

MINIMALISM IN ARCHITECTURE

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DECLARATION

I PRIYANKA DABRA, here by solemnly declare that the dissertation work undertaken by me, titled MINIMALISM IN ARCHITECTURE is my original work and whatever information I have incorporated in the form of photographs, text, data, maps, drawings, etc., from different sources, has been duly acknowledged in my report.

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TABLE OF CONTENTS

1 Introduction

- 1.1 Brief
- 1.2 Background
- 1.3 Aim
- 1.4 Objective
- 1.5 Need of the study
- 1.6 Methodology
- 1.7 Scope
- 1.8 Limitations

2 Minimalism in Architecture

- 2.1 History of Minimalism
- 2.2 Architects that practiced minimalism
 - 2.2.1 Ludwig Mies Van der Rohe
 - 2.2.1.1 Life and Work
 - 2.2.1.2 Styles and Principles
 - 2.2.1.3 Notable works

2.2.2 Tadao Ando

- 2.2.2.1 Life and work
- 2.2.2.2 Styles and Principles

3 Literature Review

- 3.1 Western Interpretation
- 3.2 Material and Effect
- 3.3 Japanese Interpretation
- 3.4 Zen philosophy

4 Principles of minimalism

- 4.1 Reduction to essentials
- 4.2 Divine proportion
- 4.3 Grid Planning

5 Characteristics of Minimalism

- 5.1 Simplicity in form and function
- 5.2 Uncomplicated cladding and wall finishes
- 5.3 Simple detailing devoid of decoration

6 Indian Minimalism

- 6.1 About
- 6.2 Principles of Indian minimalist architecture
 - 6.2.1 Unnatural Selection
 - 6.2.2 Back to the roots
 - 6.2.3 Matter of preference
- 6.3 Minimal adjustments
- 6.4 Resonating culture, modernism and morals in Indian minimalism

7 Case Studies

- 7.1 Church of Light, Osaka, Japan
 - 7.1.1. Introduction
 - 7.1.2 Use of basic geometrical features
 - 7.1.3 Material as a language
 - 7.1.4 Analysis
- 7.2 Gandhi Smarak Sanghralaya, Ahmedabad, India
 - 7.2.1 Introduction
 - 7.2.2 Architechtural Features
 - 7.2.3 Structural Simplification
 - 7.2.4 Analysis
- 7.3 Panorama house, nashik Maharashtra
 - 7.3.1 Introduction
- 8 Conclusion
- 9 References

List of illustrations

	List of illustrations	
Figure number	Figure title	Source
1	Ludwig Mies Van der Rohe	https://www.britannica.com/
2	Minimalistic chair	https://www.britannica.com/
3	vertical and horizontal lines	https://www.researchgate.net/
4	skulls and bones structure	https://www.archdaily.com
5	Justification of Time	https://www.researchgate.net/
6	Use of glass and steel	https://www.archdaily.com
7	Fluid space between interior and exterior	https://www.archdaily.com
8	Farnworth House	https://www.designingbuildings.co.uk/
9	Tadao Ando	https://www.britannica.com/
10	clear definition of space	https://www.archdaily.com
11	Use of basic geometry	https://www.researchgate.net/
12	private space for individual	https://www.archdaily.com
13	Round opening impales building	https://www.archdaily.com
14	Connection of nature and building	https://www.archdaily.com
15	Coalition of culture and modernism	https://www.archdaily.com
16	Sculpture by Donald Judd	https://www.britannica.com/
17	Herzog and De Meuron Ricola storage building	https://www.britannica.com/
18	Chichu Aur Museum	https://www.britannica.com/
19	Reduction to essentials	https://www.academia.edu
20	golden ratio diagram	https://www.britannica.com/
21	Grid planning	https://www.academia.edu
22	Panorama house	https://www.britannica.com/
23	Barcelona Pavillion	https://www.re-thinkingthefuture.com
24	Barcelona pavilion interior	https://www.re-thinkingthefuture.com
25	Farnsworth house interior	https://www.re-thinkingthefuture.com
26	Bhiksha patra	https://www.britannica.com/
27	Unnatural selection	https://www.re-thinkingthefuture.com
28	Indian idea of minimalistic interior	https://www.britannica.com/
29	The main chapel	https://www.re-thinkingthefuture.com
30	Details of the building	https://www.re-thinkingthefuture.com
31	use of minimalistic architecture	https://www.re-thinkingthefuture.com
32	Gandhi Smarak Sanghralaya	https://www.britannica.com/
33	Gandhi Smarak Sanghralaya Sectional elevation	https://www.britannica.com/
34	Gandhi Smarak Sanghralaya Detailed plans	https://www.britannica.com/
35	Site Plan	https://www.re-thinkingthefuture.com
36	View of the site	https://www.re-thinkingthefuture.com
37	Sections	https://www.re-thinkingthefuture.com
38	Isometric view	https://www.re-thinkingthefuture.com
		r diministrature.com

Chapter 1

Introduction

1.1 Brief

"Eating less food is called a diet. When you're on diet, you restrict yourself to small amounts of food for medical reasons or to lose or 'maintain weight. When architecture is on diet, it's called minimalism."

Minimalist architecture is restricted to fewer elements to achieve the most. Here, "the most" is as important as health.

'Minimalism' is derived from the word 'minimal,' which in French translates to 'minimum.' The word 'minimum' is defined as "the least or smallest amount or quantity possible, attainable, or essential". The minimalist trend has developed differently in architecture and other design disciplines than it has in other art forms. Architecture, unlike art, does not grant absolute rights to its creators. When it comes to design, the object's functional meaning is enormous. The movement concerns with stripping away the unwanted details and defines the true essence of any architectural element. It is not defined by a lack of possessions, poverty, or deprivation. On the contrary, it is a conscious decision to pursue what is difficult and to accomplish more with less.

The term 'Minimalism' is used to describe a trend in design whereas the subject 'Minimalism' is reduced to its necessary elements. Minimalist architecture focuses on the connection between lighting and the void spaces left by the removal of objects.

Architects like Tadao Ando, Mies Van der Rohe, and Philip Johnson chose to become minimalists to reach the essence of architecture. Minimalist architects value simplicity, formal cleanliness, and empty space. They eliminate everything that does not work with the program, and use the fewest and barest elements to maximum effect.

Central theme of Minimalism is not elimination of ornament but celebration of space and form.

1.2 Background

The minimalist approach is now considered a popular architectural style. According to Macarthur's essay, "minimalism is the current architectural fashion" (Macarthur 2002). In light of this, it is reasonable to conclude that minimalism is a humanised form of modernist boxes that merely represents current life. People argue that minimalism is the next era in architecture, referring to styles that sprang from modernism. In architectural practice, the term 'minimalism' first appeared in the late 1980s. Since then, several theorists have developed interpretive patterns for minimalism. As a result, these patterns continue to be explored; they did not appear out of nowhere, and they have not always existed. Returning to those texts and studies, it was discovered that there were differing perspectives on minimalism in architecture. There is a major divergence between western and

Japanese perspectives on minimalism among these interpretations. As a result, vice says in his book that the Japanese environment, tradition, and way of life are suitable for the minimalist formula.

According to Japanese explanation, minimalist design simplifies areas to reveal the building's inherent beauty and quality, encouraging people to live a simple lifestyle in keeping with Japanese tradition. The design isn't entirely devoid of ornamentation, but all of the features and carvings have been pared down to their most basic form. The style, which was heavily influenced by Japanese Zen philosophy, was characterised by a strong emphasis on simplicity. Minimalist architecture, epitomised by architect Mies van der Rohe's distinctive style, which he describes as "Less is more," is influenced by traditional Japanese designs, the Bauhaus art school, and DeStijl. It refers to architectural designs that are reduced to the absolute bare minimum of elements

1.3 Aim

To investigate the important factors that come together to generate minimalist architecture and its synchronisation with the natural mindset.

The purpose of this research is to gain a better understanding of minimalism in architecture by focusing on the characteristics, elements, and principles of minimalism in architecture, as well as the methods used by various architects to construct high-quality buildings

1.4 Objective

- 1. To learn about the Minimalist concept and its principles
- 2. To investigate minimalism's influence on architecture
- 3. Minimalist Architecture
 - a) Architects in the minimalism movement, as well as their own ideology on minimalism
 - b) Discuss their way of life and sources of inspiration.
 - c) Examine the structures designed by these architects and provide a critical analysis
- 4. To study and compare Western and Japanese minimalism theories.
- 5. To understand the concept of Indian Minimalism and and its role in current scenario.
 - a) What is Indian Minimalism and what is its scope?
 - b) Indian minimalism in the field of Architecture

1.5 Need of the study

Minimalist style brings calm and harmony not only to the physical domain, but also to the mental world. Maximizing is simple but limiting is more difficult. It is because one must know when to stop so that the entity's performance is not hampered.

1.6 Methodology

- 1 Selection of Topic
- 2 Understanding the area of research
- 3 Formulating Aim and Objectives
- 4 Defining the scope and limitations
- 5 Primary Study: Literature
- 6 Analysis of Data
- 7 Conclusion

1.7 Scope

- 1 Residential, religious and public sector
- 2 Interior design and architecture
- 3 Indian Minimalism
- 4 Architects involved
- 5 Literature case studies

1.8 Limitations

- 1 Minimalism is applicable for civil buildings and prisons, but research is limited to residential, religious and public sector
- 2 Research does not include any other art forms apart from Architecture
- 3 Research does not include live case studies

<u>Chapter 2</u> <u>Minimalism in Architechture</u>

2.1 History of Minimalism

Minimalism began in architecture in the early twentieth century, roughly in the 1920s. Architect Mies van der Rohe was one of the first famous architects after World War I to employ concepts that came to be known as minimalist design principles in his works. The availability of modern materials such as glass, concrete, and steel fueled the rise of minimalist architecture. In addition, standardised building methods were emerging, allowing for more efficient design and construction of minimalist structures. The pattern persisted until the mid-twentieth century, with Buckminster Fuller, a well-known designer and architect, building domes with simple geometric shapes that still stand and seem modern today.

Painting, interior design, fashion, and music all reflected the emphasis on simplicity. Minimal art developed in popularity in the United States during the 1960s. In a similar way to De Stijl, painters reacted to abstract-expressionism painting by using only rudimentary geometric patterns in their works, with no ornamentation or other components.

The Bauhaus movement, on the other hand, began as a German art school with the purpose of fostering mass manufacturing and bringing arts and crafts and technology together. Bauhaus was closely associated with De Stijl and shared the values of functionalism, cleanliness, purity, and form reduction. After the Bauhaus was renamed the International Style after its relocation to the United States in 1947, its famous architect Ludwig Mies van der Rohe summed up its minimalist ideology in a trademark phrase: 'Less is more.' The phrase "less is more" alludes to the reduction of form to the bare essentials, and it is still used to describe minimalism today. Minimalist architecture was influenced by traditional Japanese architecture in addition to Bauhaus and De Stijl. Traditional Japanese design has always centred around the idea of minimum and focused on adding only what is essential and discarding the rest, with an appreciation for basic and plain products.

The concept of simplicity may be found in many cultures, particularly in Japanese Zen philosophy. The Japanese have incorporated Zen culture into their architectural aesthetics and design features. Since the mideighteenth century, this architectural concept has influenced Western society, particularly in America. It also influenced minimalist architecture in the nineteenth century. The principles of freedom and the substance of living are transmitted through Zen concepts of simplicity. Simplicity has a moral perception that digs into the nature of truth and discloses the inner qualities and essence of materials and objects, as well as an aesthetic worth.

2.2 Architects that practised minimalism

2.2.1 Ludwig Mies Van der Rohe

"Less is more"

Ludwig Mies van der Rohe, born, March 27, 1886 — August 17, 1969. He was a German-American architect.

His surname, Mies, is how he is often referred to and addressed. Together with Le Corbusier, Walter Gropius, and Frank Lloyd Wright, he is widely considered as one of the forefathers of modernist architecture. Mies aimed to create a new architectural style that could symbolise current times in the same way that Classical and Gothic architecture did for their respective eras. He developed an influential twentieth-century architectural style that was extremely clear and straightforward. To define interior areas, he used modern materials such as industrial steel and plate glass in his structures.



Figure 1 Ludwig Mies Van der Rohe

2.2.1.1 Life and Work

After serving in World War I from 1915 to 1918, he established a new architectural language. Mies continued to construct within his established concepts, but he became more interested in theoretical issues about the essence of architecture.

Mies initiated a parallel experimental endeavour after World War II while still creating typical neoclassical residences. He joined his avant-garde contemporaries in the long-running search for a new style appropriate for the modern industrial period. After World War One, a calamity widely viewed as a failure of the old world order of imperial control of Europe, rising critique of historical styles gained significant cultural credibility. European masterworks: the temporary German Pavilion for the Barcelona exposition (often called the Barcelona Pavilion) in 1929 (a 1986 reconstruction is now built on the original site) and the elegant Villa Tugendhat in Brno, Czech Republic, completed in 1930.

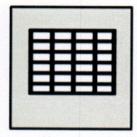


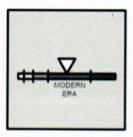
Figure 2 Minimalistic chair

2.2.1.2 Styles and Principles

Rising criticism of historical styles gained significant cultural credibility. Progressive thinkers advocated for a whole new architectural design approach based on rational problem-solving, as well as an outer expression of modern materials and structure rather than what they saw as a superficial application of classical façade. Rohe's work demonstrates his purposeful attempt to start a new architectural revolution that would provide the groundwork for contemporary architecture







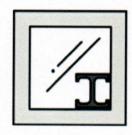


Figure 3 vertical and horizontal lines

Figure 4 skulls and bones structure Figure 5 Justification of Time

Figure 6 Use of glass and stee

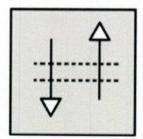


Figure 7 Fluid space between interior and exterior

2.2.1.3 Notable works



Figure 8 Farnworth House

2.2.2 Tadao Ando

"You can't really say what is beautiful about a place, but the image of the place will remain vividly with you." The minimalist style is heavily influenced by traditional Japanese design and architecture, which emphasises the

shapes' simplicity and grace. Tadao Ando, a Japanese architect, constructs structures in which light, water, wind, and concrete coexist to perfection. Ando's primary materials are concrete and glass. He creates one-of-a-kind places that are continually changing as the sun and wind dance in their frames. Light, according to the minimalist architect, plays a crucial part in all of his creations



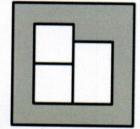
Figure 9 Tadao Ando

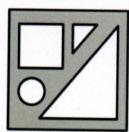
2.2.2.1 Life and work

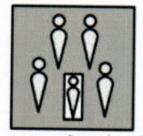
Ando was born in Osaka, Japan, a few minutes before his twin brother in 1941. When Tadao was two years old, his family decided to split them up and send him to live with his grandma. Despite having no professional training in the area, he worked as a truck driver and a boxer before deciding to pursue a career as an architect. On a vacation to Tokyo as a second-year high school student, he was struck by the Frank Lloyd Wright-designed Imperial Hotel and chose to give up boxing less than two years after graduation to pursue architecture.

2.2.2.2 Styles and Principles

Ando was born in Japan, where his architecture and design were heavily influenced by the country's religion and way of life. Ando's architectural style is believed to have a "haiku" impact, stressing nothingness and empty space to express the simplicity of beauty. He prefers to keep the appearance of simplicity while constructing sophisticated (but stunningly simple) spatial circulation. He is a self-taught architect who travels around Europe for research while keeping his Japanese culture and language in mind.







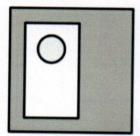


Figure 10 clear definition of space Figure 11 Use of basic geometry Figure 12 private space for individual Figure 13 Round opening impales building



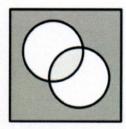


Figure 14 Connection of nature and building Figure 15 Coalition of culture and modernism

<u>Chapter 3:</u> <u>Literature Review</u>

3.1 Western Interpretation

Even while western Minimalists were less prominent during the early stages of minimalism, its theorists never failed to offer numerous arguments on the subject. Gregory, for example, defined minimalism as a disposition to minimise what is excessive in artistic activity in 1988. It refers to an architect who attempts to remove any non-essential elements from their design in order to achieve a purest form of architecture.

During that time, notable minimalist artists such as Donald Judd and Tony Smith attempted to manifest the minimal idealogy through sculpture committed to shotsaction and redical forms at least the minimal idealogy through sculpture committed to shotsaction and redical forms at least to the minimal idealogy through sculpture committed to shotsaction and redical forms at least to the minimal idealogy through sculpture committed to shotsaction and redical forms at least to the minimal idealogy.

minimal ideology through sculpture committed to abstraction and radical form reduction. As a result, we can see how Western society describes minimalism in terms of both technological and visual aspects.

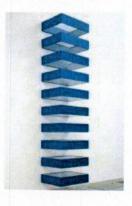


Figure 16 Sculpture by Donald Judd

3.2 Material and Effect

The first subtopic, material and impact, is a discussion of how architects direct their emphasis more toward detailing and finishing research.

Minimalism, according to Goodman's book from 2011, is a major simplification of form, a shift of attention from form to surface and detailing, and from programmatic innovation to neutral container architecture. In addition to simplification, Goodman says that minimalism focuses more on how the building affects the people around it.

In light of this, two notable Swiss architects, Jacques Herzog and Pierre de Meuron, were among the first to use this method.

Their construction strength, according to Herzog in 1997, is the acute visceral response they elicit in visitors. As a result, they take pleasure in both the materiality of their buildings and the sensory impact they have on those who come into contact with them



Figure 17 Herzog and De Meuron Ricola storage building

3.3 Japanese Interpretation

If the western setting attempts to link minimalism to a certain historical impact, Japan is a different tale. Japanese minimalism, according to Auer in 1998, is an ode to nothingness, moral encouragement, and a call for humility and self-awareness (Auer 198). As a result, we may conclude that Japanese minimalist translation is more abstract and does not impact people directly. Several structures constructed by notable Japanese minimalists such as Tadao Ando and Kazuyo Sejima demonstrate this. In 1996, Ympa seemed to agree with this when he stated that minimalism is "not a style, but a way of being" (Ypma 1996). In reality, he says that Japanese minimalism is motivated by a desire for the substance of things rather than their outward form. They strive to develop independent architecture in the west, where structures are separated from nature. However, Japanese architecture blends in with nature by creating an environment that can't tell whether it's outdoors or inside. As a result, Japanese architecture is deeply linked to culture and religion, despite the fact that the techniques and materials used are Western.

3.4 Zen philosophy

Zen philosophy seeks to convey the concept of freedom and the meaning of life. Simplicity is concerned not only with the visual appearance, but also with the moral honesty and true quality of a substance. According to the Japanese, this meticulous nature inspired the inhabitants to build imagined worlds that encourage natural mind and soul restoration. Light, shadow, materials, volumes, floors, and corridors are all important elements in creating a natural, serene, meditative ambiance



Figure 18 Chichu Aur Museum

<u>Chapter 4</u> Principles of minimalism

4.1 Reduction to essentials

To get to the essence of building, minimalist architecture uses the bare minimum of materials. This entails condensing and lowering the content of a design to the bare minimum of necessary elements, characteristics, and working means that create shape

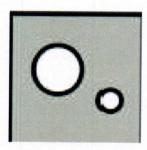


Figure 19 Reduction to essentials

4.2 Divine proportion

The Divine Proportion is a mathematical notion found throughout the universe. Things like nature, space, and physics are included. It's a timeless rule that many designers can utilise as "A design guide."

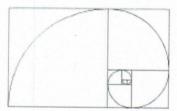


Figure 20 golden ratio diagram

4.3 Grid Planning

A crucial design principle is consistency. The use of grids to align elements is a simple and effective approach to improve readability. Because our eyes are accustomed to seeing repeating patterns, Grid Design can provide a straightforward presentation of content. Grids can also be extremely useful for designing Responsive Design.



Figure 21 Grid planning

<u>Chapter 5</u> <u>Characteristics of Minimalism</u>

5.1 Simplicity in form and function

Many minimalist homes have a plan layout that is simple, uncomplicated, and efficient, with stacking volumes of space. This results in a plan that is clear and uncomplicated, with predictable and uncomplicated places. Overall, the design is straightforward, with few ins and outs, intricate curves, or angles.



Figure 22 Panorama house

5.2 Uncomplicated cladding and wall finishes

By expressing the physical qualities of the materials and their texture, a basic continuous outside cladding material can readily create visual appeal and articulation.



Figure 23 Barcelona Pavillion

5.3 Simple detailing devoid of decoration

Clean cabinets, stair, and trim features are also common in minimalist interiors, as they pare down to exactly what is necessary. Cabinetry that is detailed with flat slab panels rather than raised or recessed panels and less exposed hardware minimises the visual cacophony that is commonly associated with cabinetry. Window elements that are sharp and clean, as well as well-designed facades, eliminate the need for additional trim work. A simple minimalist solution to window articulations is a flush window frame that aligns with the joints in the cladding material. Simple basic details save money as well.



Figure 24 Barcelona pavilion interior



Figure 25 Farnsworth house interior

<u>Chapter 6</u> <u>Indian Minimalism</u>

6.1 About

In a country where less is always less, and even more is not enough, Minimalism is difficult to sell. People all throughout the world today embrace minimalism because of its instant impact on life. A more localised type of minimalism emerges as a result of this inclination and relationship to minimalism. The spirit of culture can be seen clearly in these regional types of minimalism, which is why it is true that "culture and lifestyle are intertwined, and if one follows one, he would immediately follow the other."



Figure 26 Bhiksha patra

6.2 Principles of Indian minimalist architecture

6.2.1 Unnatural Selection

In terms of texture or visual aesthetics, Indian Minimalism pushes the idea of picking without regard for what is fashionable globally; rather, it emphasises the fusion of many textures, hues, and cultural value.

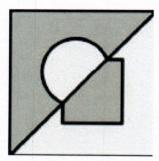


Figure 27 Unnatural selection

6.2.2 Back to the roots

The essence of Indian culture has always been verandas, courtyards, and other similar family places. Indian minimalism stresses the idea of localised cultural values, which is not common in other minimalist groups.

6.2.3 Matter of preference

It is a matter of personal preference as to how minimal a person or structure should be. There is no such thing as a limit or a threshold. A minimalist structure made of modern materials would be compared to the bamboo structure.

6.3 Minimal adjustments

A style is a living thing that changes throughout time. There is a complete lack of uniformity. Change will occur in response to the individual's need. A North Indian person's social, cultural, and physical needs are distinct from those of a South Indian. Adjustments can be made to Indian Minimalism

6.4 Resonating culture, modernism and morals in Indian minimalism

Minimalism, which is already a big global movement, is increasingly hybridising with local characteristics. India, being the pinnacle of cultural societies and equally responsive architecture, is embracing Indian minimalism in a variety of sectors, including art, architecture, fashion, and home décor. Because India is a multi-cultural country, its minimalist approach reflects this. Because of the outstanding differences in culture and tradition between these two regions, a bungalow built in Gujarat would differ from one created in Maharashtra.



Figure 28 Indian idea of minimalistic interior

Chapter 7 Case Studies

7.1 Church of Light, Osaka, Japan

7.1.1. Introduction

The Church of the Light embraces Ando's philosophical framework between nature and architecture through the way in which light can define and create new spatial perceptions equally, if not more so, as that of his concrete structures.

For Ando, the Church of Light is an architecture of duality —the dual nature of existence —Solid/void, light/dark stark/serene. The coexisting differences leave the church void of any, and all, ornament creating a pure, unadorned space. The intersection of light and solid raises the occupant's awareness of the spiritual and secular within themselves.

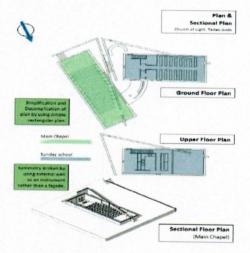
Church is seen as a place of retreat where the outside world is forgotten and the natural world is emphasized in an abstract manner. This church beckons the fundamental simplicity of Christianity with its low tech but yet powerful design.



Figure 29 The main chapel

7.1.2 Use of basic geometrical features

The chapel consists of a rectangular volume of three cubes. These cubes are punctured by a wall at 15° that never touches the other walls or ceiling of the chapel. The circulation into the space is controlled by the angled wall.



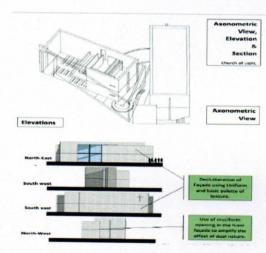


Figure 30 Details of the building

7.1.3 Material as a language

The employment of simplistic materials reinforces the duality of the space. The concrete structure removes any distinction of traditional Christian notifs and aesthetics

As a modern, minimalist structure the Church of the Light emits anarchitectural purity that is found in the details. The reinforced concrete volume is void of any and all ornament that is not part of the construction





Figure 31 use of minimalistic architecture

7.1.4 Analysis

- 1. Simplification and decomplication of structure.
- 2. Indifferent or multiple use of structural element.
- 3. Declutteration of facade.
- 4. Structure amplifying the concept.
- 5. Peculiar play with light and shadows.
- 6. Amalgamation of different materials.
- 7. Purity of texture of materials.
- 8. Less structural complexity, more spatial context to digest.

7.2 Gandhi Smarak Sanghralaya, Ahmedabad, India

7.2.1 Introduction

Mahatma Gandhi lived at a Ashram on the bank of river Sabarmati between 1917 and 1930. It is from here that he commences his historic march to Dandi- a milestone in his campaign of civil disobedience which eventually led to Indian independence. Correa was asked to design a memorable museum and study center in 1958 to house a treasure of some 30,000 letters written to and by Gandhi. The collection continues to be added to and is the major repository of memorable on Gandhi. The commission was architect's first important work in private practice.



Figure 32 Gandhi Smarak Sanghralaya

7.2.2 Architechtural Features

To clearly outline and represent mahatma gandhi's philosophy of simple living, correa concentrated on the emotional and behavioural language of the building. He was able to achieve this by focusing on the following characteristic features of the space.

7.2.3 Structural Simplification

In order to reflect the simplicity of gandhi's life and the incremental nature of a living instituion, the architect used modular units of 6 meters x 6 meters of reinforced cement, concrete connecting spaces, both open and covered allowing for eventual expansion

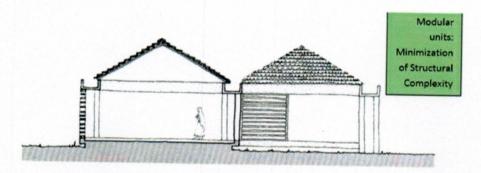
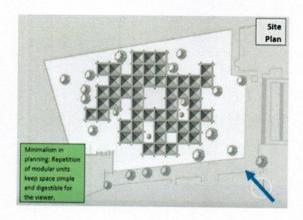
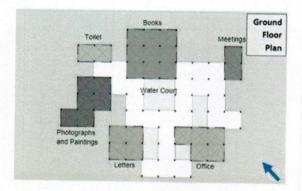
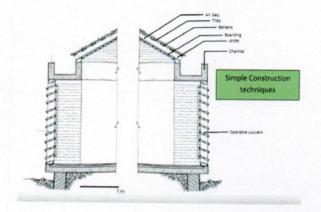


Figure 33 Gandhi Smarak Sanghralaya Sectional elevation







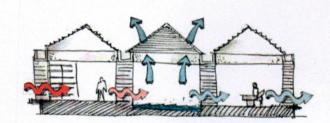


Figure 34 Gandhi Smarak Sanghralaya Detailed plans

7.2.4 Analysis

- 1. Minimization of structural complexity.
- 2. Repetition of spaces planning simplification
- 3. Definition of clean spaces, volume, symmetry and Flow of space.
- 4. Collaboration of different materials.
- 5. Simple construction techniques.
- 6. Simple climate responsive techniques.

7.3 Panorama house, nashik Maharashtra

7.3.1 Introduction

The panorama house is set on the backwaters of the gangapur dam in nasik. The backwater is framed by the beautiful sahyadri mountain ranges that help render the entire site like an idyllic dream

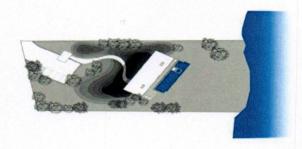






Figure 36 View of the site

The idea here is to work with the minimum in design, space making and also materials. Being a fluid space, it also blurs the lines between the interior, exterior and the nature beyond

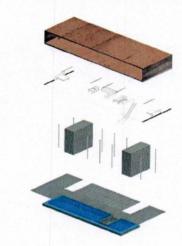
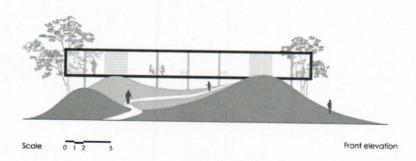


Figure 37 Sections



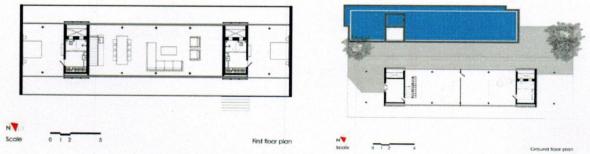


Figure 38 Isometric view

Chapter 8 Conclusion

Minimalism is not just about architecture or any other art form, it is more of a lifestyle. Minimalistic architecture provides openess, calmness but also there is a lot of wastage of space along with it. Materials used in minimalistic architecture are not suitable for every climate

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