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Theoretical review of aesthetic principles in architecture to enhance urban quality of life

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Abstract: Today, built environments play an increasingly prominent role in human life, with individuals spending over 90% of their time within residential and office structures. The evolving nature of occupations and extended working hours have rendered attention to architectural design quality essential for enhancing occupants' physical and psychological health. Architectural aesthetics, by emphasising visual and sensory dimensions, can significantly improve the quality of life for urban residents. This study employs a theoretical review and an analysis of distinguished architects' perspectives to identify and examine five key aesthetic components: lighting design, geometric proportions, spatial flow, material texture, and connection to nature. The findings demonstrate that the deliberate integration of these components can elevate user satisfaction, reduce stress, and foster psychological well-being. Finally, practical recommendations are proposed for the application of aesthetic principles in urban building design. Aesthetics is an ancient discipline, yet its universal nature demands extensive scholarly investigation. A review of architectural history reveals that aesthetics in architecture, much like water, assumes the shape of its container—its interpretation varies across cultures and scientific domains. Despite numerous gatherings and scholarly debates, architects and researchers have yet to establish unified criteria. Instead, they have come to recognise the vast and multifaceted nature of aesthetics, particularly within architecture. Today, reflection on architectural aesthetics is a vital concern for designers and architects, who strive to satisfy their intrinsic aesthetic sensibilities through creative expression—a pursuit that has historically led to the creation of timeless works. Nevertheless, it can be summarised that revisiting perspectives on aesthetics is essential for enhancing the quality of urban life. Such efforts may bring us closer to a more accurate understanding of architectural beauty.

Keywords: architecture, aesthetics, urbanization, urban planning

INTRODUCTION

In recent decades, structural shifts in the labour market toward the concentration of administrative activities and the rapid expansion of urbanisation have led individuals to spend over 87% of their daily time in indoor environments—particularly office settings (Klepeis et al., 2001). Traditionally, architecture has focused primarily on ensuring physical comfort; however, research indicates that features such as natural lighting, adequate ventilation, and connections to nature can reduce tension and stress, induce a sense of tranquillity, stimulate creativity, and enhance psychological well-being among workspace users (Ulrich, 1984; Kaplan and Kaplan, 1989). Human beings, due to their long-term existence within nature, retain an inherent affinity for it and for maintaining a connection with it. This inclination is evident even in architecture, where biophilic design—grounded in a relationship with the natural environment—is often favoured, and nature itself is regarded as one of the quintessential elements of beauty. (Agboola et al., 2024; Ojobo et al., 2024; Agboola et al., 2025).

Furthermore, organisations continually seek strategies to boost employee satisfaction and productivity. Empirical evidence demonstrates that balanced geometric proportions, the use of natural materials, and human-centred design approaches can significantly improve job satisfaction and work performance (Vischer, 2007). At the same time, international guidelines such as the WELL Building Standard extend beyond purely aesthetic considerations to prioritise indoor air quality, optimised lighting conditions, and access to living elements as foundational criteria for advancing occupants' physical and psychological health (International WELL Building Institute, 2017). Therefore, the systematic identification and rigorous analysis of aesthetic components in the architectural design of urban office environments is essential not only for enhancing the quality of life of city dwellers but also for fostering organisational creativity and profitability.

This study employs a systematic literature review and an analysis of leading architects' perspectives to develop a scientific framework for improving the quality of work environments. By examining the design approaches of distinguished architects from around the world, we can gain substantial insights into the nature of architectural aesthetics. However, it must be acknowledged that aesthetics and creativity are inherently interrelated, and unlike mathematics—where precise outcomes and defini-

tive answers can be expected—no such exactness can be demanded of aesthetics. Rather, the essence of aesthetics is shaped by a multitude of contextual and variable factors.

RESEARCH BACKGROUND

Architects employ various approaches to enhance built environments, one of which is the application of architectural aesthetics to create engaging spaces. The term "Aesthetics" was first coined by Alexander Gottlieb Baumgarten in the eighteenth century. In 1750, in both his doctoral dissertation and his subsequent book Aesthetica, Baumgarten used the term "Aesthetica" to describe the study of beauty and sensory experience (Baumgarten, 1750/2007). He defined aesthetics as the "science of sensory cognition" and underscored the importance of order, harmony, and the perfection of appearance in the experience of beauty (Baumgarten, 1750/2007; Schellekens, 2013).

Baumgarten identified key aesthetic factors—sensory perception, order and harmony, perfection of form, and the relationship between form and content—arguing that beauty arises from the harmonious interaction of an artwork's components and the clarity of sensory apprehension (Baumgarten, 1750/2007). Modern scholarship confirms these foundational ideas; for example, (Korsmeyer, 2019) has shown that the alignment of visual elements with semantic content plays a pivotal role in aesthetic appreciation. Recent empirical studies further demonstrate that Baumgarten's emphasis on sensory experience as the basis of aesthetics continues to influence contemporary design and art research (Saxena and Sehgal, 2024).

Aesthetics also constitutes a fundamentally human reflection on the nature of beauty and its relationship to perception. Regardless of literacy, culture, or nationality, aesthetics is an intrinsic aspect of human experience that can profoundly or subtly shape one's spirit and outlook (Pallasmaa, 1996). Philosophers and artists have debated beauty since antiquity. Plato regarded beauty as the harmony of parts within a whole, distinguishing between the beauty found in nature and that of geometry, line, and circle. He asserted that natural beauty is relative, whereas geometric beauty—crafted by humans—is absolute (Plato, 380 BCE/1998). Le Corbusier later referred to this Platonic concept of geometric beauty as "engineered beauty" (Le Corbusier, 1923). Hegel, following Plato, differentiated between natural and artistic beauty and emphasised the roles of history and reason in understanding beauty (Hegel, 1835/1975).

Establishing the objective existence of beauty remains challenging. From the eighteenth century onward, the concept took on a psychological dimension, linking beauty to perception. Since psychological and social factors significantly shape human perception, they likewise influence aesthetic experience. The aesthetic value of a space becomes perceivable when it presents itself as an independent entity that engages the observer's mind. In Aesthetic Measure, Birkhoff (1933) proposed that something is beautiful when it offers maximum order with minimal complexity; however, beauty is not produced by order alone but by the interplay of two equally necessary qualities: order and meaningful complexity. Successful art, he argued, initiates a dialogue with the mind, presents cognitive challenges, and evokes resonance. A fully uniform composition lacks dynamism, whereas the successful artist instils a sense of order and cohesion while introducing unexpected elements (Birkhoff, 1933).

In the Iranian context, rapid urbanisation and extended indoor living underscore the necessity for architecture to apply aesthetic principles in order to enhance both mental and physical well-being (Tehrani, 2018).

THEORETICAL FRAMEWORK ARCHITECTURAL AESTHETICS

1. Concept of Aesthetics in Architecture

Architectural aesthetics, as one of the foundational principles of design, plays a pivotal role in creating spaces that are not only functional but also artistic and inspiring. This principle manifests across architectural styles and approaches, drawing from elements such as culture, nature, technology, and human needs. This section explores core aesthetic principles, cultural and geographical influences, and how they are reflected in renowned architectural projects.

2. Core Principles of Architectural Aesthetics

2.1 Human-Centred Design and Soft Forms. A central principle of aesthetic design is human-centeredness, which focuses on creating spaces that prioritise comfort and user needs. This approach often employs natural materials and design strategies that harmonise with the human experience, resulting in environments that are both soothing and practical, like the Heydar Aliyev Center by Zaha Hadid (Fig. 1).

2.2 Spatial Dynamism and Movement. The use of curved lines and dynamic forms introduces a sense of movement within architectural space. This strategy conveys vitality and energy, transcending the purely functional aspect of built environments and enhancing the sensory experience, like Guggenheim Museum Bilbao by Frank Gehry (Fig. 2).

Fig. 1. Heydar Aliyev Center by Zaha Hadid, Baku, Azerbaijan. Photo: © Iwan Baan. (Source: ArchDaily, 2013)

Fig. 2. Guggenheim Museum Bilbao by Frank Gehry, Bilbao, Spain. Photo: © Flickr User: dbaron (Source: Pagnotta, 2013)

2.3 Light, Shadow, and Proportion. Light and shadow are fundamental elements in shaping visually balanced and functional spaces. Thoughtful application of these elements adds depth and character to architecture, aligning spatial qualities with human emotions and perceptions, like Church of the Light by Tadao Ando (Fig. 3).

2.4 Harmony with Nature. Integrating built structures with natural surroundings fosters a sense of unity and balance. This principle aims to bridge the divide between artificial constructions and the natural environment, enhancing both ecological and aesthetic value, like Fallingwater by Frank Lloyd Wright (Fig. 4).

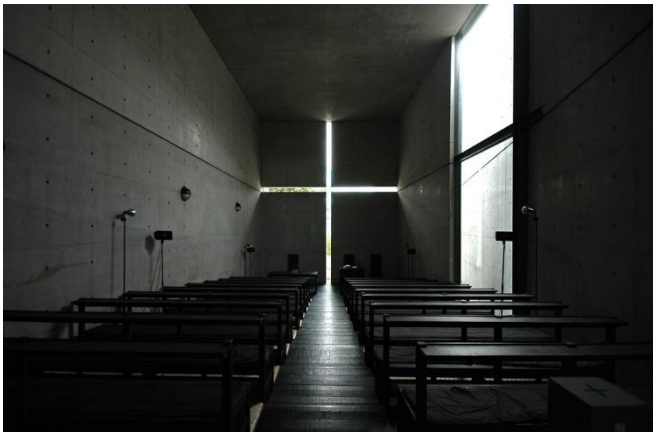

Fig. 3. Church of the Light by Tadao Ando, Ibakari, Osaka, Japan. Photo: © Naoya Fujii. (Source: Kroll, 2011)

Fig. 4. Fallingwater by Frank Lloyd Wright, Mill Run, Pennsylvania, USA. Photo: © Flick user pablosanchez, CC BY 2.0. (Source: AD Editorial Team, 2017)

2.5 Material Authenticity. Respecting the intrinsic properties of materials involves using them in ways that highlight their natural characteristics. This honest approach to material selection contributes to a sense of integrity and beauty derived from authenticity, like The Therme Vals by Peter Zumthor (Fig. 5).

3. Cultural and Geographical Influences on Architectural Aesthetics. Culture and geography significantly shape aesthetic values in architecture. Each tradition reflects its beliefs, customs, and environmental conditions in unique aesthetic approaches. For example: Finnish architecture emphasises natural materials and human-centred design, like Paimio Sanatorium by Alvar Aalto (Fig. 6). Arabic architecture often draws from curved lines and expressive forms, like National Museum of Qatar by Jean Nouvel (Fig. 7). Japanese architecture highlights simplicity, minimalism, and the interplay of light and shadow, like Koshino House by Tadao Ando (Fig. 8).

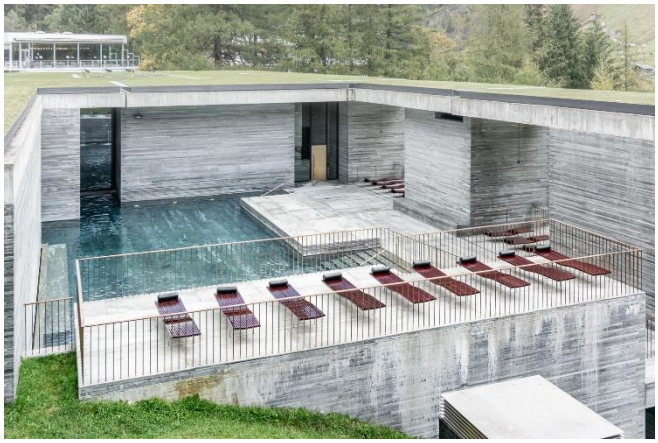

Fig. 5. The Therme Vals by Peter Zumthor, Vals, Switzerland. Photo: © Andrea Ceriani. (Source: ArchDaily, 2009)

Fig. 6. Paimio Sanatorium by Alvar Aalto, Paimio, Finland. Photo: © Leon Liao, 2011, CC BY 2.0. (Source: Wikimedia Commons, 2025)

Fig. 7. National Museum of Qatar by Jean Nouvel, Doha, Katar. Photo: © Msarg77, 2025, CC BY-SA 4.0. (Source: Wikimedia Commons, 2025)

4. Architectural Styles and the Expression of Aesthetic Principles. Various architectural movements have interpreted aesthetics through distinct lenses: Modernism values simplicity, geometric precision, and functionalism, like Villa Savoye by Le Corbusier (Fig. 9). Postmodernism evokes urban memory through meaningful and symbolic forms, like 550 Madison Avenue by Philip Johnson and John Burgee (Fig. 10). Sustainable architecture merges local materials and cultural identity with contemporary design ideals, like Handmade School by Anna Heringer and Eike Roswag (Fig. 11).

Fig. 8. Koshino House by Tadao Ando, Ashiya, Japan. Photo: © Kazunori Fujimoto. (Source: Metcalf, 2011)

Fig. 9. Villa Savoye by Le Corbusier, Poissy, France. Photo: © Flickr User: End User. (Source: Kroll, 2010)

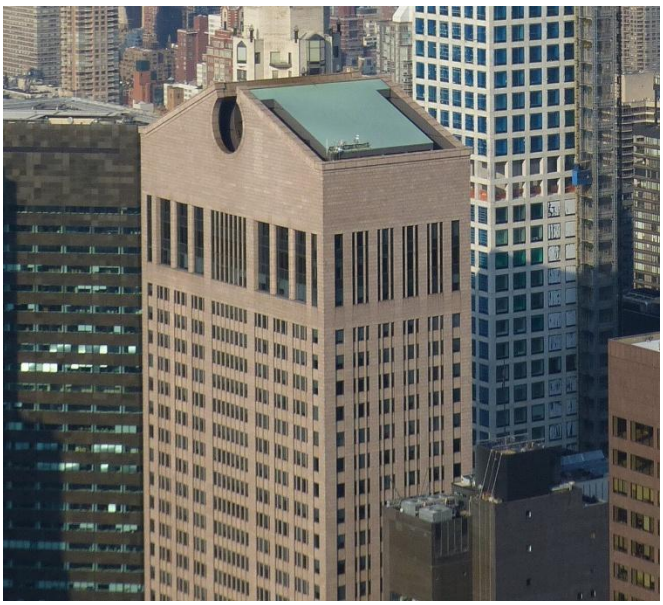

Fig. 10. 550 Madison Avenue by Philip Johnson and John Burgee, Manhattan, New York, USA. Photo: © Citizen59, 2015, CC BY 3.0. (Source: Wikimedia Commons, 2025)

FINDINGS AND DISCUSSION

Aesthetics, as a scientific discipline, initially sought to follow the path of the natural sciences, aiming to operate with methodologies similar to those used in physics, chemistry, or biology. However, it soon became evident that, unlike the natural sciences, aesthetics involves emotional impact and cannot be examined in a laboratory setting like inanimate phenomena or living subjects such as rabbits. Although aesthetics is not a young science, it has not yet achieved a sufficient level of systematic structure due to various obstacles. Moreover, aesthetics, much like psychology, deals with internal human states and realms—perception and emotion, sorrow and joy, beauty, will, and instinct (Yousefian, 2000).

Fig. 11. Handmade School by Anna Heringer and Eike Roswag, Dinajpur, Bangladesh. Photo: © Kurt Hoerbst. (Source: ArchDaily, 2010)

Discussions on aesthetics in architecture have traditionally taken place outside the realm of empirical sciences. However, with scientific advancement over recent decades, researchers, scholars, and analysts have proposed new neurobiological foundations for understanding beauty and art. Today, scientists are exploring the intersection of various disciplines with architecture. Emerging fields aim to provide aesthetic elements in architectural design by examining concepts of aesthetics and psychology, drawing inspiration from disciplines such as art, sociology, and others. These efforts seek to understand how architectural aesthetics can evolve into an empirical science and what lessons can be learned from recent developments in the field (Coburn et al., 2022). In contemporary society, architectural aesthetics has gained a special status among the public as a distinct form of art, supported by studies and research in modern communities (Ren, 2021).

Architectural aesthetics is reflected in everyday life and is widely applied in buildings such as residential homes, restaurants, hotels, and gardens. This discipline is popular because it integrates both natural and human factors. Architectural aesthetics is not merely a form of design; it represents an aesthetic understanding of objective phenomena in nature (Yang, 2021). Among the sources of inspiration for architectural aesthetics, the environment plays a significant role. Humanity's earliest dwellings were rooted in nature, and even today, people often find tranquillity in natural settings. Thus, nature itself can serve as a source of aesthetic insight. However, a fundamental issue in architectural aesthetics is how to perceive and manage the relationship between architecture and the environment in architectural activities, as well as how to manage the relationship between architecture and people.

Other sources of inspiration include historical references. Yet, aesthetic concepts reflected across different historical periods are often contradictory. Since individuals live in diverse times, geographical locations, and historical stages, their understanding of architecture can vary significantly. As time progresses and ideological awareness evolves, architectural aesthetic consciousness continues to change (Cheng, 2024). Aesthetics in architecture transcends a single abstract concept, ultimately manifesting in built form. Consequently, by examining the actual structures created by leading architects, we can uncover their underlying aesthetic philosophies. Analysing an individual's realised works is one of the most effective ways to understand their aesthetic intentions. In Tab. 1 below, we review the projects of prominent architects to highlight the specific elements they identify as expressions of beauty in their designs.

Tab. 1. Review of Works by Prominent Architects. (Source: Author, 2025)

Architect Name	Aesthetic Features	Architectural Style	Cultural /Geographical Influences
Alvar Aalto	Human-centred design, use of natural materials, soft forms	Modernism	Finnish culture
Dušan Samo Jurkovič	Harmony with nature, native culture	Modernism	Slovak culture and modernism
Zaha Hadid	Dynamic forms, curved lines, spatial motion	Postmodernism	Arab culture and modernism
Le Corbusier	Light, shadow, proportionality, spatial clarity	Modernism	French and industrial culture
Frank Lloyd Wright	Harmony with nature, use of local materials	Modernism	American culture and nature
Louis Kahn	Respect for material essence, textures	Modernism	American and industrial culture
Oscar Niemeyer	Curves, unconventional forms, poetic expression	Modernism	Brazilian culture and nature
Antoni Gaudi	Nature inspiration, curves, artistic ornamentation	Catalan Modernism	Catalan culture and nature
Hossein Amanat	Fusion of modern architecture with Iranian traditional motifs	Persian Modernism	Iranian and Persian culture
Kenzo Tange	Blend of Japanese tradition and modernism, curved forms	Modernism	Japanese and industrial culture
Tadao Ando	Simplicity, concrete use, emphasis on light/shadow	Modernism	Japanese and minimalist culture
I. M. Pei	Precise geometry, vertical /horizontal lines	Modernism	American and Chinese culture
Aldo Rossi	Urban memory, meaningful simple forms	Postmodernism	Italian culture
Antonio Sant Elia	Streamlined lines, futuristic forms, tech-inspired	Futurism	Italian culture
Luis Barragán	Bold colours, spiritual simplicity	Modernism	American culture
Charles & Ray Eames	Simplicity, functionality, art-industry fusion	Modernism	American culture
Diébédo Francis Kéré	Sustainable design, local materials, cultural fusion	Sustainable architecture	Burkinabé culture
Jørn Utzon	Nature-inspired design, curves, spatial freedom	Modernism	Danish culture
John Portman	Expansive interiors, elevated ceilings, striking elements	Modernism	American culture
Kisho Kurokawa	Metaphysical architecture, transformation in design	Metabolism	Japanese culture
Kourosh Safarzadeh	Persian garden inspiration, integration of water /greenery	Persian Modernism	Iranian culture
Houshang Seyhoun	Fusion of modern art and tradition, geometric lines	Modernism	Iranian culture
Mohammad Karim Pirnia	Revival of traditional Iranian architecture, precise proportions	Persian architecture	Iranian culture
Nader Khalili	Earth-based structures, eco-adaptive architecture	Sustainable architecture	Iranian culture
Abdolkarim Saeedzadeh	Urban harmony, Persian design patterns	Persian architecture	Iranian culture
Marina Tabassum	Environmentally responsive design, natural lighting	Sustainable architecture	Bangladeshi culture
Fernando Távora	Modern-traditional blend, respect for cultural identity	Modernism	Portuguese culture
Wang Shu	Recycled materials, traditional-modern fusion	Modernism	Chinese culture
Jean Nouvel	Innovation, tech use, light/shadow emphasis	Modernism	French culture
Mies van der Rohe	Simplicity, pure geometry, functionality	Modernism	German culture
Peter Zumthor	Material detail, atmospheric spaces	Modernism	Swiss culture
Emil Belluš	Nature	Traditionalist	Slovak culture

Viktória Cvengrošová	Country's historical and cultural identity	Modernism	Slovak culture and Modernism

Architectural aesthetics, as a cultural phenomenon, is closely intertwined with the evolution of architecture and continues to develop alongside societal progress and shifting perceptions of beauty in design. As society undergoes constant transformation, the role and function of architecture are continuously expanding and being redefined. Therefore, it is essential for contemporary architects to possess a unique and richly imaginative perspective in order to meet the diverse needs of modern communities (Cheng, 2024). On the other hand, there is a growing emphasis on the necessity of returning the discourse on form to more objective and tangible domains (Weber, 1995/2024). Many scholars argue that architectural art offers a more suitable model for other forms of art and aesthetic phenomena in general (Veres, 2018).

MATERIALS, DATA, AND METHODS

This study aims to identify effective strategies for enhancing human quality of life within built environments through the lens of architectural aesthetics, with particular emphasis on promoting individual well-being and clarifying the impact of design perspectives. To achieve this, a qualitative research approach is employed, utilising content analysis of existing texts and documents to examine the experiences and works of scholars, urban planners, and architects.

This study seeks to identify the elements of beauty in architecture and to uncover the underlying principles of architectural aesthetics with the aim of promoting well-being and elucidating the influence of design perspectives through aesthetics. Adopting a qualitative research methodology and employing content analysis of textual sources, it examines the accessible experiences and works of scholars and architects.

The data analysis followed the well-established conceptual framework of Miles and Huberman (1994) in three stages:

1. Initial coding,
2. Categorisation of emerging themes, and
3. Derivation of conceptual patterns.

Through this process, the study identified the keywords Architecture, Aesthetics, Urbanisation, and Urban Planning, which served as guiding beacons for the research and around which subsequent investigations were structured.

Data examination began with the review of relevant literature, leading to the extraction of preliminary keywords that indicated the research trajectory. This was followed by a more in-depth analysis of articles aimed at identifying and assessing empirical evidence on the impact of vegetation in office spaces. A systematic search was conducted across scientific databases including Scopus, Springer, ScienceDirect, and Google Scholar.

In the initial screening stage, more than 100 articles were assessed. Based on criteria such as thematic relevance, peer-review quality, full-text availability, and year of publication, 36 articles were ultimately selected as the core sources for content analysis. Articles lacking empirical content, relying on non-academic sources, or falling outside the research scope were excluded from the final analysis. This structured approach enabled the extraction of the necessary conceptual frameworks to advance the study.

CONCLUSION

The investigation of aesthetic principles in architecture reveals that human-centred design and soft forms occupy a central position in the discipline. By employing natural materials and prioritising user needs, this approach strives to maximise comfort and well-being within built environments. Spatial dynamism and movement—achieved through curved lines and dynamic shapes—emerge as key elements that convey vitality and transcend mere functional requirements. Light, shadow, and proportion function as foundational tools for creating visually balanced, character-rich spaces; their thoughtful manipulation not only ensures equilibrium but also enhances depth and experiential resonance.

Harmony with nature is another pivotal principle, one that integrates architecture with its natural context to foster a sense of unity and balance. Equally important is respect for the intrinsic qualities of materials, an ethic that celebrates texture and authenticity. Curvature and poetic expression further elevate architecture into the realm of art, offering emotional and sensory experiences beyond utilitarian performance. Inspiration drawn from organic forms and natural patterns serves as a powerful catalyst for creativity, grounding aesthetic expression in coherence and natural beauty.

The synthesis of modernism with traditional elements represents a significant strategy for cultivating a distinctive cultural aesthetic—one that balances innovation with identity. Simplicity and minimalism, often manifested through concrete construction and strategic light-and-shadow contrasts, distil design to its essential components, fostering serenity and visual harmony. Precise geometry and proportion reflect an orderly aesthetic, using linear discipline to establish spatial identity and balance. Urban memory and simple, meaningful forms link architectural aesthetics to historical narrative and local specificity, promoting continuity between past and present. Colour and spiritually oriented spaces invoke emotional depth, crafting atmospheres that transcend purely functional concerns.

Finally, sustainable architecture coupled with local cultural expression underlines social and environmental responsibility by leveraging native materials and context-sensitive design. Nature-inspired openness and freedom articulate expansive, adaptable environments that resonate with organic motifs, while meticulous attention to detail and the creation of spiritual spaces engage users on a profound sensory and emotional level. This comprehensive analysis demonstrates that architectural aesthetics manifests in diverse, culturally and contextually informed ways. Each approach—shaped by culture, nature, and human necessity—uniquely defines beauty in architecture, underscoring the field's capacity to address varied functional requirements while generating richly varied experiential landscapes.

Ultimately, the findings of this research—derived from an examination of the design elements employed by renowned architects and their comparison with historical precedents—indicate that the perception of aesthetics has varied significantly across different historical periods and generations. Moreover, pivotal factors such as culture, rooted in the ancient traditions of a nation or ethnic group, as well as geography, when combined with individual preferences shaped through education, can evolve into defining elements of aesthetic expression.

The central aim of this study has been to elucidate precisely this dynamic. While it is indeed possible to identify shared principles among designers—such as the interplay of light and shadow, the use of colour and materials, and the incorporation of vegeta-

tion—a deeper and more nuanced analysis reveals that aesthetics is influenced by a multitude of factors spanning from childhood experiences to adulthood, and is inherently unique to each individual. No fixed or immutable standard can be prescribed for aesthetics. As long as human creativity retains its wings, it will carry aesthetics forward on its shoulders. We must learn to draw upon the elements and factors advocated by great masters, yet never forget that there exists no timeless, universally applicable formula for aesthetics; rather, it is the interplay between the creative mind, the present era, and other contextual forces that serves as the wellspring of aesthetic inspiration.

Studies indicate that fostering a pleasant experience for individuals necessitates careful attention to aesthetics in architecture. Therefore, it may be concluded that architects have an obligation to study and understand society and contemporary conditions, to grasp the relevant cultures and geographies, and to remain informed about current technologies. Aesthetics, much like water taking the shape of its container, transforms within the vessel of history, adapts within the vessel of culture, and, with advancements in modern materials and innovative structures, can assume a contemporary and updated form. Given that the elements of aesthetics are numerous and constantly evolving, the only viable means of understanding aesthetics lies in ongoing study and in maintaining an acute awareness of prevailing circumstances.

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