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The Role of Light in Sacred Architecture and Tomb Design

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Abstract

The present research examines the role of natural and artificial light in sacred architecture and the poet's tomb, analyzing its impacts on users' spatial, spiritual, and emotional experiences. Light, as one of the key elements in the design of religious spaces, not only enhances the environment's aesthetics but can also create a spiritual atmosphere and encourage deep contemplation. In this research, we will first examine the history of the use of light in sacred architecture across different cultures and periods. Then, we will discuss the role of natural light in conveying a sense of calm and relaxation and how artificial light functions to complement and enhance spiritual experiences. Moreover, this research highlights the challenges and opportunities presented in the use of light in contemporary religious spaces. The results of this study can assist architects and designers in creating meaningful spaces that align with users' spiritual needs through the optimal use of light.

Keywords: Conveying a sense of calm, Optimal use of light, Meaningful spaces, Spiritual needs.

1 | Introduction

Light in architectural design has greatly interested architects and artists since ancient times. In sacred architectural spaces and the tombs of poets, light has aesthetic dimensions and a profound impact on the atmosphere and psychology of visitors. Natural light, with its ability to create diverse spaces and evoke varied emotions, can uniquely convey the spirituality and dignity of a sacred place. On the other hand, artificial light can also emphasize the architectural details and artworks in these spaces with precision and delicacy. The present research investigates the role of natural and artificial light in sacred architecture and the tombs of poets. This study aims to analyze the effects of light on the sense of place and the spiritual experiences of individuals while exploring the relationship between spatial design, spirituality, and lighting. By examining prominent examples of architecture, this research seeks to explore how light can function as a tool for

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expressing ideas and emotions in specific spaces and how this element can enhance visitors' cultural and spiritual experiences in sacred sites and shrines. Alongside this exploration, the importance of paying attention to lighting principles in the design and maintenance of these spaces will also be considered [1].

In this way, light is an aesthetic element and a powerful tool for creating a sense of drawing and connecting with the divine and spiritual world in sacred spaces. From ancient times to the present, architects and artists have sought to convey a different sense of reality to their audience by using light. This feeling transcends materials and architectural forms and connects with human emotions and spirit. In sacred architecture, light is a tool for illuminating spaces and a means of connecting with the transcendent and the invisible [2].

By examining the history of sacred space design and the use of natural and artificial light, this research aims to achieve a deeper understanding of this key element in architecture and to demonstrate how light can elucidate spiritual concepts and enhance religious experience. Past studies show that light is key to creating a sense of presence and calmness in architectural spaces. Architects such as Paul Marinissen and Peter Blake have emphasized the impact of light on shaping human perception of space [3].

The intelligent designs of Islamic architecture are also an example of the artistic use of light. The interplay of shadow and light through structures such as domes and latticework creates a mysterious and meaningful space. Such experiences demonstrate that light, beyond its physical dimension, carries cultural and spiritual messages that reach their zenith in sacred architecture.

2 | Fundamentals and Theoretical Framework

2.1 | Definition of Key Concepts

Definition of light

Light, as a physical phenomenon and visual sense, has various dimensions. In sacred architecture, light is considered not only a source of illumination but also a symbol of divinity and holiness.

Light and space

Light can shape architectural spaces. How light enters and distributes within a sacred place can enhance the sense of spatiality and connection to the spiritual concept.

Symbolism of light

Light is celebrated in many cultures and religions as a manifestation of the divine and a symbol of life, hope, and enlightenment. In sacred architecture, light may describe the attributes of the deity or spiritual manifestations.

Psychological effects of light

Light can profoundly impact the mood and psychological state of pilgrims and believers. Research shows that natural and artificial light can influence people's emotions and thoughts, creating a sense of calm and contemplation.

Design of light in sacred architecture

Light design in this type of architecture includes selecting appropriate illumination options, the type of glass (especially colored glass), and how light is distributed in both interior and exterior spaces.

Historical and cultural examples

Analyzing historical and cultural examples of sacred architecture where light has been used in specific ways, such as Gothic churches, Islamic mosques, and Hindu temples, can provide a better understanding of this concept [4].

2| Theoretical Concepts

Methods of utilizing light in sacred architecture

- I. Using windows and skylights: designing these elements to allow natural light in and create unique visual effects.
- II. Lamps and artificial light sources: utilizing artificial light to highlight specific elements and create spiritual atmospheres.

3| Conceptual Model of the Research

3.1| Conceptual Model

The conceptual model of the research on light in sacred architecture and mausoleums can include several key aspects that examine the role of light in the design and spatial experience of this type of architecture. Below are the main points of this conceptual model [5]:

- I. Spatial experience: examining how natural and artificial light affects the experience and feelings of users in sacred and memorial spaces.
- II. Light distribution: modeling light distribution in various spaces and its impact on spatial perception.
- III. Architecture and lighting techniques: utilization of Natural Light: Analyzing methods of employing natural light through windows, domes, and other design elements by architects.
- IV. Artificial lighting: examine artificial lighting techniques and how they influence the atmosphere and spatial arrangement.
- V. Interaction of light and shadow: an analysis of the impact of shadow on individuals' perception and experience of sacred spaces and tombs
- VI. Balance and contrast: modeling the relationships between light and shadow and how to balance them in design.
- VII. Psychological and social applications: this paper examines the effect of light on human feelings and emotions in religious and memorial spaces and its relationship with psychological tranquility.

Table 1. Component.

Light Component	Description
Natural light	Using natural light as the main illumination source creates a sense of connection with nature.
Artificial light	Utilizing artificial light to emphasize specific elements and create spiritual spaces.
Shadows and light	Employing the contrasts between light and shadow to create drama and embellish the space.
Color of light	Utilizing colored filters and transparency to create a unique and spiritual atmosphere.
Targeted lighting	Light directs visitors' attention to specific points, such as the altar or sacred statues.
Light and space	Designing and facilitating the connection between light and the interior space to create a sense of calm and silence
Lights and lamps	Special design of lights and lamps with religious and cultural symbols.

4| The Relationship between Light as a Spiritual Element And Sacred Architecture

Light is often associated with illumination, awareness, and truth. In many cultures, light is regarded as a symbol of the divine and the sacred. By utilizing natural or artificial light in sacred architecture, a spiritual space can be created that guides the soul toward contemplation and reflection. Architects can design sacred spaces using light that conveys to the worshippers a sense of tranquility and stillness [6].

For example, creating light shafts or skylights can naturally channel light into the space and enhance a sense of sacredness and grandeur. Artificial light, in particular, can create a spiritual atmosphere. Soft and gentle lights can contribute to a calming ambiance, while sharp and bright lights can convey a sense of power and magnificence. Light brings colors to life; thus, the combination of color and light can evoke various emotions and sensations in the viewer.

For example, warm light may create a sense of security and welcome, while cool light can convey a feeling of silence and separation from the world. Light in certain religious ceremonies, such as lighting candles or miniature lights, signifies important symbols of faith, hope, and prayer. These light elements can represent a form of connection between humans and God.

5 | The Impact of Light on Emotions

Light is a key factor in shaping visitors' emotions and experiences in various places and spaces. Natural light, such as sunlight, typically evokes positive feelings and happiness. In contrast, artificial light can elicit different emotions depending on its type and intensity. For example, warm and soft light can instill a sense of calm and comfort, while cool and bright light may stimulate feelings of energy and focus.

For example, warm and soft light can instill a sense of calm and comfort, while cool and bright light may stimulate feelings of energy and focus.

Light can aid in regulating emotions. The use of gentle lighting in calming spaces such as cafes and libraries can provide a sense of tranquility and relaxation. Similarly, using bright and strong light in office environments can help enhance focus and motivation. Light can contribute to enriching sensory experiences. For example, in an art gallery, appropriate lighting can effectively highlight the details of artworks and enhance the visitor's experience. Light can shape the overall atmosphere of a place. In restaurants, dim and soft lighting may create a romantic and intimate setting, while bright and vibrant lighting can create a lively and cheerful ambiance. Research has shown that light can influence various psychological responses, including stress, anxiety, and happiness.

6 | Optimization of Light Usage in the Poet's Tomb

Designing the space so that maximum natural light enters can make the environment brighter and more pleasant. Large windows, skylights, or sloped roofs can help harness more natural light. Choosing materials with high light-reflective properties for walls and ceilings can also contribute to increasing the amount of light and brightness in the space.

Using artificial lighting with appropriate design can bring spaces to life at night. Focused lights on artworks, sculptures, or inscriptions can capture visitors' attention. Adjustable lighting systems can alter the light based on the time of day and various activities. This can be effective in creating a calm and suitable atmosphere for contemplation and reflection [7].

Designing a space in such a way that light enters from various angles and with different qualities can create interesting visual effects and provide a deeper sense of the atmosphere of the mausoleum. Considering cultural and spiritual symbols in the lighting design can have a deeper impact on visitors' emotions. The use of light in ceremonies and events can also create a more meaningful experience.

7 | Field Study

This field study aims to examine light's role in sacred architecture from a practical and experiential perspective. It pursues this goal by selecting examples of sacred spaces that prominently utilize light as a design element. These examples include mosques, churches, and other places of worship, whose lighting characteristics have been considered to enhance the spiritual sense and spatial appeal.

7.1 | Process of Sample Selection

The samples under study were selected based on criteria such as historical significance, cultural importance, and architectural quality. Additionally, accessibility to the site and the possibility of direct observation were other selection criteria. The selected spaces in this research include examples of Islamic, Gothic, and modern architecture, each representing a significant use of light.

7.2 | Data Collection Method

To collect field data, the following tools were utilized:

- I. Direct observation: the research team carefully observed and recorded how light enters and disperses in selected locations. This observation included the timing of light exposure throughout the day, the direction of light, and its impact on architectural elements.
- II. Image recording: using professional photography equipment, light games, shadows, and changes in light were captured over different time intervals.
- III. Interviewing users: conversations with individuals in these spaces were conducted to understand their spiritual and psychological experiences of being in the environment.
- IV. Examination of architectural documents: analysis of the plans and design documents of these spaces to understand the purpose and method of lighting design.

7.3 | Evaluation Criteria

For the analysis of the collected data, the following criteria were taken into account:

Table 2. Collected data.

Quality of Lighting	Spiritual Sense	Aesthetic Space	Climate Adaptation
- The intensity and distribution of light in the space.	- The impact of light on feelings of calmness and focus.	- The way to create chiaroscuro and plays of light.	- Design lighting according to climatic and environmental conditions.
- The extent of utilization of natural and artificial light.	- The role of light in creating a sense of connection with spiritual and transcendent concepts.	- The effect of light on visual effects and the attractiveness of architecture.	- Utilizing traditional or modern techniques for light control.
- The harmony of light with architectural elements and the materials used.			

8 | Research Finding

Initial Findings

The findings showed that:

- I. Natural light, especially through lattice windows and glass domes, creates a profound experience of space.
- II. Light plays in sacred spaces, such as changes in shadows and brightness, enhancing the space's sense of movement and vitality.
- III. Thoughtful lighting designs create an atmosphere that evokes feelings of calm and focus in users, enhancing their spiritual connection with the environment.
- IV. The harmony of light with architectural elements and materials provides a richer visual effect to the space.

9 | Discussion

This research comprehensively demonstrates that light in sacred architecture transcends a mere physical element and functions as a visual and spiritual language. The creative use of light, through the combination of architectural elements and spatial design, enables the creation of profound and transcendent experiences for users.

Natural light, which often enters through openings, windows, and domes, creates a unique experience of being in a space. In addition to instilling a sense of calm and tranquility, this type of lighting enhances the feeling of connection with nature and the Creator. In traditional designs, particularly in Islamic architecture, this feature has been extensively utilized, and the interplay of light and shadow in these spaces is designed to enhance visual beauty and a sense of spiritual presence.

On the other hand, artificial light in modern architecture, utilizing advanced technologies, has become a powerful tool for creating a unique atmosphere. Dynamic lighting, along with changes in color and intensity at different times, offers users a unique experience. However, the coordination between natural and artificial light remains an important challenge for architects that requires further attention and investigation.

This research also demonstrated that aligning lighting design with climatic and environmental conditions is significant not only from a functional perspective but also in terms of aesthetics and spirituality. For example, in tropical regions, the use of shades and the control of direct sunlight can help create a cool and pleasant atmosphere, while in cold regions, focusing on capturing and retaining solar warmth is of greater importance.

Ultimately, this study's findings highlight the importance of understanding light as a dynamic and multifaceted element in the design of sacred architecture. Light can help create spaces that are functional and aesthetically pleasing and provide a spiritual and human experience. This understanding can serve as a valuable guide for architects and designers in creating environments that respond to users' physical, psychological, and spiritual needs.

10 | Conclusion

This research demonstrated that light, beyond being a physical element, is one of the main factors in the design of sacred architecture and plays an irreplaceable role in enhancing users' spiritual sense and aesthetic experience. The findings indicate that natural light, due to its close connection with nature and spiritual concepts, has a greater impact on creating a sense of tranquility and spiritual connection, whereas artificial light, through the use of advanced technologies, has been able to add new dimensions to architectural design.

The alignment of lighting design with climatic and cultural conditions is one of the key factors that can enhance performance and spatial quality. This study also emphasizes the necessity of considering a harmonious design between natural and artificial light so that both can enhance users' spiritual and aesthetic experiences.

Ultimately, the results of this research can assist architects and designers in creating inspiring spaces that not only meet functional needs but also provide a deep and meaningful experience for users. This approach could be an effective step toward enhancing the quality of sacred architecture and addressing diverse human needs.

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Data Availability

All the data are available in this paper.

Conflicts of Interest

The authors affirm that there are no conflicts of interest to disclose.

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