CHAPTER V THEORETICAL BASIS

5.1. THEORETICAL REVIEW OF PROBLEM 1

5.1.1. THEORETICAL REVIEW ON REFUGEES' NEEDS

UNHCR defines refugees' needs as access to basic services and assistance in health, nutrition, water, sanitation, food, shelter, energy, education, domestic items, and specialized service for people with special needs.

In order to meet the basic need of the refugees, security and dignity of the refugees have to be guaranteed, for example in UNHCR Rwanda (UNHCR Rwanda, 2017) gave access to refugees, such as :

- Water

  Access to water for the refugees is provided by the UNHCR with UN agency through sourcing and trucking water, drilling, and maintain the water system so that the refugees can receive minimum criteria 15-liter of water per person per day.
- Education

  UNHCR provides access to education for refugees through building a school located near the refugee camp.
- Health

  Access to health is provided in a health post located in the refugees' accommodation.

5.1.2. THEORETICAL REVIEW ON HUMANISM ARCHITECTURE

The term Humanism is related to Latin word *humus* which means earth and from this word creates the term *homo* which means human or God's creation; at the same time, *humanus* have a meaning human nature. Unlike humans that see as an object of nature, the term -*ism* means a set of ideas or systems of belief or behavior. Thus the meaning of humanism can be divine as a set of ideas regarding human nature (Giustiniani, 1985).

According to Rachmawati (Rachmawati, 2010), modern architecture is when humanism starts to present in architecture; at that time, architecture tries to

humanize architecture by paying attention to the users' needs. Thus, the needs of humans have to accomplish in a design, and there are four relations between humanity and architecture to accomplish the human needs, they are:

- Architecture in terms of fulfillment of human needs

  The first role of architecture in humanity is to fulfill human needs as an individual; This is intended so that architecture is expected to be a place for humans to become more qualified according to their needs.

- Architecture in terms of fulfillment of human needs as a society

  The second role of architecture in humanity is to fulfill human needs as a society; This is intended so that architecture is expected to be a mediator between one group to another group that contradicts each other.

- Architecture in terms of meeting needs in the context of humane

  Regarding the role of architecture, where the fulfillment of human needs as humane, it is connected with the second role; so architecture can provide empathy for every event, it is hoped that architecture is not only for particular moments, certain speeds, or in a specific style.

- Architecture In terms of changing roles

  The fourth role of architecture in humanity is the architect as a guardian of nature. It is intended so that users can respect the building and the environment to be moved to protect the environment.

5.1.3. THEORETICAL REVIEW ON SPACE QUALITY

According to Riandy Tarigan in his book Metode Penyusunan Protoripe Denah (Tarigan, 2016) space quality has a meaning to give value to a room so it can fit the activities that happen inside the room; this value is translated into elements and volume of the space. Quality of space based on Francis D.K Ching in his book Architecture: Form, Space & Order (Ching, 2015) can be influenced by :

- Degree of Closure

  The closure of the room can affect the quality of the room. The more openings in space make the room lose its privacy and loses its enclosure and create a diffuse effect on a space and begin to merge to the surrounding.

- View

  View on the space can be oriented to outward or inward; inward orientation can be oriented to the vocal point of the room, such as fireplace or paintings. The outward orientation needs a view to outdoor or surrounding space; this orientation needs a window or a skylight as the media, the size, and location of the openings also determine the view the bigger the opening created an extensive visibility.

- Light

  Light from the sun can be used to illuminate the form and the space of the architectural object; windows and skylight can be used as the media where the lights can come in. The size of the opening can be determined based on the openings; the location of the openings can affect the amount of sunshine that enters the room; if openings are located in the wrong place, it can give a glare to the users.

5.2. THEORETICAL REVIEW OF PROBLEM 2

5.2.1. THEORETICAL REVIEW ON INTERNATIONAL DESIGN

The international style started to spread worldwide after World War One; this style can emerge because of the boredom of the heavy details and the industrial boom, especially on iron and glass. The international style creates a style that avoids any political, cultural, religious, or geographic influence on the design; the success of this design also lies in the availability of the available materials around the world.

In order to design an international style, there are several principles to design an international style according to Hitchcock and Johnson in their book *The International Style* (Hitchcock & Johnson, 1932), namely :

1. Architecture as Volume

   Architecture as volume describes as an openness; in this principle, the structure is like a skeleton that is covered with a thin layer of screen that used to be a protective screen; that is why in this principle, the windows can act as a covered screen of the building instead of act as a hole in the wall.

2. Concerning Regularity

   Regularity in international style can be created with an orderliness of structure or building part; this creates an equal distance between structures that can distribute the pressure evenly.

3. The Avoidance of Applied Decoration

   The avoidance of applied decoration reduces heavy detail in the previous era of architecture, reducing the decoration, making the designer more detailed on the architectural detail.

For characteristic of international style itself, There are several characteristics of international style based on the journal of How international was an international style of architecture (Emeka Ebuz & Ebere Donatus, 2018), namely :

- Minimum social and cultural identity
- A weightless structure
- Free facade
- Flat roof and cantilever
- The usage of a framed structure
- A rectangular plan and simple building form
- Monochromatic color
- Using fabricated material like glass, iron, steel, or ant fabricated material
- Anti-climate style

5.3. THEORETICAL REVIEW OF PROBLEM 3

5.3.1. THEORETICAL REVIEW ON SURVEILLANCE DESIGN

Crime Prevention Through Environmental Design or CPTED is a four principle on the design that can prevent or discourage any criminal activities; These four principles are access control, surveillance, territoriality, and maintenance. The four principles are more distinct as follows:

1. Natural surveillance

   Natural surveillance is a design aimed at everyone observing their areas from multiple points of view. This design principle can be applied to an open space where all doors and windows are directed visually to the open space.

2. Territorial Reinforcement

   Territorial reinforcement is a physical design that has an impact on the users. Users are trained to be more sensitive on the area they are in with using boundaries. This design principle can be in the form of a fence or property line.

3. Access Control

   Access control is a design that aims to reduce the possibility of crime from violators doing their violation by creating a perception of the risk they may face. This design can be applied to a transitions area between public and private.

4. Space Management

   Space Management is a design when a public space is well maintained and inviting users to use the public facilities; a well-maintained open space can give better safety.

5.3.2. THEORETICAL REVIEW ON CIRCULATIONS

According to the book Architecture: Form, Space & order (Ching, 2015), circulation is the path of our movement that links the space in the building, either interior, exterior, or both. This book describes the elements of architecture, they are:

A. Approach

- Frontal

A frontal approach is an approach where it leads directly to the entrance of the building along or axial path

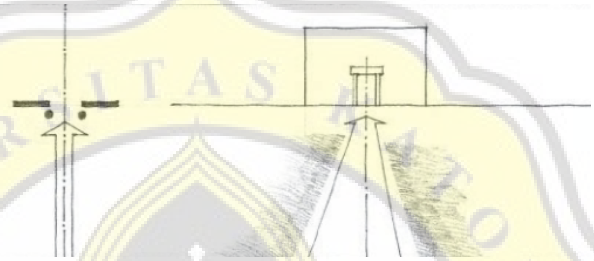


Figure 5.1 Frontal Approach
Source: Architecture: Form, Space, and Order

- Oblique

An oblique approach is an approach where the path is not directed to the entrance but through one or more times to delay the access to the building.

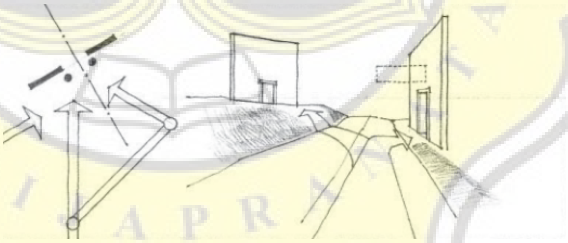


Figure 5.2 Oblique Approach
Source: Architecture: Form, Space, and Order

- Spiral

A Spiral approach is an approach to the entrance where the approaching to the building is through circling the building.

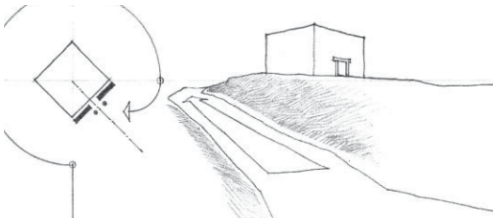


Figure 5.3 Spiral Approach
Source: Architecture: Form, Space, and Order

B. Paths

- Linear

A linear circulation is a straight path, and this path becomes the primary organizing element for a series of spaces. This space can be attached to one and another or separated and link through a linear space. Furthermore, these spaces are usually alike, either in size, form, or function. Because their characteristic is length, this path expresses a movement, extend, and growth; so to terminate this characteristic using a more dominant space or form can be applied.

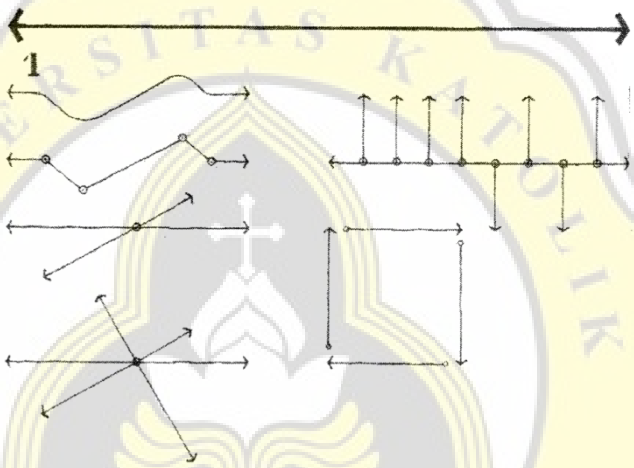


Figure 5.4 Linear Path
Source: Architecture: Form, Space, and Order

- Radial

Radial circulation is a configuration of linear that extends or terminates at a central point. This circulation is a more extrovert scheme, where every arm is directed to a different place depending on its function.

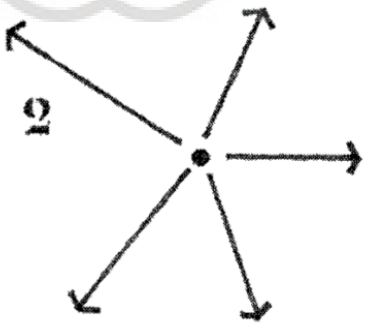


Figure 5.5 Radial Path
Source: Architecture: Form, Space, and Order

- Spiral

  A Spiral is a configuration of a single path that revolves around a central point and becomes increasingly distant from it.

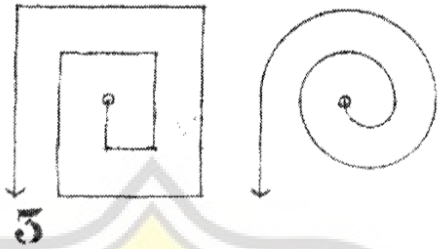


Figure 5.6 Spiral Path
Source: Architecture: Form, Space, and Order

- Grid

  A grid is a configuration of two parallel paths that intersect and create squares in a regular interval. This configuration creates a similar space in size, form, and function.

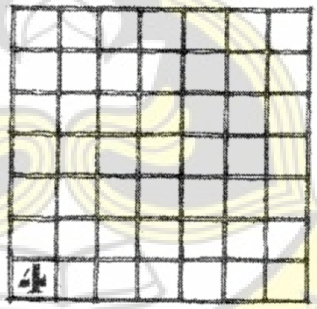


Figure 5.7 Grid Path
Source: Architecture: Form, Space, and Order

- Network

  The network is a configuration of paths that interact with each other in space.

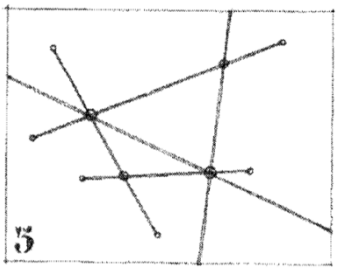


Figure 5.8 Network Path
Source: Architecture: Form, Space, and Order

C. Path and Space

Paths are linked to space; there are three types of relationships between path and space, they are:

- Pass by spaces

  Pass by spaces arrangement is where the path is located outside the space; with this arrangement, the integrity of the space can be maintained and have a flexible configuration of the path.

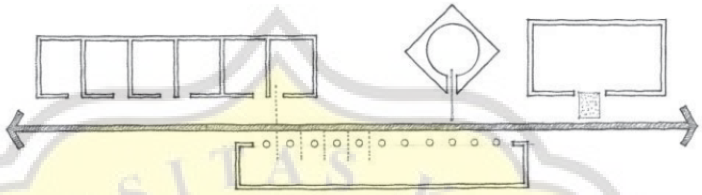


Figure 5.9 Pass by spaces
Source: Architecture: Form, Space, and Order

- Pass through spaces

  This arrangement is where path located inside the space and passthrough arrangement of spaces; with this arrangement, the path creates patterns of rest and movement within the spaces

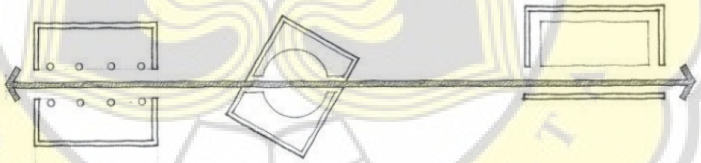


Figure 5.10 Pass through spaces
Source: Architecture: Form, Space, and Order

- Terminate in space

  This arrangement is where a path is created from the space; this arrangement is usually for approach or enters an important space.

Figure 5.11 Terminate in spaces
Source: Architecture: Form, Space, and Order

D. Circulation Space

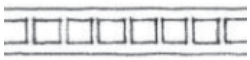
Spaces for movement in a building create a significant amount of volumes on the building. The form of this circulation space varies based on its boundaries, scale, proportions, lighting, view, and levels. There are three types of circulation space: enclosed, enclosed one side, and open on both sides.

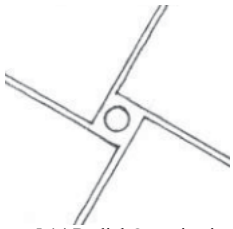
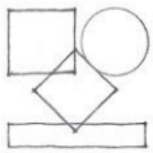
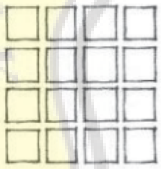
5.3.3. THEORETICAL REVIEW ON SPATIAL ORGANIZATIONS

According to Francis D.K Ching in his book Architecture: Form, Space & Order (Ching, 2015), there are several requirements to design a layout on a typical building it depends on the specific function of the room, flexibility, similar function of the room, the needs of exterior exposure, privacy or accessible. However, in a specific situation, organizing a layout depends on the demands of the building program or exterior conditions.

This book also describes many ways of spatial organizations such as:

Table 5.1 Space Organizations
Source: Architecture: Form, Space, and Order

Central	The Centralized organization has a central and dominant space on the center and a grouped secondary space around it.	 Figure 5.12 Central Organization Source: Architecture: Form, Space, and Order
Linear	Linear organizations consist of a series of spaces, usually are repetitive spaces that are alike and related or linked toward each other through a line	 Figure 5.13 Linear Organization Source: Architecture: Form, Space, and Order

Radial	The radial organization is a combination of central and radial. It consists of a dominant central space that extends from which into a radial space.	 Figure 5.14 Radial Organization Source: Architecture: Form, Space, and Order
Cluster	Clustered organizations rely on the physical appearance to link every room, but sometimes it is linked based on the repetition of the space, similar function, orientation, or shape.	 Figure 5.15 Cluster Organization Source: Architecture: Form, Space, and Order
Grid	A grid organization is an organization created by two lines that are perpendicular and have a regular pattern that creates intersections	 Figure 5.16 Grid Organization Source: Architecture: Form, Space, and Order