International Conference of Innovation and Community Engagement - ICoICE
31 October – 1 November 2024
University of August 17, 1945 Surabaya

Application of Resilience Architecture in Buildings of Kumala Island Tourist Attraction

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Abstract

The relocation of Indonesia's capital city from Jakarta to East Kalimantan resulted in increased urbanization in East Kalimantan. The aim of relocating the capital city is to reduce the burden on Jakarta which is experiencing various problems, such as traffic jams, land subsidence, pollution, and an excessively high population burden. As a result, there has been an increase in the number of people migrating and returning to East Kalimantan. On the other hand, there is the potential of East Kalimantan which has natural resources that have not been developed optimally, including the tourism sector. One thing that is unique is Kumala Island as a tourist attraction which is located in the middle of the Mahakam River. Currently, the island still receives little attention in its development and improvement.

This research will be conducted using observational research methods and directly analyzing the level of damage to buildings and their surrounding environment. It can be concluded that several buildings need to be rehabilitated using a resilience architecture approach to achieve building designs that are more resistant to challenges from environmental change and natural disasters.

This approach not only focuses on the physical resilience of buildings and infrastructure, but also on environmental sustainability, adaptation to climate change, and the welfare of local communities. The final result of the research is a resilient tourist attraction design that is able to offer a safer and more comfortable experience for visitors, as well as support the sustainability of local ecosystems and cultures.

Keywords: resilience, rehabilitation, architecture, Kumala Island

Introduction

The relocation of the state capital from Jakarta to East Kalimantan resulted in the displacement of urbanization. This relocation aims to reduce the burden on Jakarta which is experiencing various problems, such as traffic congestion, land subsidence, pollution, and a population load that is too high. As a consequence, there is an increase in the number of people who migrate and commute to East Kalimantan. On the other hand, there is the potential of East Kalimantan which has natural resources that have not been developed optimally, including the tourism sector. One of the unique ones is Kumala Island as a tourist attraction, which is located in the middle of the Mahakam River. Currently, the island is still underpaid in its development and improvement.

Photo: Kumala Island
Source : Google earth (2024)

This research will be carried out using observational research methods and directly analyzing the level of damage to buildings and the surrounding environment, through a thorough evaluation it was found that it is necessary to carry out rehabilitation with the development of the concept of resilience architecture in Kumala Island tourist destinations. It can be concluded that some buildings need to be rehabilitated with a resiliency architectural approach to achieve a building design that is more resistant to the challenges of environmental changes and natural disasters. [1]

This approach focuses not only on the physical resilience of buildings and infrastructure, but also on environmental sustainability, adaptation to climate change, and the well-being of local communities. The end result of the research is the design of tourist attractions that are resilient and able to offer a safer and more comfortable experience for visitors, as well as support the sustainability of the local ecosystem and culture. [2]

Methodology

This research method is carried out using a qualitative method (observation) and directly analyzing the level of damage to the building and the surrounding environment [3]. This study provides an accurate description and explanation of the situation or symptoms faced. According to Sugiyono [4], the qualitative research method is a research method used to research on natural object conditions, where the researcher is the key instrument, the data

collection technique is carried out in a triangulation (combined) manner, data analysis is inductive, and the results of qualitative research emphasize meaning rather than generalization [5].

Results and Discussion

Through the research on the Application of Resilience Architecture in Kumala Island Tourist Object Buildings, the results of the research and discussion are described as follows:

1. The Effect of Damage to Facilities and Facilities on Kumala Island.

Kumala Island was previously an empty land in the middle of the Mahakam River with an area of 76 hectares. Kumala Island was built directly by PT. Taman Impian Jaya Ancol became a tourist area in 2000, this island was built by dredging the Mahakam River to increase its surface height in 2002, after which various rides were built and inaugurated as tourist attractions. Until finally Kumala Island is known as a tourist destination as it is now which looks like a ship in the middle of the river.

The effect of damage to tourist facilities on Kumala Island occurs because it does not receive attention and maintenance of the equipment in its game and cultural tourism facilities so that many facilities are damaged, the efforts that have been made by the local government on Kumala Island are still considered lacking because the APBD funds are not only focused on Kumala Island. With the state of damaged tourist facilities, visitors feel bored because there are no objects or facilities that can be enjoyed visually or non-visually to have an impact on the number of visitors and income from Kumala Island which causes a decrease in tourist interest and income in the tourist attraction itself. [6]

2. The decrease in the number of visitors to the Kumala Island destination.

In the year of 2016-2020 Kumala Island experienced changes in the number of visits from year to year, in 2016 [7].the number of visitors who came was 377,597 visitors, then in 2017 the number of visitors increased by 3% to 389,243 visitors, this increase was due to the fact that in 2016 the Repo-Repo Bridge which directly connects the parking lot of Kumala Island to Kumala Island was officially opened, With the opening of the Repo-Repo Bridge, it certainly has a positive impact on the Kumala Island tourist attraction. But with the existence of these Repo-Repo Bridges, it does not guarantee that the number of visitors will increase continuously if the existing facilities still do not receive maintenance and repairs. In 2018 the number of visitors decreased by 35% to 287,595 visitors, in 2019 the number of visitors decreased again by 39% to 174,036 visitors, and in 2020 [8]. the number of visitors decreased by 78% to 37,861, the number of visitors who came in 2018-2020 tended to decrease every year [9]. This decline occurred due to a decrease in tourist interest in the facilities on Kumala Island, the decline in tourist interest because many of the facilities on Kumala Island are still damaged so that many tourists feel bored because they cannot enjoy the tourist facilities and cultural tourism on Kumala Island [10].

3. Factors that can Affect Interest in Visiting Kumala Island

Kotler and Makens in Fandeli [11]define that a tourism product is something that can be offered to the market in order to attract people's attention, want to have, utilize and consume to fulfill their desires and get satisfaction [12]. Products in this aspect of Tourism include physical objects, services, places, organizations and ideas to develop tourism products in general.

4. Application of Serial Architecture on Kumala Island.

[13]Resilience architecture is an approach in designing buildings and infrastructure that are able to withstand and adapt to various disturbances, both natural and man-made. According to Michael Berk, a professor of architecture at Mississippi State University, resilience in architecture is viewed as the ability of a building to "adapt" to changing conditions. But according to Klaus Jacob, a scientist who focuses on resilience to natural disasters, he states that resilience architecture should prioritize risk-based planning. This means that any building or infrastructure must be designed based on a deep understanding of local threats, such as floods, earthquakes, or sea level rise.

Quoted from the Sustainable Development Goal Point 11 (Sustainable Cities and Settlements) Urban Infrastructure and Service, it includes the following points:

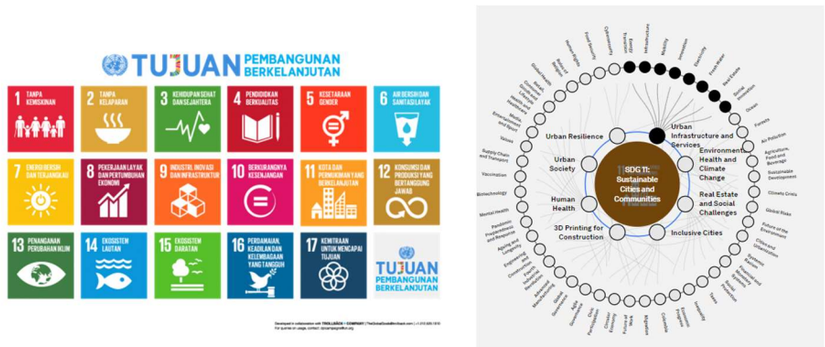

Image: Sustainable Development Goals point 11
Source : World Economic Forum (2024)

1. Real Estate
2. Fresh Water
3. Mobility
4. Electricity
5. Innovation
6. Social Innovation
7. Energy Transition
8. Infrastructure

The Sustainable Development Goals (SDGs) focus on creating inclusive, safe, resilient, and sustainable cities and settlements. emphasizing the importance of sustainable urban management and infrastructure to create a better living environment, support social welfare, and strengthen resilience to various challenges, such as population growth, climate change, and disasters. [14]

[15]In implementing resilience architecture, the Kumala Island Tourist Attraction Building is to create sustainability and resilience in the operation and management of the tourist attraction.

Conclusion

Based on research that has been conducted by the researcher with the title Application of Resilience Architecture in Buildings of Kumala Island Tourist Attractions. Therefore, it can be concluded that this approach not only focuses on the physical resilience of buildings and infrastructure, but also on environmental sustainability, adaptation to climate change, and the well-being of local communities. The end result of the research is the design of tourist attractions that are resilient and able to offer a safer and more comfortable experience for visitors, as well as support the sustainability of the local ecosystem and culture.

The end result of this study is the idea of designing tourist attractions that are resilient and able to offer a safer and more comfortable experience for visitors, as well as support the sustainability of the local ecosystem and culture.

Acknowledgments

We also thank all supervisors, staff, and other parties at the University of August 17, 1945 Surabaya who have provided extraordinary assistance and support during this research process. We would like to express our appreciation to all other supporters, including related journals, and respondents who have provided motivation, encouragement, and moral assistance that is very meaningful.

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