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# Designing a Building for Shadow Puppet Shows in Semarang City

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**Abstract:** The study aim is how to create a different building design that is able to attract the interest of young people who are able to accommodate and also preserve the art of Shadow Puppet (shadow puppet) that it is known by the wider community. Based on the shortage of shadow puppet show facilities in Semarang as the capital of Central Java, the procurement of a shadow puppet performance facility which has educational facilities for the Dalang or puppeteer profession is felt to be the right solution to preserve and revive this art of Shadow Puppet. The design of the shadow puppet show building in Semarang City raises the philosophy of the mountains of Shadow Puppet called "Kayon". Harmony with Nature as the architectural theme of the shadow puppet performance building was chosen so that the architecture of the building can live in harmony with nature by understanding and accepting the inanimate reality of natural forces.

**Keywords:** Architecture, harmony with nature, kayon, shadow puppet, traditional theater.

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## Introduction

Indonesia is one of the largest multicultural countries in the world, this can be seen from the socio-cultural and geographical conditions which are so complex, diverse and broad. Indonesia consists of a large number of ethnic, cultural, religious and other groups, each of which is plural and at the same time heterogeneous "various"(Kusumohammidjodjo, 2000).As a multicultural country, Indonesia has a large number of tribes, cultures, races and religions, as well as very diverse arts and culture from each ethnic group in Indonesia.

*Wayang kulit* (shadow puppet) is one of the arts that has been passed down from generation to generation, and has even become a world heritage that is recognized by UNESCO. This branch of art began to develop in Indonesia, especially in Java in the 11th century with the arrival of Hindu and Buddhist influences to Java. The existence of Shadow Puppet performances is interpreted as a process of internalization and socialization so that it can bring forth a generation that is cultured (civilized), polite and respectful(Pinky, 2004).

Cultural changes that are happening in the current era with the entry of foreign cultures into Indonesia such as wearing clothes like westerners, liking rock music, lifestyle like westerners, liking parties, being individualistic, materialistic, social inequality, and a consumptive life. This has made the younger

generation begin to abandon art and culture, one of which is the art of Shadow Puppet.

Based on the presentation of the shortage of Shadow Puppet performance facilities in the capital city of Central Java, the procurement of a shadow puppet performance facility that has educational facilities for the puppeteer profession is felt to be the right solution to preserve and revive this Shadow Puppet art.

To be able to realize the procurement of a place for Shadow Puppet performing arts facilities in the Semarang City, it is necessary to have the concept of Planning and Design for a Shadow Puppet Performance Building so that it can become a place for Shadow Puppet arts and its supporting facilities are capable of being a place for education and appreciation as well as a means for learning to play puppeteers for the younger generation.

The performance hall is a building in the form of a building that has the function of serving and facilitating various kinds of performances(Aska, 2020). The performance hall is included in the semi-public space which has the aim of entertaining people with the performances that are displayed(Poerwadarminta, 1976). The Performance Hall is a place for art lovers and performers to express themselves(Ardhiati, 2013a).

The design theme that will be displayed in the Design of the Shadow Puppet Performance Building in Semarang City raises the philosophy of the Mountain Puppet called "Kayon", by carrying out this concept it is hoped that it will create an atmosphere of the building that makes visitors feel the depth of the cultural message given by Shadow Puppet in the form of a sequence into the building as well as the Fashion-Architecture(Ardhiati, 2014).

Harmony with Nature as the architectural theme of the Shadow Puppet Performance Building was chosen so that the architecture of the building can live in harmony with nature by understanding and accepting the inanimate reality of natural forces(Ardhiati, 2022). The higher the understanding and acceptance, the higher the level of harmony between architecture and nature. Connecting directly with nature makes humans feel more alive and happy. Well-being is necessary for human life, as well as for their health. Therefore, it is important for anyone to stay in harmony with nature(Cahyani, 2018; Whitespace, 2020).

Then for the shape idea used in the design this time, namely Metaphorical Architecture, which in the form of the building itself contains a message in the form of a visual resulting from the shape of the building(Ardhiati, 2013b).

In accordance with the idea of the form that is presented, the design of the Wayang Kulit Performance Building in the City of Semarang takes three precedent studies. First, the Sydney Opera House was built for the first time in 1595 by going through stages of development, its shape resembling stacked shells the Architect Jorn Utzon wanted to make the shells contrast with the waters of the sea. The seashell-like layer is made of 1,056,066 ceramic tiles (Perez, 2010).

[Source: Perez, 2010]
Figure 1. Sydney Opera House

Second, the Harbin Opera House was built in 2010 in the city of Harbin, North China. The Harbin Opera House has an opera house and a cultural center. Harbin Opera House has a sinuous design with the focal point of Culture Island, this Harbin Opera House has a large theater that can accommodate over 1,600 diners and a smaller theater for up to 400 spectators (Architects, 2015).

[Source: Architects, 2015]
Figure 2. Harbin Opera House

Third, the Elbphilharmonie is located in the city of Hamburg which is in a building complex that has the function of building a philharmonic hall, music hall, restaurant, bar, terrace with views of Hamburg and the harbour, apartments, hotels and parking facilities. The Elbphilharmonie becomes the heart of this complex with its different and interesting architecture, by presenting a space for music listeners and musicians in such a way that it is able to not only present an attractive architecture but also represent the musicians and their listeners(de Meuron and Herzog, 2016).

[Source: de Meuron and Herzog, 2016]
Figure 3. Elphilharmonie

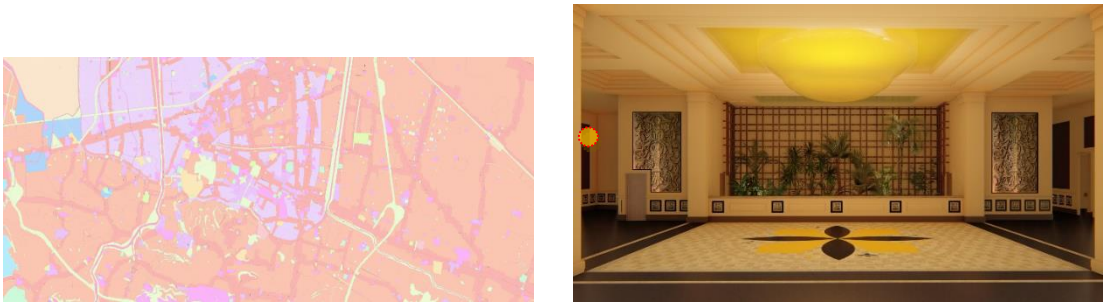
## Methodology

The method of study used qualitative research-based design, and an architectural history study approach(Ardhiati, 2017). Data collection is a very important stage in the design method because with the data, the design process can run well. This data collection was carried out to obtain primary and secondary data. Primary data output is in the form of photographs and other site-actual data such as cardinal directions, views and others from direct surveys. Secondary data output is in the form of supporting data in the form of quotations, supporting photos, theory, literature and comparative studies obtained online or in books.

Data analysis is a process for processing data that has been obtained to finally get the concept used. The analyzes used include physical analysis, vegetation analysis, sun and wind analysis, circulation and utility analysis, location and building analysis, activity analysis, spatial relationship analysis and mass composition analysis(Ardhiati, 2022; Gunawan & Ardhiati, 2022; Luthfianto & Anggita, 2022; Ramdana, 2018; Tedjo, 1988).

## Results and discussion

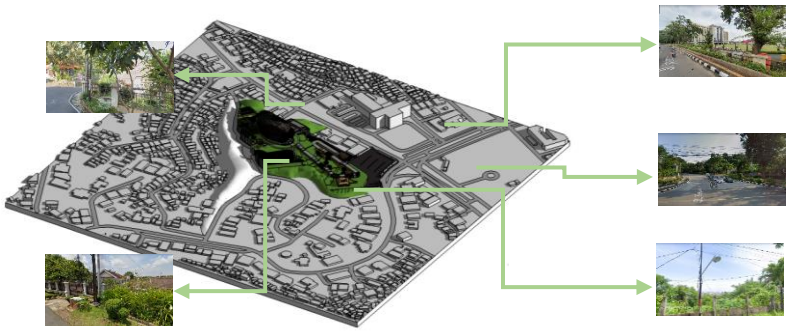
Results Based on the Semarang City Spatial Planning regulations, the site location which is on Veteran Street, Mugassari, South Semarang District, Semarang City is on land designated for trade and services. The Spatial Plan of Semarang City in 2011 as follows:



[Source: Pemerintah Provinsi Jawa Tengah, 2019]
Figure 4. Semarang City Spatial Plan

## *Analysis of Existing Site Conditions*

Based on the data obtained through surveys and observations, the existing condition of the site can be described as follows.



[Source: Herlambang, 2023]
Figure 5. Site Location

Site area : 3.2850 ha
- Building Coverage Ratio (BCR) : 60%
- Building Boundaries : 7 meters
- Green Area Coefficient : 40%
- Floor Area Ratio (FAR) : 3,2

The boundaries of the site area are as follows.
- To the North of the Site : Veterans Street and Shophouse Area
- To the South of the site : Housing
- To the East of the site : Semarang-Yogyakarta Street
- To the West of the site : Lempongsari Housing

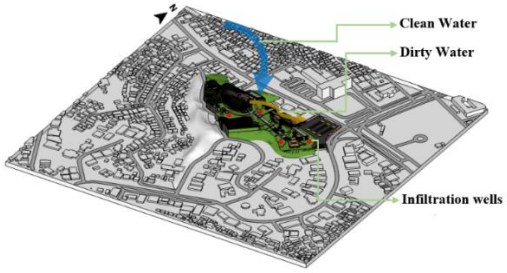
## *Topographical Analysis*

The site location has quite diverse contours as the south and west the contour increases, from this topographical analysis alternatives will emerge which can be design solutions from the final design concept. The following is a contour drawing at the site location.


[Source: Herlambang, 2023]
Figure 6. Topographical analysis

## *Hydrological Analysis*

The need for clean water in Semarang City comes from Local Water Company which has 3 sources, namely artesian water, springs and surface water treatment. As for dirty water disposal, a dirty water installation will be made according to the needs and for faecal water as well as rain water, a reservoir will be made in the form of infiltration wells at several points so that later it can be used as water in closets and as a watering can for plants around the site area.




[Source: Herlambang, 2023]
Figure 7. Hydrological analysis

## *Vegetation Analysis*

Vegetation analysis is carried out to find out the level of shade that exists at the site location, so that after analyzing the vegetation you can get it, is it necessary to add vegetation or use existing vegetation.


[Source: Herlambang, 2023]
Figure 8. Vegetation Analysis

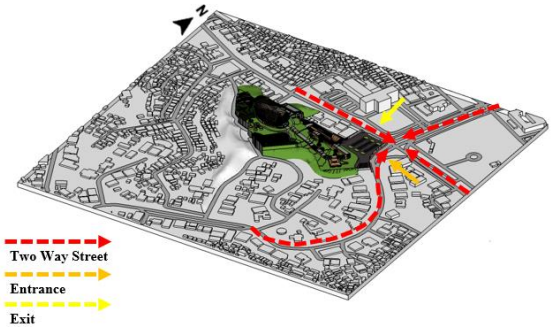
## *Achievement Analysis*

This achievement analysis intends to see the extent of the site's location from various directions, starting from the upper Semarang direction via Diponegoro Street to Semarang - Yogyakarta Street (orange) and then from the direction of West Semarang from Dr. Kariadi Street to Veteran Street (blue), then from East Semarang from Sriwijaya Street (yellow) and finally from North Semarang via Simpang Lima from two directions, namely from Pandanaran Street and Ahmad Yani Street (red).

[Source: Herlambang, 2023]
Figure 9. Achievement Analysis

## *In-Site Circulation Analysis*

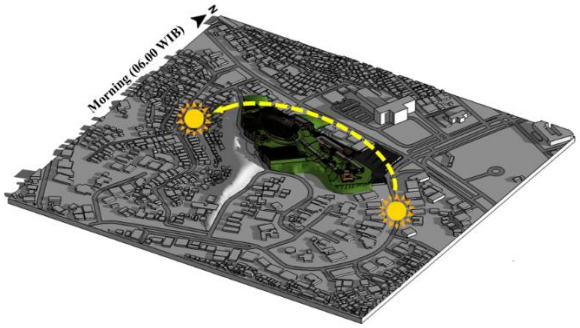
The circulation in the site using the existing main entrance. Because of its strategic location and in the middle of the site. However, if the area is holding an event, the circulation is not going well because access to and from the vehicle is one. So there is a need for additional exit access.



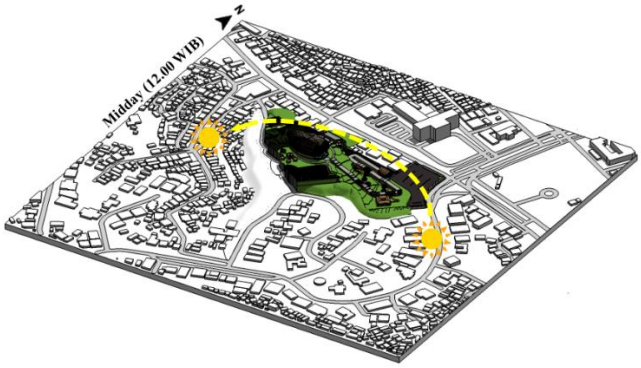

[Source: Herlambang, 2023]
Figure 10. Analysis of circulation within the site

## *Solar Analysis*

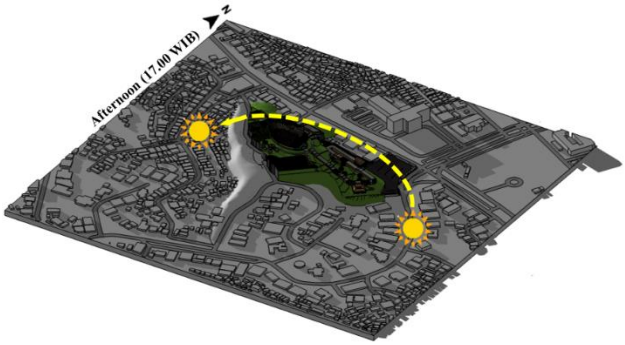
The solar analysis is carried out to determine the fall of sunlight on the mass composition which will later affect the shape of the mass composition and the direction facing the building. Through analysis and observation through the sketchup application, it can be seen that the solar circulation that occurs at the site location according to the hours that have been determined.




[Source: Herlambang, 2023]
Figure 11. Analysis of the Sun at 06.00




[Source: Herlambang, 2023]
Figure 12. Analysis of the Sun at 12.00



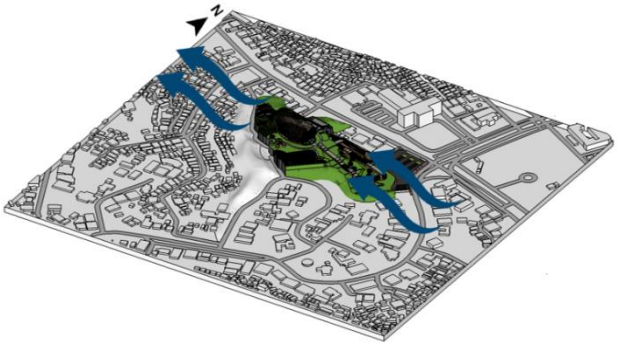

[Source: Herlambang, 2023]
Figure 13. Analysis of the Sun at 18.00

Based on the analysis data above, the design will require special treatment of sunlight, in general shading is usually used on the site, the shading is intended to minimize heat generated due to the sun's heat, many aspects need to be considered starting from the shading device, vegetation, building orientation, the height of the building and the shape of the building that takes into account the direction of sunlight.

## *Wind Analysis*

The wind analysis is carried out to determine the direction of the wind so that later the concept can take advantage of wind circulation properly, based on data obtained through Meteorology, Climatology, and Geophysical Agency, data the average wind direction in Semarang or especially around the site location

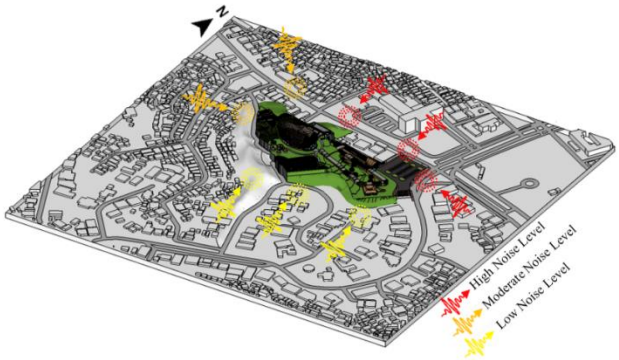
comes from the east with an average wind speed of in 2021 in Semarang City it is around 7.11 km/hour.



[Source: Herlambang, 2023]
Figure 14. Wind Analysis

## *Noise Analysis*

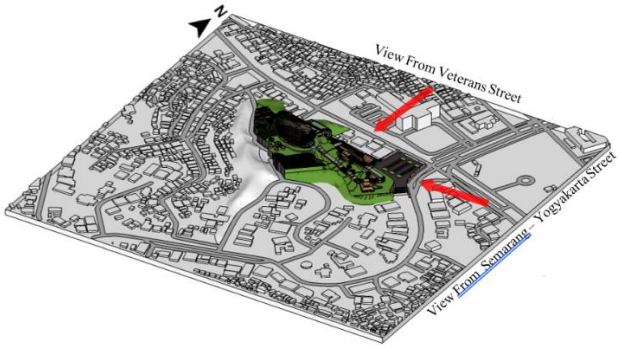
The highest noise in the site area comes from the North and East areas of the site where the North and East are traffic or the main road which is a busy area at certain hours with a fairly dense vehicle density ranging from private vehicles, public transportation, transport vehicles (trucks), etc. Whereas for the South and West directions the noise level is moderate and low.




[Source: Herlambang, 2023]
Figure 15. Noise Analysis

## *Inward View Analysis*

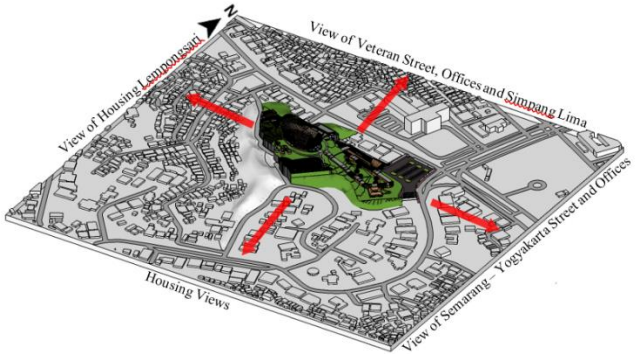
Analysis of the view into the building is used to maximize the potential of the view into the site, later this analysis will affect the design concept. After analysis and observation, there are 2 views that can lead directly to the site, namely from the North and East, namely from Veteran Street which is in the North of the site and Semarang – Yogyakarta Street which is in the East of the site.




[Source: Herlambang, 2023]
Figure 16. Inward View Analysis

## *Outward View Analysis*

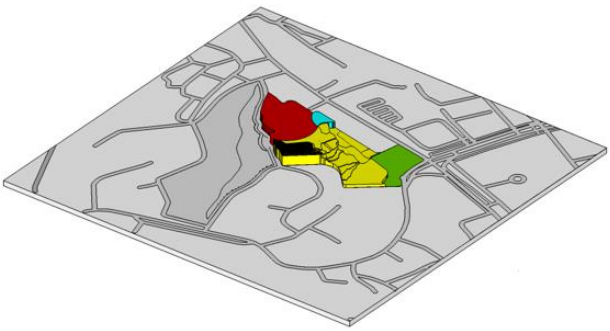
Analysis of the view into the building is used to maximize the potential of the view into the site, later this analysis will affect the design concept. After observing, there are 4 views to the outside from inside the site location, namely the North direction view of Veterans Street, offices and the Simpang Lima, the second is from the East the view is Semarang - Yogyakarta Street, offices and shop houses, the third is the South view to Housing and the fourth is West. view to Lempongsari Housing, of the four views only the North direction is the best view.




[Source: Herlambang, 2023]
Figure 17. Outward View Analysis

## *Zoning Analysis*

Zoning analysis is an analysis that is used to provide area boundaries according to their designation. From the above analyzes starting from the analysis of the existing site, topographical analysis, hydrological analysis, vegetation analysis, achievement analysis, circulation analysis on the site, climatological analysis, noise analysis, view analysis obtained zoning division. The division of Zoning at the site location is divided into 4 areas, namely Public Areas, Service Areas, Semi-Public Areas, and Private Areas.

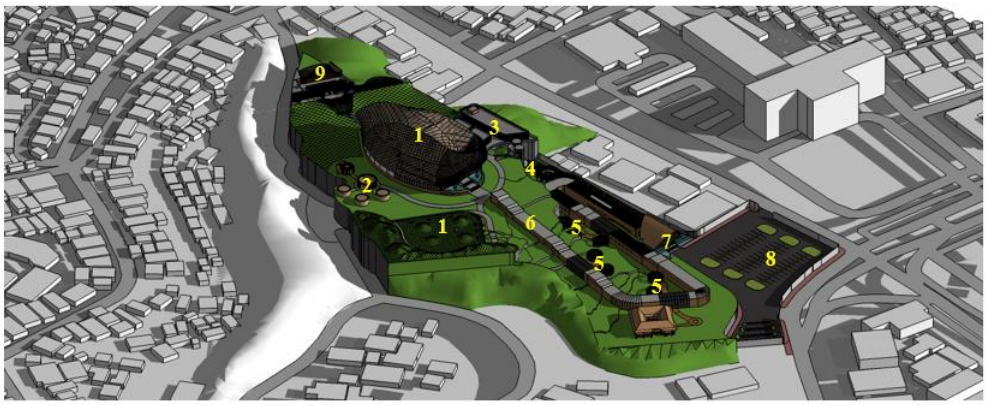


[Source: Herlambang, 2023]
Figure 18. Zoning Analysis

## *Mass Zoning Concept*

The concept of zoning space on the site is obtained through the analysis carried out in the previous chapter, for zoning division as follows.

a) Public Zone : Prayer Room, and Parking Lot
b) Semi-Public Zone : Museum, Cafe & Souvenir Shop, Elevator, and Park
c) Private Zone : Performance Hall, Puppeteer's House, and Office
d) Service Zone : Mechanical and Electrical Room, Panel and Water Reservoir.




**Keterangan :**

1. Performance Hall
2. Puppeteers House
3. Plumbing Mechanical Electrical Area
4. Visitor Elevator
5. Outdoor Rest Area
6. Museum
7. Main Entrance
8. Parking lot
9. Outdoor Performance Building
10. Cafe & Souvenir Shop

[Source: Herlambang, 2023]
Figure 19. Mass Zoning

## *Site Design Concept*

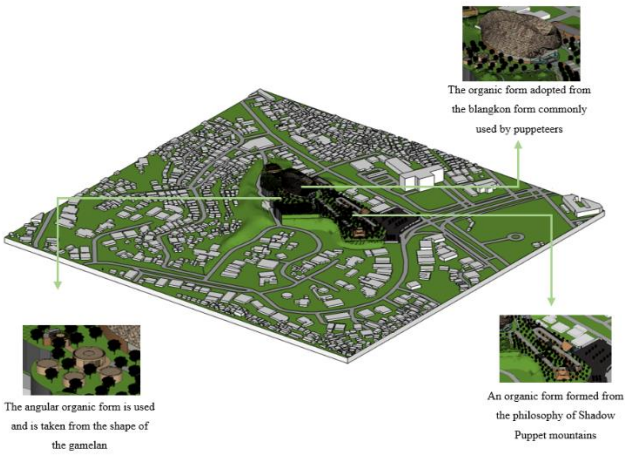
The site concept in this design is taken from the theme, approach, atmosphere used and analysis in the previous chapter, according to the theme that will be carried out, namely Harmony with Nature with an Ecological Reality approach(Ardhiati, 2022). The site will be made with lots of green space with the selection of vegetation not only for beauty but also its function for buildings or

activities that occur around it, then also the selection of materials for buildings, museums, Puppeteers House and also pavement will be adjusted to the theme and approach that is being carried out.


[Source: Herlambang, 2023]
Figure 20. Site Design Concept

## *Building Mass Composition Concept*

The The concept of mass-composed forms in this building is taken from the idea of the form that is carried, namely metaphorical architecture which has organic characteristics that are not angular and dynamic. Apart from that, the form of this mass composition is also formed from the philosophy or atmosphere that will appear in the building, from the philosophy that goes hand in hand between the building and nature, so this building has a shape that follows the contours of the site location, by only changing a few parts without destroying existing ones.




[Source: Herlambang, 2023]
Figure 21. Building Mass Composition Concept

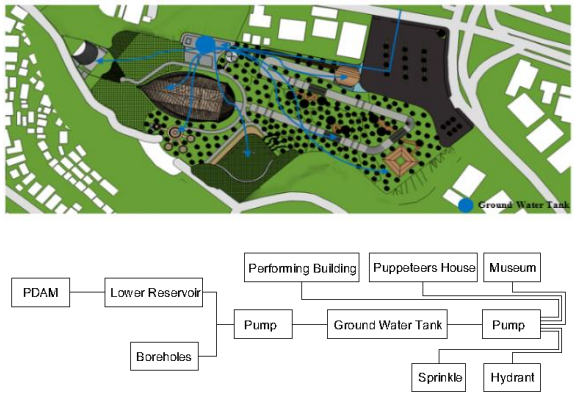
## *Electrical Concept*

The electrical concept in the design of the performance building will use two sources of electricity, namely from PLN (state electricity company) and through sunlight absorbed by solar panels, of course, with the size of the existing building, it will require a large source of electrical energy and also to maintain the comfort of the performance building. you need a generator that is placed in the service area. The mechanical, electrical and plumbing areas will be in one area to make maintenance easier in the future and also to lay cable channels underground so they don't interfere with the view.


[Source: Herlambang, 2023]
Figure 22. Electrical Concept

## ***Clean Water Utilities Concept***

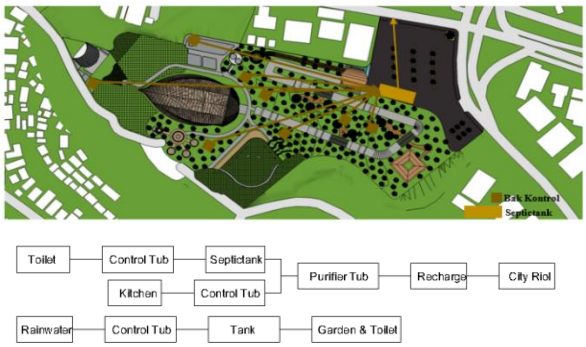
The concept of a clean water utility in the Design of a Performance Building is by taking clean water from two sources, namely Local Water Company (PDAM) and Drilling Well where the Ground Water Tank is located at the very top of the site, which is next to the Performance Building which is a service area to make it easier for control and maintenance.




[Source: Herlambang, 2023]
Figure 23. Clean Water Utilities Concept

## *Dirty Water Utility Concept*

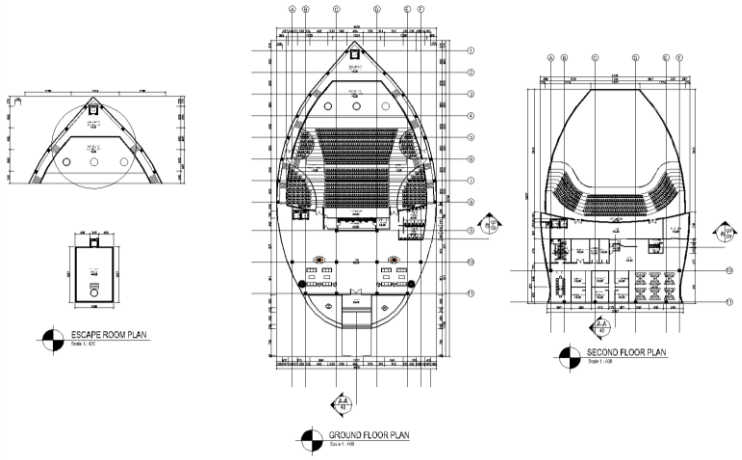
The concept of a dirty water utility in the Design of a Performance Building is to place a control tub at several points so that the dirty water can be wasted properly and not clogged due to the steep contours of the site and later the dirty water from the control tub will be discharged into the septic tank and for rainwater it will be reused as garden watering and for flushing WC (Closet) water.



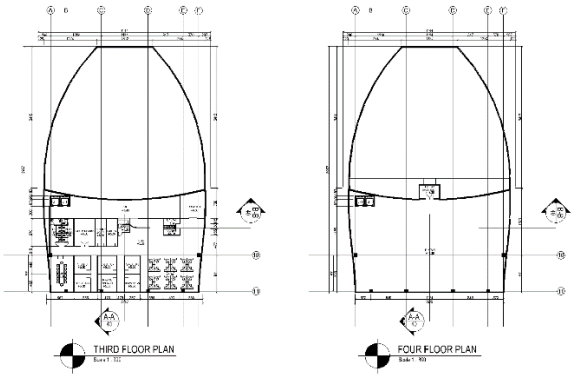

[Source: Herlambang, 2023]
Figure 24. Concept of Dirty Water Utility

## *Main Show Building Floor Plan*

[Source: Herlambang, 2023]
Figure 25. Regional Master Plan

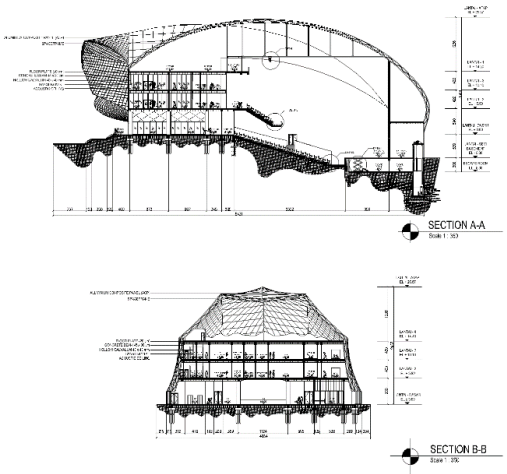



[Source: Herlambang, 2023]
Figure 26. Floor Plan of the Main Show Building Floors 1 and 2




[Source: Herlambang, 2023]
Figure 27. Plan of the Main Show Building Floors 3 and 4

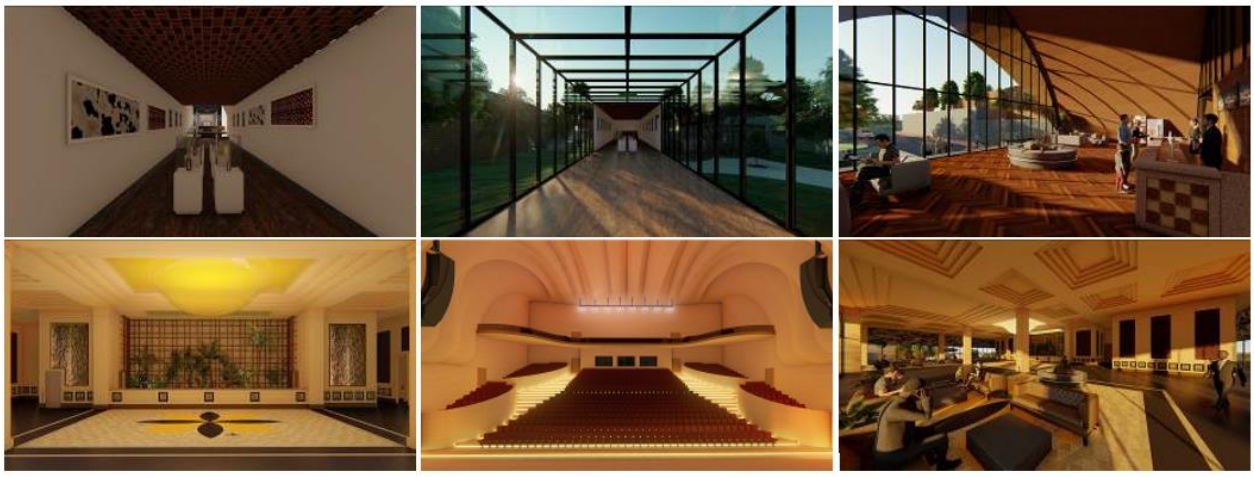
## *Main Building Section*




[Source: Herlambang, 2023]
Figure 28. Section of the Main Performance Building

## *The Design*

[Source: Herlambang, 2023]
Figure 29. Exterior Perspective



[Source: Herlambang, 2023]
Figure 30. Interior Perspective

## Conclusion

Indonesia is one of the largest multicultural countries in the world. Changes in the current era in Indonesia have caused local culture to be left behind, one of which is Shadow Puppet, the need for a facility that accommodates and helps the art of Shadow Puppet to be preserved and recognized again.

The design of the Shadow Puppet performance building is the best solution, with a theme taken from the philosophy of Mountain Puppet or "Kayon" combined

with Harmony with Nature which will later create a different building that is able to attract the interest of the youth, is able to accommodate and also preserve the art of Shadow Puppets. Skin to be known by the wider community.

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