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To: arwityas@yahoo.com; dedi.hantono@umj.ac.id; lutfi.prayogi@umj.ac.id; valeria.schneider@comunidad.unne.edu.ar

Date: Thursday, September 30, 2021, 10:09 PM GMT+7

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Yeptadian Sari, Ari Widyati Purwantiasning, Dedi Hantono, Lutfi Prayogi, Valeria Schneider:

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A Study of Adaptive Reuse: Shophouses in Clarke Quay-Boat Quay, Singapore from Visitor's Perspective

Yeptadian Sari^{1,a)}, Ari W. Purwantiasning^{2,b)}, Dedi Hantono³, Lutfi Prayogi⁴,
Valeria Schneider⁵

Author Affiliations

¹*Architecture Department, Faculty of Engineering, Universitas Muhammadiyah Jakarta, Indonesia*

^{2,3,4}*Architecture Department, Faculty of Engineering, Universitas Muhammadiyah Jakarta, Indonesia*

⁵*Faculty of Architecture and Urbanism, Universidad Nacional Del Nordeste, Argentina*

Author Emails

^{a)}*yeptadian.sari@umj.ac.id*

^{b)}*arwityas@yahoo.com*

Abstract. Singapore riverbank or commonly known as Clarke Quay-Boat Quay is the conserved area. The buildings around the riverbanks in Singapore were reused into buildings that can be enjoyed by many people. One form of adaptive reuse is shophouse. This study tried to find out how the adaptive reuse of the shophouse at Clarke Quay-Boat Quay was based on the perception of visitors. The method that used in this research was descriptive statistical method. The results of this study indicate that almost all visitors who have visited the shophouse in the Clarke Quay-Boat Quay area felt that shophouse was an appropriate form of adaptive reuse. The building remains comfortable, safe, and the economy of the area continues to run smoothly. This means that the forms of adaptive reuse that used by the Singapore government on the river banks of the Clarke Quay-Boat Quay can be said to be successful.

INTRODUCTION

Revitalization of the area is one of the conservation program efforts, which is also one of the government programs in an effort to improve the quality of the area which was originally an abandoned area into a commercial area and a tourist destination for tourists. One of the efforts in the revitalization process of the area is to make the old buildings into new functions, or we can say that is adaptive reuse of old building. This concept is known as the old building conversion concept which is an attempt to convert an old building that is no longer fit to function according to its original function [1].

Revitalization theory is associated with urban planning; revitalization can be categorized as a very complex activity. In its implementation, revitalization is not only related to buildings, but also related to the area and the surrounding environment, and also related to urban planning. Revitalization in its implementation is carried out through several stages and requires a certain period of time which is certainly not short, because it requires various understandings and thoughts in various aspects. Revitalization is an architectural heritage, in a way that conservation can bring about broader changes, in addition to renovating the heritage building; it can also increase the overall usefulness of the area [2]. The reuse of old buildings affects the return of population and commercial content in deserted urban areas and thus leads to their revival, while respecting inherited roots and traditions [3]. Revitalizing

existing facilities through a conservation process will protect their historical and architectural integrity [4]. One of the main criteria for evaluating conservation and adaptive reuse is architectural and structural [5].

The scope of preservation of cultural heritage includes:

1. **Protection**, is an effort to prevent and overcome damage, destruction, or destruction by means of rescue, security, zoning, maintenance and restoration of cultural heritage.
2. **Development**, is an increase in the potential value, information, and promotion of cultural heritage and its utilization through research, revitalization, and adaptation in a sustainable manner and does not conflict with conservation goals.
3. **Utilization**, is the utilization of cultural heritage for the best interests of the people while maintaining its sustainability.

Adaptive Reuse

Buildings are built for a specific function or use. However, the building often outlasts its original purpose. Adaptive reuse for historic buildings, structures, or sites is the most ideal approach to storing them that links the past with the present and future projects. Adaptive reuse is the conversion of buildings, sites, or districts from one use to another. When relic sites have been reused, new uses must support ongoing interpretation and understanding of temporary inheritance values and adjust new functions. Instead of trying to freeze historic buildings or sites, adaptive reuse can give new life to it. Adaptive reuse seeks alternatives between extreme demolition or turning the site into a museum. Adding a new layer without deleting the previous layer, the adaptive reuse project becomes part of a site's long history which is another stage, not the last result [6].

Adaptive reuse means changing a building and/or its use to meet the needs of new owners or even existing owners [7]. One of the recognized additional values in adaptive reuse of heritage buildings is a way to reward the efforts of previous builders [8]. There are two main types of adaptive reuse of buildings; 'within-use' and 'across-use'. When a building has been adapted based on its primary use, then it means it is within-use adaptation, while the initial use of building has been changed to another use, it is across-use [9]. There are many challenges related to conservation, adaptive reuse of architectural heritage can have a detrimental effect on the social, cultural and historical values of historic buildings, especially where changes in the original function of a building are concerned [10]. This is the reason why we should pay attention to adaptive reuse that has been used in a building is appropriate and feasible. Because there is a possibility that conservation activities in the building are not appropriate so that it will develop into negative things in the environment.

Buildings are usually built with specific uses in mind. Overtime, however, they often outlive their original purpose. Adaptive reuse is the act of modifying a building to accommodate uses that are different from those originally intended. These modifications are often accompanied by significant physical changes to the building [1].

Clarke Quay-Boat Quay Singapore

The Clarke Quay and Boat Quay areas are two of many areas in Singapore which are pilot projects for the implementation of the conservation concept from the Singapore Government. The origin of the word Clarke Quay itself is taken from the name of the second Governor of Singapore, namely Sir Andrew Clarke and the Governor of the Straits Settlements who ruled from 1873-1875. They had a very important role in making Singapore a prime position as a port for the states of Perak, Selangor and Sungai Ujong. In addition, Clarke Quay and Boat Quay are also the names of a road along the pier, where the area has been turned into an area for pedestrians or pedestrians. The street name Clarke Street, which is next to Clarke Quay, was inaugurated in 1896 [11].

Prior to the conservation program in this area, the two streets were known as Street East and West Street in the north of Kampong Malaka. Similar to Clarke Quay, Clarke Street is also used as an area for pedestrians, in the form of restaurants and nightlife spots. The Clarke Quay area is located near the mouth of the Singapore river, which is bounded by Tye Tan Place and Canning Road. Located opposite the mouth of the Singapore River, Clarke Quay is

said to be the oldest pier in Singapore because the Singapore River or the Singapore River has been a trading center since modern Singapore was founded in 1819. Apart from Clarke Quay, the conservation area also includes Boat Quay which is one area with Clarke Quay. During the colonial era, Boat Quay was the center of the commercial district where lighter barges would transport goods upstream to the warehouses at Clarke Quay. At the height of its prosperity, dozens of cruise ships jostled to dock next to Clarke Quay. This phenomenon continued into the second half of the twentieth century. This makes the Singapore River very polluted. With the emergence of this phenomenon, the Government decided to relocate the loading and unloading place to the Pasir Panjang area. The government then cleaned up the Singapore River and its environment in 1977-1987 [11].

Plans were made to revamp the area and turn it into a thriving commercial, residential and nightlife area. This plan is a serious consideration given the historical value of Clarke Quay. The existing buildings along the Clarke Quay area, which were originally intended to be demolished by the developers, were deliberately defended by the government, which is pro-conservation. Old buildings are maintained by renovating them to produce buildings with new functions, this is known as the conversion concept. Meanwhile, several new buildings were built to maintain the character of the old buildings. The new building was deliberately built to follow the style and character of the old building, so that the basic characteristics of the old buildings along Clarke Quay are not polluted at all. The concept of converting old buildings is also applied in the conservation of the Clarke Quay and Boat Quay areas. Old buildings are converted into buildings that serve tourism activities in the area, namely by converting the old buildings into commercial functions, namely cafes, bars, entertainment centers and shops [11].

Then over time, the development of the Clarke Quay conservation area became more and more sharp, with increasing tourist arrivals in the area, making the area more lively, especially at night. This of course can be an indicator of the success of the Singapore government in implementing the concept of conservation in old areas that have actually been neglected before. The increasing economic growth in the area provided an idea for the Singapore government to make the Clarke Quay area a conservation pilot project. For this reason, the Singapore government launched the largest conservation project in the Singapore River area, namely the establishment of the Clarke Quay Festival Village, which was developed and officially opened on 10 December 1993. In the following years, Clarke Quay was managed and developed by Kapitaland. Ten years later, works began to revamp Clarke Quay in the area in order to provide a better place. The development also saw major changes to the exterior and riverfront area. Clarke Quay was developed into a commercial district and business district. The entire construction was completed in October 2006 [11].

This conservation project in the Singapore River is one of the application of the concept of conservation in riverbank areas, namely on the banks of the Singapore River. This area has become very famous so that it is one of the areas that play a role in improving the economy of the Singapore state [12].

The Shophouse in Singapore

a historical source of delight and nostalgia—are a prevalent building type in Singapore’s architectural and built heritage. These buildings are generally two- to three- storeys high, built in contiguous blocks with common party walls. They are narrow, small terraced houses, with a sheltered ‘five foot’ pedestrian way at the front. Constructed between the 1840s and the 1960s, these shophouses formed the majority of the pre-World War 2 urban fabric of the old city centre as well as several other parts of Singapore. They are also commonly found throughout the historic cities of South East Asia. Shophouses therefore form the bulk of gazette conservation buildings. The key elements of the shophouses have been carefully restored and conserved according to our conservation guidelines.

As shown at Urban Redevelopment Authority of Singapore Government at 2021 there are key elements that need to be respected in the restoration of a typical shophouse [13], it is shown in Figure 1. Key Elements of Typical Shophouse.

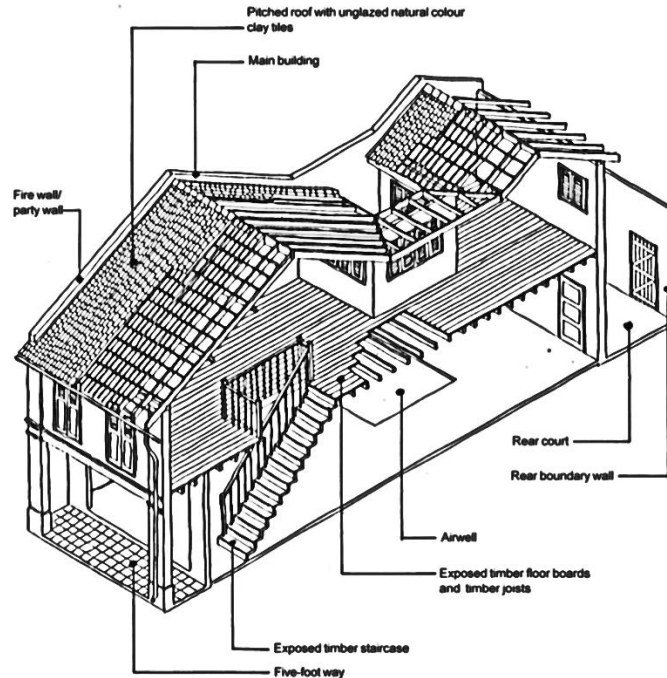


Figure 1. Key Elements of Typical Shophouse [13]

Party walls in Figure 1 says that key elements that need to be respected is principle load bearing walls that separate a shophouse from its neighboring shophouse. Timber structural members refer to the main and secondary timber beams, which span from one party wall to the other and support each floor. It also includes the timber floor boards, and timber rafters that support the roof. Airwells are courtyards that are exposed to the sky, they provide natural ventilation and lighting to the interior of the shophouse, they facilitate a comfortable indoor environment in our tropical climate. Rear court is An open courtyard located at the back of the shophouse. It is bounded by the rear boundary wall, service block, rear elevation of the main shophouse and the party wall. This area was traditionally used for functional needs such as the kitchen and the toilet.

Timber windows or timber framed windows that are designed in the French or Casement style. Some have solid infill panels while others will have operable timber shutters/jalousies to allow for air and light. Timber staircase refers to the staircase inside the shophouse, which are often of timber structural construction in some houses, the timber balustrades can be of ornate design. Front façade is the front ‘face’ of the house that faces the street. Facades from different architectural eras will have different aesthetic approaches. These projects over the five-footway to form a covered pedestrian arcade or we can call it the upper floor. The columns located at the front of the building. They support the upper floors and form five-foot way colonnades. The five-footway provides pedestrians with a sheltered environment for passage away from the hot sun and torrential rain. This feature was mandated by Raffles since the first Town Plan for Singapore. The roof is usually of a ‘pitched’ construction on a timber structural frame and lay with natural color, unglazed V-profile terracotta roof tiles. Shophouses from the 1900s onwards tend to use natural color, unglazed flat-interlocking tiles (also commonly called ‘Marseilles’ tiles) [13].

Revitalization is an important part of the city, especially when the area has historical attachment [14]. Cities are centers of growth characterized by the rapid development of several aspects [15] including history of an area and how it developed. History can be defined as a way of thinking about important events that have been seen in different times or eras [16]. Based on these things, the adaptive reuse of old buildings is carried out in accordance with the revitalization rules so that the city can develop properly. This also applies to Singapore and its area, Clarke Quay - Boat Quay with their shophouses.

Research Method

The method used in this study is a quantitative method, with explanations through descriptive statistics, which were obtained through questionnaires and submitted to fifty four respondents with the sample selection method, namely purposive sampling and followed by snowball sampling. They gave point to each criterion with Likert style question. These answers will be processed and analyzed using a Cartesian diagram and see the tendency of approval of Clarke Quay-Boat Quay visitors.

Result and Discussion

Fifty four respondents who had been to the Clarke Quay-Boat Quay area were given a questionnaire with closed and open questions, and produced descriptive statistical answers.

- **P1** = numbers of visitors
- **P2** = interest level of visitors to visit the shophouses
- **P3** = the quality of space in the shophouses
- **P4** = shophouse buildings maintainability
- **P5** = low crime rate
- **P6** = the feeling of comfortable in the shophouses
- **P7** = the fame of shophouses
- **P8** = the role of good infrastructure around the shophouses

The criteria that were asked in the questionnaire to the respondents were about the topics from P1 to P8. These discussions are in accordance with the stages in revitalization, including physical intervention; economic rehabilitation; and social/institutional revitalization consisting of the death of economic activity, declining spatial and physical quality of buildings, poor regional image and inadequate/deteriorating regional infrastructure.

The tendency of the answers to the questionnaire was analyzed by looking at the average answers and standard deviations and resulted in the dominant answers being in P2, P3 and P4. The analysis scatter shown in Figure 2. Scatter of P1 to P8.

- **P2** = interest level of visitors to visit the shophouses
- **P3** = the quality of space in the shophouses
- **P4** = shophouse buildings maintainability

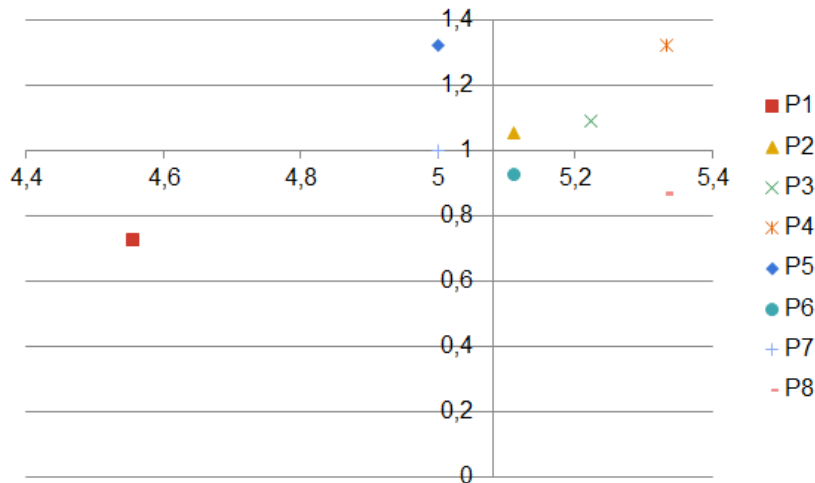


Figure 2. Scatter of P1 to P8

Those three criteria were criteria agreed upon by the respondents, there are three of the eight criteria agreed to be positive by the respondents. These three criteria really represent the stages of revitalization, namely physical intervention; economic rehabilitation; and social/institutional revitalization.

CONCLUSION

Three criteria that chosen by respondents were the interest level of visitors to visit the shophouses were very high; the quality of space in the shophouses was very good; shophouse had good building maintainability. Those three criteria represented enough of revitalization stage namely physical intervention; economic rehabilitation; and social/institutional revitalization, which is mean that Clarke Quay-Boat Quay area have successful adaptive reuse form of old buildings into shophouses. They increase the economic activity, improve the spatial and physical quality of buildings, improve the image of Clarke Quay-Boat Quay, restore the infrastructure of the Clarke Quay-Boat Quay area.

ACKNOWLEDGMENTS

Thank you to the Program Kompetisi Kampus Merdeka (PKKM) or Independent Campus Competition Program grant that held by the Department of Architecture, Universitas Muhammadiyah Jakarta for funding this research. We are also very grateful to the Indonesian Ministry of Education and Culture for providing government funding of PPKM program to the Department of Architecture at UMJ. We hope that this research can be used by many parties to improve the riverbank area.

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