

# Natural Light as an Element to Create Sacred Environment in Churches

## Case Study: Santo Kristoforus Catholic Church, Jakarta

Melati Ayudyah  
*Student of Magister Architecture,  
Departement of Interior Design Universitas  
Tarumanagara Jakarta, Indonesia  
melatimina@yahoo.co.id*

Rudy Trisno  
*Departement of Architecture  
Universitas Tarumanagara Jakarta, Indonesia  
rudyt@ft.untar.ac.id*

Naniek Widayati  
*Departement of Architecture Universitas  
Tarumanagara Jakarta, Indonesia*

Fermanto Lianto  
*Departement of Architecture  
Universitas Tarumanagara Jakarta, Indonesia  
Corresponding author: fermantol@ft.untar.ac.id*

**Abstract**— There was cases in November 2011 where catholic church architecture design around the world had deviation. The deviation mentioned was the loss of holy space in catholic church architecture due to inappropriate design according to the correct layout. This showed that sacred holy space is important in catholic church architecture. Based on the statement above, natural lighting is important to be discussed as a problem in a building architectural design. The methodology of this research is; first, Natural lighting enters less on the altar compared to audio-visual buffer on the seating area; second, Altar as the center of sacred value of the church; third, Quite and silent environment of the church added to the sacred impression. The conclusion in this study is Natural lighting enters less on the altar compared to audio-visual buffer on the seating area to create sacred environment has not been achieved by Kristoforus Church, Altar as the center of sacred value also not yet achieved because natural lighting intensity that spreads to all parts of the room, Silent and quiet environment that added to the sacred environment has also not been achieved by Kristoforus Church because the proportion of light on the altar and audio-visual buffer is similar. The finding of this study is the natural lighting filter on altar area and audiovisual buffer on the seating area affect sacred environment in church, thus the lighting on altar area should be brighter and more dominant than other areas

**Keywords:** *natural light, sacred, church, church architectural lighting*

### I. INTRODUCTION

Lighting in churches has a very important role because according to humans, lighting is a symbol of truth, holiness, and the presence of God. Light can also create religious, holy and special environment.

Light is a sign of God's presence which provides brightness and safety from darkness. Therefore, holy area is marked by the existence of light. Pope Benedict XVI cares a lot about holy arts and architecture of catholic churches, which is seen in the form of books, journals, and

the content of homily which shows his concern. The Pope's view on church architecture impact catholic church architectures in the world [1].

In November 2011, there was a case where catholic church architecture design in the world showed deviations in the form of loss of holy area because of inappropriate design according to correct layout rules. This showed that sacred holy area is important in the architecture of a catholic church.

According to above statement, natural lighting is important to be discussed as a problem in building architecture design, especially catholic churches. In the past, churches always face west, thus the altar is in the east which received natural sunlight [2].

This study is expected to provide an addition to knowledge regarding theories of catholic church architecture, especially for the architects or interior designer who design churches so that they consider natural lighting which affects the environment and sacredness of church.

### II. MATERIAL AND METHODS

#### A. Theoretical Review

Lighting can create a sacred impression, especially in the altar area. Meanwhile, seating area tend to be darker compared to the altar. Natural lighting should be less visible on the altar area compared to audio-visual buffer [3], thus creating a more sacred space with a sound-muffling audio-visual buffer [1].

Lighting influence is important to humans because the light entering the church can guide humans closer to God and improving sacred values [4].

Not only bright light, darker light can also provide sacred and holy impression [5]. The bright light mentioned was to create light filter, while dark as a filter for audio-visual so that it should not enter the room, therefore lighting

become a point known as “hierophany” that has holy power [2].

Supporting lighting carry the people in a sacred environment through lighting layout in certain important locations (altar, statue, and painting of the saints) [6].

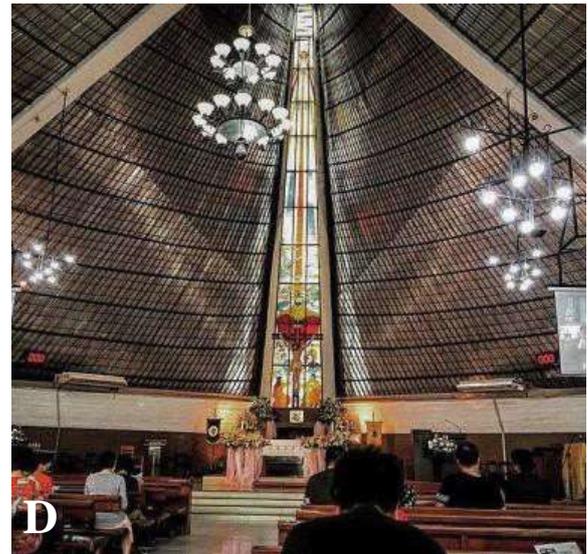
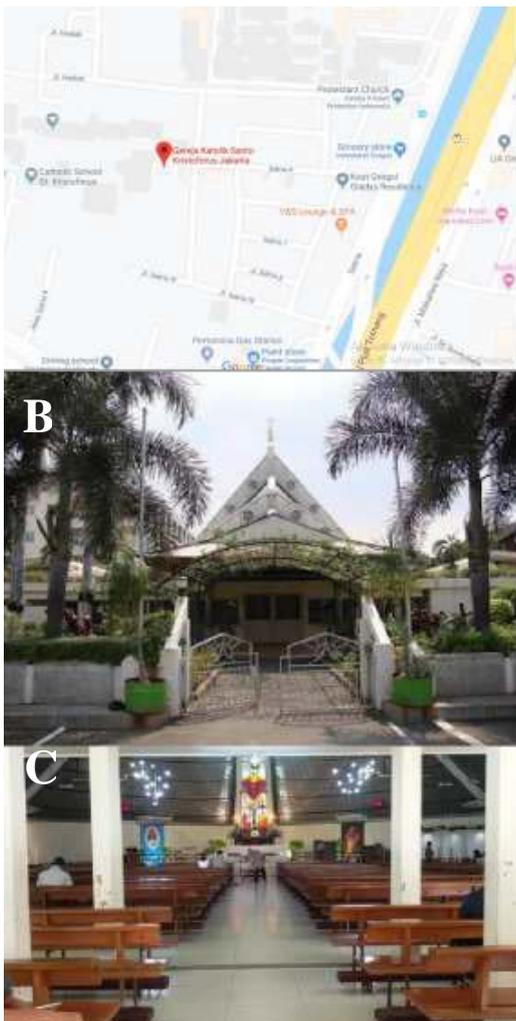
There are several aspects that need to be considered regarding natural lighting process, i.e.: the best building orientation is North-South, avoid East-West orientation [7].

According to the view from above theories, the author summarized the theories into an instrument to analyze this study by using methods as follows:

1. Less natural lighting on the altar compared to audio-visual buffer in seating area.
2. Altar as the center of sacred value of the church.
3. Silent and quiet church environment added to the sacred impression.

### III. RESULTS AND DISCUSSION

The case study obtained in this study was Santo Kristoforus Catholic Church located in Jalan Satria IV Blok C Nomor 68, RT.14/RW.4, Jelambar, Grogol Petamburan, West Jakarta, 11460



(A) Location of Kristoforus Church; (B) The outside view of Kristoforus Church; (C) The interior of Kristoforus Church; (D) Natural lighting in altar.

Source: (A) googlemaps.com; (B) Irwin Permata, 2016; (C-D) Documentation by Author

- i. Natural lighting enters less on the altar compared to audio-visual buffer on the seating area

In Figure 1C, the intensity of natural lighting in Kristoforus Church not only enters the altar area, but also the left, right, and the front of the church through windows and door thus the natural lighting to the altar was less dominant because the light spreads evenly

- ii. Altar as the center of sacred value of the church

In Figure 1D, the altar of Kristoforus Church is still the center of sacred space because of natural lighting orientation from high stained glass, like high expectation to God. Lights from other sources creates a less sacred environment on the church altar

- iii. Quite and silent environment of the church added to the sacred impression

The proportion of light through the altar as the center of sacred value in church, and quiet and silent impression of the church has not yet been felt This was caused by the intensity of light that spreads evenly to the room in the church without supporting audio-visual buffer

### IV. CONCLUSIONS

According to above results, the author concludes: 1. Natural lighting enters less on the altar compared to audio-visual buffer on the seating area to create sacred environment has not been achieved by Kristoforus Church, 2. Altar as the center of sacred value also not yet achieved because natural lighting intensity that spreads to all parts of the room, 3. Silent and quiet environment that added to the sacred environment has also not been achieved by Kristoforus Church because the proportion of light on the altar and audio-visual buffer is similar. The results of this study were that the natural lighting filter on altar area and audio-visual buffer on the seating area affect sacred environment

in church, thus the lighting on altar area should be brighter and more dominant than other areas.

This study suggests that the natural lighting in Kristoforus Church focuses the natural lighting on altar area, adding audio-visual buffer to create darker seating area to reinforce quiet and sacred impression.

#### REFERENCES

- [1] Lobell, J., 1979. *Between Silence And Light*. Colorado: Shambala Publication, Inc. Srisadono, Y. D., 2012. *Konsep dalam Arsitektur Gereja Katolik*. melintas, pp. 182- 206.
- [2] Eliade, M., 2002. *Sakral dan Profan*. Yogyakarta: Fajar Pustaka Baru. Kieckhefer, R., 2004. *Church Architecture from Byzantium to Berkeley*. New York: Oxford University.
- [3] Trisno, R. & Lianto, F., 2018. The Meaning of Natural Lighting on Altar Case Study: Cathedral church and church of the light. *Scopus. International Journal of Civil Engineering and Technology (IJCIET)*, 9(12), pp. 209-213.
- [4] Krautheimer, R., 1986. *Early Christian and Byzantine architecture*. London: Yale University Press.
- [5] Ashihara, Y., 1971. *Exterior Design in Architectur*. USA: Van Nostrand Reinhold Inc.
- [6] Dwi, N. E., Kurniati, F., Kusuma, H. & Widyawan, 2017. Makna Kesakralan Gereja Katolik. *Jurnal Lingkungan Binaan Indonesia* , pp. 195-202.
- [7] Lechner, N., 2001. *Heating, Cooling, Lighting: Design Methods for Architects*. Second Edition ed. New York: John Wiley& Sons, Inc..