CHAPTER V
DESIGN CONCEPTS

5.1 Basic Concept

Based on the theme of the lift is Green Architecture taken the basic concept is the concept of openness, it's based on the concept of relevance to the theme, so this concept can be applied in matters relating to the theme. The concept of openness is also taken by the object of design, where design objects are objects recreational gathering place for many people (public places), so the concept is trying to invite visitors to come visit. This concept also allows for the cages in order to design in accordance with the original habitat of animals that open freely.

5.2 Site Concept

5.2.1 Pathways Concept

The concept of circulation at the Surabaya Zoo is using the concept of circulation of the mixture is combined circulation patterns. On site circulation divided into several types:

1. Vehicle circulation, circulation of which is used exclusively for vehicles.

   Circulation on the site is geared toward the parking lot. Circulation is divided into two parts, namely the circulation of special guests and special circulation manager.

2. Pedestrian circulation. For visitors who come by car could go straight into the zoo area with streets that are separated by the circulation of vehicles.
Circulation in the redesign Surabaya zoo will use a composite or a mixture of the circulatory system, the system would be more appropriate to direct visitors to the exhibit all of the zoning classification has been done.

![Diagram of the circulation system](image)

**Figure 5.1: Application of the circulation on the site**
(Source: Analysis result, 2011)

### 5.2.2 Zoning Concept

Site conditions in the middle of the city to make arrangements / placement in a building adapted to the potential that exists on the site. at the entrance / entrance is placed at the front area bounded by the Darmo Raya street, this is due to an easy achievement. In the area manager's office located adjacent to the main entrance, allowing visitors to get information. Zoning of the cages of animals adapted to the type of the animal itself, the animals that require high lighting placed on the west, while that does not require high lighting placed on the east.
5.2.3 Concept of Vegetation and Soil Treatment Advances

Vegetation became the main landscape elements shall be so arranged that its presence in accordance with the function and purpose. Vegetation as green belt in conservation areas, aiming to control the temperature of the micro, control hydrology, erosion control, wildlife habitat, buffer dust and pollutants. The
selection of plants done well in order to function and aesthetics of the environment can be achieved as well. Vegetation was also planted on the cages in order to create micro-environments for animals in it, with the selection of suitable plant habitat. Application of the vertical arrangement of vegetation will be placed along the path towards the building as the referrer.

![Figure 5.4: Directional tree](Source: Analysis result, 2011)

On the Pavement and the land surface treatment, pavement required for steering, especially belt circulation, and boundary markers of space. Visitor activity on the site is a public activity that requires pavement within the activity area. Pavement is kept to a minimum to reduce the functionality and performance in recycling soil hydrology. Pavement designed to track the vehicle circulation, parking, and pedestrians. The other face of the ground treatment using grass, and plants of low ground cover types.

![Figure 5.5: Implementation of the use of vegetation](Source: Analysis result, 2011)
Application of vegetation above shed some light on the character, function, of the vegetation itself.

5.2.4 Entrance Concept

Of analysis that has been previously stated the main entrance located in the western part of close to Darmo Raya street, because of the easy access to the visitors and the addition of another access as an alternative to the other side.

![Figure 5.6: Entrance is selected in the draft](Source: Analysis result, 2011)

This alternative was chosen because the system is more than one entrance provide opportunities for visitors to try a different experience from the other side. Currents that occur will be split in two when there is accumulation of visitors, with more than one pint entrance as if he invites visitors to come visit this zoo.

![Figure 5.7: Forms the main entrance is made as attractive as possible](Source: Analysis result, 2011)
5.3 Concept of Space

The concept of space at the Surabaya Zoo which will be designed using the concept of grouping, through from the entrance will be found in public buildings/facilities. Getting into the cages will be found adapted to the classification of animals such as bird, pisces, mammals, amphibians, reptiles.
Consisting of open space and enclosed space, as for the division:

Indoor : The cages, garden, parking.

Outdoor : Office manager, general office, aquarium, library, cafe, dioramas, the space service.

5.4 Concept Shape and Views

The concept of form to be used is the concept of natural impressive form. In the open concept of the building will be used, use materials that are environmentally friendly, so memorable one with nature. Will be displayed at the entrance while the reliefs of animals, as if the main entrance is a large boulder.

In the cages will be used an open concept so that animals in it seemed to be in the wild.
Figure 5.11: Shape of the building on the manager’s office and ticketing system shows Green Architecture
(Source: Analysis result, 2011)

Figure 5.12: Shape of the building is made of natural and open
(Source: Analysis result, 2011)

Space on the cage/outer space:

Figure 5.13: Display cage is open and tried to resemble the natural habitat
(Source: Analysis result, 2011)
Figure 5.14: Visitors perceived impression of the atmosphere of an open cage
(Source: Analysis result, 2011)

Figure 5.15: Space was opened with a glass barrier at the interior and outer
(Source: Analysis result, 2011)

Figure 5.16: The atmosphere at the giraffe enclosure, natural, and open
(Source: Analysis result, 2011)
Use of roof garden on the roof of a building intended to replace the green area that has been damaged, but it aims to accommodate the roof garden and rain water flow into underground water tank that can be used as a water reserve for utility/sanitation are also building for the purpose of watering plants. At this zoo to be used on the roof garden of trustees of the office buildings, public offices, and service.

Figure 5.17: Use of roof garden on the building  
(Source: Analysis result, 2011)

The use of photovoltaic roofing aims to provide energy reserves for use by the building in order to reduce reliance on state power and solar-powered engines.

Figure 5.18: The use of photovoltaic roof  
(Source: Analysis result, 2011)
The use of wide openings in the facade of the building aims to sunlight can enter the building so that the use of artificial lighting can be reduced.

The use of building materials that are environmentally friendly and comes from nature as follows:

- Natural brick or brick fabricating lightweight has fire-resistant characteristics, strong high pressure and low water absorption.
- The use of aluminum as a material anodize doors and windows because it has the advantage can be recycled, free of toxins lead to cancer, and practically maintenance-free design with special insulation to reduce heat transmission and noise, more powerful, durable, and anti rust.

5.5 Concept of Utility

5.5.1 Air System

Air in this building using the natural and artificial systems. However, emphasis on the natural system with less how to create openings large enough for air circulation, it is supported also by the planting of vegetation that much that it
makes the microclimate inside that eliminates hot air and dust. While the use of artificial such as air conditioner (AC) is placed in spaces that require artificial.

5.5.2 Water System

System used for water supply is well water and PAM (Water Company). Ground water from a dug well or a well water pump for their own needs or the needs of small amounts ranging from 5-15 m depth.

Clean water system uses a storage system. For storage water of pumps or PAM, the water volume entirely adapted to the purposes of occupants, calculated per 8 hours. Clean water is stored in a ground reservoir and the tank roof.
5.5.3 Wastewater System

Wastewater system is a closed channel system. Channel depth is now branching with rain water drainage channel is located at the bottom. At certain distances made manhole as a maintenance channel. Terminal end of the installation of waste water effluent WWTP (Wastewater Treatment Installation).

5.5.4 Electricity distribution

Power source used is the Source of electricity and of the genset. Scheme of the power source will be used in the concept design and planning of the Surabaya Zoo:
5.5.5 Information System

Information systems to be used is the telephone network, CCTV and security.

It is prepared in the telephone system are as follows:

1. Distribution panel of the phone line
2. PABX unit according to the number of connections
3. Telephone handset with the needs of
4. Telephone wiring in a building
5. Building wiring connector.

The tools used in CCTV and security are as follows:

1. Camera
2. Monitor TV
3. Koaxial cable
4. Timelaps video recorder
5. Security room, the room is fitted with the monitors and equipped with air conditioning, separate toilet and lighting.