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Design of the Lapindo Sidoarjo Mud Museum with a Metaphorical Architectural Approach

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Abstract. *The Lapindo Mud Disaster that occurred in Sidoarjo in 2006 has become one of the most phenomenal events in Indonesia, causing the sinking of 16 villages and drastic changes to the landscape and lives of the surrounding community. The aim of designing the Lapindo Mud Museum is as a solution to fulfill its function not only as a place to store artifacts and information, but also as a space for interaction and reflection for the community. The research method used is descriptive qualitative. Design using a metaphor approach, namely the preparation of planning and design concepts with several analyses, namely, urban analysis, site analysis, land use analysis, circulation analysis, wind direction analysis, sun direction analysis, noise analysis, several concept preparations. The research results show that the building design is used as a symbol of the Lapindo Mudflow and commemorates the victims and communities affected by the Lapindo Mudflow. With a metaphorical architectural approach, the museum is expected to overcome the boredom that often occurs during conventional museum visits and facilitate deeper interactions with visitors.*

Keywords: *museum, mud lapindo sidoarjo, Metaphor Architecture*

I. INTRODUCTION

According to the Big Indonesian Dictionary (KBBI), a museum is an institution whose aim is to collect, maintain and exhibit various objects of historical, cultural, artistic or scientific value for educational and research purposes. Museums are usually open to the public and function as a place to study various aspects of human life and nature through the collections presented.

The Lapindo Mud Disaster that occurred in Sidoarjo in 2006 has become one of the most phenomenal events in Indonesia, causing the sinking of 16 villages and drastic changes to the landscape and lives of the surrounding community. This disaster not only had significant environmental and social impacts, but also generated public interest at both national and international levels. Lapindo Mud Incident with hot mud erupting at the PT Lapindo Brantas drilling site in Balongnongso Hamlet, Renokenogo Village and Jatirejo Village, Porong District, Sidoarjo Regency, East Java, Indonesia, on May 29 2006. In collaboration with the Ministry of Research and Technology, we are trying to provide design study, as a simulation of developing activities around the affected location. The application of metaphorical architecture to the Lapindo Mud Building in Sidoarjo can act as a conveyor of messages or information, thereby allowing messages to be conveyed vaguely (implied) in the form of the building, becoming quantitative and measurable characteristics. The museum building not only functions as a memorial building for the Lapindo Mud disaster, but also as a symbol of memory

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of the event so that visitors can see a re-image of the Lapindo Mud disaster.

Previous research on museum design was the Transport Museum, a transportation museum located on Jalan Jalan Sultan Agung Atas No. 2, Ngaglik Village, Batu District, Batu City, East Java. The Transport Museum has an area of around 3.8 hectares and is located on the slopes of Mount Panderman. The Angkut Museum has a collection of more than 300 types of traditional to modern transportation. Museum Angkut was founded on March 9 2014 and is managed by the Jawa Timur Park Group.

The reason for choosing the Transport Museum as the object of comparative study is because it has a similar object, namely the museum building

The Sepuluh November Museum is located at Jl. Pahlawan, Alun – Alun Contong, Bubutan District, Surabaya City, East Java. The Sepuluh November Museum is located in the center of Surabaya, close to the East Java Governor's Office. The Ten November Museum is located in the Tugu Pahlawan area which has an area of around 1.3 hectares, located in the underground part of the Tugu Pahlawan area at a depth of 7 meters. The Ten November Museum was built on 10 November 1991 and inaugurated on 19 February 2000. In the Ten November Museum, historical objects related to the 10 November Battle of 1945 which occurred in Surabaya are stored. This design has a common object, namely the museum building.

The Aceh Tsunami Museum is a museum in Banda Aceh which was built as a symbolic monument to the 2004 Indian Ocean earthquake and tsunami disaster which claimed up to 230,000 lives, as well as a disaster education center, as well as an emergency shelter in case a tsunami occurs again in the future. The Tsunami Museum is located on Jl. Sultan Iskandar Muda No.3, Sukaramai, Kec. Baiturrahman, Banda Aceh City, Aceh. The Tsunami Museum consists of 4 floors, with an area of 2,500 m2. The reason for choosing the Aceh Tsunami Museum as the object of comparative literature study is because it has similar objects and themes, with the object being the museum building and the architectural theme Tangible Metaphor (Concrete Metaphor).

Based on the Lapindo mud problem, researchers are interested as a form of conservation and education effort regarding this disaster, a facility is needed that is able to present in-depth and interesting information for visitors. The Lapindo Mud Museum is proposed as a solution to meet this need, with a function not only as a place to store artifacts and information, but also as a space for interaction and reflection for the community.

A metaphorical architectural approach was chosen in the design of this museum to provide a deeper and more meaningful experience for visitors. By using visual and conceptual

elements that depict the events and impacts of the disaster, it is hoped that visitors can feel and understand the story behind the Lapindo Mud tragedy more emotionally and intellectually. This approach also aims to overcome the common perception that museums are boring places, by creating dynamic and interactive spaces.

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II. RESEARCH METHODS

This type of research is descriptive qualitative which tends to be analytical. Data collection techniques consist of data collection obtained through literature studies, field surveys, resource interviews, precedent studies and documentation. Design using a metaphor approach, namely the preparation of planning and design concepts with several analyses, namely, urban analysis, site analysis, land use analysis, circulation analysis, wind direction analysis, sun direction analysis, noise analysis, several concept preparations are carried out such as site concepts, building concepts with metaphorical architectural concepts, and utility concepts.

III. LITERATURE REVIEW

A museum in the Big Indonesian Dictionary (KBBI) is a building/building that is used as a place to exhibit historical relics, cultural heritage, art and science or a place to store ancient items.

An architectural metaphor is a figure of speech or expression of form that is realized in a building with the hope that it will evoke a response from people who enjoy or use the work (Abarchitects, 2013). Anthony C classifies metaphors into three categories: intangible (not real), tangible (real), and combined (a combination of both). The following is an explanation of these three categories: a. Intangible (abstract metaphor): Refers to concepts, ideas, human conditions, as well as certain qualities such as individuality, naturalness, tradition, community and culture. These ideas come from the metaphorization of abstract concepts. b. Tangible (concrete metaphor): Is the basis or basis a metaphor resulting directly from a particular visual or material character. Combine (combination metaphor): This is a metaphor based on concepts and visuals. Visuals are used as a tool to detect goodness, quality, and fundamental aspects of a particular visual container (Rumahlia, 2018)

IV. RESULTS AND DISCUSSION

This research was conducted at the Lapindo mudflats in Sidoarjo.

Figure 1. Site Analysis

Based on Figure 1, the site location is on Jalan Raya Candi, Candi District, Sidoarjo Regency, East Java. The area is 25,000m²

SITE LIMITATIONS

Figure 2. Site Boundaries

Based on figure 2, the site boundaries are:

North: Residential housing

South: Jalan M. Ridwan, shops, residential areas

East: Jalan Raya Candi

West: Railway tracks, empty land

LAND USE

1. The site location is included in the land designation as a medium density residential area, however construction of the museum building is permitted under certain conditions (RDTR for the Temple Region 2019), namely:

KDB of 70%

KLB is 1.4

KDH of 10%

GSB is measured from the road fence to the building wall:

Secondary collector road 5 meters

Environmental road 4 meters

CIRCULATION ANALYSIS

The main entrance and exit to the site are on the East side. The South side can also be used as an alternative exit to the site for 4-wheeled vehicles and 2-wheeled vehicles. The West side of the site has a small road that can only be passed by 1 car, and on the North side of the site it borders directly on the South housing complex of the site and is spread across several points in the area. East side and South side of the site. There are several transformer substations scattered on the East and South sides of the site, so that the West and North sides cannot be used as entrances or exits to the site.

UTILITY

Water and drainage channels only exist on the South and East sides of the site. Street lighting is on the East and Side

SITE VIEW ANALYSIS

View to Site

+ : East Side

- : West Side & North Side

View from Site

+ : East Side & West Side

- : North Side

NOISE ANALYSIS

The loudest noise comes from the east side of the site which borders Jalan Raya Candi. The noise is quite loud coming from the West side of the site which is the railway track, and from the South side where there is Jalan M. Ridwan which is quite busy

Figure 3. Noise Analysis

Based on picture 3, the loudest noise comes from the east side of the site which borders Jalan Raya Candi. The noise is quite loud coming from the West side of the site which is the railway track, and from the South side where there is Jalan M. Ridwan which is quite busy.

WIND DIRECTION ANALYSIS

Figure 4. Wind Direction Analysis

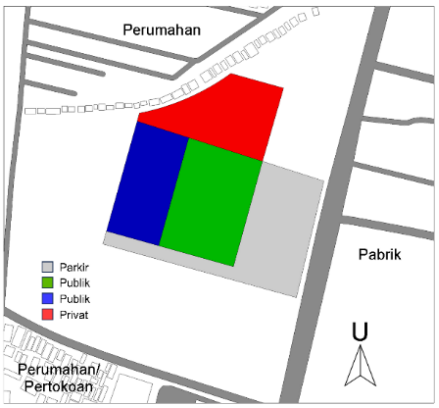
Based on figure 4, the wind blows from the north to the south.

SUN DIRECTION ANALYSIS

Figure 5. Analysis of Sun Direction

Based on Figure 5, the sun rises from the east (front of the site) towards the west (back of the site) so that the front of the site will feel hot in the morning while the back of the site will feel hot in the afternoon.

ZONIFICATION



Gambar 6. Zonifikasi

Based on Figure 6, the planned site zoning consists of a Public Zone, Semi-Public Zone and Private Zone consisting of:

Public Zone: Main Facility Building

Semi-Public Zone: Supporting Facility Buildings

Private Zone: Service Facilities, Management Facilities Building

SPACE RELATIONSHIP DIAGRAM

The space relationship diagram is as follows Planning and Design of the Lapindo Mud Museum in Sidoarjo using the Metaphor Architecture Theme. There are 2 macro concepts taken at the Lapindo Mud Museum, namely Tangible Metaphors (Concrete) and Intangible

Metaphors (Abstract). Tangible (Concrete) Metaphors will be applied to the Micro Concept of Land Order, while Intangible Metaphors will be applied to the Micro Form Concept.

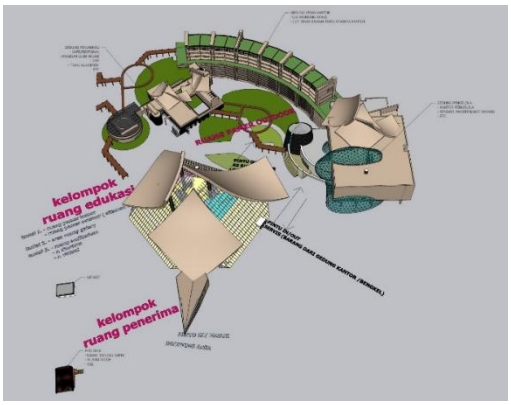
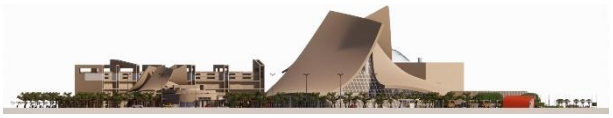


Figure 7. Grouping

NORTH VIEW



WEST VIEW

SOUTHERN VIEW

Figure 8. North, West and South views

Figure 9. Design Design

Based on Figure 9. The mass arrangement uses a radial pattern taken from the analogy of Tangible Metaphors (Concrete Metaphors) for mudflows, with the main facility building being the center (like the center point of a mudflow) and other facility buildings surrounding the main facility (like a spreading mudflow).

Using a branching linear organizational pattern with space divisions arranged according to zoning and function. The reason for choosing the Branching Linear Organizational Pattern is to direct the flow of circulation in the room so that it is clear and not confusing. The application of Metaphor Architecture to the Lapindo Mud Building in Sidoarjo can act as a conveyor of messages or information, allowing the message to be conveyed vaguely in the shape of the building.

V. CONCLUSION

The research results show that the building design can be used as a symbol of the Lapindo Mud and commemorate the victims and the community

who were affected by the Lapindo Mudflow. With a metaphorical architectural approach, the museum is expected to overcome the boredom that often occurs during conventional museum visits and facilitate deeper interactions with visitors.

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