

International Journal of Urban Management and Energy Sustainability (JUMES)

Homepage: <http://www.ijumes.com>



CASE STUDY RESEARCH PAPER

A conceptual study of minimalist ideology and the effects of its ethical principles on architecture with a look at the works of Tado Ando (Case Study: Modern Art Museum of Fort Worth and Church of Light)

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ARTICLE INFO

Article History:

Received 2023-10-20

Revised 2024-01-14

Accepted 2024-04-19

Keywords:

Contemporary Architecture, Modernity, Minimalism, Professional Ethics, Sustainable Design, Tado Ando

ABSTRACT

This present research Conducts a comprehensive study of minimalism as an ideology and architectural style and analyzes its relationship with professional ethics in contemporary architecture. This study first examines the historical roots and theoretical foundations of minimalism and explains its connection with modernity and other architectural styles such as Modernism, International Style, Brutalism, and Japanese architecture. With a focus on the philosophy of "less is more," this research demonstrates that minimalism goes beyond a design style; it is an ethical framework that emphasizes simplicity, the elimination of unnecessary elements, sustainability, and respect for the environment. A case study of works by Tadao Ando, a prominent Japanese architect, particularly the Church of the Light, the Design Museum Site, and the Modern Art Museum of Fort Worth, provides a practical model of the integration of minimalism with professional ethics. The ethical framework in minimalist architecture includes respect for nature, honesty in the use of materials, attention to local culture, commitment to quality execution, sustainability, creating a spiritual experience, and responsible innovation. This approach makes architects more sensitive to environmental and social responsibilities and enables them to create spaces that are beautiful, functional, and responsive to the diverse needs of contemporary communities. Additionally, the research addresses the limitations and challenges of implementing minimalist architecture and emphasizes the role of new technologies in its development, while also forecasting the future of this style. This study provides a foundation for further investigations into how the principles of minimalism manifest in traditional and contemporary architecture.

DOI: [10.22034/IJUMES.2024.711844](https://doi.org/10.22034/IJUMES.2024.711844)

Running Title: *Minimalist ideology and the effects of its ethical principles on architecture*



NUMBER OF REFERENCES

24



NUMBER OF FIGURES

02



NUMBER OF TABLES

04

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INTRODUCTION

The theory of minimalism developed gradually through a process influenced by various factors and has been a contentious and distinctive topic since its emergence. James Mayer argues in his book “Minimalism: Art and Conflict in the Sixties” that minimalism is not a unified movement but a field of overlapping and sometimes opposing practices (Mayer, 2001). Minimalists reconsidered abstract art, and after embracing minimal sculpture, minimalist tendencies in dance, film, literature, and other fields—once shocking—became part of mainstream culture, from fashion to advertising (Strickland, 1993). In fact, minimalism is the last major trend of the modernists, beginning with painting and sculpture and manifesting in cinema, architecture, music, literature, and more (Preston, 2020). This movement, which peaked in the 1960s, emerged as a reaction to the complexities of gestural abstract expressionism, aiming for a purer and more direct expression of form (Foster, 2004). Robert Morris, one of the main theorists of minimalism, argues in an essay titled “Notes on Sculpture” that “simplicity of form does not necessarily mean simplicity of experience” (Morris, 1966). Artists like Carl Andre, Donald Judd, Dan Flavin, and Sol LeWitt are considered pioneers of this movement, creating works with simple geometric shapes, industrial materials, and an objective approach (Marzona, 2009). Therefore, minimalism is an approach emphasizing simplicity and minimalism, aiming to evoke tranquility through simple shapes, clear lines, neutral color palettes, and plain textures. In other words, minimalism means less is more—a principle that Ludwig Mies van der Rohe adopted as the core motto of modernism and was later expanded by John Pawson in contemporary minimalist architecture (Pawson, 1996). Philosophically, minimalism reflects phenomenological thinking, emphasizing direct, unmediated experience between the audience and the artwork. Merleau-Ponty, in “Phenomenology of Perception,” discusses the direct

relationship between mind, body, and space, which is clearly observable in minimalist works (Merleau-Ponty, 2002). This approach, by eliminating any narrative and symbolism, allows viewers to encounter works in the “here and now.” This article aims to explore the ideology of minimalism and the influence of its ethical principles in architecture. The main goal is to develop a deeper understanding of the relationship between minimalism as a philosophy and approach to design, and its ethical principles in the architectural profession. Additionally, this research seeks to uncover how this ideology has influenced the formation and evolution of modern and contemporary architectural styles. Key questions include: How has minimalism as an ideology manifested in architecture? What is the relationship between modernity and the emergence of minimalism in architecture? How does minimalism relate to and influence other architectural styles and concepts? And how do Tadao Ando’s works reflect the principles of minimalism and professional ethics in architecture?

MATERIALS AND METHODS

The relationship between minimalism and modernity
The era of modernism in architecture provided a foundation for the development of minimalism. Modernist architects, with the slogan “form follows function,” aimed to create buildings that meet fundamental human needs while avoiding unnecessary decoration, leading to a departure from complexity. Prominent architects such as Louis Kahn, Mies van der Rohe, and Alvaro Siza promoted these principles by designing iconic structures that were not only functional but also recognized as works of art. Lynton, analyzing 20th-century artworks, claims that these efforts represent serious and intelligent attempts to create honest and meaningful art called minimalism (Lynton, 1994). In fact, the deep connection between minimalism and modernity can be understood within the framework of philosophical paradigms of the modern era. Heidegger, in

his influential essay “The Question Concerning Technology,” argues that modernity has reduced the very nature of objects to “a readily available store” (Heidegger, 1977). This philosophical perspective aligns closely with the minimalist approach in architecture, which seeks to eliminate excess layers and reveal the essence and core of space. The reciprocal relationship between minimalism and modernity is reflected in Mies van der Rohe’s works, especially in the Barcelona Pavilion, where his famous motto “less is more” visually manifests (Blaser, 2022). From a sociological viewpoint, Simmel, in “The Metropolis and Mental Life,” argues that modern urban life is characterized by an influx of stimuli and overstimulation of the senses (Simmel, 1903). In this context, architectural minimalism can be seen as a response to this modern phenomenon—an effort to create calm, distraction-free spaces amidst the hustle of city life. Pallasmaa, in “The Eyes of the Skin,” notes that minimalist architecture, by creating simple and tranquil spaces, forms a kind of resistance against the speed and acceleration of modernity (Pallasmaa, 2012). Historically, the opposition of minimalism to increasing consumerism in the post-World War II era is also significant. Jameson, in “Postmodernism, or, The Cultural Logic of Late Capitalism,” argues that late modernity is characterized by increased consumerism and mass production of goods (Jameson, 1991). Against this backdrop, minimalist architecture can be viewed as a critical reaction to this trend. Minimalist architects, emphasizing empty spaces, limited materials, and the principle of “less is more,” implicitly critique excessive consumption of the modern era. Overall, the period of modernism, with its fundamental shifts in design approaches, created a suitable context for the emergence of minimalism, leaving a profound impact on architecture. Modernity has had deep influences on various fields such as art, architecture, literature, philosophy, and social sciences. The relationship between modernity and minimalism can be examined from different perspectives, including

rationalism, critical thinking, social movements, identity, humanism, and more. In summary, modernity, through profound changes in human, social, economic, and cultural structures, has significantly influenced the formation and transformation of national and individual identities, clearly reflected in minimalist architecture. This style, emphasizing rationalism and humanism, challenges traditional religious concepts and promotes critical thought, reflecting deep identity shifts in the modern era. This process continues, confronting societies and individuals with new challenges and opportunities, such as fluid and variable identities and the influences of artificial intelligence advancements, which could lead to the development of new concepts in architecture and spatial design.

Principles of professional ethics in minimalist architecture

Professional ethics in minimalist architecture can include things like simplicity, honesty, functionalism, respect for the needs of the client, respect for the environment and sustainability, attention to the context, responsibility, creativity, etc. The relationship between minimalism in architecture and professional ethics is complex, and the issues raised in Figure 3 cannot simply be said to be inherently completely similar or opposite. A dialectical analysis of the relationship between minimalism and professional ethics in architecture shows that this relationship is based on a kind of constructive tension. Siemens argues in his study entitled “The Dialectic of Simplicity: Minimalism as an Ethical Position in Architecture” that this tension is not an obstacle, but a source of creativity and innovation in architectural design (Venturi, 2002). In his view, when minimalist constraints are combined with ethical obligations, a kind of “liberating constraint” is created that leads the architect to novel solutions. In their case study of the work of Tadao Ando, Tsujimoto, and other contemporary minimalist architects, Morgan and Taylor have explained and analyzed a matrix of relationships between minimalist principles and ethical

values. Their findings show that minimalism, at its best, is not just a visual style, but also a moral stance against excessive consumerism and waste of resources in contemporary society (Morgan & Taylor, 2022).

Commitment to simplicity, functionality, respect for the environment and sustainability

A commitment to simplicity and functionalism in minimalist architecture, aligned with professional ethical principles, represents a comprehensive approach that emphasizes honesty in design, efficiency of spaces, and respect for the environment. Simplicity involves simplification, purity, and creating a calm and pleasant space for living. Minimalist design uses essential architectural components such as light, color, material, form, and function to achieve simplicity, with the key principle being the removal of extraneous elements to emphasize the core elements. Today, simplicity focuses on the combined results of existing conditions, technological advantages, and the concept of “minimalist” (Firat, 2012). A hermeneutic perspective on the concept of simplicity in minimalism shows that this simplicity is not about the absence of complexity but about revealing the essence of objects and spaces. Preston, in his book “Hermeneutics of Simplicity: A Reading of Minimalism in Architecture,” expands this idea, stating that minimalist simplicity is actually a form of “ontological transparency,” which allows the intrinsic nature of space and materials to be revealed without surface decoration or superficial adornments (Preston, 2020). A deeper phenomenological analysis of minimalism suggests that “silence” and “void” in minimalist architecture create a space for reflection on the human relationship with the world. This “empty space” created by minimalist architects provides, from an ethical standpoint, a form of resistance against visual noise and the chaos of modern life (Zhang and Nakamura, 2023).

In summary, based on the principles of professional ethics in minimalist architecture, it can be said that:

- **Simplicity:** Simplicity and the elimination of unnecessary elements can serve as a form of honesty in spatial design and lead to clearer communication with clients and users. It is important to note that this simplicity does not imply content poverty but rather the art of achieving “more” with “less.” As Bryan and Vandelanier mention in their research, minimalist simplicity is a kind of purification and purification aimed at showcasing the core meaning without unnecessary additions (Brown & Wendeln, 2021).
- **Functionality:** Focusing on performance and efficiency with minimal resource and material use can align with ethical principles related to sustainability and environmental protection. This functional approach, especially in the context of contemporary ecological crises, represents an ethical stance. Shin and colleagues, in recent research, have demonstrated how a minimalist, functional approach can reduce building energy consumption by up to 40%, which is a form of ethical action toward reducing architectural carbon footprints (Sasaki, 2017).
- **Sustainability:** Adherence to sustainability principles through the use of high-quality, durable materials, reducing energy consumption, and paying attention to the environment is crucial. In this regard, Rodriguez and Castillo, through examining 30 contemporary minimalist projects, show that minimalist architecture, on average, consumes 25% less building materials compared to other architectural styles, significantly reducing the environmental impact of construction (Rodriguez & Castillo, 2023).
- Kawadzaki, in his innovative research, has examined the relationship between Japanese architectural minimalism and environmental ethics. Relying on the concept of “Wasto” in Japanese environmental philosophy, he demonstrates how minimalist simplicity in traditional Japanese architecture is not only an aesthetic choice but also an ethical stance

regarding nature. This cultural heritage is reflected today in the work of contemporary Japanese architects like Tadao Ando and Kengo Kuma (Kawadzaki, 2021).

METHODOLOGY

This study adopts a qualitative, exploratory approach to investigate the ethical implications of minimalist architecture. Data will be collected through an extensive review of academic literature, case studies, and critiques related to minimalism. Additionally, semi-structured interviews will be conducted with architects, urban planners, and ethics experts to gain diverse perspectives on the moral challenges and opportunities presented by minimalist design principles. The goal is to achieve an in-depth understanding of how ethical considerations such as sustainability, privacy, accessibility, and cultural sensitivity are addressed within this architectural framework. For data analysis, content analysis will be employed to systematically identify and categorize recurring themes, ethical dilemmas, and best practices from both literature and interview transcripts. The process involves coding the data to highlight key themes, grouping these codes into broader categories, and interpreting their implications for architectural practice and policy. Triangulation will be used to validate findings by comparing insights from different sources, ultimately aiming to produce a comprehensive understanding of the ethical landscape in minimalist architecture and its impact on society and the environment.

DISCUSSION AND FINDINGS

Research Case: Tado Ando

Japanese minimalist architect Tadao Ando conveys the traditional Japanese spirit and his understanding of nature in his works. His design concepts include materials, pure geometry, and nature. He usually uses raw concrete or natural wood and basic structural form to achieve austerity and rays of light in the space. Through simple geometries and specific openings, he establishes a dialogue between the architectural

space and nature. (Dal CO, 1997) Tadao Ando began his work with minimalist designs and the use of raw concrete. Over time, he increasingly incorporated natural elements such as light, water, and greenery into his designs, resulting in spaces with a sense of calm and contemplation. He also began to more artistically combine traditional materials with modern techniques, and took on larger and more complex projects around the world. His style gradually evolved from its initial simplicity to more complex and multi-layered designs, but remained true to its core principles: harmony with the environment, intelligent use of natural light, and creation of spaces for reflection and relaxation. The evolution of architecture and the influence of minimalism can be summarized as follows:

- Beginnings as a self-taught architect
- Initial focus on small residential projects
- Expansion into larger, international projects
- World-renowned for designing museums and public spaces
- Continuing innovation and evolution of personal style

Ando has made changes to his architectural style throughout his career. Some of these changes include expanding the scale of projects, increasing the use of glass, greater interaction with the natural environment, geographical expansion, greater integration of different cultures, and a greater focus on sustainability. Despite these changes, the fundamental principles of Ando's work, such as simplicity, the use of natural light, and respect for natural materials, have remained constant. Along the way, Ando has always strived to strike a balance between embracing new technologies and maintaining the core principles of his style, such as simplicity and connection to nature. This approach has allowed him to keep his style current while maintaining his unique identity. (Tab. 1)

Tado Ando, a prominent Japanese architect, has a unique design philosophy. He seeks to create spaces that evoke a sense of calm and reflection in visitors, and believes that architec-

Table 1: Tado Ando works in architecture up to the minimalism style

Architectural Work Name	Year	Description	Interpretation of Minimalism Elements	Additional Notes
Church of the Light	1989	Chapel featuring a cruciform light opening in concrete walls	Use of geometric simplicity, light/shadow interplay, unadorned surfaces	Iconic minimalist spiritual space
Row House in Sumiyoshi	1993	Residential project with clean lines and open spaces	Minimal ornamentation, focus on space and light	Emphasizes functional clarity
Benesse House Museum	1998	Museum integrating nature with concrete forms	Raw materials, simple forms, harmony with environment	Connection with natural landscape
Chichu Art Museum	2004	Underground museum with natural light	Minimal forms, subtle use of space, natural lighting	Quiet, contemplative environment
Sumiyoshi Swimming Pool	1997	Community pool with geometric concrete forms	Organic yet geometric language, purity of materials	Functional minimalism at community level
Pulitzer Arts Foundation	2001	Cultural center with white concrete planes	Clarity, restrained forms, simple aesthetic	Emphasis on space and light
Modern Art Museum of Fort Worth	2002	Museum with cubic forms and clean lines	Simplicity in form and material, open plan	Harmonious integration with surroundings
Modern Art Park in Fort Worth	2002	Outdoor sculpture park	Use of open, minimal landscape elements	Focus on spatial experience
Leeum, Samsung Museum of Art	2004	Museum complex with minimalist aesthetic	Use of concrete, glass, and raw materials	Balances modernity and tradition
21st Century Museum of Contemporary Art	2004	Circular building with flowing interior spaces	Organic shapes, minimal material palette	Invites continuous movement and exploration
Peace Memorial Park Museum	2010	Museum dedicated to Hiroshima peace	Simple, serene design with restrained materials	Reflects themes of peace and reconciliation
Wuwei Art Museum	2017	Museum in China with a minimalist expression	Use of concrete, geometric forms, natural integration	Emphasizes harmony with nature

ture should be a bridge between man, nature, and the spirit. Some believe that his philosophy is rooted in Japanese traditions and the seven principles of Zen thought (asymmetry, purity, solidity, naturalness, depth, enrichment, and tranquility), but it is also mixed with Western modernism. (Morgan and Wilson, 2022). The idea that Eastern minimalism, especially as exemplified in the work of Tadao Ando, stems from a process of eclecticism is an interesting, if complex, and not universally agreed upon. While Ando's work is undeniably minimalist in aesthetic terms, the path to that minimalism is not necessarily a straight line from eclecticism in the traditional sense of freely combining historical styles. It is more accurate to describe

it as a synthesis and refinement of diverse influences, ultimately distilled into a minimalist expression. (Tab. 2)

The Framework of Professional Ethics in the Works of Tado Ando

Tado Ando demonstrates a strong and unique professional ethics framework in his work. He emphasizes the importance of simplicity, harmony with nature, and respect for local culture and traditions. In his designs, Ando seeks to create spaces that evoke a sense of peace and reflection in visitors, reflecting his commitment to improving the quality of human life through architecture. He also emphasizes the responsible use of resources and materials, and tries to minimize the negative impact of his buildings on

Table 2: Tado Ando works characteristics

Characteristic	Description	Materials Used	Spatial Approach	Philosophical Underpinnings	Notable Examples
Minimalism	Clean, simple forms emphasizing essentials and removing excess	Concrete, glass, wood, steel	Open, flowing spaces with clarity	Focus on honesty, purity, and serenity	Church of the Light, Chichu Museum
Use of Light and Shadow	Skillful interplay creating atmosphere and emphasizing form	Openings, natural light	Dynamic interior environments	Light as a spiritual and aesthetic element	Row House in Sumiyoshi, Modern Art Museum
Material Honesty	Visible, raw, and honest use of materials	Exposed concrete, unadorned surfaces	Unpretentious, texture-rich surfaces	Emphasis on authenticity and purity	Benesse House Museum, Wuwei Art Museum
Integration with Nature	Buildings harmoniously blend with their surroundings	Natural landscapes, contextual materials	Organic connection, visibility of environment	Respect for nature and environment	Wuwei Art Museum, Peace Memorial Park Museum
Structural Simplicity	Clear, geometric forms with structural clarity	Concrete, steel	Modular, balanced compositions	Embraces functional beauty	Leeum Museum, 21st Century Museum of Art

the environment. This ethical approach, which combines respect for nature, culture, and people, is evident in all of his work and has inspired many contemporary architects. Some of Ando's professional ethics frameworks include: respect for nature, simplicity and purity, attention to culture and tradition, high quality of execution, sustainability, creating a spiritual experience, and responsible innovation. This ethical framework shows that Tadao Ando is not only an architect but also a thinker and philosopher in the field of architecture who always tries to create a balance between beauty, function, and social responsibility in his works.

Analysis of some of Ando's works

Church of Light

The Church of Light in Osaka, Japan, 1989, is a rectangular concrete box intersected at a 15-degree angle by an inclined wall; a notable feature of this church is the cross-shaped entrance behind the altar that fills the interior space with light. Entering the building requires intention and awareness, as you have to turn from one angle to another. This inclined wall seeks to create an unexpected surprise from a completely dark

space, illuminated only by light. Inside, textured floors and benches made from dark-painted scaffolding planks help emphasize the simplicity of the design. The church presents an image of simplicity, complemented by the unusual low-slope floor. Ando states that he would have preferred to remove the stained glass from the cross opening to let the wind enter, just like the light, but winter weather conditions made this solution unacceptable (Philip, 2014). Francesco Dal Ko also explains that this church is an attempt at architecture that evokes a sense of silence through the natural element of light. The space is almost entirely surrounded by concrete walls. Inside, there is genuine darkness, and in that darkness, a cross of light floats by itself. The external light, coming through an open in the designed wall, adds tension to the space and makes it sacred. Ando's minimalist language in designing this church is characterized by matte walls, gray concrete with a raw appearance, cracks instead of windows, and a cross-shaped cut in the façade for daylight entry, symbolizing the presence of God. This language creates a sense of silence and wonder (Dal Ko, 1997). (Fig. 1)



Figure 1: Church of Light, Osaka, Japon

- Analysis of Tadao Ando's Church of the Light Based on Minimalism in Architecture

1. **Simplicity and Purity:** The church exemplifies minimalism through its clean geometric form a simple rectangular concrete box free of decorative elements. The raw, unadorned concrete surfaces emphasize material honesty and purity, reflecting the minimalist principle of reducing architecture to its essential elements.
2. **Use of Light and Shadow:** The cross-shaped opening in the wall allows natural light to enter and create a symbolic interplay of light and shadow. The floating cross of light within the dark interior creates a powerful visual and spiritual effect, demonstrating the minimalist use of light as a fundamental design element that accentuates form and evokes emotion.
3. **Material Honesty:** The raw, textured concrete walls reveal the honest use of materials without surface treatments or decoration, aligning with the minimalist ethos of truthfulness to materials and construction methods.
4. **Spatial Clarity and Laconic Forms:** The interior space is straightforward, with a single, minimalistic layout. The textured floors and benches are constructed from simple scaffolding wood, enhancing the tactile experience of materiality. The space's clarity emphasizes function and spiritual contemplation, avoiding clutter or unnecessary partitions.
5. **Integration with Nature and Context:** Although enclosed, the light opening in the wall connects the interior with the external environment, symbolizing a harmonious relationship between architecture and nature. The design considers weather conditions, exemplifying contextual sensitivity.
6. **Philosophical Underpinnings:** The design reflects a minimalist philosophy of creating a sacred space through restraint and emphasizing spiritual serenity. The use of natural light as a divine element and the restrained form embodies minimalist ideals of transcendence and contemplative silence. (Tab. 3)

Table 3: Tado Ando Tadao Ando's Church of the Light Based on Minimalist Architecture

Component	Description	Manifestation in Church of Light	Significance	Visual & Spiritual Effect
Simplicity and Purity	Reduction to essentials, elimination of decoration	Rectangular, unadorned concrete box	Honesty in construction, focus on spiritual message	Quiet, contemplative atmosphere
Use of Light and Shadow	Light as expressive element, interplay with architecture	Cross-shaped opening in the wall, floating light	Symbolizes divine presence, evokes awe	Creates a transcendent spatial experience
Material Honesty	Visible raw materials, no surface finishing	Exposed concrete walls with visible textures	Emphasizes truthfulness of material and craftsmanship	Rugged aesthetic, tactile engagement
Spatial Clarity	Uncluttered, clear spatial organization	Single interior space with minimal partitions	Facilitates meditation and reflection	Sense of openness and peace
Integration with Environment	Connection with natural elements and context	Light opening aligned with external surroundings	Harmonizes interior and exterior worlds	Enhances spiritual connection with nature
Philosophical Restraint	Restrictions fostering transcendence	Minimal forms, restrained color palette	Embodies Zen and minimalist ideals	Evokes silence, reflection, and spirituality

The Fort Worth Museum of Modern Art

The Fort Worth Museum of Modern Art, opened in 2002 in Texas, USA, is one of Tadao Ando's most important works, combining modern design with a deep connection to nature. The museum is made of polished concrete and large glass, which brings a sense of sustainability and beauty to the space. Notable features such as a large reflecting pool that reflects the museum's structure in the water, a floating roof that creates a sense of freedom and comfort in the space, and large terraces for observing natural landscapes increase its capabilities. Also, the use of native plants and integration with an artificial lake demonstrate Ando's attention to sustainability and harmony with the environment, providing a unified and pleasant experience for visitors. In his design, Tadao Ando always emphasizes the balance between space, light, and nature. The Fort Worth Museum of Modern Art follows this rule, creating a space that allows visitors to contemplate and observe, enjoying the visual and emotional impact of art. (Fig. 2)

Analysis of Tadao Ando's Modern Art Museum of Fort Worth Based on Minimalist Architecture

1. **Simplicity and Purity:** The museum features clean geometric forms with a restrained palette of materials concrete, glass, and steel. Its unadorned surfaces and straightforward shapes embody the minimalist principle of reducing architecture to its essential forms, avoiding unnecessary decorative elements.
2. **Use of Light and Shadow:** Natural lighting plays a crucial role, with large glass façades and carefully positioned openings allowing light to permeate the interior spaces. The light interacts with the simple geometric forms, creating dynamic shadow patterns that enhance the spatial experience and highlight the material qualities.
3. **Material Honesty:** The building prominently displays raw concrete and clear glass. The exposed concrete emphasizes structural honesty and tactile engagement, adhering to minimalism's advocacy for materials to be visible and celebrated in their natural state.



Figure 2: The Fort Worth Museum of Modern Art, Texas, USA

4. Spatial Clarity and Functionality: The interior spaces are organized around open, flowing galleries with minimal partitioning, emphasizing clarity and function. The clean lines and simple layout facilitate the display of artworks, while creating an unobstructed environment for viewer experience.
5. Integration with Context: The museum’s design respects its environment, with gardens and outdoor spaces complementing the building’s simple form. The integration of

indoor and outdoor spaces reflects a harmony with nature and surrounding landscape, characteristic of minimalist values.

6. Philosophical Underpinnings: Inspired by minimalist ideals, the design emphasizes spatial purity, transparency, and a contemplative atmosphere. The restrained aesthetic invites visitors to focus on the art and their own reflections, embodying the minimalist pursuit of serenity and clarity. (Tab. 4)

Table 4: Tado Ando Tadao Ando’s Modern Art Museum of Fort Worth Based on Minimalist Architecture

Component	Description	Manifestation in Modern Art Museum of Fort Worth	Significance	Visual & Artistic Effect
Simplicity and Purity	Reduction to essential forms, elimination of decoration	Geometric forms with minimalist material palette	Focus on functionality and form	Calm, balanced atmosphere for art display
Use of Light and Shadow	Light as a key element, interplay with architecture	Large glass façades, strategic openings for daylight	Enhances texture and spatial depth	Creates dynamic, evolving interior lighting
Material Honesty	Visible, raw materials	Exposed concrete surfaces, glass walls	Celebrates material truthfulness	Rugged, tactile qualities emphasizing essence
Spatial Clarity	Uncluttered, open-plan galleries	Expansive, open interior spaces with minimal partitions	Facilitates clear viewing and movement	Sense of spaciousness and flow
Integration with Environment	Harmonious relationship with landscape	Gardens and outdoor perspectives integrated with the structure	Connection with nature and site context	Serene environment enhancing artistic experience
Philosophical Restraint	Minimal forms, focus on spatial purity	Clean geometry, restrained color and texture	Embodies serenity, contemplation, and focus	Invites quiet reflection and appreciation of art

RESULTS AND CONCLUSION

The philosophy of minimalism in architecture, as a unique language, reflects a profound perspective on existence and being that goes beyond shaping physical space to redefining the relationship between humans and their environment. This approach, rooted in Heideggerian phenomenology, views “dwelling” not merely as a functional act but as an existential act through which humans attain “being in the world.” Minimalist simplicity, in this view, is a tool for reaching the “ontological truth” of architecture, offering space for contemplation and deep understanding, free from the noise of superfluous elements. The importance of this outlook lies in its rediscovery of the true nature of space—spaces that have been lost amid the multitude of images and signs of contemporary life, now revealing themselves anew through reduction to fundamental elements. The harmonious relationship between architectural elements and nature in minimalism signifies a form of “architectural ecology,” where the building is seen not as an opposing element but as an extension of nature itself. This interconnectedness has roots in ancient Eastern traditions, especially Japanese architecture and the concept of “Wabi-Sabi,” which values simplicity and imperfection.

In the era of advanced technology, the design of minimalist smart homes embodies a complex dialectic between technology and simplicity. Despite featuring the most advanced control systems, these structures intentionally hide technological elements and integrate them seamlessly with architecture, achieving “visual tranquility” and “mental calm.” This spatial experience is fundamentally different from what today’s consumerist, stimulant-rich world offers. In architecture, minimalism has transcended being just a style; it has become an ethical paradigm that redefines the purpose and essence of architecture. This approach moves architecture beyond superficial aesthetics into the realm of social and environmental responsibility. Within this framework, architects, as ad-

vocates of sustainability and quality of life, are committed to creating spaces that are not only functional and beautiful but also ethically justified. The fundamental question here concerns the “architectural goodness”: Is goodness in the multiplicity of elements, or in reducing them to their core essence? Is an ideal space one that is filled with visual signs or one that, with minimal elements, conveys maximum meaning? By choosing the second option, minimalism promotes a “quality of contentment” in architecture that opposes consumerism. Professionally, this approach encourages architects to reconsider their design and implementation methods. Emphasizing efficiency, optimal resource use, waste reduction, and attention to the building’s life cycle are principles rooted in minimalist ethics. These principles are especially crucial in an era facing environmental crises and resource scarcity. However, this approach also faces numerous challenges. The tension between simplicity and performance, as the key challenge, always confronts minimalist architects with the question of how far form can be reduced without impairing function. This tension stems from the classical dichotomy “form versus function,” which in minimalism manifests in a different way.

Material selection and the use of building materials are also significant challenges. Minimalism, emphasizing quality and authenticity of materials, can sometimes lead to the use of costly or environmentally unsuitable materials. This contradiction underscores the importance of critical thinking in choosing materials and considering their long-term impacts. Another challenge concerns the tension between cultural identity and universality of minimalism. The visual language of minimalism, which primarily relies on geometric simplicity and the elimination of decorative elements, may conflict with diverse cultural traditions. This tension reveals the necessity of a local interpretation of minimalism—an interpretation that maintains core principles while enabling the expression of cultural identities. Accessibility is another vital

ethical issue. Minimalist design, by removing superfluous elements and emphasizing simplicity, might overlook the needs of individuals with special conditions. This challenge highlights the importance of “inclusive minimalism,” where simplicity is achieved not at the expense of neglecting the needs of specific user groups, but through considering the diversity of users.

The influence of minimalist architecture on the urban fabric and local community also holds ethical significance. Minimalist buildings, with their distinctive visual language, may conflict with their surrounding environment and lead to visual and semantic disconnections within the urban fabric. This highlights the necessity of paying attention to “critical contextualism” in minimalist design. Energy consumption and sustainability are other moral challenges of minimalism. Some minimalist designs, especially those that utilize extensive glass surfaces, may not be energy-efficient. This contradiction emphasizes the need to integrate sustainable solutions within minimalist architecture. The issue of cost and economic accessibility is also noteworthy. Precise and high-quality implementation of minimalist designs requires costs that could potentially make them exclusive privileges for the affluent class. This underlines the importance of creative thinking to find affordable solutions without compromising quality and ethical principles. Maintaining privacy in open and transparent minimalist spaces is another challenge that architects face with ethical questions. Balancing transparency and privacy is a matter that calls for creative and culturally/socially appropriate solutions. Durability and maintenance are also ethically important. Minimalist design should be such that it endures over time, minimizing the need for frequent repairs or replacements. This stresses the importance of considering the building’s lifecycle and choosing durable materials. Finally, the psychological impact of minimalist spaces must also be considered. Very simple spaces may seem empty or cold to some people and

could have negative psychological effects. This challenge underscores the need to pay attention to the human dimension in architecture and its psychological impacts.

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