

## CO WORKING SPACE AND CAFÉ DESIGN IN MEDAN WITH A TROPICAL ARCHITECTURAL APPROACH

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**Keywords:**

Coworking Space, Medan, Tropical Architecture

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**Abstract:** *The rapid growth rate of the creative economy in Indonesia is a new hope for the Indonesian economy in the future. The growth of the creative economy on a national scale certainly influences the growth of the regional creative economy, especially the city of Medan which is the third largest city in Indonesia after DKI Jakarta and Surabaya. The growth of the creative economy followed by the growth of digital-based start-ups and MSMEs in Medan City has caused a shift in the need for conventional office facilities which tend to be formal to more flexible and dynamic workplaces. In general, Coworking Space is a multifunctional building that combines the functions of an office and a community center which offers sufficient sharing area to accommodate office activities, especially startup businesses and communities. Designing a coworking space requires a tropical architectural approach, which in its application is related to the weather in the city of Medan.*

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### INTRODUCTION

Coworking Space in general is a multifunctional building that combines the functions of an office and a community center which offers sufficient sharing area to accommodate office activities, especially startup businesses and communities. Along with the development of the startup world, the creative industry and the large number of freelancers in Indonesia, especially in the city of Medan, creative industry players need a place to work and collaborate together.

The city of Medan really needs public space or a place to accommodate startup entrepreneurs to develop their businesses in the world of creative industry. With the sophistication of information and communication technology that now exists, working does not need to be in a permanent office, where every day you have to meet face to face with employees and other office actors. Now, you can work anywhere, meet with clients and colleagues when needed, and communicate between work partners via the internet.

With the existence of coworking space in Medan City, it is hoped that entrepreneurs can work together, exchange ideas or solutions in order to develop their respective businesses. There are only 5 coworking spaces in the city of Medan, namely Dilo Medan, Betahive, Clapham Co, Saga Creative Hub, Kami Space. This shows the lack of facilities and infrastructure to accommodate startup entrepreneurs in the creative industry sector in Medan City. (Aditya, 2018; Nuraini & Sudrajat, 2010). The space for human activities should be designed according to the activities and characteristics of humans (Nuraini, 2019; Nuraini et al, 2022; Nuraini & Suprayetno, 2021). This design involves five steps or processes, namely programming (site and building), analysis (site and building), concept (site and building), as well as design synthesis (Nuraini & Sudrajat, 2010)

## **THEORETICAL FRAMEWORK**

### **1. Definition**

The general definition of Co Working Space is an office or work environment used by people who work alone or by people with different companies (Oxford Dictionary). In particular, coworking spaces adapt to a work environment where teams, ideas and knowledge are shared. Collaborative workspace also includes renting a shared workspace with other users and using time flexibly. People from various backgrounds use coworking spaces to work, including entrepreneurs, freelancers, startups, associations, consultants, investors, artists, researchers, students, etc. (Majoral 2012 in Siti, 2022).

The term Café comes from French which literally means coffee, but is used as the name of a place where people gather or just relax and do activities. As time goes by, cafes not only serve coffee, but also other drinks and snacks.

According to Maulidi (2017 in Siti, 2022), the definition of a café is a place to relax and chat where visitors can order drinks and food. Cafes are a type of restaurant but prioritize a relaxed atmosphere, entertainment and visitor comfort so they provide comfortable seating and a little music.

### **2. Location**

The Coworking Space project is located on Employees Street, Setia Budi, Medan

Sunggal District, with a land area of around 700 m<sup>2</sup>. The site location is directly adjacent to residential areas in the north, residential areas in the east, residential areas in the south and empty land in the west. This location is shown in Figure 1.

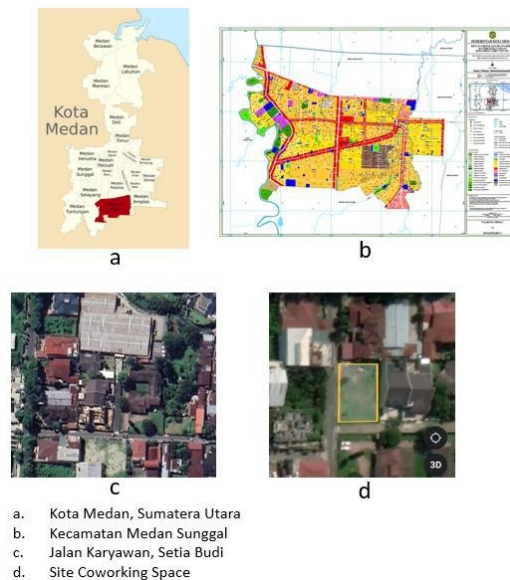


Figure 1. Coworking Space Locations  
(<https://earth.google.com/web/search/medan+deli/>)

According to the RDTR, this area is included in the Low Population Density Housing zoning, where according to the provisions and nature of the use of the Low Density Housing zone, space is allowed for Coworking Space.

The function of the land is designated as a Coworking Space because the area around the land is a residential area. For transportation access, there is also lots of public transportation. The location of this land is in a strategic area.

### 3. Tropical Architecture

The theme applied to the Coworking Space building is Tropical Architecture. Tropical architecture according to Tri Harso Karyo is a building concept that refers to climatic conditions where throughout the building design is aimed at solving problems caused by the tropical climate such as hot sun, high temperatures, rain and high humidity.

All architectural products are produced in tropical climates with the aim of and being able to meet the comfort requirements of the building's users. So that building users can use the building with a feeling of comfort, it can be said to be tropical architecture (LMF Purwanto, 2006 in Nuraini, 2023). Architecture that is aligned with the local

environmental conditions and tailored to the needs of its community can also be referred to as tropical architecture (Nuraini, 2023). The design of spaces for human activities should align with human activities and characteristics. Architectural designs that harmonize with the surrounding environmental conditions and cater to the requirements of the local community may also be labeled as tropical architecture (Nuraini et al , 2023)

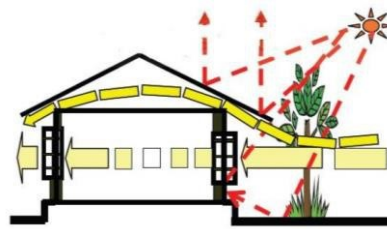


Figure 2. Principles of Tropical Architecture

#### 4. Characteristics of Tropical Architecture

Karyono, TH (2010) believes that building design with a tropical character has several requirements as follows, namely: it must have a view and orientation of the building that is in accordance with tropical standards (building orientation), use materials or parts that support comfort in tropical conditions (such as; sunshading, sunprotection, sunlouver), paying attention to the standards for the influence of openings on the surrounding environment (window radiation), having characteristics or characteristics that expose the building as a tropical building, and using materials or bright colors.

The characteristics of tropical architecture that need to be used as parameters for the success of implementing tropical architecture are as follows (Karyono, 2010):

a. Orientation

Buildings need to pay attention to the orientation of the building so that radiation and sunlight do not hit the walls or holes in the walls too much, so that the space inside the building does not get hot.

b. Isolation

Buildings need restrictions against direct heat, rain, and wind-borne particles.

c. Shading

Shading needs to be strategic so that it can reduce direct sunlight on the building.

d. High Cross Ventilation

It is very important to pay attention to air flow regulation both outside the building

and inside the building so that it can neutralize air humidity in the building.

e. Plant Utilization

It is important to place plants and choose the right type so that they can act as a barrier, air divider, air guide, or prevent dust.

f. Roof Ventilation

The heat throughout the day hit by the roof of the building should be neutralized before entering the building by providing ventilation on the roof.

g. Building Materials

Material buildings affect the thermal conditions inside the building. The type of material, thickness and color of the material will influence the heat exchange by radiation and conduction to the environment around the building.

## 5. Tropical Architectural Strategy

According to Sugiyatmo (2001 in Nuraini, 2023) tropical architectural strategies that need to be considered in tropical climate buildings are as follows:

a. Thermal Comfort

To obtain thermal comfort in a space, it is primarily to reduce heat gain, which is caused by sunlight, as well as providing sufficient air flow and carrying heat outside the building and preventing heat radiation, both direct solar radiation and from hot inner surfaces. This heat can be reduced by using large heat-resistant materials, reducing the surface area facing east and west, and protecting the walls with shading devices. Secondary Skin is a layer that is built after the outer wall of a building.

b. Air Flow Through Buildings

Air flow occurs due to thermal forces, namely there is a temperature difference between the air inside and outside the room and a difference in height between ventilation holes. These two styles can be utilized as well as possible to obtain the desired amount of air flow. The use of air flow in buildings is to provide fresh air full of oxygen to provide health and to cool the inside of the building.

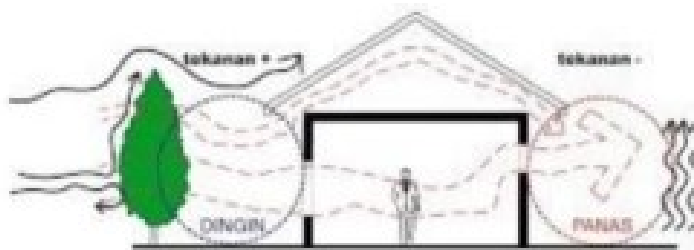


Figure 3. Building thermal management strategy  
(Source : Husaini, 2020)

c. Heat Radiation

High exposure to light and radiation in buildings will create air temperatures that exceed the comfort threshold of approximately above 40C, making you feel uncomfortable. To prevent direct solar radiation and diffuse solar radiation, shading devices such as sun shading devices and roof overhangs are needed.

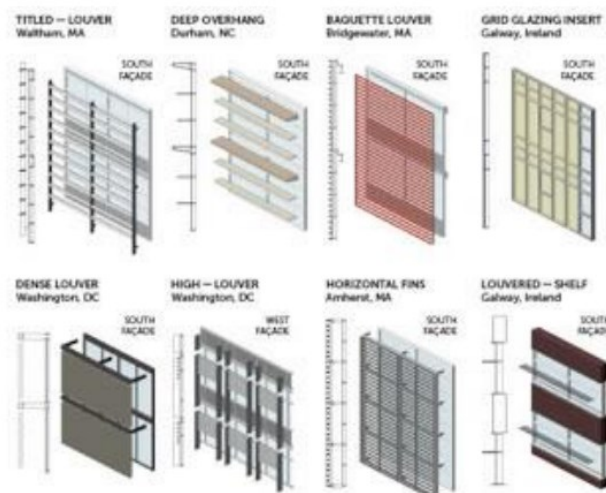


Figure 4. Radiation management strategy hot with shading  
(Source : Husaini, 2020)

Quoting from Binus.ac.id secondary skin function in the building, namely:

- a. Protects the building from sunlight and can block sunlight so that the building doesn't get too hot but still provides natural lighting.
- b. Privacy in the interior is better maintained. Rooms with large openings are more private, but not too closed.
- c. Can be used as a vertical garden medium. Beautify and add green space to the building.
- d. Patterns and designs on secondary skin can add an attractive composition to the

building exterior and produce a more aesthetic facade appearance.

- e. Maintain thermal conditions in the inner area because the heat from sunlight can be absorbed first by the secondary skin and not directly hit the wall behind it.

According to Yellamraju (2004) energy savings by using secondary skin are achieved by minimizing the solar load around the building. Providing a low solar factor and low U-value minimizes the load on adjacent spaces. Secondary skin is claimed to save natural resources by reducing energy consumption during the building's operational period.

## DISCUSSION

### 1. Design Concept

This design concept uses a Tropical Architecture theme where this design is designed using lots of openings and the use of light and in the café there is an open area. The use of sloping roofs or plana roofs is representative of the characteristics of tropical buildings.

### 2. Mass Composition and Mass Order

The basic mass shape chosen is a combination of square and triangular shapes which adapt to the tropical concept of the roof shape. The building layout pattern takes into account the function of the building, circulation of activities and ease of access from one building to another. Meanwhile, the concept of the building period uses the Tropical Architecture concept.

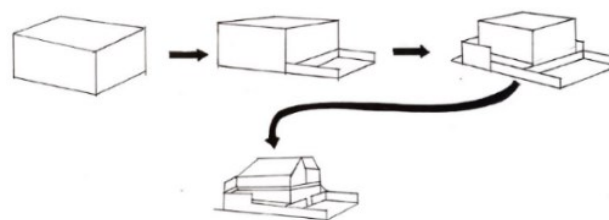


Figure 5. Composition and Arrangement Building Mass

### 3. Zoning Concept

Zoning generally consists of outdoor areas and indoor areas

1. In the outdoor area There is a parking area, outdoor and semi-outdoor café area.

2. In indoor areasthere is an indoor café area and a coworking space area.

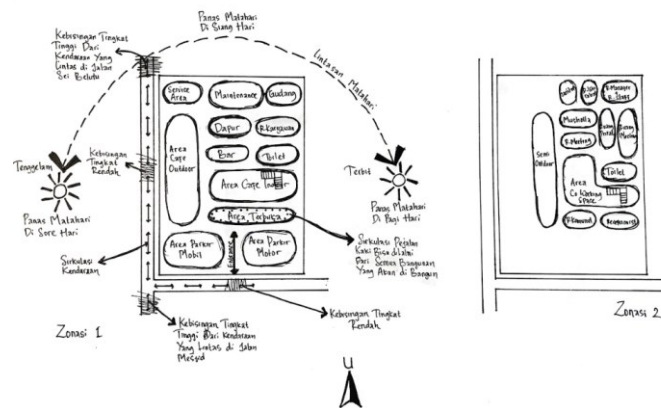


Figure 6. Zoning

#### 4. Site Plan



Figure 7. Site Plan

#### 5. Floor plan

In the design of the Co Working Space it has 2 floors, where the 1st floor is the café area and the 2nd floor is the Co Working Space area.





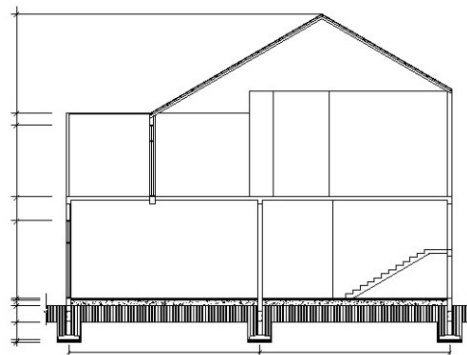


Figure 10. Cut

## 8. Perspective

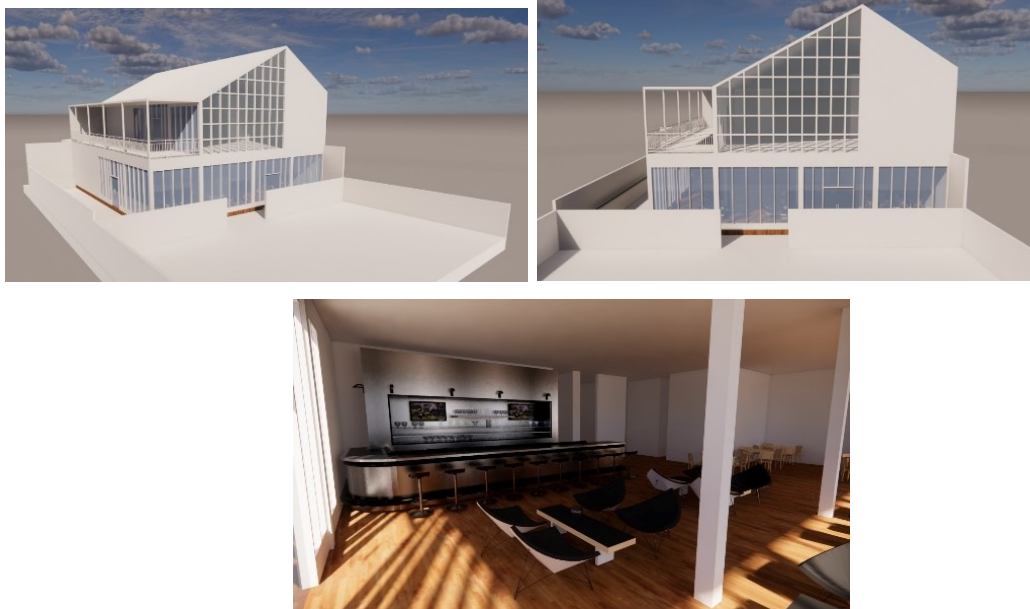


Figure 11. Perspective

## CONCLUSION

Coworking Space (rental office) in Medan is a building that can be a place for startup entrepreneurs to be able to work in a collaborative way to improve and develop their business. With the existence of Coworking Space (Rented Offices) in Medan, it can become a creative place for startup entrepreneurs and also creative industry workers to make it their main choice to choose to work together and uphold the community of entrepreneurs.

Coworking design with a tropical architectural approach can solve startup development problems as well as create a conducive space for startups and create an atmosphere that can reduce stress for users.

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