

Chapter VII. DESIGN APPROACH FOUNDINGS

A. Building Spatial Organization

The general spatial organization in the building is using Radial Organization, the reason of using this type of organization is because the project has 4 different space functions; Cinematic Theater, Live Performing Arts Theater, General Facility, and Management Facility. Each space has their own circulation but everything is integrated by the General Facility space as the main spatial hub among the other three spaces. The General Facility Space also become the main access into the whole constellation of spaces.

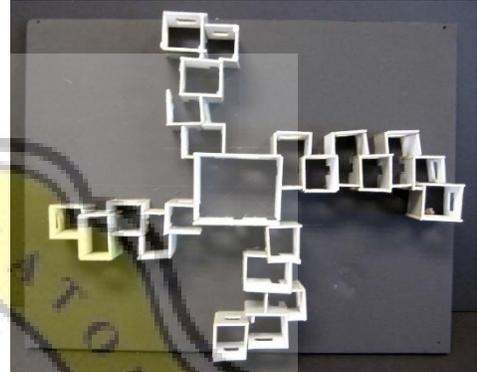


Figure 7. 1 Illustration radial space organization
Source:
<http://mrzarchitecture.blogspot.com>

B. Building Morph

The building morph of this project responded to the environment and site condition, resulting in series of separated masses of building that integrated with access connectors that being able to maximize as much as natural resources of light and air as possible, although the theater spaces are disclosed boxes of rooms. The Balinese architecture philosophies also play part in morphing this building, using **Tri Angga Concept**; the conception of hierarchy from microcosm, middle realm, and macrocosm. Tri Angga concept implied in the visual

sequence in the project, dividing the mass into three different levels of taxonomy, microcosm implies for foot of the building, middle realm implies for body, and macrocosm implies for head.

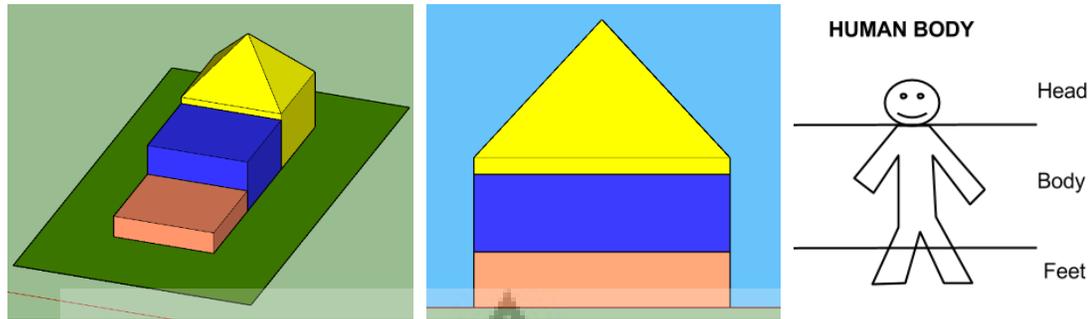


Figure 7. 2 Illustration of Tri Angga concept in the project, showcase building perspective (left), front view (middle), and human body interpretation (right)
Source: self-illustrated figures

C. Building Structure

The project's building has certain requirement for Longspan Structure because the theater spaces demand column-less structure in the middle of theater room with the span at least 20 meters wide, the appearance of any column will reduce the visual quality of the space resulting in design failure.



Figure 7. 4 Illustration building with longspan structure
Source: pinterest.com



Figure 7. 3 Illustration of theater interior with longspan structure
Source: beyerblinderbelle.com

D. Building Material

The building will have modern structure with the latest construction technologies which require concrete and steel material as main structure. In order to limit carbon footprint, locally fabricated material is being used as much as the building needed.

1. Theater Acoustic Material

The acoustic performance is mainly affected by the chosen form and material applied in the theater. Fabric tend to absorb better sound than any solid material, but it also possible to manipulate with the shape and form of it. For example, geometrically designed wooden with gap and holes, it can increasing the performance of a theater by turning the reverberation and absorbing the excessive sound through the gap.



Figure 7. 6 Wooden acoustic wall panel
Source: optimain.ae



Figure 7. 5 Geometric wooden acoustic wall system
Source: DHgate.com



Figure 7. 7 Wool ceiling acoustic panel
Source: stilleacoustics.com

2. Wooden Element



Figure 7. 9 Combination of glass, metal, and wooden element in one building
Source: indesignlive.sg



Figure 7. 8 Illustration of contemporary wooden fence
Source: terrapinbrightgreen.com



Figure 7. 10 Illustration of exposed Wooden Ceiling
Source: depositphotos.com

E. Façade

Bali Cinema and Cultural Center adapting post-modern architecture style to embellish the modern tropical style, Balinese aesthetic also infused into the façade as part of the details such as traditional pattern or any other artistic materials.

The materials are:

1. Customized Perforated Metal

Perforated metal is a very versatile façade that fits perfectly for tropical climate in Indonesia, the façade allow natural air to passing through the surface and the form is easily customized.



Figure 7. 11 Customized design perforated metal
Source: arrowmetal.com.au

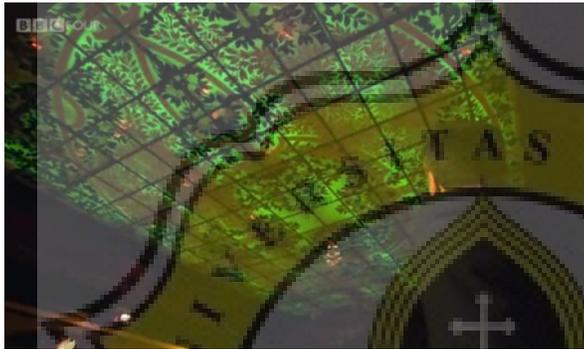


Figure 7. 12 Illuminative skylight design
Source: screenshot from BBC documentary film: Sex and Sensibility, the Allure of Art Nouveau.

2. Biophilic Façade

Biophilic façade is a combination of modern structure building with natural element, mostly plants in order to increase the visual comfort for the visitor. Based on the hypothesis done by Wilson (1984), humans possess an innate tendency to seek connection with nature and other forms of life.



Figure 7. 13 Illustration of Biophilic Façade
Source: grendz.com



Figure 7. 14 Illustration of Biophilic Façade
Source: archdaily.com

3. Natural Wind Kinetic Façade

Located on the beach area, the project has frequent high air pressure/wind as a good potential. Kinetic Façade is a motion façade that allow the changes of a building face. The natural wind powered kinetic façade gives a natural motion on the façade, constantly changing into various shape that has wave interpretation on it. The façade consist small pieces of aluminum panels that installed on the façade in loose grip, that way the small metal pieces will be able to move by the wind pressure.



Figure 7. 15 Natural Powered Kinetif Façade in Brisbane Airport
Source: designboom.com



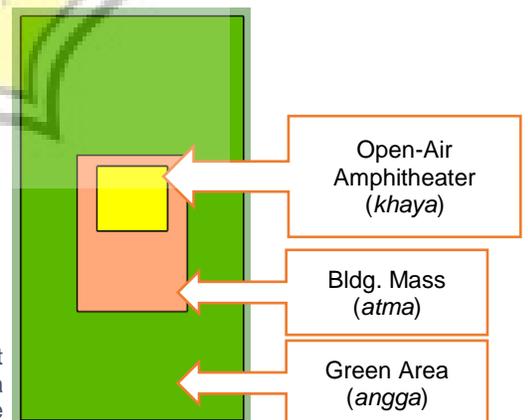
Figure 7. 16 The detail of small piece of aluminum plates that consist in the facade
Source: designboom.com

F. Site Planning and Organization

The spatial organization is adapting Balinese traditional architecture philosophies.

- a. **Tri Hita Karana:** the concept of harmony and balance consists *atma* (human), *angga* (nature), and *khaya* (gods) as building's main elements. In the project, *alma* represent the building mass, *angga* represent the open green area in the site, and *khaya* represent the temple that placed on the rooftop along with amphitheater as part of *Kecak* dance rituals.

Figure 7. 17 Illustration of spatial concept in the site based on Tri Hita Karana
Source: self-illustrated figure



- b. **Tri Mandala:** spatial concept describing three parts of realms, from *Nista Mandala* (the outer and lower mundane less-sacred realm), *Madya Mandala* (the intermediate middle realm), to *Utama Mandala* (the inner and higher

most important sacred realm). This concept is related to the orientation that fits perfectly with the site, Nista Mandala must be located closest to the ocean which happens to be located on the east part of the site. Madya Mandala is in the middle, in the project this area will be functioned as general facilities. The last one is Utama Mandala is located closest to the mountain area, in the project it happens to be the main facility because it is considered as the most important part regarding the project's function, this is located on the western side.



Figure 7. 18 Illustration of zoning in the site based on Tri Mandala concept
Source: self-illustrated figure

G. Building Utility

The building consists of a series of separated masses of spaces that are integrated with semi-outdoor terraces that allow natural air to flow around the spaces. Meanwhile, the main function spaces such as theaters, restaurant, and management facilities use fully air-conditioned rooms to ensure the user's comfort during the specific activities inside. The site has relatively big areas for circulation, which benefits the design to adapt the vehicle circulation into the site, creating longer flows to prevent bad traffic in the main access of the site.

In site utilities consist of:

1. Pathway and Active Garden

The site has a total area of 3 acres, and a long pedestrian pathway in an active garden is a good option to serve an open green area and circulation for the visitor.



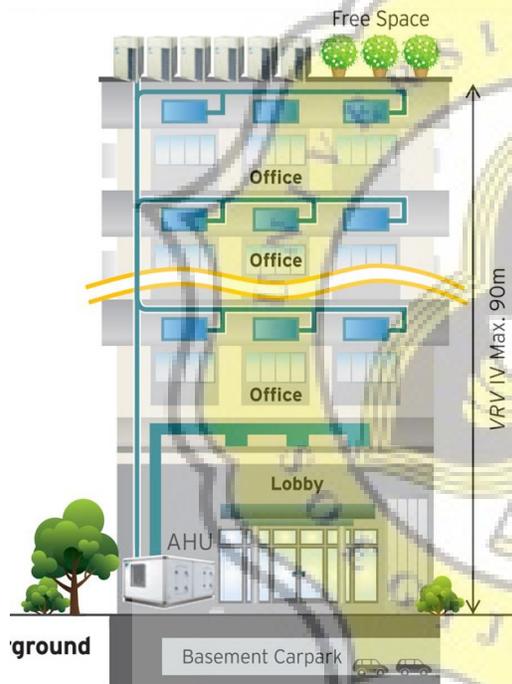
Figure 7. 19 Illustration of pathway along the garden
Source: dreamstime.com

2. Vehicle circulation

The site's only accessibility is from Jalan Pantai Kuta, which has daily high traffic density. Circulation in the site allows the traffic to buffer and avoid traffic clog in the main access, this also offer more drop and pick-up points throughout the site.

3. Air Conditioning system

Using the latest model of central air conditioning system, specifically Daikin VRV technology. Daikin VRV allows individual control in the indoor units, with the capability of using no-liquid chiller that serve multiple indoor units each one outdoor unit.



VRV AHU System

Figure 7. 23 Daikin VRV illustration system
Source: daikinac.com

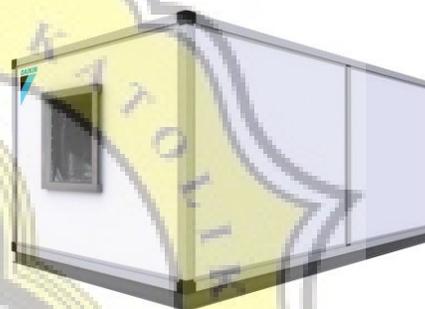


Figure 7. 22 AHU unit
Source: daikinac.com



Figure 7. 21 Variety of indoor units
Source: daikinac.com



Figure 7. 20 Daikin VRV outdoor units
Source: daikinac.com

4. Tsunami escape

The building will have 3 stories high, the top of the building is categorized as a Tsunami evacuation area. In the design output, it is requiring an easy access to the top of the building such as signage of evacuation arrow that lead the visitor easily to reach the stairway to the top of the building.



Figure 7. 25 Tsunami escape sign on the ground
Source: flickr.com



Figure 7. 24 Tsunami escape sign on a building
Source: flickr.com

5. Fire prevention

Fire prevention in the project consist outdoor fire hydrants placed in 3 different location around the site because the site has more than 100 meter length away from the main street. The other tools are hydrant boxes, smoke detector, and water sprinkler that thoroughly placed in the building. The last option is the fire escape stairs that easily reachable by the visitor.



Figure 7. 28 Outdoor fire hydrant
Source: fr.aliexpress.com



Figure 7. 27 Fire detector and sprinkler
Source: 123RF.com



Figure 7. 26 Indoor hydrant box
Source: indonetwork.com

6. Environmental utilities consist of:
- a. Liquid waste treatment and management

Liquid waste treatment system using IPAL (*Instalasi Pengolahan Air Limbah*) that will be planted underground. This system allow the liquid waste to be processed with biotechnology inside the tank, resulting the output of cleaner waste that less damaging for the environment.



Figure 7. 29 IPAL tank
Source: biofive.co.id

- b. Solid waste management

Balinese government waste management considered as less environmentally sustainable because all the waste are dump into the final landfill in *TPA Suwung* (Suwung Final Landfill). The project will have a partnership with ecoBali, a private company runs in sustainable waste management. The focus on the company is maximizing recycling waste into reusable items and renewable sources such as compost fertilizer, which lead the system into reducing waste in the landfill. The company do the sorting process, distinguish different types of waste and turn it into reusable product such as recycled glass, roof, bags, and many other recycled goods.



Figure 7. 30 ecoBali waste management sign
Source: ecobali.com

c. Electrical source

The electricity in the island of Bali is completely provided by PLN, government electrical company.

d. Clean water source

Clean water is provided by PDAM (government clean water supply) and the project will have individual water harvesting system from rainwater. The rainwater will be collected into a water tank then processed with special filter that turn the rainwater into clean water for plants and toilet flush. The future possible option is filtering the sea water and turn it into clean water, but this require more thorough evaluation by the government law that has not yet been made.

