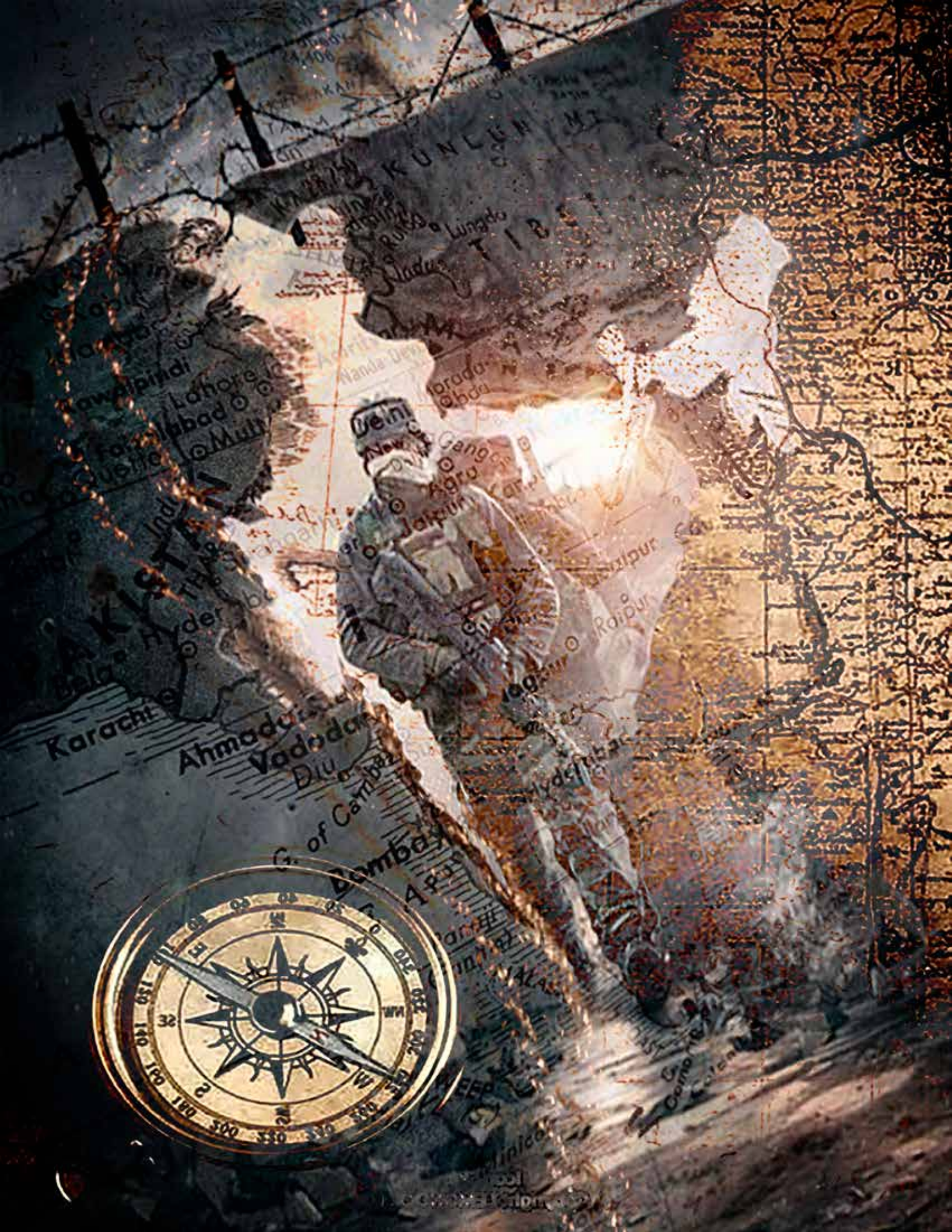
India has experienced several tragic events that have profoundly impacted the nation since gaining independence from British colonial rule in 1947.

One of the most devastating tragedies in Indian history was the partition of India, which resulted in the creation of two separate nations: India and Pakistan. The partition led to widespread violence, communal riots, mass killings, and forced migrations, with estimated casualties ranging from several hundred thousand to over a million.

Mahatma Gandhi, leader of India's independence movement was killed by Nathuram Godse, a Hindu nationalist. This event shocked the nation and led to mourning and introspection.

India has fought multiple wars with Pakistan since independence, significantly losing life and property. The wars in 1947-48, 1965, and 1971 (which led to the creation of Bangladesh) and the Kargil conflict in 1999 were tragic events that caused immense suffering and casualties on both sides.

One of the world's worst industrial disasters occurred in Bhopal, Madhya Pradesh. On December 2-3, 1984, a gas leak that released toxic methyl isocyanate gas into the air. The gas leak caused thousands of immediate deaths, with estimates of total casualties ranging from 15,000 to 20,000 people over the years due to its long-term effects.



INDIA
PAKISTAN
BANGLADESH
Karachi
Ahmadabad
Vadodra
Diu
G. of Cambay
Bombay
Mumbai

Delhi
New Delhi
Gangam
Agro
Jaipur
Raipur
Raipur



The Time

line - *the rewind*

Third war with Pakistan, culminating in the creation of Bangladesh

Death of Prime Minister Jawaharlal Nehru
Second war with Pakistan over Kashmir

Congress Party wins first general election



Leadership

India becomes a republic

Partition of India and Pakistan becomes an independent state

- 1. Quit India Movement
- 2. The Indian National Army is established by Subhas Chav



Non-cooperation movement Khilafat Movement



Anglo-Manipur War



Third war with Pakistan



B.R. Ambedkar death.

War with China over disputed territory with China

War with Pakistan over disputed territory of Kashmir



Assassination of Mahatma Gandhi.

Death of Subhas Chandra Bose at Taiwan.

Second round table conference.



Quit India Movement.

Civil Disobedience Movement

Massacre of Jallianwalla Bagh and Khilafat Movement

Indian Mutiny- First war of Independence

End of the Maratha Empire and British control over most of India

The first COVID-19 case of the country was reported in Kerala's Thiruvananthapuram district



Terror Attacks on Pathankot Air Base

Terror attacks in Hyderabad in Dilsukhnagar area.

16 people are killed in a bomb explosion at German Bakery in the city of Pune.



The 2008 Mumbai attack's (often called the 26/11 attacks) kill 173 people

India and Pakistan sign an agreement aimed at reducing the risk of accidental nuclear war

More than 1,000 people are killed in floods and landslides caused by monsoon rains in Mumbai

India, Pakistan mass troops on common border amid mounting fears of a looming war

Suicide squad attacks parliament in New Delhi, killing several police. The five gunmen die in the assault

At least 50 people are killed in two simultaneous bomb blasts in Bombay.

Gujarat earthquake shakes Western India with a maximum Mercalli intensity.

Babri Mosque in Ayodhya is demolished, triggering widespread Hindu-Muslim violence.

Muslim separatist groups begin campaign of violence against Hindus in Kashmir resulting in thousands of Kashmiri Hindus

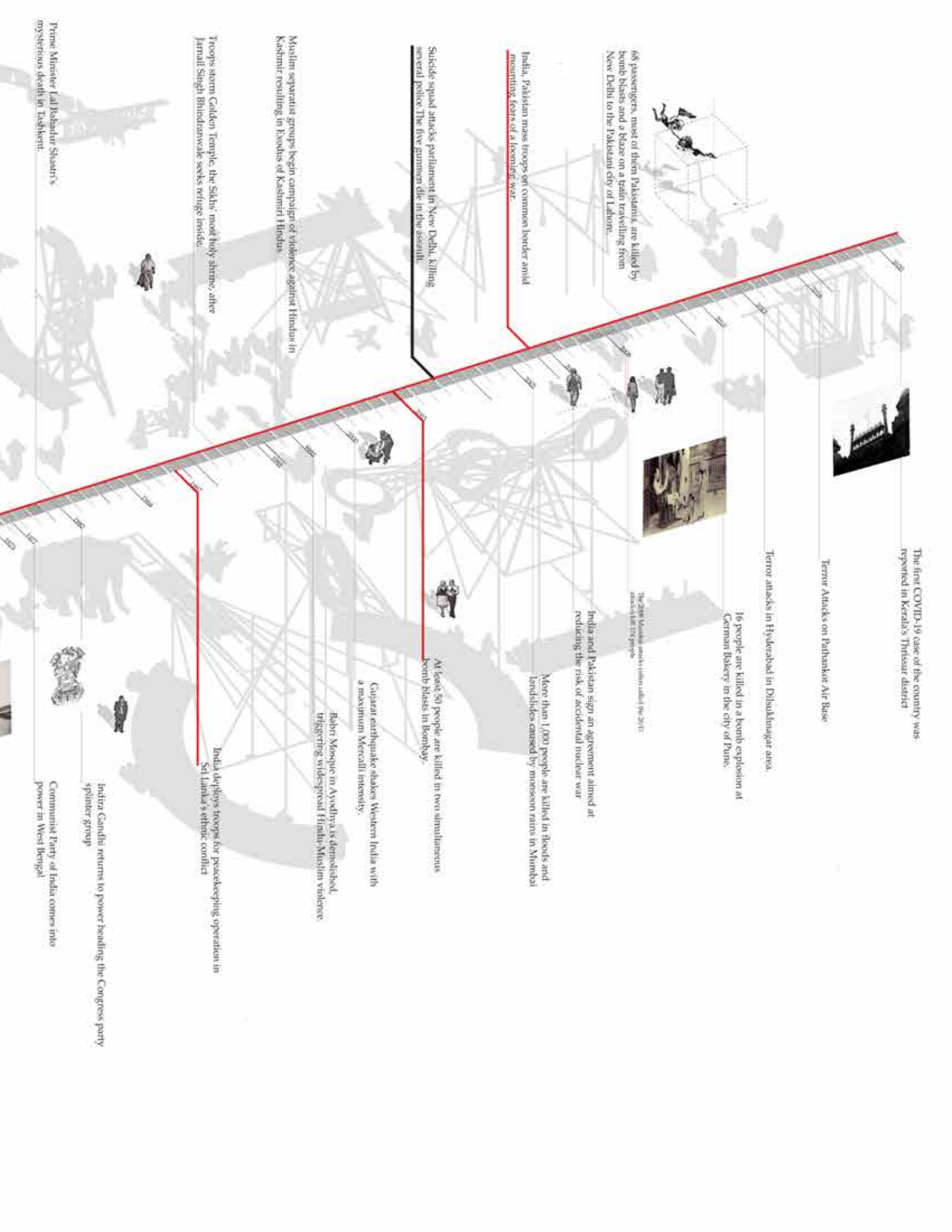
Troops storm Golden Temple, the Sikhs' most holy shrine, after Jarnail Singh Bhindranwale seeks refuge inside.

India deploys troops for peacekeeping operation in Sri Lanka's ethnic conflict

Indira Gandhi returns to power heading the Congress party splinter group

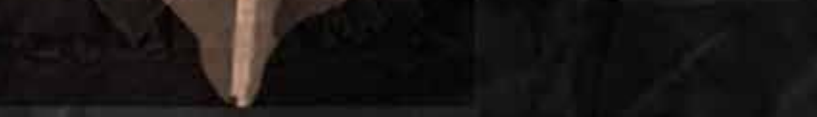
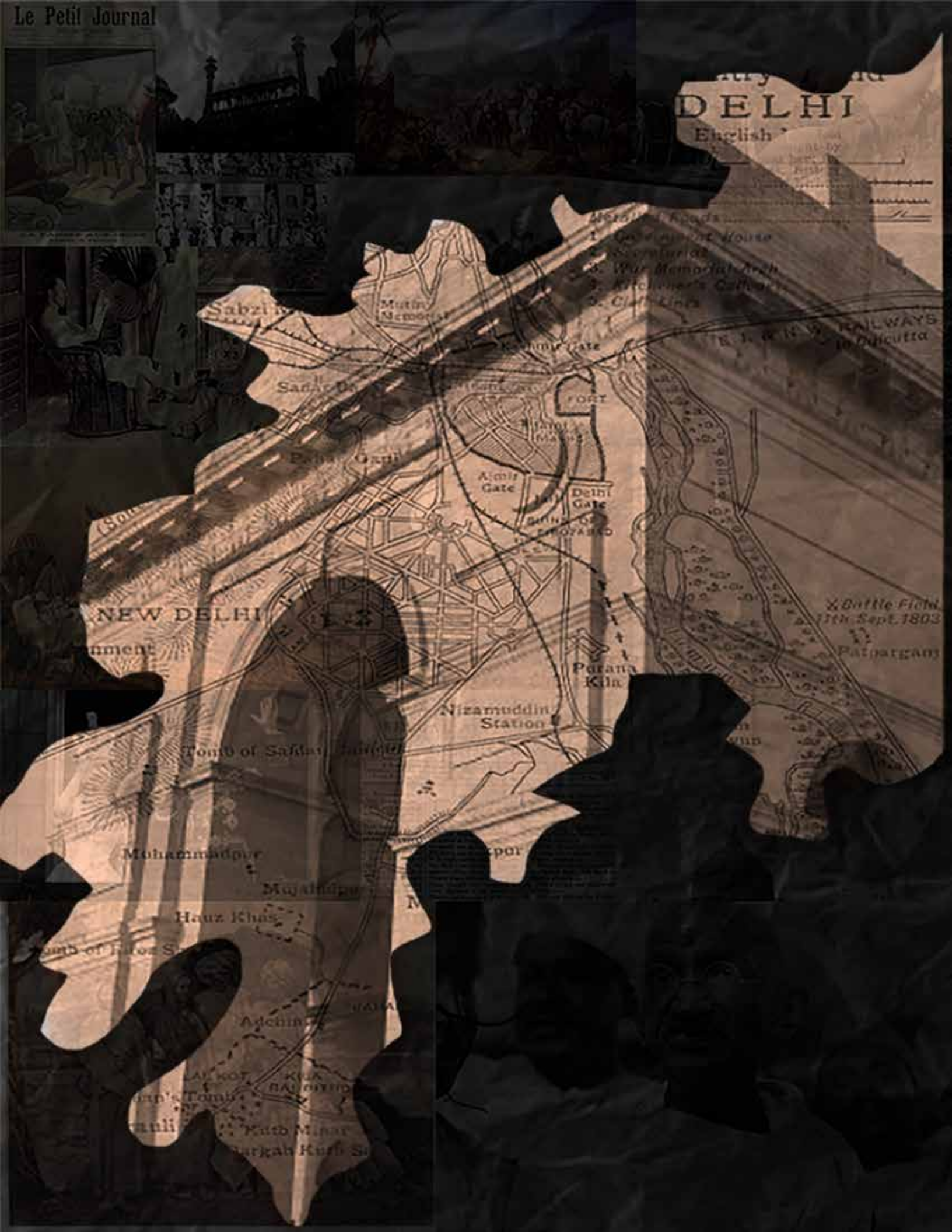
Communist Party of India comes into power in West Bengal

Prime Minister Lal Bahadur Shastri's mysterious death in Tashkent



DELHI

English



The 1st War of Indian Independence took place in 1857. The formation of the Indian National Congress took place in 1885. The Muslim League was formed in 1906. The Non-Cooperation Movement occurred in 1920. Civil Disobedience Movement took place in 1930. The Quit India Movement happened in 1942. The partition of India occurred in 1947. The constitutional development of India took place from 1946 to 1950.

Help the Refugees
AHUJA
CHANDNI CHOWK, DELHI

NEW DELHI, FRIDAY, AUGUST 15, 1947

INDIA INDEPENDENT: BRITISH RULE ENDS

CONSTITUENT ASSEMBLY TAKES OVER

MOUNTBATTEN'S APPOINTMENT AS GOVERNOR-GENERAL ENDORSED COLOURFUL CEREMONY MARKS BIRTH OF NATION

NEW DELHI, Friday.—At midnight tonight the Constituent Assembly, consisting of 388 elected representatives of the Indian people, assumed national sovereignty and the members solemnly took the pledge to serve India and her people. The end today a period of ill fortune and strife to the country since its birth, said Pandit Nehru presiding upon the meeting to take the new pledge.

The Constituent Assembly, which was constituted by the British Government, met for the first time at midnight today to inaugurate the new era of Indian independence.

After the Assembly had met for 22 minutes, Pandit Nehru presided over the proceedings. He said that the Constituent Assembly had taken the oath of allegiance to the people of India and that the British Government had accepted the responsibility of the new nation.

The Constituent Assembly, which was constituted by the British Government, met for the first time at midnight today to inaugurate the new era of Indian independence.

It was the greatest honour for India, for the first time in its history the seat of power had been transferred to the hands of the Indian people.

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HOMAGE TO THE NATION

Elephant, Indian National flag, and people gathered for the ceremony.



Govt. Asst. Secy. Mr. ...

GOVT. ASSEMBLY

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In 1948 Mahatma Gandhi was assassinated by Nathuram Godse. India became a republic in 1950. There was a war over the disputed territory of Kashmir with China in 1962. India had a second war with Pakistan over Kashmir in 1965. The third war with Pakistan took place in 1971, culminating in Bangladesh's creation. In 1999, a cyclone devastated the eastern state of Odisha, leaving at least 10,000 people dead. In 2004, thousands of people were killed when a tsunami caused by the earthquake in the Indian Ocean off the Indonesian coast devastated coastal communities in the south and the Andaman and Nicobar Islands. The Mumbai Terrorist Attack occurred in 2008. The COVID-19 pandemic began in 2020.

How can architecture

show - *the pain, the chaos and the fear*

IS IT PAIN?

IS IT CHAOS?

IS IT FEAR?



In architecture, the design should primarily focus on making functional, safe, and aesthetically pleasing spaces that promote well-being and a positive user experience. Pain, fear, and chaos are typically not desired outcomes in architectural design, as they can harm the users' comfort and overall satisfaction. However, there are instances where architects may intentionally incorporate elements that evoke certain emotions or experiences, including pain, fear, or chaos, for specific artistic or conceptual purposes.

Pain: While minimizing physical or psychological pain is a priority in architecture, there may be instances where architects aim to provoke discomfort or challenge conventional norms. This approach is often seen in avant-garde or experimental architectural projects that aim to push boundaries, question established standards, or create thought-provoking experiences. However, such designs are typically limited to specific installations or art projects rather than everyday architectural spaces.

Fear: In general, architectural design aims to create safe and secure spaces and instill a sense of comfort. However, there may be situations where architects deliberately introduce elements of controlled fear to elicit specific responses or experiences. For example, certain amusement park attractions or haunted houses are designed to create temporary fear or excitement. Nonetheless, these instances are typically brief and limited to specific environments for entertainment or themed experiences.

Chaos: Architectural design typically strives for order, clarity, and functionality. However, architectural styles or design approaches embrace elements of randomness, complexity, or non-linear patterns. While this may introduce complexity, it is still within a framework that maintains coherence and functionality. Architects may employ strategies such as fractal patterns, organic forms, or non-traditional spatial arrangements to introduce controlled chaos or complexity in design.

How can architecture

be - use to memorialize an event

“Memory begins, and that’s where history ends”.

A type of architecture known as memorial architecture is used to honor and remember deceased individuals, significant occasions, or tragic events. Building memory into memorial architecture entails designing areas and buildings that arouse feelings of respect, remembrance, and honor for the person being memorialized. Memory starts where history ends. Our current era is one in which existence is in motion. When the living are dead, voids are created. Identity and self-development are facilitated by memory. A memory cannot encompass both the present and the future.

The use of symbolic and essential design aspects is a way to represent memory in architecture. This might lead us to use components that hold significance to the person being remembered. These components or elements can include stones or materials. Some people also utilize natural or artificial lighting to emphasize that space. For example, the 9/11 Memorial in New York City features two reflecting pools situated on the World Trade Center site. These pools are surrounded by a reflecting parapet made of bronze, inscribed with the names of the victims.

The process of designing memorial architecture is a crucial component that can help achieve the objective of recognizing the event or person. Materials can also be used to create memorial architecture that evokes memory. The choice of material is essential in determining how the memorial is viewed and remembered. The use of stone or marble, for instance, can impart a sense of permanence and infinity, supporting the idea of an enduring tribute.

When incorporating memory into architecture, site selection can be significant. The location should have a strong emotional connection to the occasion or individual, thereby enhancing the building. For instance, placing a memorial near the scene of a tragedy or an important historical event can encourage visitors to feel a sense of continuity and remembrance.”.



Events

Jallianwala Bhag - *The massacre of hundreds.*

24/11 Mumbai attack - *The darkness of a city*

Jallianwala Bhag



MAIN A.C. COMPONENT LAYOUT

Site

Type: Historical site - a place of historical importance.

Region: Amritsar, State of Punjab, India.

Latitude: 31° 37' 12" N

Longitude: 74° 52' 50" E

Tectonic Plate: Indian Plate (India Plate)

Jallianwala Bagh is a historic garden and memorial of national importance close to the Golden Temple complex in Amritsar, Punjab, India, preserved in the memory of those wounded and killed in the Jallianwala Bagh Massacre that took place on the site

on the festival of Baisakhi, 13 April 1919.

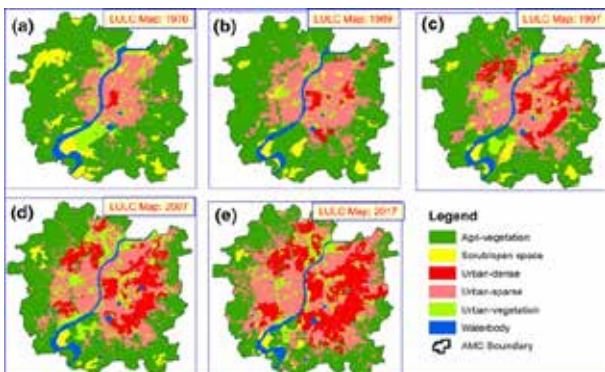
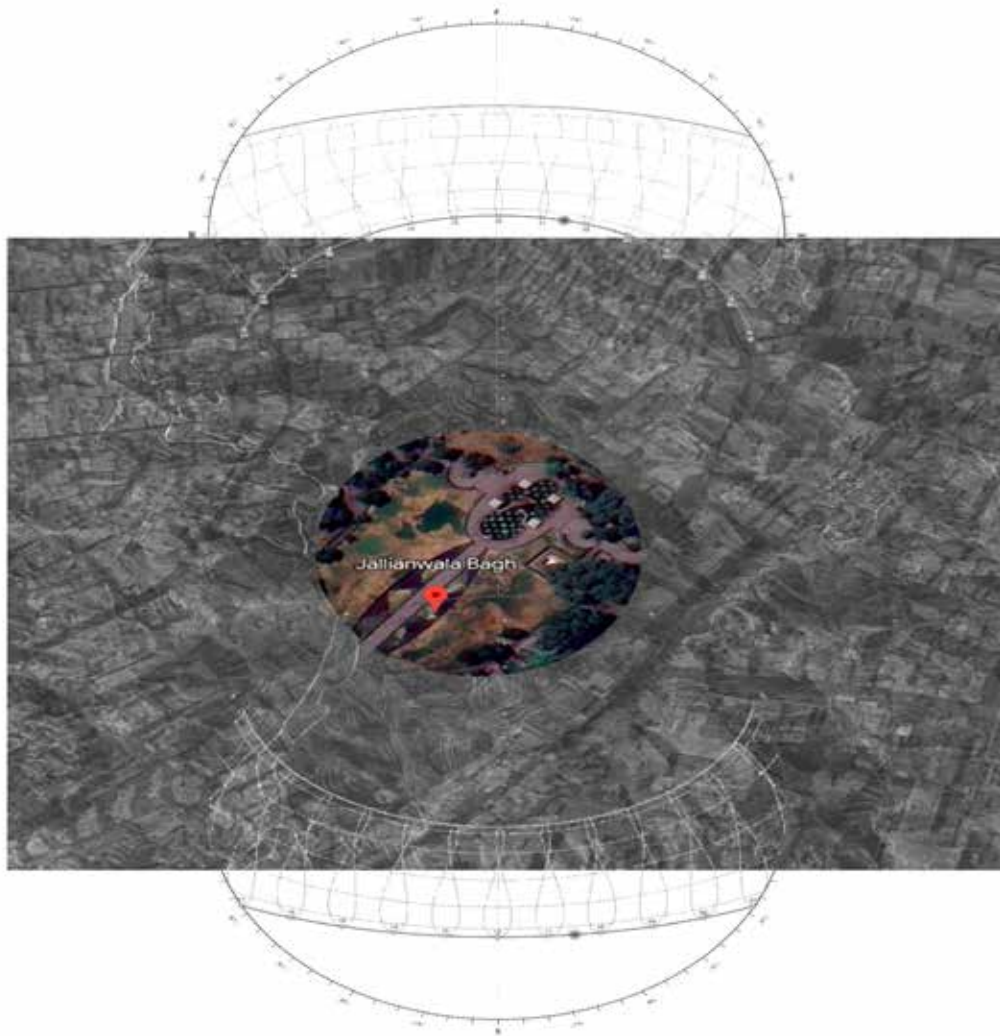


fig.1

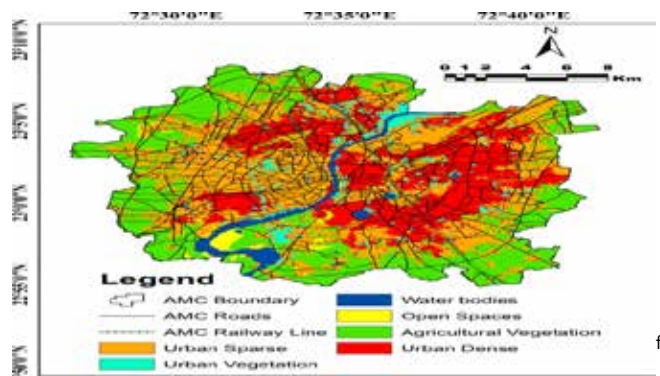


fig.3



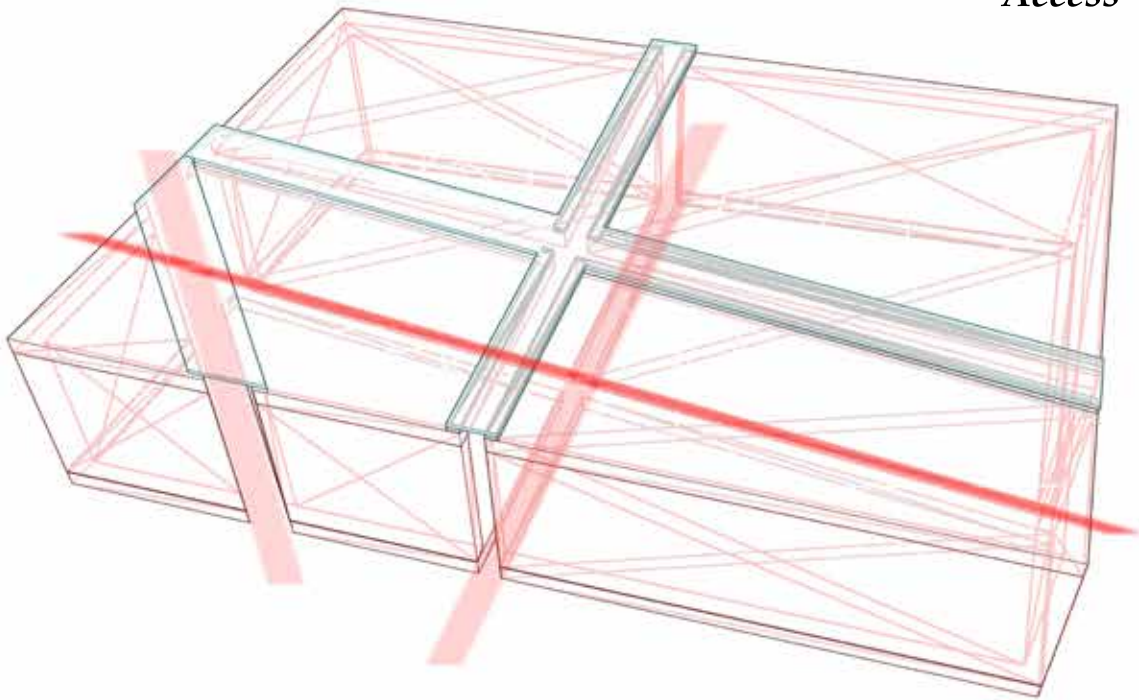
fig.2



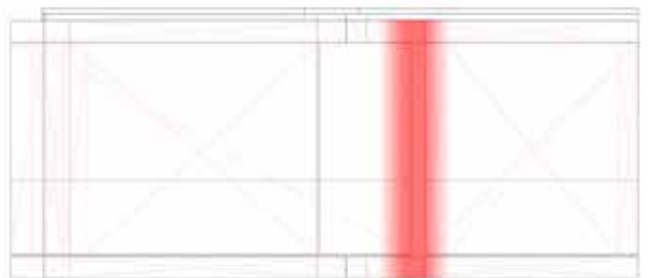
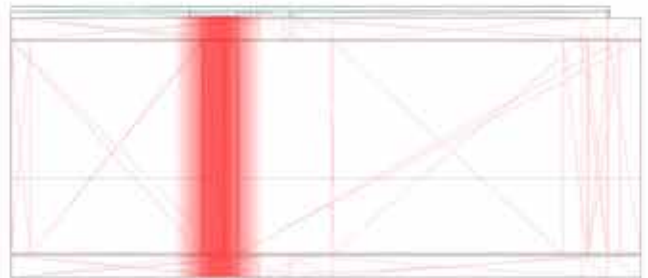
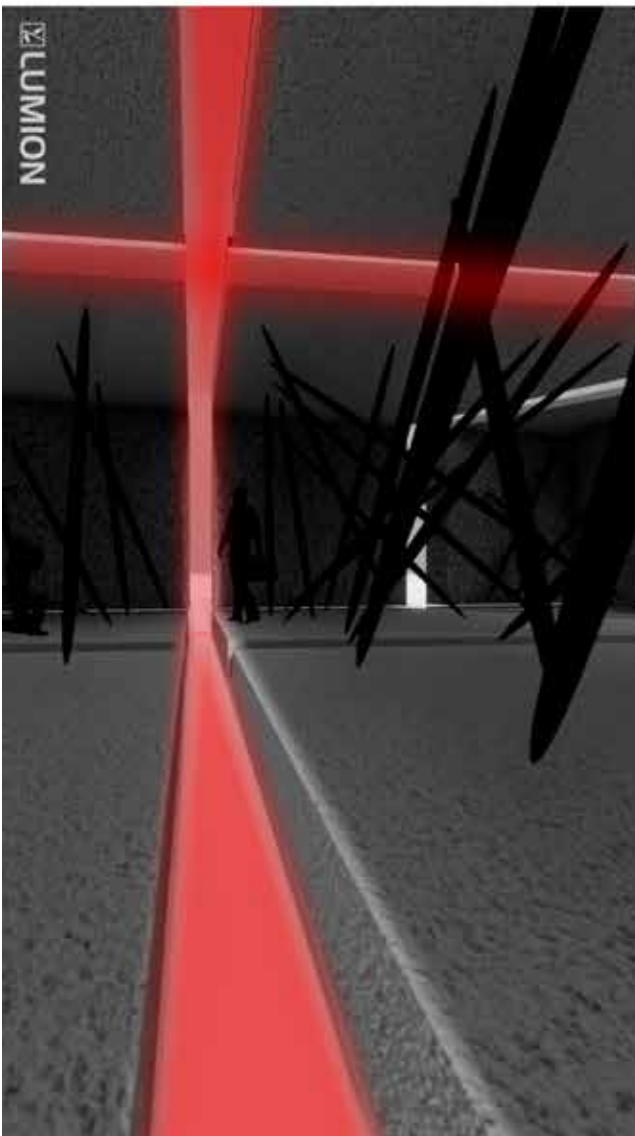
fig.4



Access



Four opening which allows sunlight to enter the space and highlight the access.





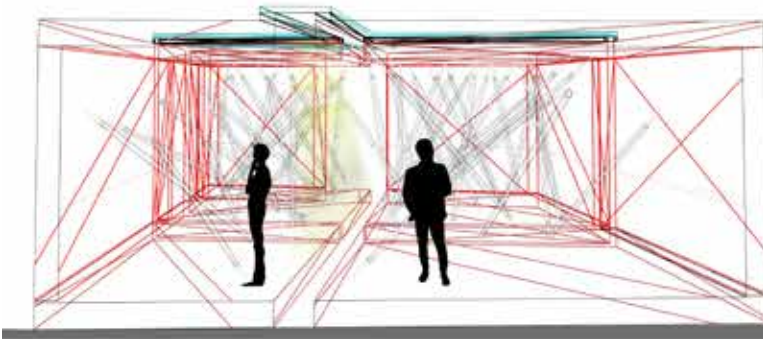
Early morning 8AM



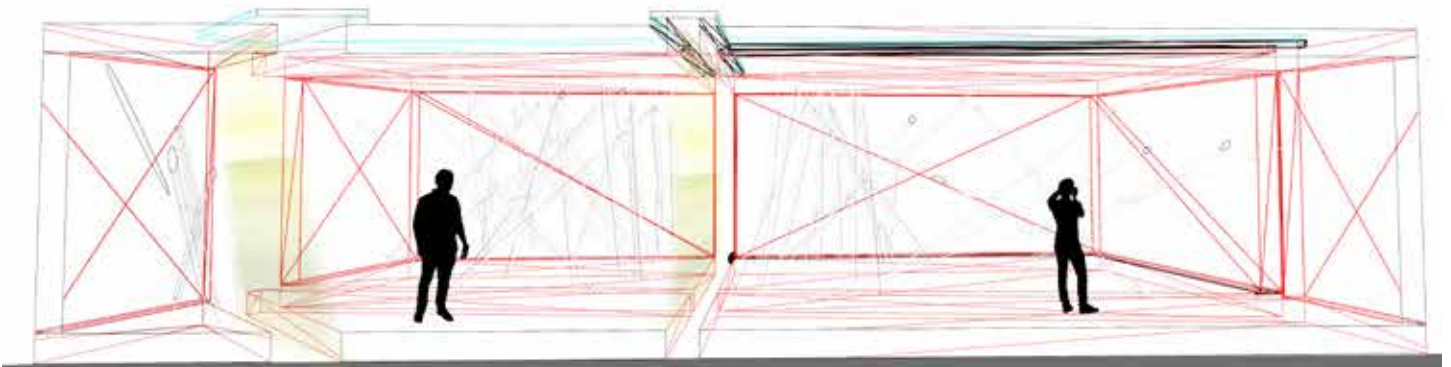
Noon



Evening 6PM

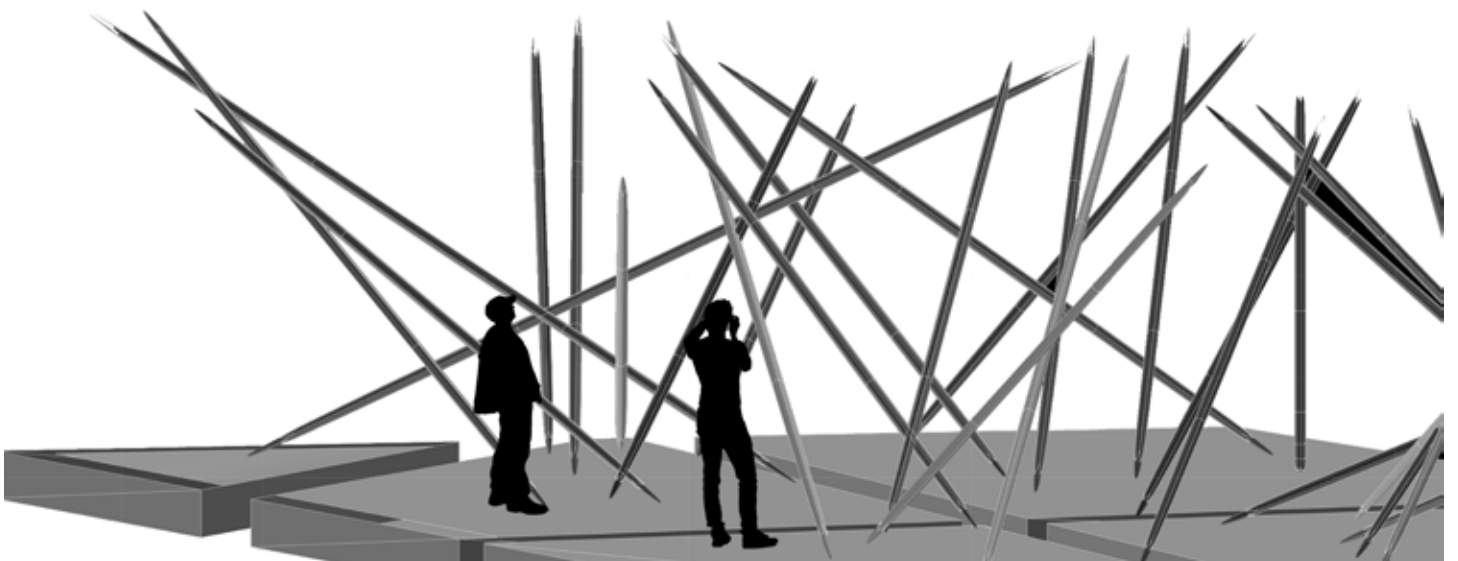
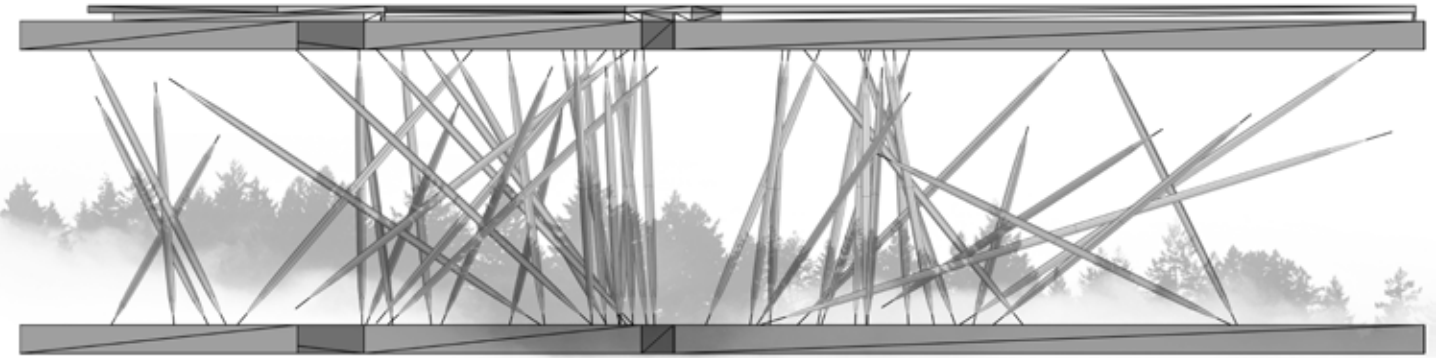
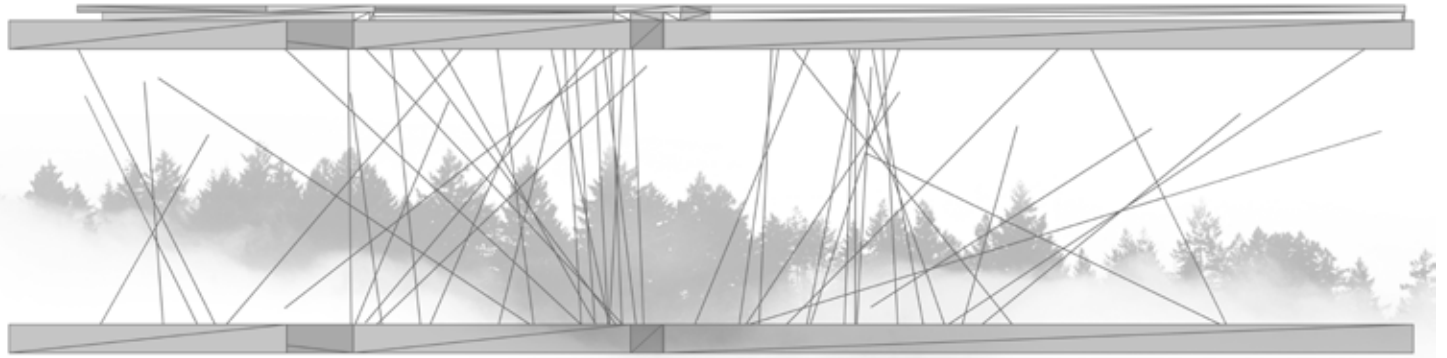


Section cut showing the entry of light at BB'

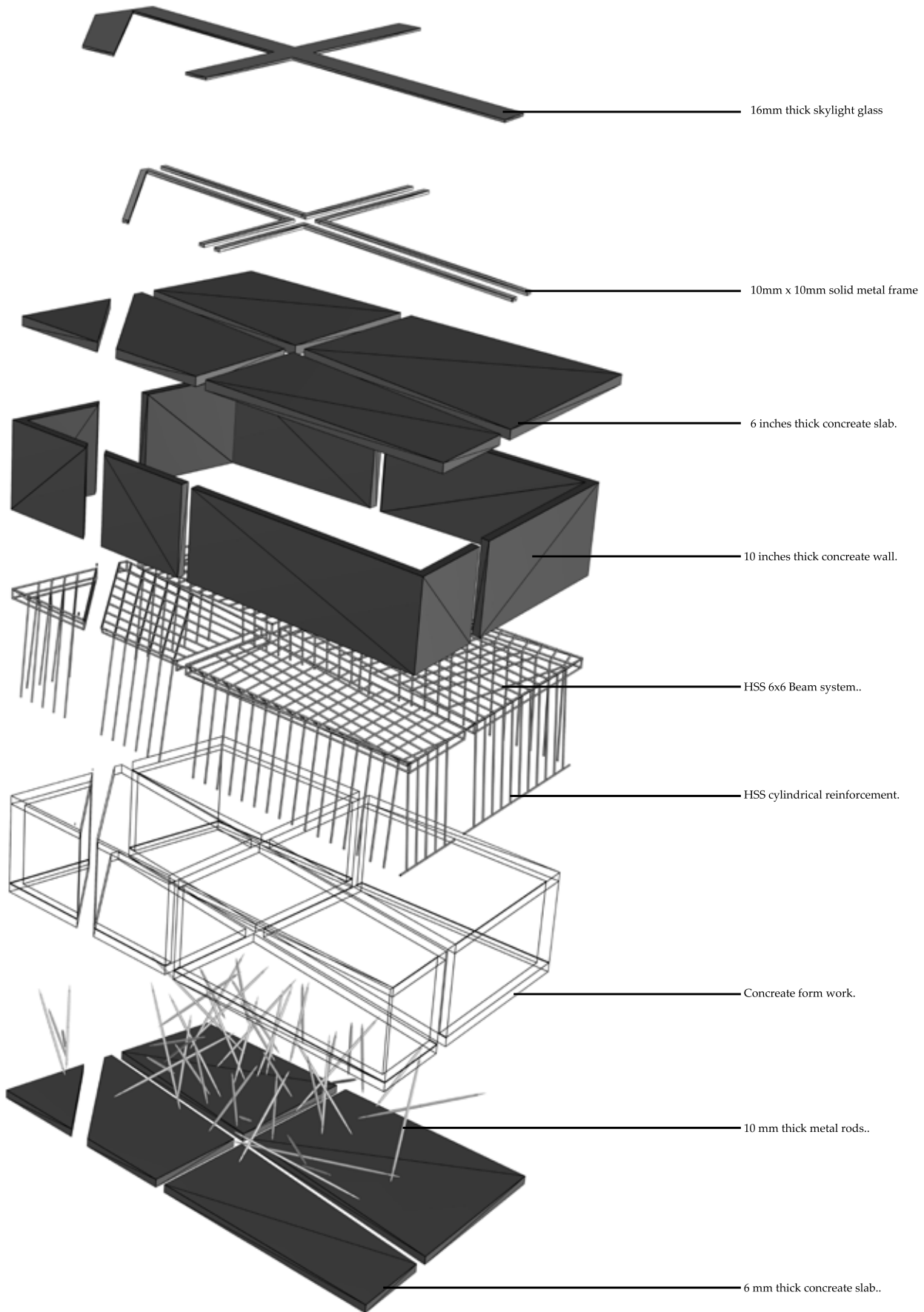


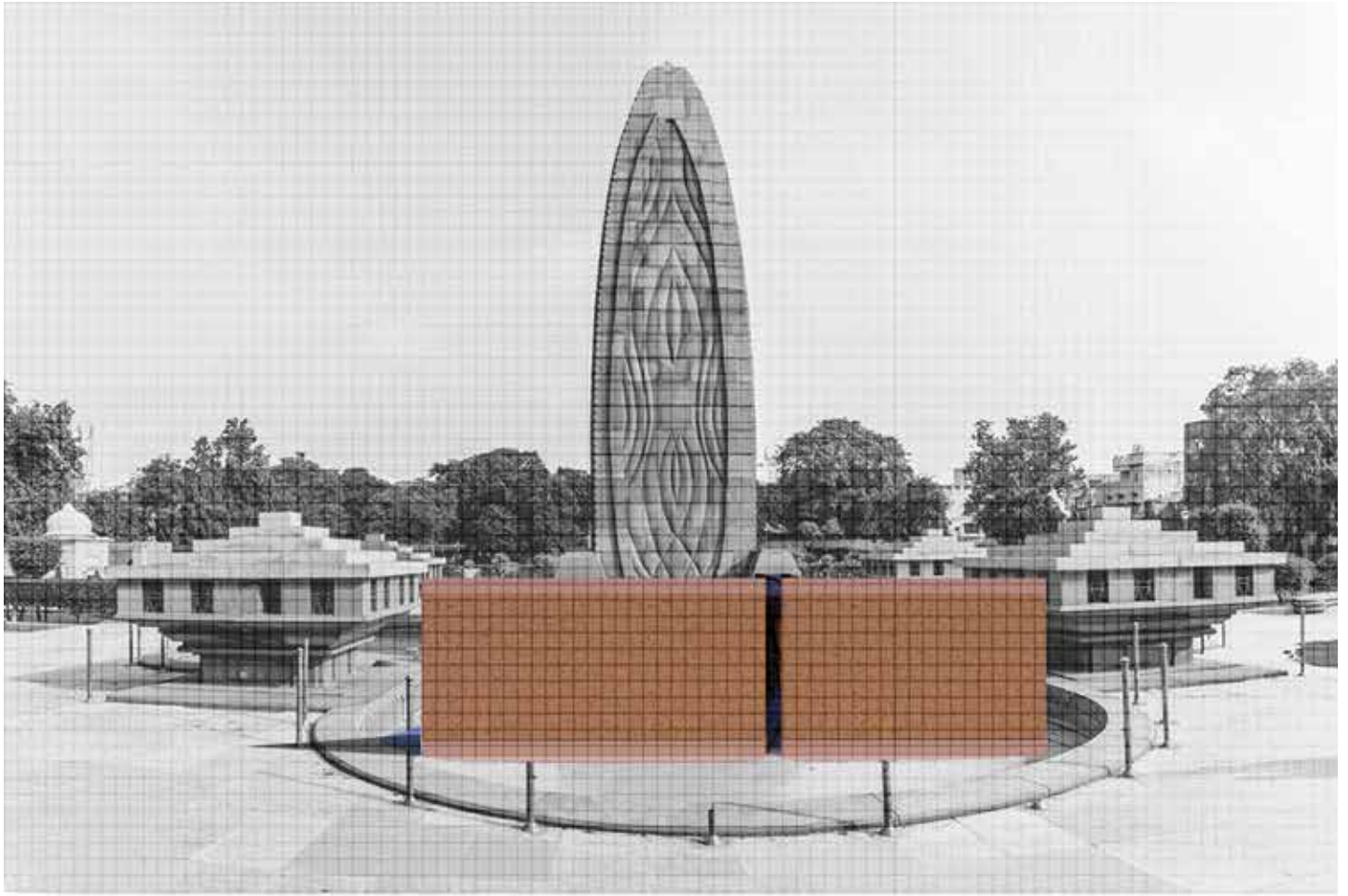
Section cut showing the entry of light at AA'

Bullets



Structure





24/11 Mumbai Attack



24/11 MUMBAI

Site

Type: Historical site - a place of historical importance.

Region: Mumbai, State of Maharashtra, India.

Latitude: 18.9219°N

Longitude: 72.8346°E

Tectonic Plate: Indian Plate (India Plate)

The Gateway of India in Mumbai was built in the early 20th century during the visit of the British emperor.

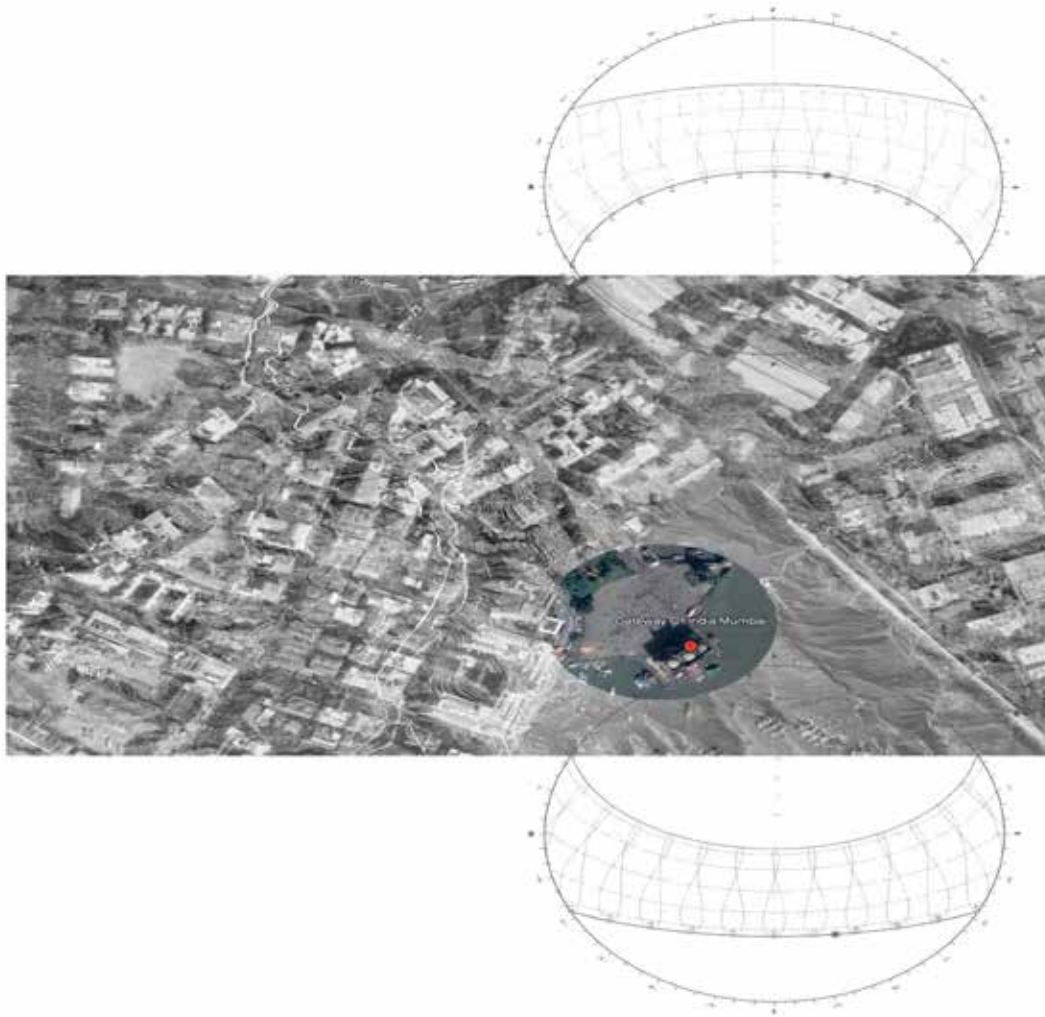


fig.5

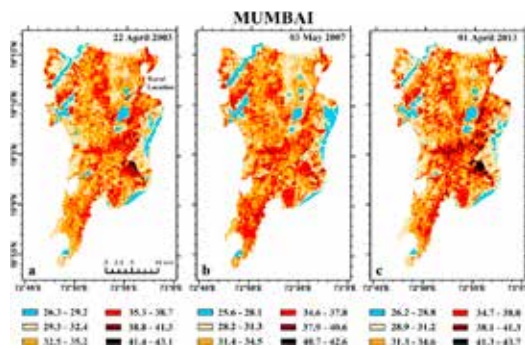


fig.7



fig.6

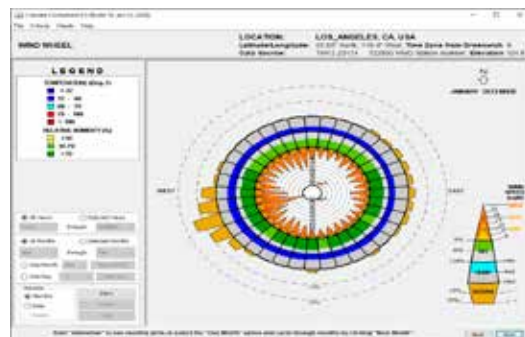
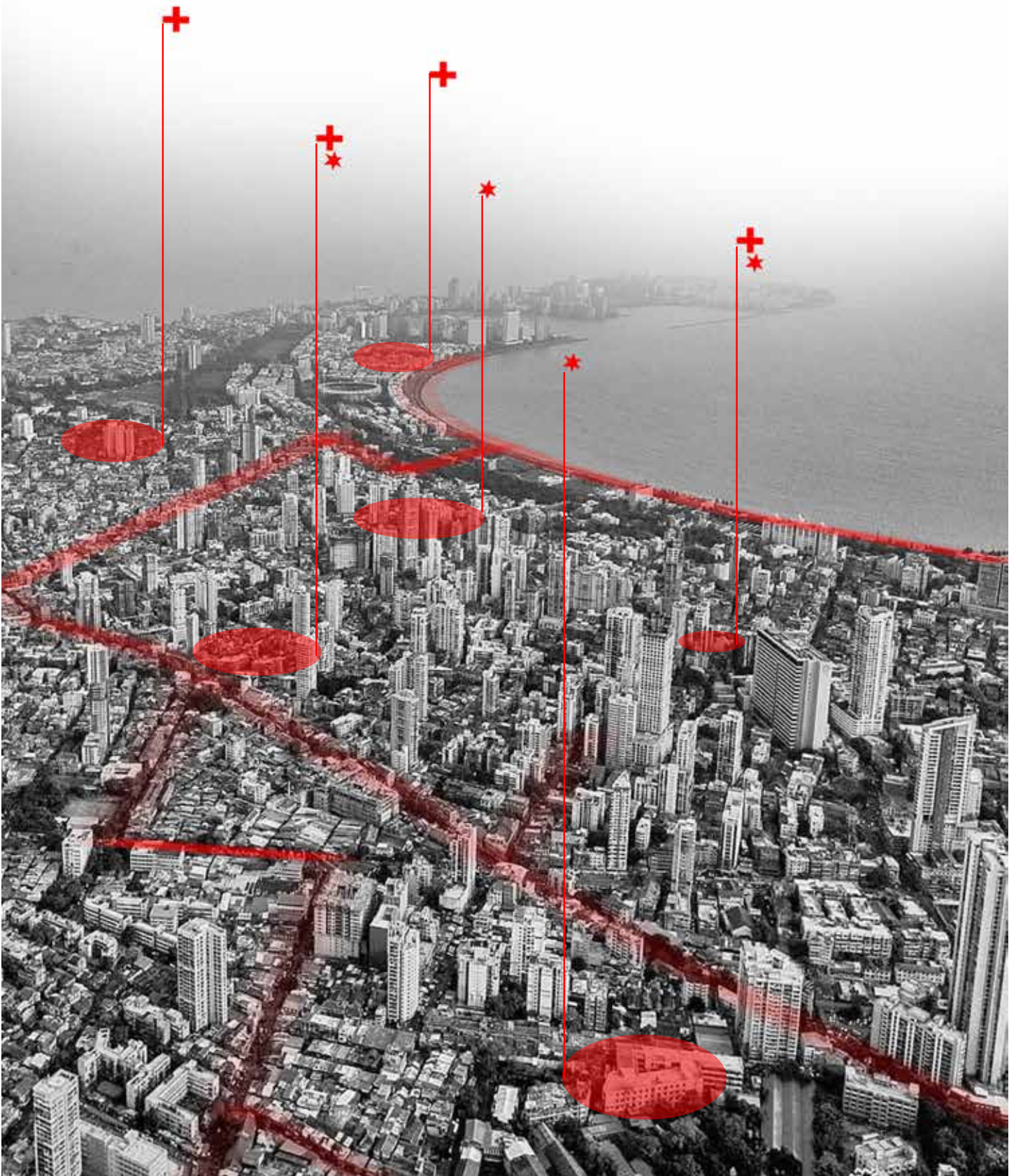
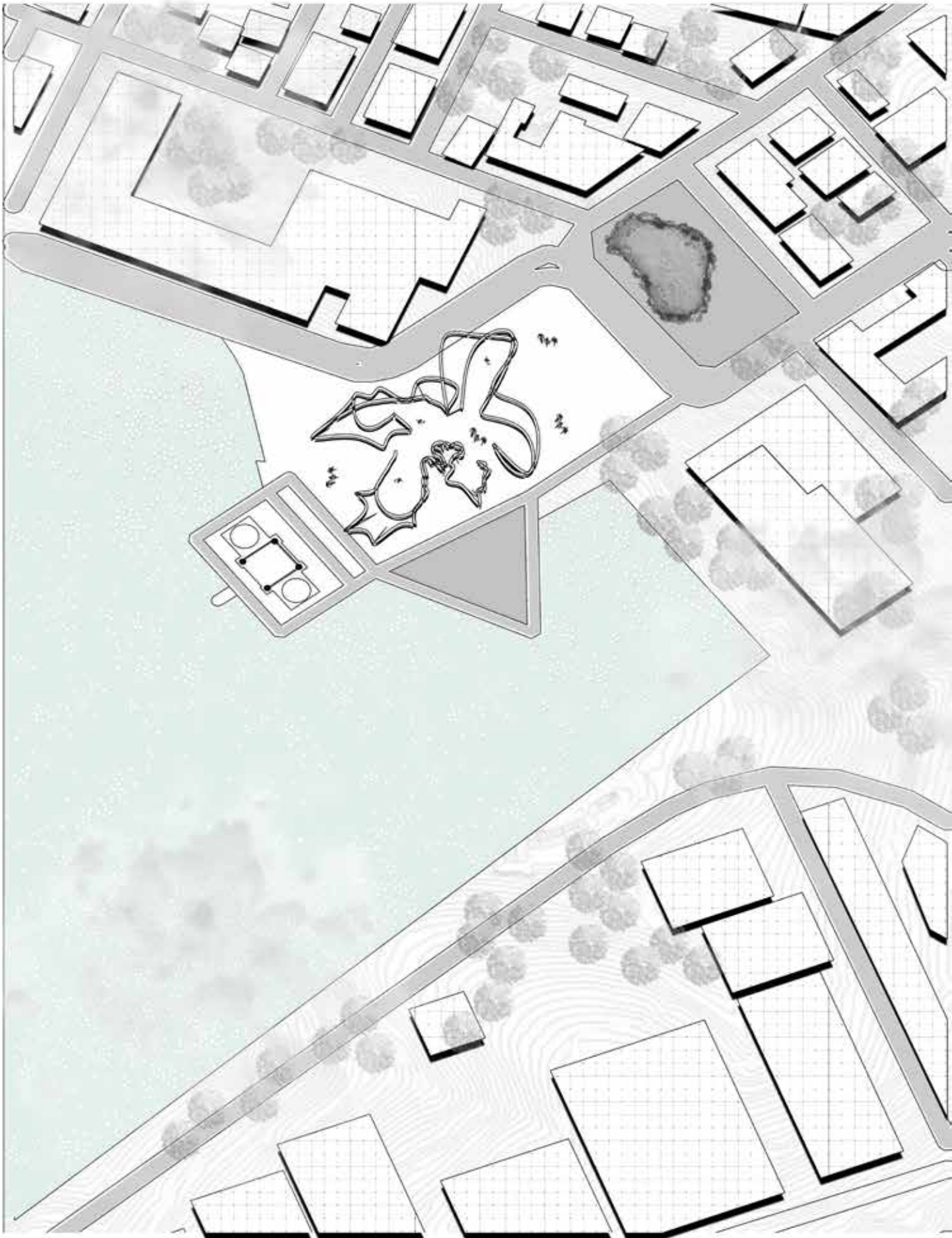


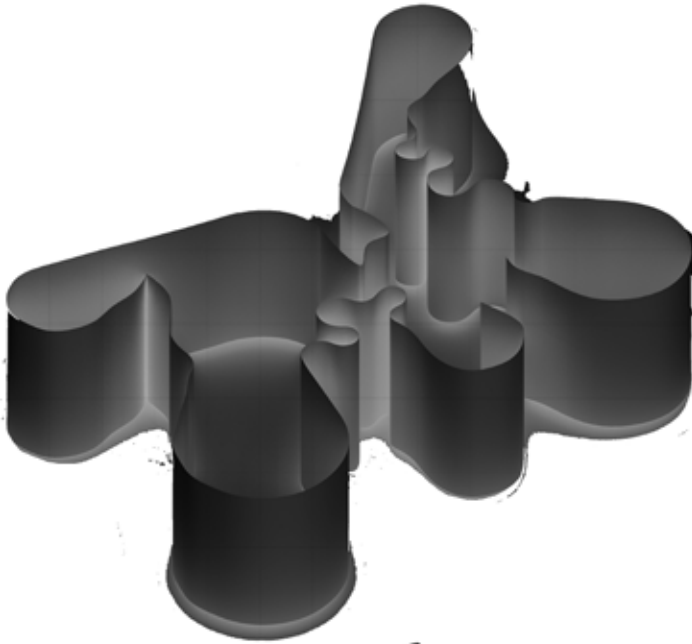
fig.8

THE 24/11 PLACES OF ATTACK

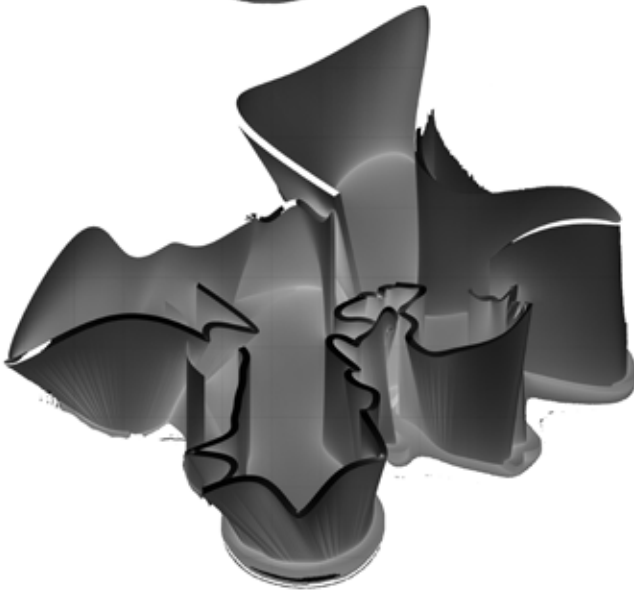




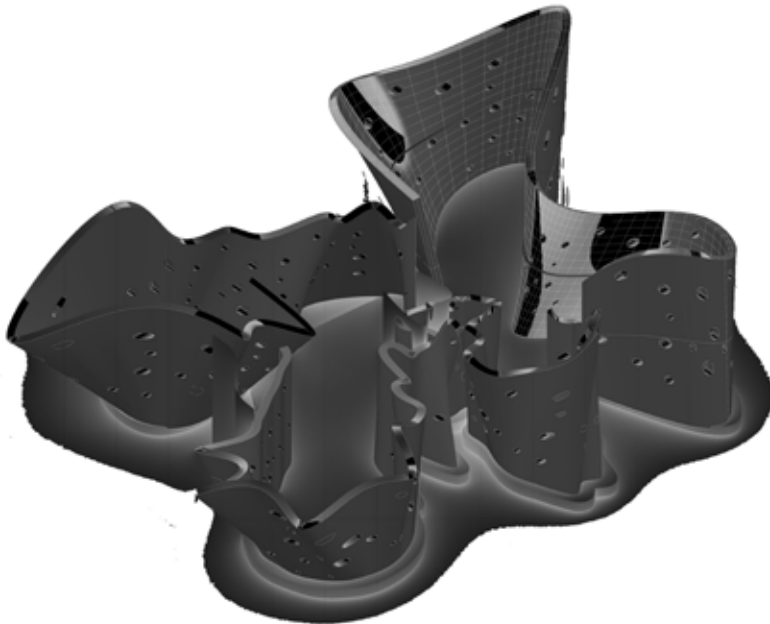
FORM EVOLUTION



This pavilion design aims to create a public space that promotes interaction and unity among people of all backgrounds, without inducing feelings of terror or fear. The goal is to encourage individuals to come together as one community

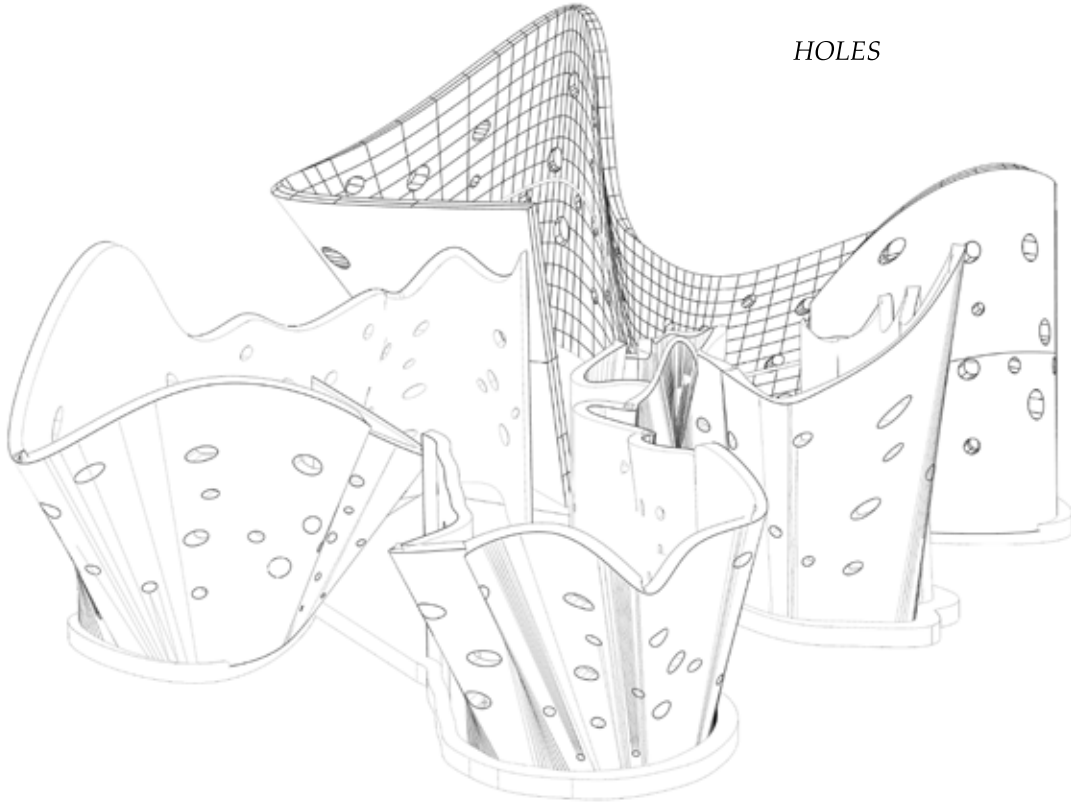


These events caused terror and trapped citizens in a particular situation. The curves in the design represent the lines indicating the direction of the attacks. Five major semi-circles represent the locations where the attacks occurred, and the more minor bends depict the experiences of the victims trapped during the attacks.

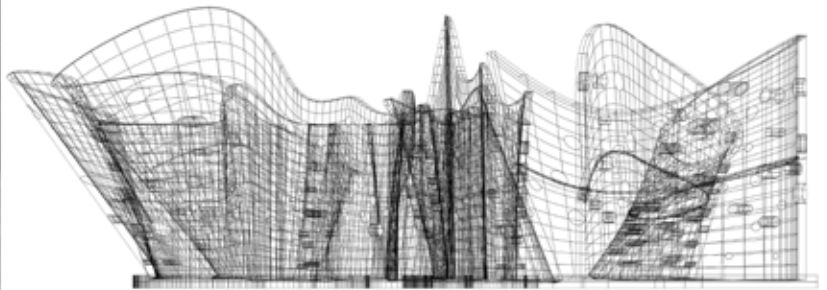
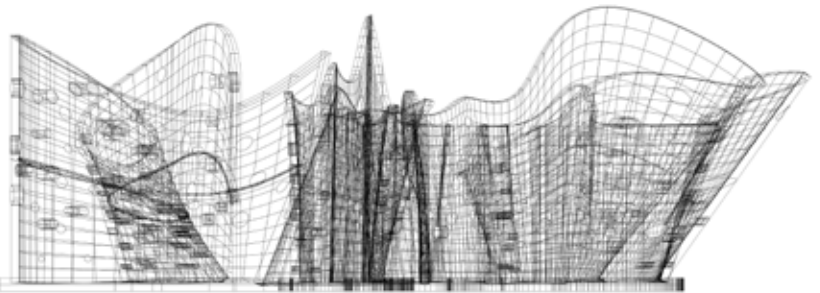


The idea is to reflect the loss of life through a change in the color of the building façade over time as victims take steps forward, symbolizing the end of sorrow and despair..

HOLES



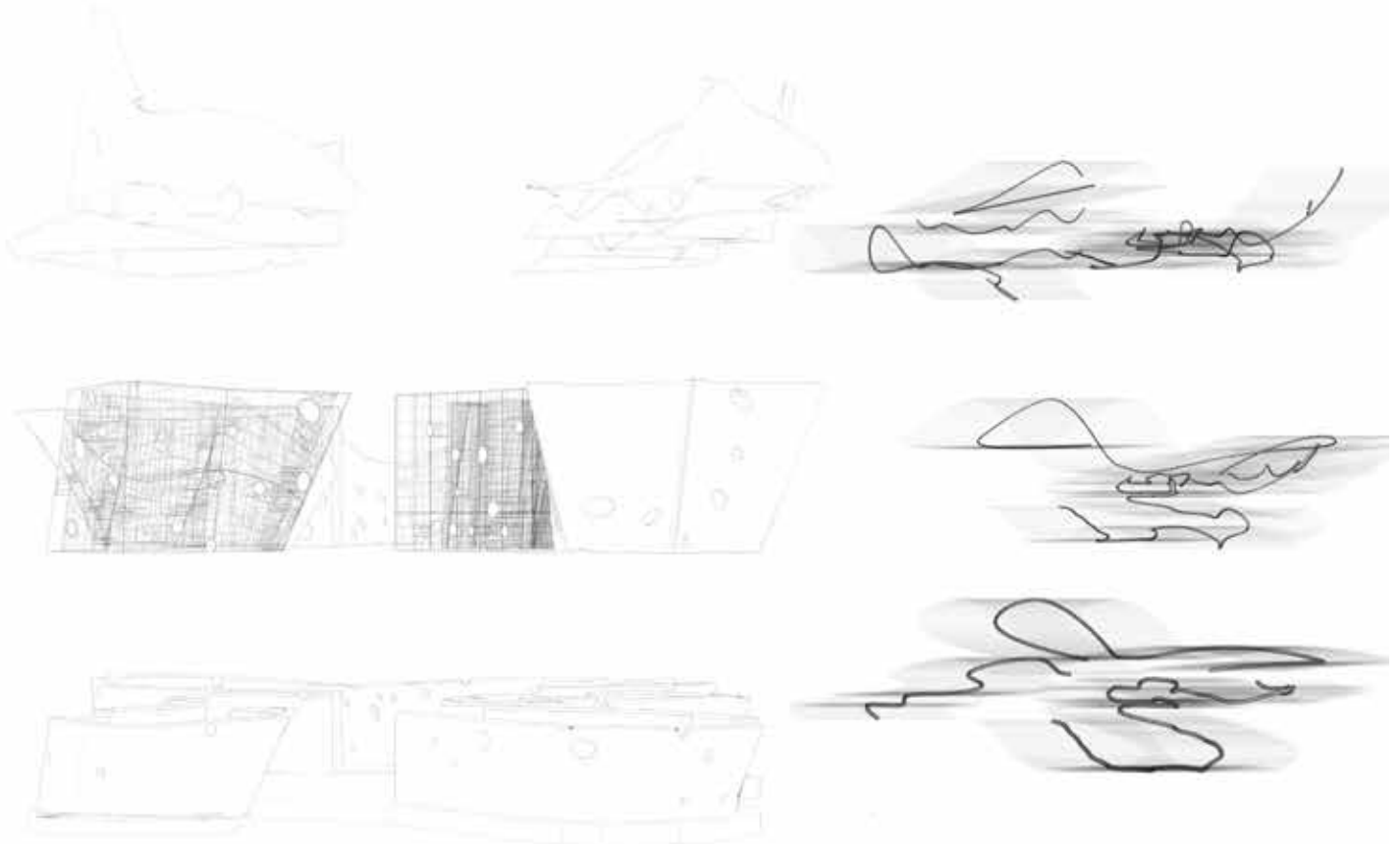
The main character of the addition is natural light, which horizontally penetrates and diffuses throughout the through deep cylindrical holes to reflect on the exposed materials and surface of the floor. The spatially and temporally dramatic quality of the floor brings climatic focus (visual and sensorial) through the space.

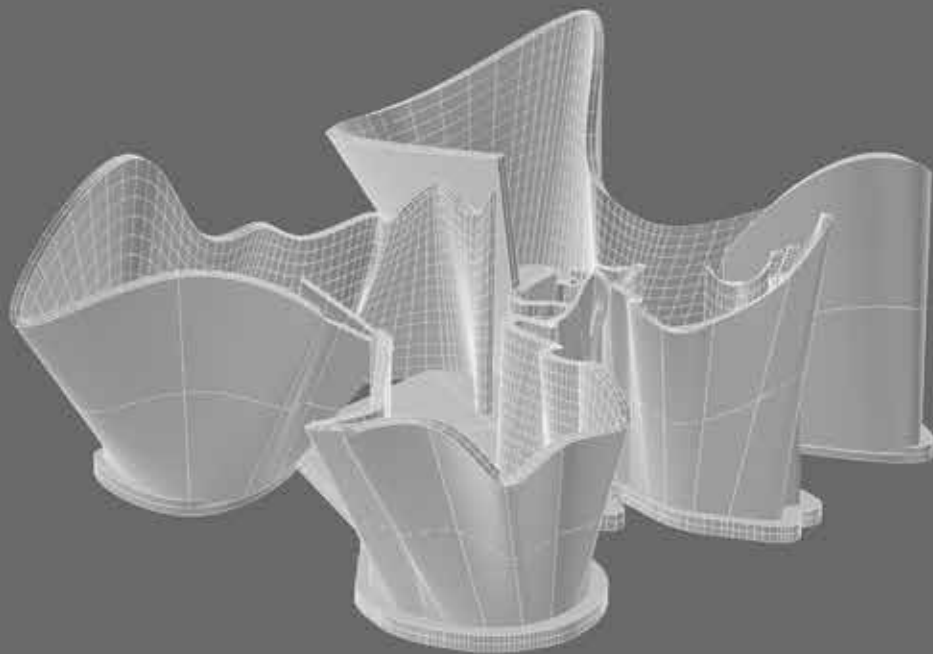
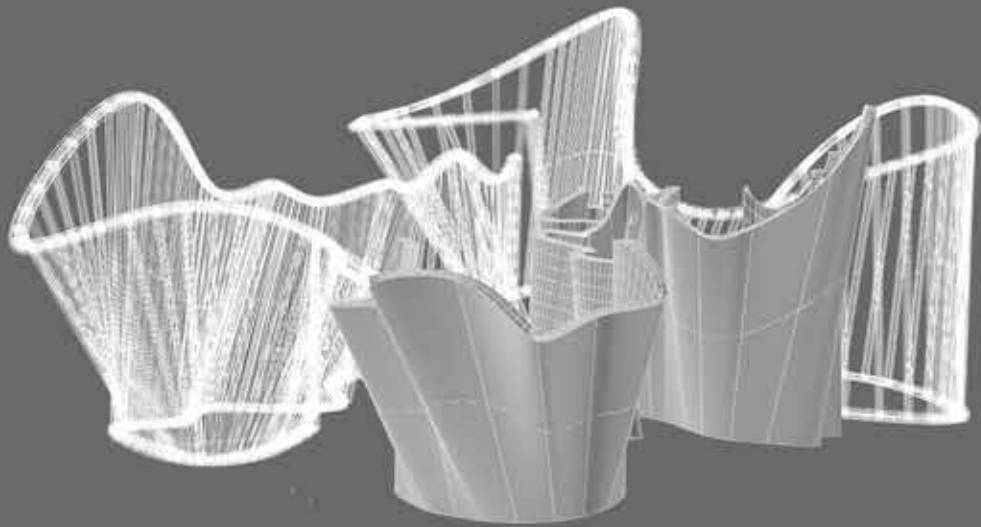
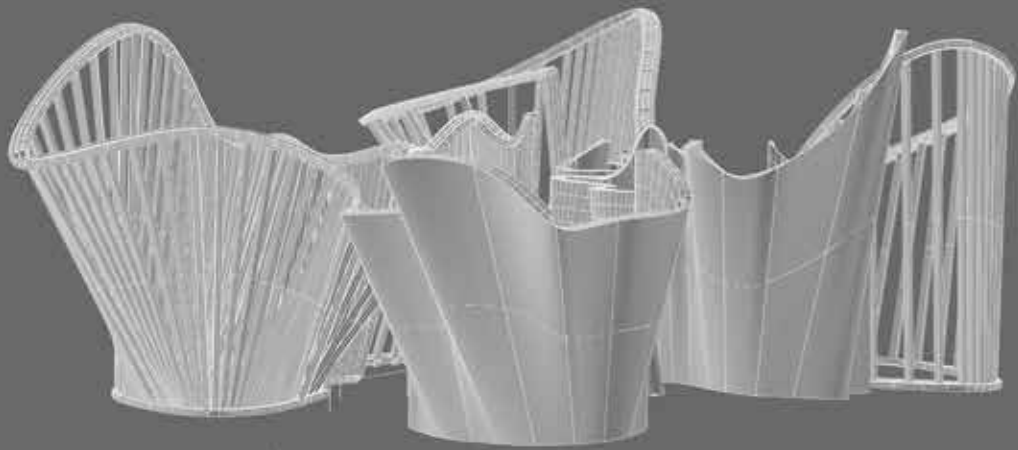




Welding is an essential process for architectural metalwork, where certain metallic materials need to be joined together to create a finished product. However, there are a number of considerations that need to be taken into account when welding is required on a product or project. It requires an understanding of what the desired finish is for the finished product or element of work.

By working backwards from the desired finish, it's possible to plan the materials and processes that can be used, and avoid having to change the design of a product due to the wrong materials being specified for a project that needs to utilise welding.











The Conclusion

This Thesis, *Shadow Of Tragedy*, is a framework that encompasses the structural, thematic, and emotional elements of tragic events. Throughout this thesis, I have explored the various facets of architecture and its profound impact on our understanding of tragedy. By examining these events and the emotional resonance of tragedies, I have gained insights into the intricate interplay between form and function and how tragedy engages and affects this function.

Through my research and analysis, it became clear that tragedy serves as a mirror to our own experiences and a means to explore the complexities of human nature.

The most critical component of this thesis is Empathy. Empathy plays a crucial role within this thesis, serving as a bridge that connects the events with people and their experiences. Empathy highlights the struggle, pain, and fear of the city and the people who went through it. Empathy in this thesis involves understanding and valuing the diverse range of human needs and emotions and designing spaces that reflect and support those needs and emotions.

To conclude, this thesis examines the relationship between architecture and tragedy, highlighting the importance of design elements in telling a story and commemorating significant events in India History. It will explore how architecture can be used to create sense of Empathy and understanding while also acknowledging the complex ethical issues involved in representing tragedy through design.

The Citations

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Images

Fig.1 and Fig.3

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Fig.2 and Fig.4

google images.

Fig.5 and fig 7

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Fig.4 and Fig.8

Google images

