

## THE ROLE OF LIGHT IN THE ARCHITECTURE OF RELIGIOUS BUILDINGS

**Iskandar, Zulfan Zacky, Adelina Ratika Isti, Putu Ayu P. Agustiananda, Hanif Budiman**  
Universitas Islam Indonesia, Indonesia  
Email: iskandarmuda.arch@gmail.com, zulfan.zacky@gmail.com, adelinarch26@gmail.com, agustiananda@uii.ac.id, habudiman@uii.ac.id

### KEYWORDS

Light, Sacred, Religious Buildings, Houses of Worship

### ABSTRACT

Light is one of the important factors in human life. Lighting especially in houses of worship is considered a very important part for symbolic and spiritual reasons. Light is the main focus in architecture, both in Islamic and Gothic architecture. The purpose of this study is to summarize the role of light in buildings of worship, especially houses of worship. This study uses a qualitative method of literature study. The results of this study indicate that the role of light in buildings of worship, especially houses of worship, is very important for the congregation, both spiritually and visually. Spiritually, the role of light can provide inner peace and also the closeness of the servant to his God. From a visual point of view the role of light can provide beauty and comfort to the room. From these results, the conclusion is that the role of light in religious buildings in the building of houses of worship is very important for worshippers, in shaping the inner *kayakinan* both in spiritual terms and in Visual terms

### INTRODUCTION

Natural Lighting is one of the important factors in life. Light is transmitted through sunlight which is then reflected on a surface before illuminating a space or an area. Sunlight is also used as a light source in rooms in buildings, in this case it requires a design plan to create access to sunlight into the building so that it can be used as a light source needed by the building. The Quran explains that:

وَجَعَلَ الْقَمَرَ فِيهِنَّ نُورًا وَجَعَلَ الشَّمْسَ سِرَاجًا

And there He created a luminous moon and made the sun a (brilliant) lamp?" (QS. Noah 71: Verse 16). Based on this verse God has created the sun as a source of illumination in this world, without us realizing it, the importance of light in the room let alone the role of light in houses of worship.

Indoor lighting, especially houses of worship, is sacred, symbolic and spiritual. Lighting especially in houses of worship is considered a very important part for symbolic and spiritual reasons (Arel & Öner, 2017). The use of light in Islam has very significant physical and spiritual implications in man's relationship with heaven, related to religious and spiritual power, and man's relationship with God himself (Erzen, 2011).

In Christianity, natural lighting is one of the main means used to decorate the interior of a Christian church. The light flowing from the dome windows of the dome or through the twilight of the extended part of the *tengah*, highlighting the *apse* with the altar, or emphasizing the beauty of the statue, is *divine conductor* on earth (Ermolenko, 2021).

From the discussion above, the researcher wants to summarize how the role of light in religious buildings, especially banguand houses of worship. This research uses a qualitative method of *library research*, because this method makes it easier to collect data from various references and previous studies (Andrianto Pangondian et al., 2019).

## BIBLIOGRAPHY REVIEW

According to Pangestu (2019) light is one of the essential factors in an architectural work. Without the light of architectural buildings cannot be enjoyed their beauty, space and function. The role of light in buildings can provide a visual and emotional comfort effect for users in it. The nature of light also provides a positive value for one's mood and raises one's spirits.

The perspective of Light in Islam is about the existence of God. Al-Suhrawardi (1978) explains that, light as an existential source is considered one of the basic epistemological discourses, and its recognition leads to the explanation of the existential dimension of God with man, self-knowledge and truth. Al-Suhrawardi regarded the tangible cahaya as the noblest among other objects. He believed that tangible light is inherent and involved in human knowledge of purgatory or objects, and is one of the manifestations of true light.

## RESEARCH METHOD

The method in this study uses a qualitative approach to *library research*. This method begins with collecting data and understanding and studying theories from various literature studies related to a research (Fadli, 2021). The literature study that will be carried out in this research, obtained from various previous studies and also from various books related to light in religious buildings, especially worship buildings.

There are four stages in research based on literature study studies formulated by Zed (2004). The first is to prepare all the equipment and tools needed, the second is to prepare references related to research, the third is to manage the time, and the fourth is to prepare that is, reading and recording and summarizing predetermined research materials from various sources. The data collection is carried out by searching from various accurate sources, such as from various books, journals, and previous studies. In this study, the data analysis method used content and descriptive analysis. Literature study data obtained from various sources and analyzed in detail so as to support all propositions and ideas in research (Fadli, 2021).

## RESULT AND DISCUSSION

Indoor lighting, especially religious building spaces, has a sacred, symbolic and spiritual meaning. Lighting especially in houses of worship is considered a very important part for symbolic and spiritual reasons (Arel & Öner, 2017). Light became a major focus in the world of architecture, both in islamic architecture and in gothic architecture, In islamic architecture the light gives a spiritual (symbolic) and religious side about islam as a decorative tool. Through light, the inner space formed by manusia is connected with the outer space which is the realm of God's creation. Thus, light underscores the redemption, relativity, and imperfection of man, as well as the beauty, absoluteness, perfection, and infinity of God (Arel & Önr, 2017).

In a gothic architecture, light is also very important in providing a spiritual side. Ermolenko (2021) argues that, light is one of the very important roles in the church. Light is the menjain the main means used to decorate the interior of a Christian church. The

light flowing from the dome window or through the twilight from the extended center, highlighting the apse with the altar, or emphasizing the beauty of the statue, is the conductor of Ilah i on earth

In both religions, light is very directly or indirectly related to God. Antonakaki (2007) argues that. Light in Muslim architecture is used symbolically to enhance the sense of unity, unity and unity of the congregation, enhance the sense of collective space. Symbolically also but in a different way, light in orthodox religion is used to attract people and guide them to revelation. It creates a mystical and transcendental atmosphere that inspires people to seek light and seek the truth of the apocalypse.

#### **The role of light in the building of mosques and churches**

The role of light in religious buildings is very interesting to discuss, Since mehas certain symbols and meanings contained in it. This study discusses two functions of religious buildings, namely mosques and churches. The selection of a sample of the two functions of this building refers to the rituals of worship that are generally carried out indoors (mosques and churches).

The selected building sample, representing several locations (europe and asia including indonesia), the building sample also represents the period of its construction starting from the middleages to the this present-day building. In addition, samples of juga buildings represent various forms of architecture, such as *Byzantine, Gothic, Moorish, Renaissance, Ottoman, Isfahani*, Modern to sustainable architecture. The following are eight samples of religious buildings:

##### 1. Aya Sophia (Istanbul, Turkey)

The Hagia Sophia Church was built in 532–537 by the *Byzantine* emperor Justinian and designed by Isidore of Miletus and Anthemius of Tralles a physicist and mathematician respectively (Hoffmann, 2005). In the research of Jabi & Potamianos (2007) the design of Hagia Sophia seems to be the embodiment of the integration of geometry, light, and cosmology. According to Christian Dogma, what matters is the Byzantine third hour in which the Holy Spirit descends to consecrate the offering offered to God by the priest in front of the altar an offering that resembles the descent of the Holy Spirit.

The design of the Byzantine church relied heavily on cahaya to produce an evocative effect that favored the liturgical acts that took place within it. The use of light in the Aya Sophia building is to appreciate the important celebrations in religious beliefs of the Celebration of Christmas. At exactly three o'clock at hari christmas light will lead to the altar through the apse designed in the building of Aya Sophia (Jabi & Potamianos, 2017).



**Figure 1 Aya Sohpia Interior**

Source: Pinteres.com

Symbolically, the role of light in this building is to take advantage of the light that enters the building through the windows under the dome. The light leads to apse to an important celebration in religious belief that is the descent of the Holy Spirit just on christmas day. In visual view, light produces an evocative effect that supports liturgical action, as well as providing a light effect as if its God is present in front of them when performing worship rituals.

2. Grand Mosque of Cordoba (Cordoba, Spain)

The Great Mosque of Cordoba was one of the grandest mosques in Al-Andalus in the middle ages. The light in the Great Mosque of Cordoba has unique characteristics, because the light in this building is influenced by its elements (Arel & Öner, 2017). Arel & Öner added that the structure in this building intends to give worshippers a perception of privacy and connect with God directly, thus giving a feeling of one orang no higher than the other before God. The structure of the Great Mosque reflects and enhances the presence of divine light differently. A mysterious atmosphere with light and shadow is created due to the structural elements in it. How rows of curvatures smooth out the light creates a wonderful play of light in it. Direct sunlight and roasted windows provide a perception of God's presence. Direct sunlight coming down from the northern end of the mosque is the main source of cahaya.



**Figure 4 Great Mosque of Cordoba**

Source: Widiutama.com

Symbolically, the role of light in this mosque has an effect on the presence of god in the lives of its people. It can be seen from the structure of the building in this mosque that it gives a memorable light effect as if the degree of the servant is not higher than his God. In a visual view, the role of light in this mosque is clearly visible from the structure of the building that can reflect light and increase the impression that the presence of divine light *toum atnya* at any time.

### 3. Selimiye Mosque (Edirne, Turkey)

Silemiye Mosque located in the city of Edirne, Turkiye is one of the masterpieces of the architect Sinan (mimar Sinan) which was built between 1568-1574 during the Ottoman empire of Sultan Selim II. According research Arel & Öner (2017) the use of light in the Selimiye mosque designed by Mimar Sinan is as a welcome for worshippers. The light coming from the crevices of the dome ornament signifies the light of god turun to the place of the assembled servant. This effect makes the pilgrims have peace and homogeneity when they are indoors. As worshippers enter the mosque, they are greeted with a magnificent holy light and a feeling of traveling from the inner space to the outside world. In addition, Mimar Sinan prefers to use materials and ornaments generously to enhance the visual enjoyment of light and underline the effect of gathering divine light at the Selimiye Mosque.



**Figure 2 Aya Sohpinterior he**

Source: flickr.com (2010)

The design of this mosque gives a symbolic effect very pronounced when the pilgrims enter the space, the impression of light descending from above seems to be given Welcome by god to the pilgrims who come to him. Likewise, the role of visual light that provides peace for worshippers when in the room and when worshippers perform worship rituals due to the effect of the light.

### 4. Sheikh lotfollah Mosque (Isfahan, Iran)

The Sheikh Lotfollah Mosque was built between 1603 and 1618 by Muhammad Reza Esfahani during the reign of Shah Abbas (Clevenot & DeGeorge, 2000). In the study of Arel & Öner (2017) The use of lighting in the Sheikh Lotfollah Mosque in Isfahan as an idea of the presence of God. Worshippers who came to the mosque had to climb five stone steps and as they passed the entrance, a dark and narrow corridor greeted them. The light radiating at the end of the corridor, in contrast to the narrow and dark corridor, is the divine light that will soon connect the worshippers with the presence of God.





**Figure 3 Sheikh Mosque of Lotfollah**

Source: likealocalguide.com

The light in this building is interpreted as the seekers of god, god will be present when the pilgrims confidently seek it. This is because the pilgrims who come to this mosque will pass various obstacles so that they are reached to the intended place. Pilgrims who come will climb a high staircase and pass through a dark corridor and at the end of which there is a bright light source. The light is interpreted as the light that greets worshippers when they are really looking for it.

#### 5. Nasir Al-Mulk Mosque (Shiraz)

Nasir Al-Mulk Mosque, one of the old mosques, is a unique masterpiece in Shiraz. This stunning beauty makes Nasir al-Mulk one of the most spectacular mosques in the world (Ehsan Madai-Kandjani, 2019). One of the outstanding architectural features of this mosque is the colored glass, which creates countless colored shadows on the inside of this masjid, and when the sun shines on this colored glass, making a special and amazing spiritual atmosphere created inside the mosque. The reflection of sunlight into the windows of the mosque and giving the effect of its shine on the carpet is one of the few enchanting sights that provide peace of mind (Matracchi & Sadeghi habibabad, 2021).



**Figure 7 Interior of Nasir Al-Mulk mosque**

Source: Wallpapertip.com

Visually, the role of light in this mosque is the effect of sunlight penetrating the glass with a shadow, and in the room it gives a beautiful shadow pattern and is full of colors. Thus creating inner tranquility when the pilgrim is in it and giving specificity when the pilgrim performs the ritual of worship.

#### 6. Holy Spirit Cathedral Catholic Church (Bali)

The Catholic Church of the Holy Spirit Cathedral in Bali has a lighting design designed with a touch of local culture to convey its symbolic meaning. In the research of Tjandradipura et al. (2021) explained the presence of light present in the interior space of the catholic church can be considered to provide experience and have a great religious impact on the jamaat through the achievement of a sacred and sacred meaning. The light in the church provides a space-forming element that can communicate messages through the bonding relationship between man and God. Light also serves as a symbolic can describe the presence of Christ that illuminates human life in darkness.



**Figure 8 Interior of the Catholic church of the Holy Spirit Cathedral**

Source: Blogspot.com

The presence of light in symbolic view is defined as the presence of a god who gives gifts, affection to all his people who are full of sin (darkness). This is because visually, the light that enters through the sidelines of the façade and crawls the entire interior of the room, thus giving the message of a close relationship between the people and their gods.

#### 7. Al-Irshad Mosque

Masjid Al-irsyad is a mosque located in Padalarang, West Bandung Regency, this mosque was designed by an Indonesian architect, Ridwan Kamil. The design of the Al-Irshad mosque carries the concept of space and light that represents the presence of god in the life of uma t nya (Michael Wangsa et al., 2015). He added that in this building, there are many circulation paths made of breezeblocks throughout the building sheath, and there is a wide opening in the mihrab area. The opening gives the effect of a direct view towards sala m when performing worship rituals. The effect is very much felt when performing the Maghrib prayer ritual, worshippers directly see the setting of the sun among such a beautiful valley. so that his people will always remember the creator.



**Figure 9 Interior of Al-Irshad mosque**

Source: Pinteres.com

The whole room of this mosque has a dark room like a servant who is full of sin (darkness). In the front area (mihrab) has a light source that enters the room like the presence of god (light) as a forgiving of all the sins of servants when they perform worship rituals. Symbolically, the role of light in this mosque reminds its people of god when they perform rituals of worship because of the role of light visually. This mosque has a wide opening in the front area of the pilgrims that faces the direction of nature (valley) making its people always remember the beauty of their god's creation.

#### 8. Baitul Rouf Mosque (Bangladesh)

Baitul Rouf Mosque in Bangladesh its simple design, but won the Aga Khan Award in 2016 which was given to an innovative project for a new standard serving architecture and society, Saber & Mahmoud (2019) explained in his research that, the Baitul Rouf mosque is an innovation for natural lighting and ventilation standards. The ceiling is designed in such a way that circular holes can be distributed to give points of natural light into the building. Then on the Qibla Mihrab gives a spectrum of light falling from the open space between the squares. The design also includes a perforated wall that serves as a light filter and vent to the prayer room.



**Figure 10 Interior of Baitul Rouf mosque**

Source: Vam.ac.uk

The whole room of this mosque has a dark room like a servant who is full of sin (darkness). Visually in the mihrab area there is a light source that descends into the room from the ceiling it is likened to the presence of god (light) as the guide of his servant. In addition, light coming from the ceiling of the room The design of the Baitul Rouf mosque applies lighting to the space to become a paradise of tranquility and comfort of worshippers that forms a place like the universe and changes all the time, likened to the presence of god's mercy to his servant in different forms and times. The design of the Baitul Rouf mosque applies lighting to the space to become a paradise of tranquility and comfort jamaah.

#### **Comparison of the Role of light in mosque and Church buildings**

The role of light can be interpreted as the general dimension between man and his God. Tangible light is also considered the most transcendent body of material, it is known as a good mediator between objectivity and subjectivity. The following is a comparison of the role of light in religious buildings, especially houses of worship:



**Table 1 The relationship of the role of light in religious buildings**

No	Religus Building	The role of light in the Symbolic view	The role of light in the Visual view
1	Aya Sophia (Istanbul, Turkey)	appreciate the important celebration in religious belief (the descent of the Holy Spirit) on christmas day.	The effect of light coming down from the cracks of the windows under the dome gives the impression that god is present in front of them.
2	Grand Mosque of Cordoba (Cordoba, Spain)	The presence of god in the life of his People, The impression of the degree of servant is not higher than that of his god.	a structure of the Great Mosque that can reflect light and enhance the impression that the presence of divine light to its people.
3	Selimiye Mosque (Edirne, Turkey)	Welcoming the pilgrim (servant) by his god.	The light coming down from above gives peace when indoors.
4	Sheikh lotfollah Mosque (Isfahan, Iran)	Seekers of god, welcome worshippers.	Pilgrims through the dark corridor are set up as obstacles and at the end there is a bright light source with the light of God.
5	Nasir Al-Mulk Mosque (Shiraz)	Inner calm and solemnity in worship.	The beautiful shadow patterns and full of colors give a sense of peace.
5	Holy Spirit Cathedral Catholic Church (Bali)	The presence of god, the relationship of god with his people.	The light coming in from the cracks of the façade gives a message of closeness of people and god.
7	Al-Irshad Mosque (Paldalarang, West Bandung)	reminding people of the Creator. God's presence as a forgiving of sins.	The wide opening towards nature, namely towards the valley, makes people always remember the creator of beauty and light itself.

No	Religus Building	The role of light in the Symbolic view	The role of light in the Visual view
8	Baitul Rouf Mosque (Bangladesh)	The presence of god as a guide to the life of the people.	The incoming light of the mihrab is defined as the presence of god. The shadow pattern forms a pattern likened to the universe.

From the description of the case study above, the role of light in the symbolic view is very pronounced because it is interpreted as the light of God. There are several buildings, light is interpreted as the presence of god in the life of mankind. There are several others that light is interpreted as the giver of grace, the guide and reminder of his people. The role of light in buildings also gives the impression that god is higher than his people. Meanwhile, darkness is likened to a servant full of sins and obstacles in the life of world.

Visually, the role of light plays an important role in supporting the emotional presence of worshippers who are present in the room. The role of light is visually related to the decipherment of light in a symbolic view. From some of the case studies above, the role of light in visual thinking provides an impact on tranquility and comfort when pilgrims are indoors. Due to the light entering through the cracks or openings on the façade so as to give the effect of calmness and coolness of the soul.

From the foregoing, it is very jel as that the role of light in religious buildings is very important to present god in the daily life of man. The role of light can also make indoor users feel calm and emotional comfort.

**CONCLUSION**

The role of light in religious buildings in the building of houses of worship is very important for worshippers, in shaping the inner kayakinan both in spiritual terms and in Visual terms. The role of light can symbolically provide inner calm and also the servant's intransigence with his God. In addition, the role of light as a representation of the coming of God in human life. Both in the architecture of mosques and churches although different beliefs, the role of light both has a function as a reminder of god's presence in his people and as a shaper of ties.

In terms of visuals the role of light can provide beauty and comfort in the room. Religious buildings that have a good lighting concept, can condition the people in feeling the presence of their god, in addition to light as a tranquilizer, providing comfort and tranquility during worship

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