

POST DISASTER BUILDING PRESERVATION THROUGH COLLECTIVE MEMORY DEVELOPMENT IN RW 11 PURBAYAN KOTAGEDE

Ni'mal Abdu Prihatmaji¹

¹International Program of Architecture, Universitas Islam Indonesia

¹Email: 20512060@students.uii.ac.id

ABSTRACT: *Kotagede boasts numerous heritage traditional buildings, embodying its rich cultural values. However, following the 2006 earthquake, many of these structures faced deterioration due to financial constraints and neglect. This abstract explores the potential of memory collective initiatives in preserving Kotagede's architectural heritage, focusing on the abandoned Omah Kahar Muzakkir. Through a comprehensive examination of its components and historical significance, this research aims to develop a virtual reconstruction of the building. Utilizing Virtual Reality (VR) technology, the project seeks to provide an immersive experience for individuals to explore and learn about Omah Kahar Muzakkir's past. By offering an alternative means of preservation, this approach ensures that the legacy of Kotagede's traditional buildings endures despite challenges and financial limitations.*

Keywords: kotagede javanese traditional house, post disaster, collective memory

INTRODUCTION

Kotagede is an old town located in Yogyakarta, which is administratively located in Yogyakarta City and Bantul Regency. As an ancient city, it is the former capital of the Islamic Mataram Kingdom which was established in 1532. Kotagede is a city with a very strict culture and many historical relics that can be seen from the architecture of buildings and sociocultural life. There are many cultural relics and buildings in terms of architecture throughout Kotagede.

In 2006, an earthquake disaster hit the whole of Kotagede, which caused many old relics such as buildings especially destroyed and required to rebuild or reconstructed through a program submitted to the local government. Many of Kotagede's old buildings after being renovated have changed their form and function. In addition to the changes in form, there are some buildings that were not rebuilt, due to economic factors. This has caused many of the values of each building to be forgotten.

With the historic buildings affected by the earthquake in 2006 in Kotagede, there was a reduction in the original Kotagede buildings that began to disappear. Lost here is interpreted in twomeanings. First, there are many Kotagede houses that do not have the funds to reconstruct or rebuild and renovate their buildings, so that most Kotagede residents leave their buildings abandoned and unused until now. Secondly, there are some owners who do not have the funds to rebuild, so the owners took the initiative to sell their buildings outside Kotagede. Along with the times, this research also wants to combine the beauty of past history with technological sophistication. Thus, this research aims to rebuild historical buildings without having to carry out physical reconstruction.

LITERATURE REVIEW

Kotagede is a cultural area with many historical relics that can be seen from the architecture of the buildings as well as the socio-cultural life (Supriyadi, Sudarwanto, & Werdiningsih, 2012). The city is filled with relics of the past that are unique and distinctive, although it is like any other city that uses the Javanese Islamic cultural style. Besides being the center of ancient heritage, this city also has a factor that causes the heritage to be a treasure that is preserved until now. That factor is because Kotagede is also a relic of the center of the Mataram Kingdom. Kotagede in the past was the center of political, economic, and socio-

cultural activities. Kotagede is called the center of political activities because it was the center of the Mataram kingdom since the reign of Senapati until the center of the kingdom was moved to Kerta by Sultan Agung. (Supriyadi et al., 2012)

On May 27, 2006, an earthquake struck Jogja and parts of Central Java with a magnitude between 5.8 and 6.2 on the Richter Scale. This shallow tectonic earthquake resulted in more than 6,000 deaths and about 50,000,000 injuries. Meanwhile, 86,000 houses were destroyed and approximately 283,000 houses were damaged. The earthquake, which claimed hundreds to millions of victims, also affected the Kotagede area, which in turn affected the heritage houses or the original traditional houses of Kotagede (Prihatmaji & Fauziah, 2007). Of the many houses affected, around 80 out of 250 traditional buildings were affected by the earthquake that occurred in 2006. The devastating earthquake, which then impacted Kotagede's traditional houses, caused fatal damage. So that many people are thinking of rebuilding buildings that have been damaged by the natural disaster of the earthquake. Some people took the initiative to submit a proposal to the government in applying for funds for the reconstruction of traditional buildings as Kotagede cultural heritage. (Prihatmaji, 2007)

The impact of the earthquake on Kotagede's traditional houses also resulted in spatial and functional changes that occurred after they renovated traditional houses that are included as cultural heritage. Therefore, there are many traditional houses whose functions and uses must change after being repaired. (Prihatmaji et al., 2013) There are some buildings that are sold by their owners due to lack of economic factors. This has resulted in the reduction of traditional houses from the past. So the importance of collective memory of historic buildings that have not been repaired to regain the original image and function in the past. Collective memories are location-specific, and both their recall and reproduction are influenced by the location of the events that gave rise to those memories. Place can play a significant role in the formation and preservation of collective memories because even if the feeling of place is subjective, it is the outcome of collective perception. As a result, when people respect communal memories, they are really elevating the identity of the location, which deepens their attachment to it. The historic area will experience reduced neglect and social vulnerability as a result of increased public participation in conservation efforts. The environment will have a higher spatial quality as a result, and social and cultural values will be protected more effectively. (Ardakani & Oloonabadi, 2011)

Collective memory often becomes a weapon to restore fragments of memory that have been shattered into pieces. Usually carried out in locations that were used for war or were destroyed due to natural disasters that struck. So that memories and recollections that have begun to fade are brought together one by one from each individual who has experienced them to help restore memories to be completely intact again. It's also recognize structures and locations that are often focal points in conflicts over memory and identity, including historic buildings that hold significant collective memories, as well as places and landscapes that have great symbolic importance. (Hoteit, 2015)

RESEARCH METHOD

The approach in this research uses a theoretical qualitative descriptive approach with a review through direct observation and interviews. The data obtained from the interview and observation process will be presented and the results can be directly managed as a basis for taking a review of the collective memory fusion relationship. Knowing the existence of the family, relatives and neighbors of the deceased as the owner of the house is still around the house of the deceased which is presented with data and images provided and arranged in words that are easy to understand. In addition, there are also data that will be explanatory such as technical drawings that have been tidied up and some observation photos. The results of the qualitative research conducted will then be able to describe the lost memory

in Kahar Muzakkir's building. Through the theoretical qualitative description method, the data studied will be described regarding the conditions of its physical form and the extent to which the level of conformity with the benchmarks where this analysis is then applied in descriptive form, with comparative or comparative techniques. The data needed in this research was obtained through several methods, namely:

1. Literature study, data and theories that refer to the object of study and are collected by means of literature study and internet searches to find out about the foundation of understanding, historical understanding, values in buildings, and place making events in buildings.
2. Observation, direct observation is carried out to support the data obtained from internet media sources, observation is carried out on the spot, namely RW11 Kotagede at Kahar Muzakkir's house as an object of study and comparison.
3. Interviews, conducted with family, relatives and neighbors to find out the phenomena that occur in Kahar Muzakkir's house that no longer exists and its relation to place making that occurs in it.

RESULT AND DISCUSSION

There are many historical buildings located in RW 11, such as Langgar Kyai Amir, Djumanuddin Humam House, Baiturrahman Mosque, Darwis Family House, and others. There is one building owned by a historical figure that has not been rebuilt until now, this house was destroyed due to the old building factor, and also affected by the earthquake that hit in 2006. Therefore, to restore the history, and a definite picture of the Kahar Muzakkir House building in providing education and knowledge to the community and tourists who come, a collective memory of the lost building is needed and restore it to its original state. (Anshory & Siswosukarto, 2014)

1. Space Arrangement of Traditional Joglo House



Figure 1 Simple scheme of Joglo house

Source: Prihatmaji, 2009

1. Pendhapa/ Pendopo

Pendhapa or pendopo is the front part of the house that has a non-private nature due to its place in front, open, not walled, fenced or has a partition and where the soko guru pole is located. In general, this pendhapa house is lower with omah dalem. This room is used by residents as a meeting place, receiving guests, relatives and relatives. This room is also sometimes used to be a center for dance training and other activities. The open front room illustrates the philosophy of the Javanese people who have an open friendly nature and free anyone who wants to come. Instead of tables and chairs, the terrace floor is covered with mats so that the atmosphere can be more relaxed and more intimate so that there is no difference in status between residents of the residence and guests. Uniquely, although it is located at the front, the main route to enter the house is not from the pavilion but through the side door.

2. Pringgitan

Pringgitan is a room that connects the pendopo with omah njero or omah dalem. Pringgitan is a semi-private room that is usually used as a living room to receive guests or relatives who are more closely related. Generally, there is no partition between Pendhapa and pringgitan so that we can see the Pendhapa as a whole, but nowadays many pringgitan are also given a partition or sketch with Pendhapa, while the partition with omah ndalem uses gebyok. Javanese people used to use Pringgitan to hold shadow puppet shows and the audience watched from the pendhapa. That's why this room is called Pringgitan, which has the root word Ringgit meaning wayang.

3. Omah Ndalem

Omah Ndalem or Omah Njero is sometimes referred to as omah-mburi and dalem ageng. This room is the core building of a joglo house and is a special room for the residents of the house to chat and relax with each other. Omah Ndalem consists of a living room and several rooms called senthong. In the past, people only built three senthong, namely senthong Kiwo, middle senthong and senthong tengen. However, people nowadays make senthong according to the number of family members.

4. Gandhok

Gandhok is the building to the left and right of the dalem. The left gandhok (gandhok kiwa) is used as a male bedroom, while the right gandhok (gandhok tengen) is used as a female bedroom. Between the gandhok and dalem there is also an open courtyard that is useful for maintaining the comfort of the house.

5. Gadri

The structure behind the dalem known as Gadri is typically used as a dining room. From the left or right senthong's back doors, one can enter the gadri. The gadri resembles a porch in shape and is a semi-open structure.

6. Pekiwan and Pawon

The service area is situated near the back of the housing complex, between Pekiwan and Pawon. The pawon is a kitchen, while the pekiwan is a bathroom. In close proximity to the bathroom and kitchen is a well. (Tri Prasetyo Utomo, 2006)

The above is an explanation of the function of space in the joglo found in omah Kahar Muzakkir, there are still many others regarding the division of space obtained in the joglo house.

2. Omah Kahar Muzakkir Joglo Type



Figure 3 Kahar Muzakkir Joglo house condition in the present
Source: Prihatmaji, 2013



Figure 3 Kahar Muzakkir Joglo house condition in 2006
Source: Prihatmaji, 2013



Figure 4 Kahar Muzakkir Joglo house condition in the past
Source: Prihatmaji, 2013

Due to this earthquake, most of the building parts has collapse, only leave part Dalem of the house. After collapes, his son (Mr. Rifqi) still wants to keepthe building even though the house mostly get destroyed and there is a reconstruction plan for the rest of the house but hasnt start yet until right now. In the three pictures above, we can see the journeyand story of why Kahar Muzakkir's house has been neglected and unrenovated despite beinga building visited by historical figures.

After observing this building and getting answers to why historical buildings can be neglected, even though it can be said that this building is quite important in remembering the history of a Kahar Muzakkir figure. We conducted a data collection that was accompanied by observing the surroundings and also conducting interviews with the closest people such as relatives and family. Some provided very interesting data in describing the whole activities in the house and of course explaining how the creation of functions and spatial arrangement in Kahar Muzakkir's house. Below is some of the data that has been collected with the research methods that we have mentioned above.

3. The Difference between Kahar Muzakkir's Joglo and Joglo in General



Figure 6 South elevation of Omah Kahar Muzakkir
Source: Author, 2023



Figure 6 North elevation of Omah Kahar Muzakkir
Source: Author, 2023

Mr. Kahar's house is unique in that the Pringgitan is quite small because it merges between the Pendopo and Omah. gandhok, and the shape of the fence is half of what is common in Kotagede which indicates that he likes to invite people. Mr. Kahar receives guests not in the pendopo, but in the gandhok because there is a langgar and a library. The additional buildings located to the left and right of the house that are usually used as bedrooms, in Mr. Kahar's house in Gandhok Kiwa become a langgar, library, and mushala, and there are only bedrooms for women, and a place for recitation in Gandhok Tengen. The men's bedrooms

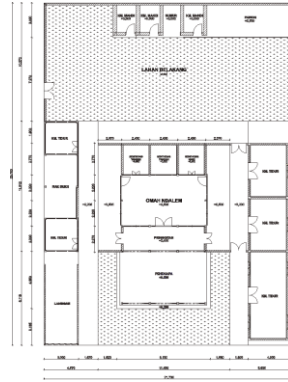


Figure 9 Final result of Omah Kahar Muzakkir plan
Source: Author, 2023

5. Omah Kahar Muzakkir Structure Construction

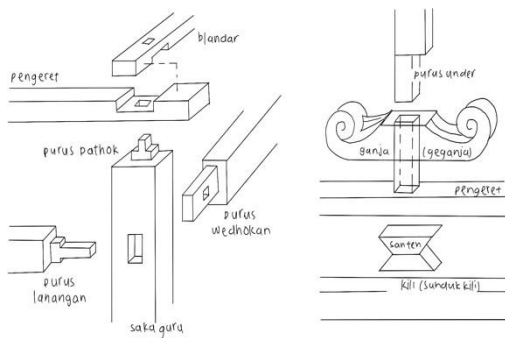


Figure 11 Cathokan and purus system
Source: Author, 2023



Figure 11 Cathokan system at Omah Kahar Muzakkir
Source: Author, 2023

1. Purus System

The purus system is an interlocking system with knockdown construction in the form of protrusions and holes that produce locks and interlock with each other. by setting up poles on the floor that can be done with: purus system with umpak (ompak / bebatu)

2. Ceblokan System

Without the utilization of purus, the column is put into the floor in this system. The wood is covered with tar or wrapped in coconut leaf rope to protect it from moisture or water damage at the foot of the floor-mounted column.

3. Cathokan System

The cathokan system is used for central beams such as the kili, blandar, etc. A locking mechanism may or may not be used by this system. The lock is known as the emprit gantilif a locking mechanism is employed. The lock is designed to stick out upward in order to stop the beam from moving. (Prihatmaji, 2009)

The picture shows that the joints in Kahar Muzakkir's building are not complicated. It uses traditional Javanese joints, such as the Cathokan system. (Prihatmaji, 2013) The Cathokan system consists of two concave surfaces that interlock when joined together. Similar to the construction system of prefabricated houses, the Purus system is a knockdown construction system with interlocking protrusions and holes. This system can use a locking mechanism or not depending on the use of the lock that will be made to protrude upwards to prevent the beam from moving. (Prihatmaji, 2009)



Figure 13 Outside view of gebyok
Source: Author, 2023



Figure 13 Inside view of gebyok
Source: Author, 2023

6. Omah Kahar Muzakkir Material Construction



Figure 15 Outside view of wall construction **Figure 15** Inside view of roof construction
Source: Author, 2023



The majority of the building's construction components, like those utilized in other traditional structures, are made of teak wood in Kahar Muzakkir's structure. A typical building material is teak wood (*Tectona grandis*). It is regarded as the greatest kind of wood to utilize for building. In the relatively arid lowlands of Java, these trees can be found. These straight-trunked trees can reach heights of 30 m and widths of 2 m. Almost every component of traditional Javanese construction is made of teak wood. Only specific areas of the house can utilize other types of wood in place of teak. However, the components used in rongrongan construction (saka guru, blandar pengerat, sunduk, and kili) cannot be substituted with other components.

In the study of tectonics as an expression of lightweight construction material, which means that in the law of statistics it has equal compressive and tensile strength. Semper tectonics is also found in many traditional archipelago architectures in the use of wood materials with ikat-pull construction, rooted in Austtanesian architecture. of course, the material that meets these characteristics is wood. where the principle of structure in tectonics is where materials can attract through ties, so that a structure can stand freely on the earth against the given gravity. (Santosa et al., 2020)

7. Omah Kahar Muzakkir Material Construction



Figure 16 Window ornament
Source: Author, 2023



Figure 16 Door ornament
Source: Author, 2023



Figure 18 Wall ornament
Source: Author, 2023

Seen in the picture above, the placement and use of ornaments on the omah Kahar Muzakkir building in wood material media. In the picture, the ornamentation is used to create a barrier for the window so as not to capture too much light and also to provide a private space in the room. Although the windows are opened, the room inside does not feel like it can be seen from the outside, but the gaps provide a sufficient supply of natural light for the room. (Jana & Dana, 2022)

There are two types of placement and use of ornaments attached to Kahar Muzakkir's somah. First, the ornament is integrated with the component and cannot be removed and has become an integral part of the main component. Then the second ornament becomes an additional component such as a barrier on the window where the component can be disassembled, but of course in this installation it is not an option to be able to remove additional components of the ornament. It is advised to retain the ornamentation in the same plain color of the material if the building's frame and wall (gebyok) are both uncolored. In contrast, if the gebyok is colored, the ornamentation should match the gebyok's hue. In addition to wood, decoration can also be fashioned of stained glass. In tebeng above the window, this sort of glass is typically utilized in a very straightforward pattern or shape.

CONCLUSION AND RECOMMENDATION

Based on direct observation of the Omah Kahar Muzakkir building, it can be seen that there were many impacts caused by the 2006 earthquake. It was concluded that each traditional house experienced spatial changes due to the 2006 earthquake. With the disaster of the earthquake that hit Kotagede and caused the number of traditional buildings of Kotagede's original heritage to decrease with many factors, from economic factors to the difficulty of getting aid funds from the government. Therefore, the number of Kotagede's original traditional buildings is endangered. Therefore, there is a regulation that prohibits Kotagede residents from selling buildings to outsiders to prevent the extinction of cultural buildings. (Arif, 2008)

In order to maintain Kotagede's original traditional buildings that have started to fade, there must be actions to maintain important values that can later become useful knowledge for mankind. The problem in maintaining the traditional building for the people of Kotagede is the fund to renovate and maintain the building which is a burden for them. Therefore, there must be an effort that can maintain important values without spending a large amount of money. This becomes impossible after there is a way to maintain the building by organizing collective memory, which later can be implemented with other results besides rebuilding or renovating buildings that have been abandoned and have no form. (Mainah,

2017)

The collective memory referred to here is about the awareness of the importance of history that must be preserved and reassembled so that it becomes one unit in completing the history that is almost lost. In this context, collective memory is aimed at the Omah Kahar Muzakkir building located in RW 11 Purbayan Kotagede. The building has been abandoned by a historical person and until now the building has been abandoned and neglected due to several factors. Currently Omah Kahar Muzakkir is still standing with all the remaining building components left after going through the earthquake disaster until now. Therefore the need for data collection on Omah Kahar Muzakkir in order to restore its original form even though it is intangible and requires renovation and rebuilding. (Akbar & Meidiana, 2017)

After collecting the data described above, it can be collected into one and combined. SValsinerhe general description of the shape and layout of the Omah Kahar Muzakkir building can already be described. In order to reduce the expenditure of large funds, researchers create a program in which it is designed to be used using VR (Virtual Reality) tools in which there is already a design of the Omah Kahar Muzakkir building generated from the data that has been collected. So that people can learn and know how the authenticity of the Omah Kahar Muzakkir building, from the shape, structure, spatial activities, and activities around the house of the late Kahar Muzakkir as a historical figure. (Valsiner & Rosa, 2007)

REFERENCES

- Akbar, H., & Meidiana, C. (2017). *Indonesian Green Technology Journal Memori Kolektif Kota Bima Dalam Bangunan Kuno Pada Masa Kesultanan Bima : Sebuah Studi sebagai Langkah Awal Pelestarian Sejarah.*
- Anshory, A., & Siswosukarto, S. (2014). *Analisis Stabilitas Struktur Pendopo Joglo Terhadap Beban Gempa.*
- Ardakani, M. K., & Oloonabadi, S. S. A. (2011). Collective memory as an efficient agent in sustainable urban conservation. *Procedia Engineering*, 21, 985–988.
<https://doi.org/10.1016/j.proeng.2011.11.2103>
- Arif, K. A. (2008). RAGAM CITRA KOTA BANDA ACEH. In *Interpretasi Sejarah, Memori Kolektif dan Arketipe Arsitekturnya.*
- Jana, M. I., & Dana, N. I. (2022). *ORNAMEN NUSANTARA.*
- Mainah, D. M. (2017). *FILOSOFI DAN PENGARUH KONSTRUKSI RUMAH JOGLO TERHADAP GEMPA BUMI DI DESA JAGALAN KECAMATAN BANGUNTAPAN KABUPATEN BANTUL.* 6.
- Prihatmaji, Y. P. (2007). *PERILAKU RUMAH TRADISIONAL JAWA "JOGLO" TERHADAP GEMPA (Yulianto P. Prihatmaji) PERILAKU RUMAH TRADISIONAL JAWA "JOGLO" TERHADAP GEMPA.*
<http://www.petra.ac.id/~puslit/journals/dir.php?DepartmentID=ARS>
- Prihatmaji, Y. P. (2009). Possibility of Javanese Traditional House Reconstruction Using Laminated Veneer Lumber (LVL). *"Contribution of Scientific Profession Society on the Development of WoodScience and Technology in Indonesia."*
- Prihatmaji, Y. P. (2013). *INVESTIGATION OF "JOGLO" STRUCTURE DAMAGED BY EARTHQUAKE AND DEVELOPMENT OF TECHNICAL CONSERVATION METHOD FOR DAMAGED STRUCTURAL MEMBERS.*

- Prihatmaji, Y. P., Kitamori, A., & Komatsu, K. (2013). *An Investigation of Traditional Javanese Wooden Houses "Joglo" Damaged during the May 2006 Yogyakarta Earthquake, Indonesia*. <https://repository.kulib.kyoto-u.ac.jp>
- Santosa, A., Rachmawati, M., & Noerwasito, V. T. (2020). Hibriditas Tektonika Arsitektur Joglo. *Seminar Ikatan Peneliti Lingkungan Binaan Indonesia (IPLBI), 4*, 88–095. <https://doi.org/10.32315/sem.4.088>
- Supriyadi, B., Sudarwanto, B., & Werdiningsih, H. (2012). In Search of the Power of Javanese Culture against the Cultural Urbanization in Kotagede, Yogyakarta-Indonesia. *Procedia - Social and Behavioral Sciences, 68*, 676–686. <https://doi.org/10.1016/j.sbspro.2012.12.258>
- Tri Prasetyo Utomo. (2006). TRANSFORMASI NILAI ESTETIKA RUMAH "JOGLO" DI KAWASAN KOTAGEDE-YOGYAKARTA. *Seni Rupa STS Surakarta, 3*.
- Valsiner, Jaan., & Rosa, Alberto. (2007). *The Cambridge handbook of sociocultural psychology*. Cambridge University Press
- Hoteit, A. (2015). *WAR AGAINST ARCHITECTURE, IDENTITY AND COLLECTIVE MEMORY*. <http://www.journalijdr.com>