

BAB 6. DESIGN APPROACH

In this chapter, the design scenario in the design of international basketball academy in BSB will be described in relation to the formulation of the problem and the theoretical basis that has been reviewed in the previous chapter.

6.1 General Concept Approach

In designing this basketball academy building, the user's health is a priority in designing buildings, both physical and mental health. With the existence of a pandemic like this many change the habits of athletes or users in carrying out sports activities. "Physical distancing" becomes a word that is often left by the government. If it does not consider the user's health, basketball activities will not have a positive impact in the middle of this new normal era. Also in this pandemic it is very important for everyone to exercise to maintain body immunity. in accordance with the recommendations of WHO (World Health Organization), it is recommended for each of us to be able to keep our distance and carry out activities that are no less important, namely to exercise. Therefore, by responding specifically to user convenience, the response will be that this building has adequate circulation distance and flow and complies with the "physical distancing" rules. One-way circulation system is also applied to the basketball academy building which is intended to avoid direct physical contact.

Given the covid-19 threat, it is important to maintain physical health, but it is also important for all users of this building to consider mental health. Therefore Biophilic approach is used as a bridge so that user comfort is maintained. in the presence of natural elements such as sunlight, water, green area processing along with an outdoor jogging track, it will provide a new atmosphere so that athletes can run basketball training activities comfortably. for some other elements discussed in chapter 5.2.1. with biophilic approach, glulam wood becomes the main structure choice. in addition to better strength and endurance, this will further enliven the atmosphere on the ground and have a positive impact on athletes (based on Figure 2.11).

In addition, the basketball academy building must become a place where it can hone the skills of athletes because it is in accordance with the background of the project (chapter 1.1), by applying international standardization, it can create many potential athletes. The

standard used for basketball academy is based on FIBA standards. For the size of the ring, field, locker room, and other facilities in accordance with international standards so that athletes do not need to go to Europe to get these facilities.

6.2 Concept Approach Based of The Main Problems

6.2.1 How to apply the biophilic approach (natural approach) to provide comfort to all athletes in the new normal era ?

Based on 14 Pattern of Biophilic Design (Picture 2.11), This basketball academy applies several patterns, which are :

1. Visual Connection with Nature

The application of the nature element according to chapter 5.2.1 . This basketball academy presents the concept of green areas on the outside of buildings and in building interiors. Biophilic design requires repeated and sustained engagement with nature. Aside from being a space utilization in accordance with new normal rules, the existence of nature such as ponds, small parks, and green walls provides benefits in aspects of stress reduction, cognitive performance, and emotion, mood and preference. Stress recovery from visual connection with nature has been realized through a decrease in blood pressure and heart rate; reduce attention fatigue, sadness, anger, and aggression; increased mental involvement / attention, attitude and overall happiness. all of these effects will have a positive impact on all users or athletes who are running the training. There is also evidence for stress reduction associated with experiencing real nature and seeing natural images. the presence of biodiversity benefits our psychological health rather than access to land (example: Total land area). Processing elements such as terrain, water, and vegetation can be applied to the green area of the jogging track, communal space, and other facilities. With the existence of nature, it can stimulate a view of the elements of nature, living systems and natural processes; like a window with a view of a park, yard, or green wall.



*Picture 6.1 The Birch Tree And Moss Garden In The New York Times Building
Source: Metric Handbook*

2. Non-Visual Connection with Nature

Patterns of Visual Connection with Nature are more identical to visual preferences and responses to views of nature that have the effect of reducing stress, more positive emotional function, and increasing concentration and recovery rates. By seeing something that indirectly represents the presence of nature, that existence can also stimulate us and even reduce our stress levels. stress recovery is manifested in his opinion blood pressure and heart rate. Even sounds can simulate the existence of nature such as bird song, flowing water, the crackle of a fireplace, or simulated digital nature sounds.

3. Thermal & Airflow Variability

The purpose of the Thermal & Airflow Variability pattern is to provide an environment that allows users to feel the variability of airflow and thermal variability. The goal is also so that the athlete or user can control the thermal conditions, either individual control, or other occupants access conditions around variables in space. Providing a material that has many variables, seating options with different levels of solar heat increase (inside and outside the room) or close proximity to the window that can be operated which aims to catch cold winds on a sunny day or maybe users of this basketball academy building being able to lean one's back against a warm stone on a cold day - can increase overall space satisfaction.

Design considerations could include incorporating air flow and thermal conditions into the material, daytime lighting, mechanical ventilation, and / or fenestration will help distribute thermal comfort. the use of sustainable materials aims to be ready to face climate change and rising energy costs. when this is implemented and by providing several openings that provide comfort to the user, it can reduce energy demands to cool the room because the room is already cool. Coordination of design strategies between the project teams (eg, architects, lighting designers, and MEP engineers) that aims to bring in sunlight so that they get natural lighting but look for materials that can absorb heat so that it remains comfortable for users in the basketball academy.

4. Dynamic and Diffuse Light

With the Dynamic & Diffuse Light pattern giving effect to the user the lighting options that stimulate the eyes and maintain attention in a way that gives rise to a positive psychological or physiological response, and to help maintain the functioning of the circadian system. The aim should not be to create the same light (boring), nor should there be extreme differences (glare discomfort). The movement of light and shadow can attract our attention. A same room if you have different lighting, indirectly the room is divided because in certain parts have different light intensities. with the presence of light can distinguish the room. maybe the lighting needs adjust to the requirements of each room's keperluan. For example, the field gets bright sky from the south and north so there is no glare for players or athletes who are practicing.

5. Biomorphic Forms & Patterns



*Picture 6.2 Biomorphic form on facade
Source: 14 Patterns of Biophilic*

The application of Biomorphic Forms & Patterns can be used in certain areas such as facades, floors and walls or furniture windows for greater diversity and frequency of exposure. The patterns used are certainly in accordance with the biophilic approach

concept and there are not too many shapes and patterns that can cause visual poisoning. Besides that for material selection you can use woodwork. Besides arranging the structural elements (for example: the column is shaped like a tree).



Picture 6.3 The column is shaped like a tree

Source: <https://id.pinterest.com/pin/326933254180877935/>

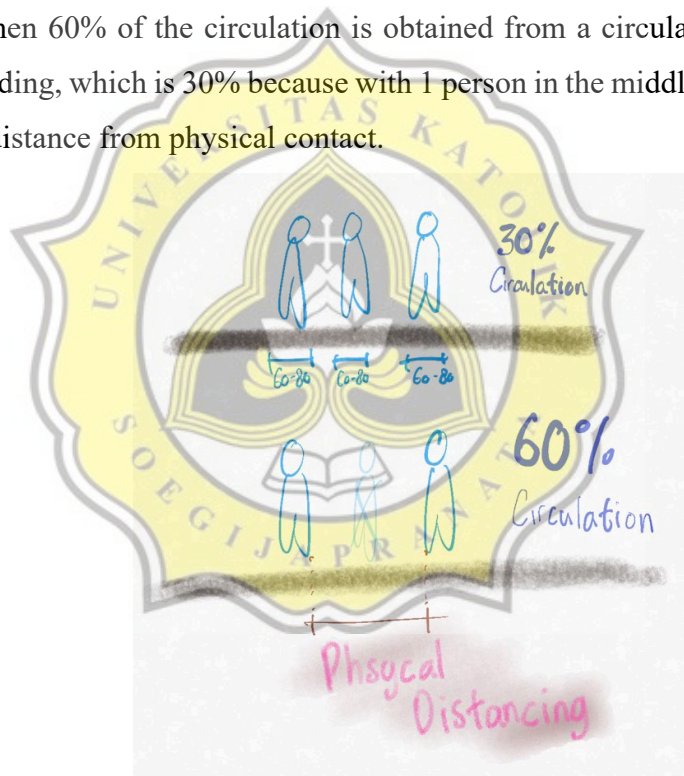
6. Material Connection with Nature

The purpose of the Material-Nature Relationship pattern is to explore the characteristics and optimal amounts of natural materials to elicit a positive cognitive or physiological response. There is some information in relationship enhancing materials. Natural materials can be decorative or functional (for example: wooden planks, granite countertops) can lead to interactions between users and natural materials.

In this building you can find a lot of brown, green and white. The quantity of material and color (natural) should be determined based on the desired function of the space (for example, to increase the sense of competitiveness). In the area of the color field and the texture of the structure will be exposed. according to chapter 5.5, the dominant material in this building is glulam and the roof covering is PTFE fiberglass. Identical original materials are preferred over artificial or synthetic materials because human receptors can distinguish which is genuine from which is not original so that the materials used are mostly natural natural materials. Including examples of green can help enhance the creative environment, with green in some communal spaces (other than green open spaces outside the building) that can spark creativity.

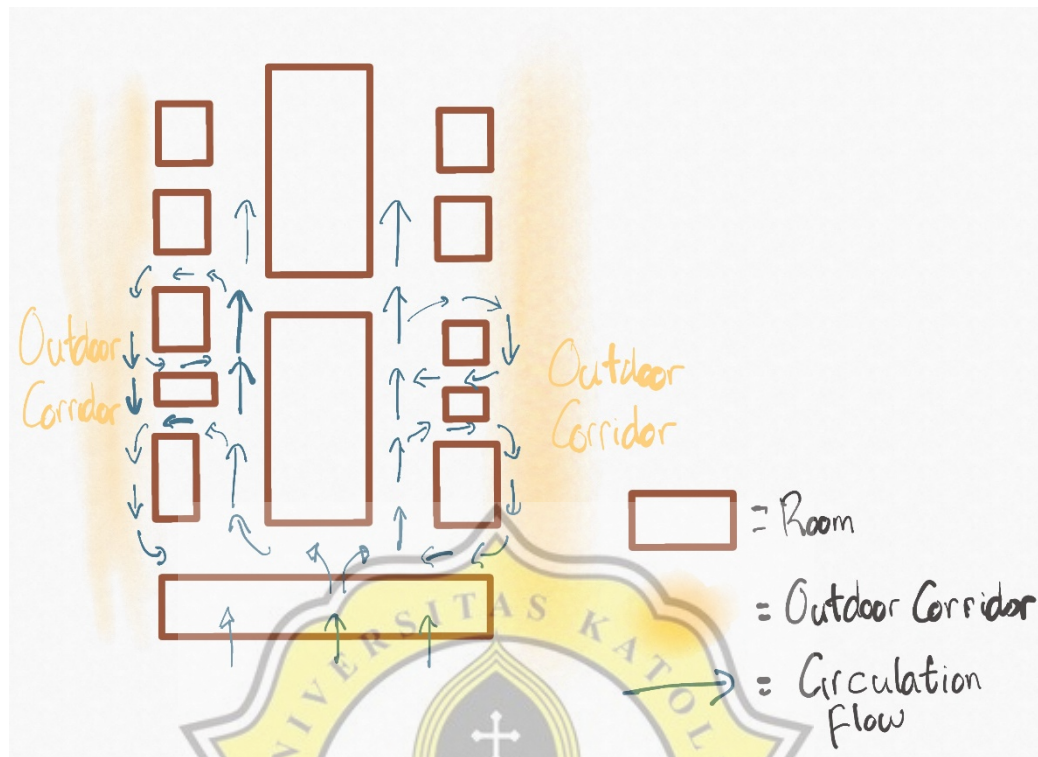
6.2.2 What is the application of new normal rules to create a comfortable and safe space for athletes when they practice ?

According to chapter 5.3 and 5.4, With the existence of Covid-19 and the implementation of the new normal, it has greatly changed many habits, especially in the areas of circulation and distance. For an ordinary building (without considering the new normal), it has 30% circulation space for people to do activities or people passing by. The international basketball academy building has a circulation of 60%. WHO (World Health Organization) and several covid-19 research bodies recommend physical distancing rules to avoid direct physical contact and maintain a distance between humans with a distance of approximately 1.6 meters. according to the value of Physical distancing, then 60% of the circulation is obtained from a circulation multiplier in an ordinary building, which is 30% because with 1 person in the middle of 2 people, at least they have a distance from physical contact.



Picture 6.4 Physical distancing circulation concept
Source: Personal Analysis

In addition, the application of 1-way circulation so as to avoid physical contact for building users. Of course, with 1-way circulation there are several accesses in certain parts making it easier for all users if they want to go to a room that has been passed.



Picture 6.5 Physical distancing circulation concept
Source: Personal Analysis

Application of access entry (door) that uses sensors. as much as possible avoid physical contact so that all users in the building do not need to touch or open it manually. the presence of a sensor door (sliding door) can minimize the deposition of viruses on an object.

6.2.3 How the application of international standards in basketball academy facilities ?

For the international standards is divided into 2 standar which are FIBA and NBA. When compared between FIBA and NBA, it does have very clear differences. FIBA is an institutional sports body, while the NBA is a private sports association and is more synonymous with entertainment. For the application of international standards in this basketball academy using the FIBA standard because FIBA is an institutional sport body and not concerned with the entertainment side. Of course, with the international FIBA standard, there are several facilities that follow the FIBA standard such as ring size, field size, use of the ball, 3 point detail area, and several other facilities that have been discussed in chapter 2.1.3. The learning curriculum also races on Jr. NBA so because the curriculum really teaches every athlete to understand basketball from basic to expert stage.