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BeeHive Co-Working with Green Architecture Approach

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Abstract*. Mainstream work activities that are generally carried out in rigid office spaces sometimes cause boredom for workers. Variations in ways and places of working need to be accommodated to avoid boredom. BeeHive Co-Working was built with the aim of providing a new place to work and socialize which is expected to provide enthusiasm in carrying out work activities. The design method applied is through a process that begins with the problem of how to create a flexible, relaxed, and unpressured work environment. The idea of Co-Working design is proposed to answer the initial problem. Green Architecture theme is proposed as the main theme of BeeHive Co-Working design. The concept of Green Architecture used in this design takes the main focus as a building that is energy efficient, minimizes expenses and increases the added value of the building. The position of the building in green architecture is related to (1) being able to adapt to solar circulation and wind direction, (2) extending from east to west, blocking solar radiation on transparent walls, (3) reducing heat transmission from massive walls exposed to direct solar radiation. The design of BeeHive Co-Working, which applies the concept of Green Architecture, is realized in the form of a modern design transformed from a rectangular mass form with a front view that uses an additional honeycomb-shaped facade. BeeHive Co-Working facilities that support the function of casual work are accommodated by the provision of furniture designed for the convenience of working while relaxing. The commercial function is supported by the provision of café shop facilities. This design is expected to be a place for workers to restore energy from the fatigue of busy work activities.*
Keywords*: Green Architecture, Workspace, Lounge Space, Co-Working Space*

INTRODUCTION

Background Knowledge

The current economic condition has entered the fourth wave economic era known as the creative economy era. Followed by the development of startups in Indonesia, every year, even every month many new startups appear in Indonesia. Startups are industrial startups with organizations designed to find new business models that generate large profits (Blank, 2014). Currently, there are more than 1,500 local startups in the Creative Industry in Indonesia. However, many startups fail due to several factors including market

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needs, internal conflicts, weak teamwork and inefficient funding, one of which is the relatively expensive space infrastructure for activities and the existing infrastructure is currently inadequate, especially functions that are in accordance with the activity needs and characteristics of creative startups. For this reason, a space is needed that can accommodate and develop the creativity of creative startups that is comfortable, suits their needs and supports a collaborative atmosphere.

In the current era, mobile usage has changed the attitude to work anytime and anywhere. The use of technology has made it possible for both entry-level and full-time workers to work anywhere to find a co-working space that is widely networked and collaborative. However, on the other hand, one also needs a supportive work environment (Weijs-Perrée, van de Koevering, Appel-Meulenbroek, & Arentze, 2019). Workers who are supported by a comfortable and supportive workspace Workers who are supported by a comfortable and supportive workspace are expected to increase their work productivity. Therefore, organizations need to build a comfortable internal work environment with a variety of facilities that can increase work creativity (Arentze, 2019). various facilities which can increase work creativity (Fuzi, Clifton, & Loudon, 2014). This kind of work environment is commonly referred to as Co-Working Space. The concept of CoWorking Space can be identified in public offices, third places of work, collaboration relationships, Co-Working hotels, incubators, and shared studios. These categories are based on the business model (for profit or non-profit) and the level of user access (public, semi-private, and private) (Kojo & Nenonen, 2016).

Literature Review

Co-Working Space is a building that functions as a flexible workplace for all people. This flexibility then changes the habit of workers, they can take their work wherever they want without having to be in a rigid office environment as in general. They can be in coffee shops, parks and other facilities in the Co-W orking Space. Finally, with all the facilities provided, Co-Working Space is expected to be a solution to the problems faced by workers. a solution to the problems faced by workers in the office in general.

Co-working Space is a workplace as well as a place to collaborate with fellow users who come from various disciplines. Co-working Space creates a new work network that is interconnected with various disciplines, everyone can work together with various groups of workers, communities, and other individuals. This facility applies a place to work with a concept like a cafe and is not rigid like a conventional workplace because it does not have barriers between workspaces. According to Uzzaman (2015), Co-working Space is an office space where independent workers such as entrepreneurs, freelance programmers, and web designers, freelancers who share with each other. The facility provides desks, conference rooms, and internet connection for its users. Co-working spaces are similar to rental offices but provide various facilities to support the work activities of freelancers and tend to be cheaper in operational costs.

According to Moreira (2013), Co-working Space is a concept that reflects a new workforce reality, started in the late 90s of the twentieth century in the United States. Co-working Space has a function as a workspace that is mostly used by freelancers. This facility is also used as a community platform that functions to share space costs as well as cooperate with others. Workspaces are individual but shared, creating a collaborative, flexible, trusting and knowledge-sharing environment among members. The number of co-working spaces today has grown rapidly. According to Lazuardi and Donny (2014), in Indonesia the first Co-working Space was present in Bandung in 2011, Jakarta in 2012, Bali in 2014. This facility is not only a shared office for freelancers but many things can happen such as learning, interacting, collaborating various freelancers and independent workers.

Design Issues

Based on the background description above, the formulation of this design problem is how to design BeeHive Co-Working that uses the Green Architecture approach.

Objective

The purpose of this design is to create a Co-Working design that uses the Green Architectur approach.

METHODS

1. Desaign Location

This BeeHive Co-Working design is located on Jalan Dr. Mansyur Medan. The location which is right on the edge of the main road provides easy access for BeeHive Co-Working Space users. The location which is also close to the campus makes this Co-Working Space can not only be used by workers, but also students.

Figure 1. Location Map

(Source: Processed by the author based on Google Earth, 2023)

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Figure 2. Design Location

(Source: Processed by the author based on Google Earth, 2023)

2. Design Process

The design process that ensues consists of five consecutive stages, encompassing data collection (for both the building and site), involvement in the programming phase (for both the building and site), carrying out analysis (for both the building and site), conceptualizing (for both the building and site), and synthesizing (Nuraini & Sudrajat, 2010). The design of BeeHive Co-Working Space is made using the Green Architecture approach. The design starts with land data collection, location survey, site analysis, proposed design ideas/concepts until the final design. The next process is to analyze user activities, and space requirements (zoning). Following the existing stages will create a Co-Working Space design that will be useful in the future. BeeHive Co- Working Space is located on Dr. Mansyur Medan street, adjacent to the University of North Sumatra. Co-Working is designed with the hope of becoming a comfortable place to work, study, relax and socialize. Co-Working is also made to support commercial activities, which are expected to complement the function of relaxing and socializing. For this reason, a Coffee Shop will be created as a place to relax for BeeHive Co-Working Space users.

DISCUSSIONS

Green Architecture

Green architecture is architecture that is environmentally sound and based on concern about the conservation of the natural global environment with an emphasis on energy efficiency (energyefficient), sustainable patterns (sustainable) and holistic approach (holistic approach) (Jimmy Priatman, 2002).

According to Siregar (2012), green architecture is a movement for the preservation of nature and the environment by prioritizing energy efficiency (environmentally friendly architecture). According to Pradono (2008) green can be interpreted as sustainable, earth

friendly, and high performance building. The green building concept that has long been developed in developed countries can be applied to reduce air pollution in urban environments.

According to Abhimanyu Takdir Alamsyah, green architecture is the theme of architectural design or the product of the realization of architectural works that are environmentally sound, care about the preservation of nature, support sustainability or prioritize environmental conservation, seek material efficiency and energy use on a local or global scale, are holistic both ecologically and anthropologically, in the context of architecture and other aspects related to it. According to him, green architecture is a term for architecture that is grounded, a reflection of the results of architectural thinking or every architect's work, both conceptually and instinctively, if he cares about the place where he lives, both ecologically and anthropologically as a unum inse not unum ordinis (Anisa, 2010).

The principle of Conserving Energy is the main principle to utilize energy in an appropriate manner. The building must pay attention to energy consumption before and after the building is built. The building is made elongated and thin to maximize lighting by utilizing solar energy radiated in the form of thermal energy, as a source of electricity using Photovoltaic devices placed on the roof of the building. Sunlight is responded to by the use of Sunscreen on the windows. Sunscreen can automatically regulate the intensity of light and excessive heat energy into the room. The interior colors of the building use bright colors but are not dazzling. The use of color aims to optimize the effect of light on the environment.

The orientation of the building towards sunlight uses the Working with Climate principle, to utilize natural conditions and energy sources. Air is responded to by using an air pump and cross ventilation. The system uses plants and water as climate regulators. The building uses windows that can be partially opened and closed to optimize ventilation. The design of a space or facility for community activities should also consider the characteristics of the individuals who will be using it (Nuraini, 2019).

Conceptual Basis

The BeeHive Co-Working Space design plan has a function as a comfortable place to work, study, relax, and socialize. This function is targeted to accommodate individual or team workers who do not have a permanent office. Not only workers but also students who may want to find a new learning atmosphere. Using shared facilities in order to establish communication between fellow Co-Working Space users, so that the purpose of socializing can be realized properly. Additional functions that exist in Co-Working Space are commercial functions to support the needs of drinking and relaxing.

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Figure 3. BeeHive Co-Working Space Site Plan

(Source: Processed by the author, 2023)

On the building site there is a car park and a motorcycle park. There is only one gate for access in and out for Co- Working users.

Figure 4. 1st Floor Plan

(Source: Processed by the author, 2023)

The first floor functions as a service area for Co-Working users. There is a reception room as an information center, café shop for relaxing, childcare room, toilets, and ATM.

Figure 5. 2nd Floor Plan

(Source: Processed by the Author, 2023)

In Co-Working, two choices of space for work are made, private space and shared space. The 2nd floor contains more focused private workspaces. Small meeting rooms, restrooms and an outdoor space that can be used as a place to rest and relax.

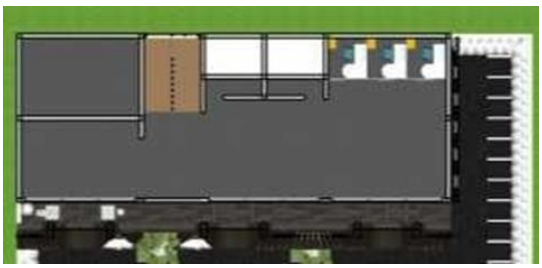

Figure 6. 3rd Floor Plan

(Source: Processed by the Author, 2023)

Co-Working is designed for workers to mingle casually without any awkwardness between each other. The 3rd floor space is more focused on those who want to work while establishing harmonious relationships between each other as fellow Co-Working users.

Figure 7. 4th Floor Plan

(Source: Processed by the Author, 2023)

To support the function of working leisurely, there is a lounge on the 4th floor. Meeting rooms that are larger than those on the 2nd and 3rd floors, and restrooms.

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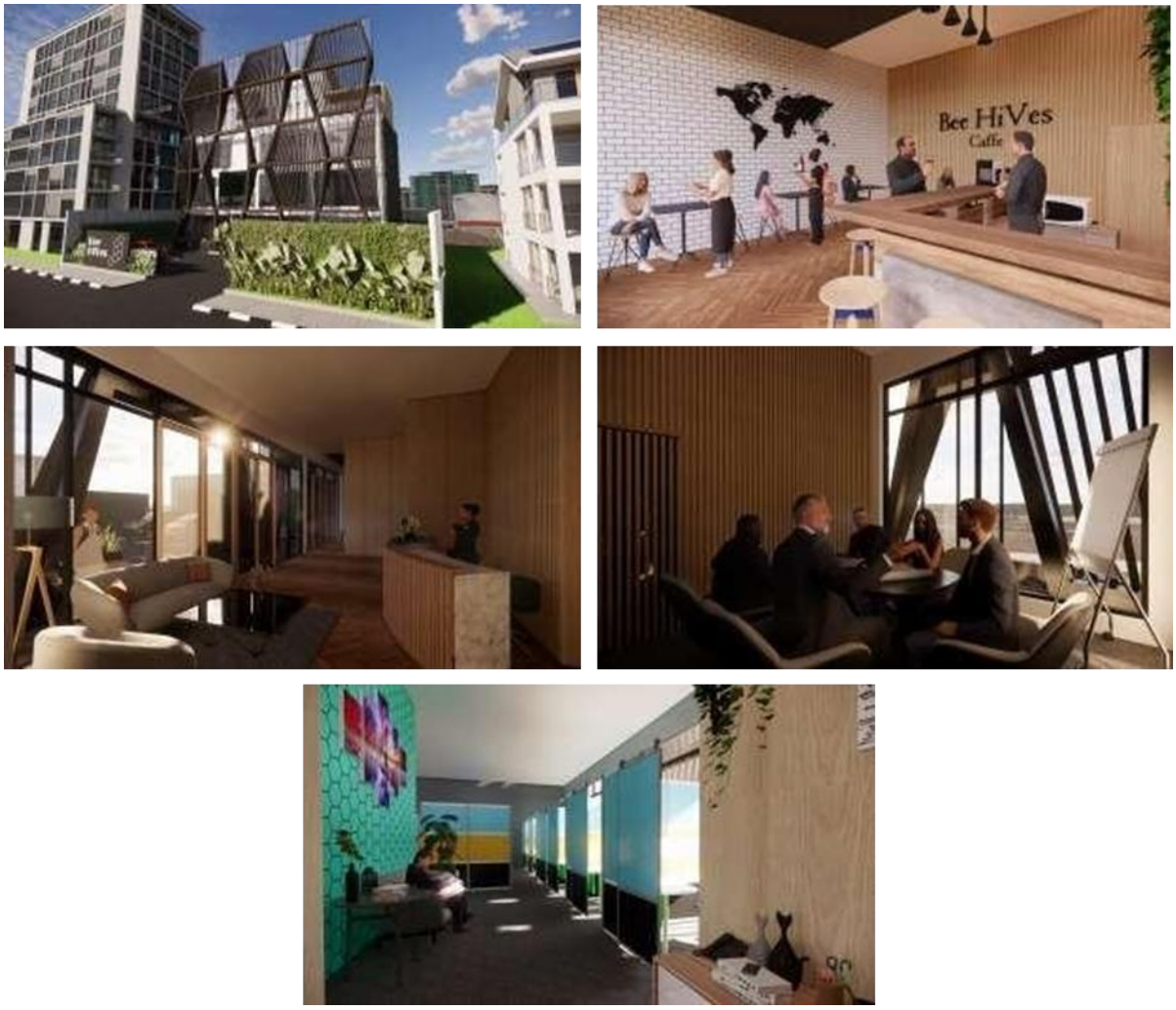

Figure 8. 3D Illustration of View & Interior

(Source: Processed by the Author, 2023)

CONCLUSIONS

The design of BeeHive Co-Working Space that applies the concept of Green Architecture is realized in the form of a modern design transformed from a rectangular mass form with a front view that follows a honeycomb pattern. The overall structural design that is realized in the form of a modern physical appearance of the building symbolizes togetherness.

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