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Research Paper

Identification of Cultural Heritage Building Characteristics Shirathal Mustaqiem Mosque Samarinda Seberang, Samarinda City

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ABSTRACT
Shirathal Mustaqiem Mosqueisone of thecultural heritage buildings located in Samarinda Seberang, Samarinda city.This building still functions and uses wood as alocal wisdom that was owned by the Kalimantan area at the time the building waserected. As a cultural heritage building, its existence needs to be preserved because it has important values for history, science, education, religion, and/or culture. The work of preserving the building is an obligation to maintain its authenticity by maintaining theconcept of its authenticity, namely the wood component as a constituent of the shape and structure of the building. This research was conducted with the method of observation, observation and direct review of the location of the mosque building. Observations were only made on visible and accessible parts of the building, which included the main column, secondary column, main room floor, terrace floor, walls,window frames and shutters, floor list plank, terrace poles and terrace fence.From the observation, it was found that floors with boards varying in width from 15-19 cm were installed using nails to the floor frame, columns/poles made of 8-sided wood (each sidewidth of 17-18.5 cm) totaled 4 pieces as the main column with a height of 8 meters. The secondary columns of 4-sided wood (the width of each side is 23-25 cm) are 12 pieces with a height of 4 meters. The walls of the mosque are made of wooden planks with awidth of 9.5-20 cm installed vertically with reinforced semi circular beams with a diameter of 20 cm. The distance between the wall beams is approximately 90 cm. The height ofthe inner wall is 334 cm. The window frames are made of wooden beams measuring16x16 cm (window circumference) and the door is equipped with a frame pole which has wood dimensions of 17x17 cm, door width is 168 cm and height is 227 cm. Terracepillars in the form of beams with dimensions of 13x13 cm with a height of 331 cm from the face of the floor, installed around the terrace.
Keywords: *Cultural Heritage Building, Shirathal Mustaqiem Mosque, Wooden Building*

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I. INTRODUCTION

Cultural heritage buildings as witnesses to the history of a city's journey can be found in almost every big and small cities through out Indonesia. Many are still in good condition and continue to be used and well maintained, but many are neglected and damaged. Regardless of the conditions, these buildings help shape the face of a city. With the increasing awareness of preserving historical witnesses, efforts to preserve these cultural heritage buildings have been rampant recently. Conservation efforts such as conservation if carried out with good and correct techniques and stages will maintain cultural heritage buildings so that they remain standingand sustainable. However, conservation efforts carried out in a hurry and in a hurry will cause damage to cultural heritage buildings [1].

In East Kalimantan, there are several cultural heritage buildings, including the Shirathal Mustaqiem Mosque in Samarinda City.This building is still functioning anduses wood as a local wisdom that was owned by the East Kalimantan area at the time the building was erected. Wooden buildings, both in the form of monuments and people's buildings, save aninvalu able cultural heritage. Not only in terms of architectural embodiment, but also in terms of the wealth of knowledge in building construction. The toughness of wooden buildings in Indonesia has been tested by natural challenges for hundreds of years [2]. However, the development of various aspects of urban areas, without realizing it, eliminates various traces of history and the

story of a city's long journey in shaping its current identity [3].

Lack of attention or in appropriate maintenance activities carried out will cause anegative condition or impact, namely a decrease in the productivity level of activities carried out by building owners or users as a result of poorly maintained building conditions [4]. In addition, the supply of wood from natural forests is decreasing inquantity and quality. In addition, the price is getting more expensive.The trend is that the harvested woods are younger in age and are not resistant to attack by destructive organisms [5].

The building to be studied is the Shirathal Mustaqiem Mosque in Samarinda City. The building uses wood material and still maintains the authentic city of its architectural form. Currently the building is a tourist destination in the city of Samarinda, both as religious tourism and historical tourism.

The purpose of this study was to determine the characteristics of the building with wood materials in the Shirathal Mustaqiem Mosque cultural heritage building in Samarinda City.

2. RESEARCH METHOD

2.1. Time and place

The research was carried out from September 2021 to November 2021, where the research location of the Shirathal Mustaqiem Mosque was on the corner of the road, namely on Pangeran Bendahara Street and K.H. Mas Penghulu Street, Mesjid Urban Village, Samarinda Seberang sub District, Samarinda Municipality (Figure 1).

Figure1. Shiratal Mustaqiem Mosque, Samarinda

2.2. Materials and tools

The tools used for this research are iron ruler, Laser Distance Meter Krisbow 10106768, HP Vivo Y95 camera, Autocad 2016 software and Skectup.

2.3. Research Implementation

The study was conducted by means of gradual observation, identifying the visible and afford able characteristics of the mosque building including the main column, secondary column, main room floor, terrace floor, walls, window frames and shutters, floorlist plank, terrace poles and terrace fences.

2.4. Data collection

The data collected is the dimensions of the components that make up the building, namely: main column, secondary column, main room floor, terrace floor, walls, window frames and shutters, floor list plank, terrace poles and terrace fences.

3. RESULTS AND DISCUSSION

3.1. General History of the Shiratal Mustaqiem Mosque

Shiratal Mustaqiem Mosque is the oldest mosque in Samarinda City, East Kalimantan Province, Indonesia, precisely in Mesjid Village, Samarinda Seberang sub District. The mosque, which was built in 1881, was the 2nd winner in the festival of historic mosques in Indonesian 2003[6].

This mosque is known to be made of iron wood which is used as the main material for the construction of the mosque, taken from four villages, including Karang Mumus, Dondang, Kutai Lama, and Loa Haur [7].

This mosque was built in alocation that was deliberately chosen as a gamblingden and a place of idol worship. The construction of this mosque aims to be able to stop these immoral and misguided activities. The proof is, after the Shiratal Mustaqiem Mosque was built, it turned out that immoral activities disappeared and this area (Kampung Mesjid) became increasingly popular at that time. Because of its popularity,

the area where the mosque was built was given the name "Kampung Mesjid" and is now the village of the Mosque. This mosque was rehabilitated in 2001 by the Mayor of Samarinda Achmad Amins. This mosque is a cultural heritage, which is protected by Law Number 5 of 1992 concerning cultural heritage objects [8]. Until now, the architecture of the mosque, which was completed in 1891, has not changed. Although there is treatment done. Even the second best historic mosque in Indonesia has become a sacred location for local residents [9]. The isometric model of the Shirathal Mustaqiem Mosque, Samarinda and the components that make up the building are presented in Figure 2.

Figure 2. Isometric Model of the Shirathal Mustaqiem Mosque,Samarinda

3.2. Identity of Shirathal Mustaqiem Mosque

Building owner	:	Samarinda City Government
BuildingAddress		
a. City	:	Samarinda
b. sub District	:	Samarinda Seberang
c.Urban village	:	Mosque
d. Street name	:	Pangeran Bendahara
Building Function	:	Muslim Places of Worship
Building Age	:	139 years (founded 1881-1891) Began to function in1891
Building and Land Area		
a. Building area	:	812,25M^2
b. Foundation System	:	Ulin pile construction (then covered with reinforced Concrete pedestal foundation)
c. Landarea	:	±7400M^2

3.3. Characteristics of the Shiratal Mustaqiem Mosque Building

3.3.1. Main Room Floor

The main floor of the mosque is covered by two layers of carpet. The first layer ofcarpet was installed to coat the wooden floor using glue, the second layer of carpet was installed to cover the first carpet and reinforced with nails.The width of the floor boards cannot be measured, because they are covered with carpet. Likewise, the type of connection used, cannot be seen. The floor area of this main room is 440.75 M^2 (Figure3).

Figure 3. The Condition of the Floor of the Main Room of the Mosque

3.3.2. TerraceFloor

The terrace surrounds the main room of the mosque with an area of 390 M^2. Theterrace floor uses a ± 2 cm thick board and a width that varies between 15-19 cm. Thewidth of the terrace board is 15-19 cm and the thickness is 2 cm. The length of the boards varies from ±70 cm to ±340 cm(Figure 4).

Figure 4. Mosque Terrace Floor

3.3.3. Column

This mosque building is supported by 4 main columns and 12 secondary columns.These columns support the construction of the roof of the building. The main column consists of 4 octagons and each side has awidth of 16–18.5 cm and a height of 8.35 meters from the floor. While the secondary columns are 12 rectangular pieces and each side has dimensions of 23-25 cm and a heigh to 4.2 meters.

The wood of the existing poles is not perfectly flat, but the rough edges are still visible. The bottom side of the pole is mounted with a 6 cm profile of wood around the pole. Likewise, on the upper side of the pole, profiled wood is also installed, just below the ringbalk beam. Column connection type with beam is not visible. All wood columns are intact without joints. The main pillar looks bigger on the bottom side and gets smaller on the top side of the column. All poles are painted in green and yellow. For the main column, it is painted green as high as 82 cm from the face of the floor and on the topside of the wooden profile, while the rest is painted in yellow. For the secondary column, the bottom side of the green paintis only 30 cm high and the rest is yellow (Figure 5).

Figure 5.Condition of Main Column and Secondary Column

3.3.4. Doorsand Windows

This mosqueis equip ped with 18 windows that'spread on all sides of the walls. The placement of each window is 4 pieces on each side of the building wall and 2 more on the left and right side of the mihrab room. As a building located in the tropics, the existence of this window makes air circulation into the room (cross ventilation). The window frames use wooden beams of 16x16 cm, both on the posts and on the lower and upper sills. The jamb poles are installed continuously from the face of the floor to the bottom of the ringbalk as high as 3.34 meters. The windows are equipped with 7wooden trellises each in the form of a cylinder with a diameter of 5 cm which are permanently attached to the frame. The inner side of the frame is painted white while the outer side is green and yellow.

There are two panels of leaf type on each window and they are connected to theframe using 2 pairs of butterfly hinges. Each shutter is 60 cm wide, 168 cm high and 3 cm thick. The panel shutters are divided into 2 parts, namely the upper side using 8 wooden slats with a width of 10 cm arranged horizontally and the lower side with an ellipse shape ornament. Window shutters use 10 cm wide wood. The shutters are painte dinamix of yellow and green. The visible wood damage on the windows is due to friction of the shutters on the upper side of the lower sill and the shrinkage of the wood visible at the corner joint boundaries. Some of the wind rights have been lost so to hold the window opening on lyuse nails (Figure 6).

Figure 6. Sills and Shutters

This mosque has 3 doors as access to the main room. The doors are on the east, north and south sides. Each door has a pair of leaves that open inward. The width of the door is 168 cm and the height is 227 cm. The door is equipped with a frame pole which has a wooden dimension of 17 cm x 17 cm, continuously from the floor to the ringbalk. While the horizontal frame has dimensions of 12 cm x 17cm wood as the lower threshold and upper threshold. The door of this mosque has a lower threshold and is placed after the floor plank. So the height of the door line is 37 cm from the terrace floor. Every visitor who wants to enter the main room must step over the lintel under the door.

For the room security system, from the inside of the door a wooden barrier is given as a lock which is attached to the handle.The door handle on the inside is also made of wood which is attached using nails to the door leaf. From the inside, each door isequipped with a list of wood across the top and bottom. While from the

outside there is an iron that serves as a place for installing security / locks.The doors are painted darkgreen on both sides. Each door leaf measuring 90 cm x 227 cm is made of two or 3pieces of wood and is 5 cm thick. The door leaf uses an "axle" hinge which is a mechanical system for opening and closing movements (Figure 7and Figure 8).

Figure7. Doors Seen from the Inside and Outside

Figure 8. Door Accessories

3.3.5. Wall

The walls of the mosque are boards with a width varying between 9.5-20 cm, a thickness of ± 2 cm and a length of ± 3.34 meters. Mounted vertically with the help of 3 wall beams of semi circular shape with an outline of 20 cm. The distance between the wall beams is 90 cm. These wall beams are installed horizontally and are connected between columns with a distance of 340 cm. The dimensions of this wall column are 23cmx23 cm. The walls are painted white on the inside and yellow on the outside.While the wall columns are painted dark green. On the outer side of the wall, a transverse beam is installed at the top to support the roof rafters (Figure 9).

Figure 9.Walls and Wall Beams

3.3.6. FloorList Plank

The floor plank is installed to cover the underside of the walls around the building. Serves to cover the bottom side of the wall, so that if the bottom end of the board that is installed is not flat, it is not visible. The dimensions of the board are ±20 cm wide with athickness varying between 2-5 cm. The listplank board is painted dark green (Picture10).

Figure10. Floor Listplank

3.3.7. Terrace Pole

The pillars of the terrace are beams with dimensions of 13 cm x 13 cm with aheight of 331 cm from the floor, installed around the terrace. The distance between the pillar soft his terrace varies, namely 210, 220, 290, 295, 310, 340, 350 and 400 cm. This terrace pole is not only used as a pillar for the construction of the terrace roof, but also as a place for installing terrace fences. There are 37 terrace pillars in this mosque. The terrace poles are covered with dark green paint (Picture 11).

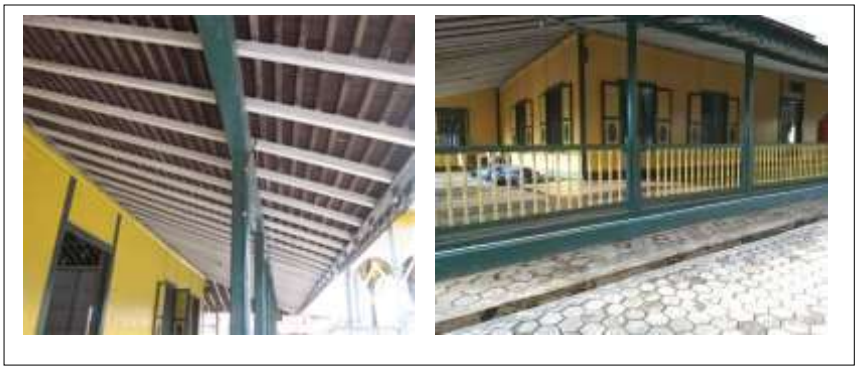

Figure 11.Terrace Poles

3.2.7. Terrace Fence

The terrace fence is a barrier between the building and the yard, with a height of90 cm from the face of the floor and is installed between the pillars of the terrace. The length of each fence varies according to the distance of the poles which is also not the same. The fence frame uses a 7 cm x 7 cm beam and the railing is made of 4 cm x 4 cm beam. The distance between the railings is approximately 10 cm, so the number one ach fence varies according to the distance between the terrace columns. This patiofence has 2 small doors and 3 large doors. The small door is on the west side of the building, namely on the left and right sides of the mihrab room. While the 3 large doors as access to the terrace are on the east, north and south sides of the mosque. The large gate has direct access to the main door. The width of the gate is 2.1 meters and has two leaves that use butterfly hinges (Figure 12).

Figure 12.Terrace Fence

4. CONCLUSION

The Shirathal Mustaqiem Mosque building adopts local buildings, has a regionalidentity typical of East Kalimantan carrying wood as the main material. Established with the concept of a house on stilts because it adapts to the conditions of the location on the banks of the Mahakam river.

Shirathal Mustaqiem Mosque was built using wood as a whole. The current building is still in the form of a stage construction / has a pit. Underneath can be observed from the west side of the building on the damaged floor list plank. From the yard, this pit is no longer visible because the land has been filled (±20 cm lower than the face of the terrace floor) and some paving blocks have been installed. Observation results show :

1. There was a decline in the wooden floor in several places. The biggest drop is inthe center of the building between the main columns. However, not all floors have decreased. Some parts are flat and not wavy.
2. This mosque building is supported by 4 main columns and 12 secondary columns. These columns support the construction of the roof of the building. The main pillar looks bigger on the bottom side and gets smaller on the top side of the column. All wood columns are intact without joints.
3. This mosque is equipped with 18 windows that spread on all sides of the walls and 3doors as access to the main room.The doors are on the east, north and southsides. Each door has a pair of leaves that open inward.
4. The walls of the mosque are boards with a width varying between 9.5-20 cm, a thickness of ± 2 cm and a length of ± 3.34 meters. Mounted vertically with the help of 3 wall beams of semicircular shape with an outline of 20cm.
5. This terrace pole is not only used as a pedestal for the construction of the terrace roof, but also as a place for installing terrace fences. There are 37 terrace pillars in this mosque.
6. The patio fence has 2 small doors and 3 large doors. The small door is on the westside of the building, namely on the left and right sides of the mihrab room. While the 3 large doors as access to the terrace are on the east, north and south sides of themosque.

BIBLIOGRAPHY

[1]. Architectural Documentation Center (PDA). 2011. Introduction to the Guide to the Conservation of Colonial Historical Buildings, Architectural Documentation Center.
[2]. Wibowo,Arif Sarwo.2013. Learn From Japan : Timber Building Preservation System.Scientific Meeting Proceedings IPLBI 2013,page D7-D12.
[3]. Hurek, Maria Bergita; Maryudha, Ifana Puteri; Herlambang, Suryono. 2015. Inventory and Assessment of Cultural Heritage Buildings in Kampung Bandar and Kota Lama Kupang using the Historical Site Inventory Method. Journal of Technology Studies Vol.11 No. 1 March2015.
[4]. Iriana, Rian Trikomara, Ade. 2012. Analysis of Damage Level and Estimated Cost of School Building Repairs. Civil Engineering Journal, November 2012.
[5]. Priadi, Trisna, et al. 2010. Biodeteriosation of House Wood Components in DifferentAreas of Temperature and Humidity. Journal of Forest Products Science and Technology 3 (1), page26-31.
[6]. Modern and Historic Mosque in the KotaTepian. *Kaltim Post*, 20 February 2011.
[7]. Shiratal Mustaqiem Oldest Mosque : Formerlya Place of Sin. *Kaltim Post*, 20 February 2011.
[8]. Always Visited by National Figures, So a Place to Learn History. *Kaltim Post*, 17 May 2009.
[9]. Shirathal Mustaqiem, 131 Years Old: A Former Gambling Site, Becomes a Center for the Spread of Islam. *KaltimPost*, 15 July 2012.
[10]. Regulation of the Minister of Public Works and Public Housing of the Republic of Indonesia Number 01/PRT/M/2015 concerning Preserved Cultural Heritage Buildings.