COWORKING SPACE PLANNING WITH AN ERGONOMIC APPROACH (CASE STUDY IN SAMARINDA)

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ABSTRACT

Technological innovation in the modern era has fundamentally transformed working practices across various sectors. The rise of digitalization and the adoption of hybrid work systems have encouraged a more flexible approach to work, enabling people to operate from virtually anywhere. This Coworking Space design adopts the Design Thinking methodology an empathetic, user-centered problem-solving approach that emphasizes iterative development. Rather than focusing on identifying problems, the primary objective is to gather concrete data regarding spatial organization and the core functions typically present in Coworking Spaces, particularly within the Samarinda region. The goal is to develop a shared workspace that promotes ergonomics, adaptability, and enhanced user productivity. The central design concept combines Biophilic and Zen Modern principles to cultivate a tranquil atmosphere through the integration of natural elements and a minimalist, balanced aesthetic. The selected materials emphasize both natural and semi-industrial characteristics, including wood, glass, stone, metal grilles, and exposed concrete. Spatial zoning is tailored according to functional needs, encompassing private rooms, both open and enclosed coworking areas, meeting rooms, a mini restaurant, lounge, pantry, and rooftop facilities providing users with the flexibility to choose work environments that suit their preferences and requirements. This design aspires to serve as a modern, efficient, and adaptable workspace solution that also supports the psychological and physical well-being of its users.

Keywords: *Coworking Space, Ergonomics, Productivity, Flexibility, Biophilic, Zen.*

INTRODUCTION

As a supporting region for the new capital city of Indonesia (IKN), the city of Samarinda is experiencing rapid infrastructure development. This transformation has also spurred growth in the business, service, technology, and creative industries, especially among the youth. Consequently, there's a growing number of professionals with flexible work arrangements, such as freelancers, startup founders, content creators, consultants, researchers, as well as hybrid workers and students.

Despite the significant market potential for coworking spaces in Samarinda, the available facilities are very limited. The existing options, such as @YOU Space and @Ruangku Coworking Space, are currently unable to meet the diverse needs of users. This lack of adequate space has led many individuals to seek alternative work locations like cafes and local eateries (Angkringan). However, these places are

generally not designed ergonomically, making them unsuitable for long-term work, especially for collaborative activities or tasks requiring high concentration.

Furthermore, intense and prolonged work can lead to both physical and mental fatigue. In this context, ergonomics is crucial in the interior design of coworking spaces. It focuses on adapting the environment to the human body, thereby minimizing the risk of physical strain due to poor posture and enhancing user comfort and productivity.

A key challenge is Samarinda's tropical climate, characterized by high temperatures and significant humidity. These factors directly impact thermal comfort indoors. Therefore, the design of a coworking space must consider local environmental aspects, such as natural lighting, air circulation, climate control, and the selection of sustainable building materials. Local cultural aspects should also be integrated into the design to ensure it aligns with the social characteristics of the Samarinda community.

This research aims to design a coworking space in Samarinda using an ergonomic approach that supports user flexibility, comfort, and productivity. The resulting design is expected to serve as a guide for interior designers and coworking space managers in Samarinda.

RESEARCH METHODOLOGY

This research employs the Design Thinking methodology. It guides the researcher to identify and map out the various types of spaces within a coworking environment. The process includes:

- *Empathize, Observation (@YOU Space, @Ruangku).*
- *Literature Study about Coworking Space, ergonomics, Biophilic, Zen, Flexibility and Productivity concepts.*
- *Define.*
- *Formulating the problem statement of the design concept (problem statement).*

This method aims to analyze the strengths and weaknesses of each architectural and interior design of the Coworking Space. The main focus is not to dig into the problems, but to obtain concrete data regarding the room composition and the main functions commonly found in Coworking Space environments in Samarinda.

After the problem is clearly defined, a creative solution exploration is carried out through Ideate (Generating design concept ideas), Brainstorming design concepts, Developing a moodboard, Arranging the structure of user activity needs and zoning, Visualizing ideas in the form of sketches and floor plans, Creating 3D models, and Prototype (Creating 3D rendering prototype). The final step is the design selection method. The steps used in the design selection evaluation include Test (Testing sketches, floor plans and 3D), Survey form for the design to respondents to get feedback, Design revision, and Design finalization.

RESULTS AND DISCUSSION

In the initial part of the research, a design analysis was conducted. The purpose of this analysis is to identify the various user activities within a coworking space, review the patterns of these activities, and formulate the spatial requirements based on their function and usage intensity. The planned location for this design is at Jl. Teuku Umar/Adam Malik Perum Bukit Indah Permai, Karang Asam Ilir, Sungai Kunjang, Samarinda, East Kalimantan.

Interior Concept Emphasis

a. Ergonomics

The primary focus of the coworking space design is on ergonomics, aiming to create a comfortable and efficient environment for all users. Every interior element, from furniture and lighting to spatial circulation, is designed to accommodate human posture, movement range, and the specific needs of various activities.

b. Biophilic

The use of natural materials and vegetation is integrated throughout the space, including the lobby, hallways, mini-restaurant, outdoor balconies, and main hall. This approach aims to bring a natural atmosphere to the interior.

Spatial Concept

he coworking space building is structured into four main sections: the ground floor, the first floor, the second floor, and the rooftop area, which functions as an additional space.

1. Ground Floor

Figure 1.
Ground Floor Interior Layout

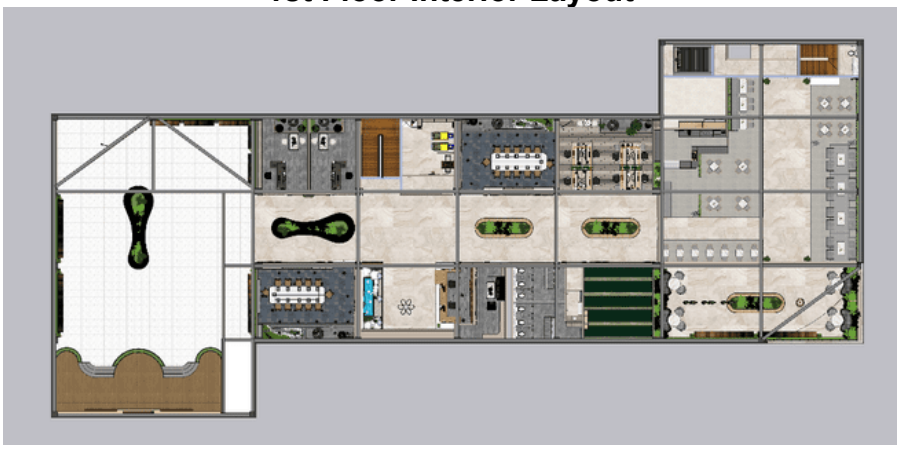
(Source: Author, 2025)

2. First Floor

The first floor features a main entrance, a lobby with a reception area, and a hallway (selasar). It includes an auditorium (aula) with an outdoor extension, a meeting room, a private work room, and a coworking area. Essential facilities such as a janitor's room, toilets, and a prayer room (musholla) are also located here. For dining and relaxation, there is a mini-restaurant with a balcony area. A fire escape is also available on this floor.

Figure 2.

1st Floor Interior Layout



(Source: Author, 2025)

3. Second Floor

The 2nd floor has a hallway, lounge, auditorium void, 2nd-floor auditorium seating, private work room, enclosed coworking room, open coworking room, toilets, staff room, archive room, HRD room, manager's room, founder's room, pantry, and an emergency staircase.

Figure 3.
2nd Floor Interior Layout

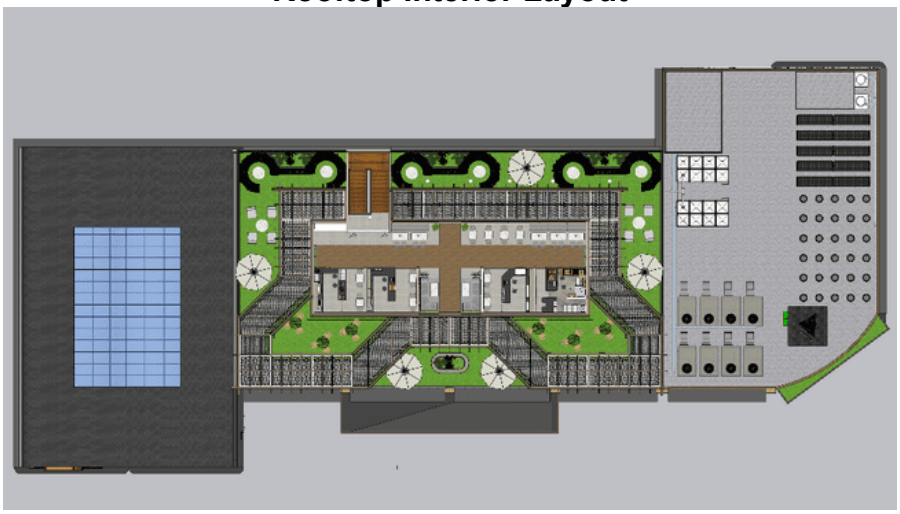
(Source: Author, 2025)

4. *Rooftop*

On the rooftop there is an open area, namely a garden, and a food court area as a place to relax and enjoy the Coworking Space facilities. Several device facilities such as AC Center, Solar Panels, Roof Tank, Wi-Fi Tower, Solar Tunnel, lift house, electric, pump, and emergency stairs.

Figure 4.

Rooftop Interior Layout



(Source: Author, 2025)

Building and Interior Style Concept

Zoid Coworking embraces a design approach that blends ergonomics, Biophilic, and Zen principles within a tropical contemporary style. These three approaches complement each other to create a workspace that is aesthetic, comfortable, and supports the overall well-being and productivity of its users. The shift towards contemporary workspace concepts is increasingly seen in Samarinda, which necessitates a modern, efficient, and adaptive work environment to meet this dynamic demand.

1. Building Appearance

   The Biophilic approach is reflected in the integration of natural elements such as vegetation, organic materials (wood, stone, natural metals), and the optimal use of natural lighting and ventilation. This design aims to create a strong connection between users and nature, improving mental health, visual comfort, and indoor air quality.

   The building's form is designed to be simple yet full of character, highlighting clean, geometric, and proportional lines that reflect Zen principles of simplicity, balance, and visual tranquility. The use of natural colors like wood brown, cream, and gray supports a warm and calming atmosphere while also bringing a tropical feel that aligns with Indonesia's climate.

   Elements like metal lattices, vertical wooden shading, and textured facades serve not only as aesthetic ornaments but also as controls for direct sunlight and heat protection. This aligns with ergonomic principles by maintaining thermal comfort within the building.

Gambar 1.

Building Facade

(Source: Author, 2025)

Gambar 2.
Building Facade

(Source: Author, 2025)

Gambar 3.
Building Facade

(Source: Author, 2025)

2. Interior Appearance

The application of ergonomic principles is reflected through attention to aspects of accessibility, comfortable circulation, and design that considers natural lighting and protection from direct heat. The interior is designed not only to reflect a contemporary aesthetic suitable for a tropical climate but also to support the productivity and overall well-being of the Coworking Space users.

The interior design approach combines Biophilic and Zen concepts, which are applied through simple, clean, and balanced interior forms, in order to create visual tranquility that supports a focused and distraction-free work atmosphere. A natural color palette such as wood brown, cream, and gray is used to bring a warm and calming impression.

Gambar 4.
Ground Floor Interior

(Source: Author, 2025)

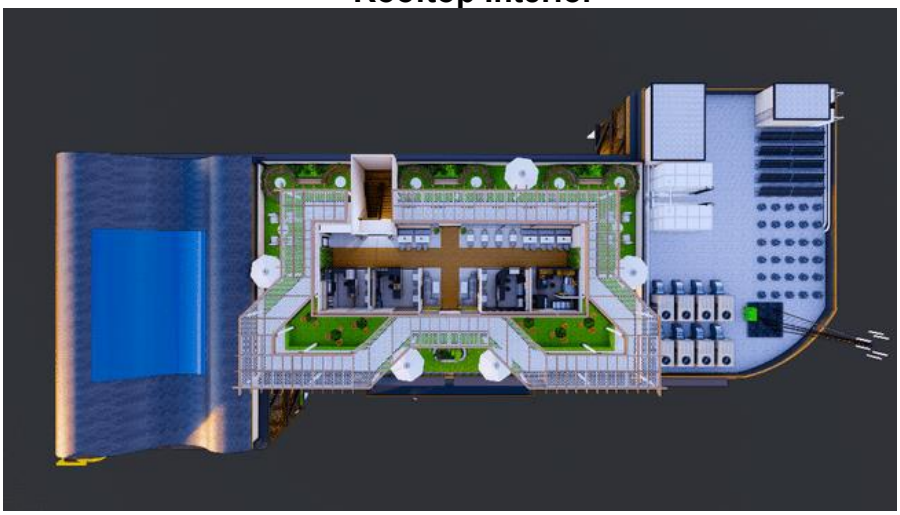
Gambar 5.
1st Floor Interior

(Source: Author, 2025)

Gambar 6.
2nd Floor Interior

(Source: Author, 2025)

Gambar 7.
Rooftop Interior



(Source: Author, 2025)

Discussion

The majority of respondents for the ZOID Coworking Space survey were young adults aged 21-30 with diverse backgrounds, ranging from students, employees, entrepreneurs, to directors. Most of them had never visited or were aware of the coworking space concept, so their evaluation was purely based on the design visualization shown.

In general, the first impression of ZOID Coworking was very positive. Many respondents described it with words like "interesting" to "very interesting," especially due to the blend of colors, textures, and materials which were considered harmonious and balanced. These visual elements were also seen as capable of creating an attraction for people to stop by, although a small portion of respondents felt that its functionality could still be improved.

The arrangement of the motorcycle parking area outside and the car parking inside was viewed as quite good and facilitated user movement. Access to service rooms such as the control room, server, and storage was considered clear and safe. Even on the technical ground floor, natural elements were still present through the selection of appropriate materials, colors, and lighting. Overall, the ground floor was rated as simple, calm, and harmonious, as well as supportive of user flexibility and comfort.

Upon entering the first floor, areas like the lobby, meeting room, private room, and Coworking Space received appreciation for their comfort, both in terms of sitting posture, distance between furniture, and ease of mobility. The natural elements in the form of plants, wood and stone materials, and natural lighting felt integrated, especially in the outdoor auditorium, balcony terrace, and mini-restaurant which gave a refreshing impression. The atmosphere on this floor was considered able to support focus, tranquility, and productivity, while facilities like the toilets, prayer room, and mini-restaurant were deemed quite adequate.

On the second floor, respondents felt that the private work room, enclosed and open coworking spaces, and lounge already supported comfort and work efficiency. The furniture layout was considered ergonomic and provided sufficient space for movement. Natural elements were still present through plants, ventilation, and natural light that created a silent, neat, and harmonious atmosphere. Almost all respondents said this floor was comfortable for long-term work.

The rooftop was one of the most favored parts. The presence of a garden, food court, and open seating area was considered capable of creating a direct connection with nature, providing refreshment, reducing stress, and boosting morale. The design was rated as simple yet functional, serving as a perfect break space from work activities. Some respondents only added suggestions for a greater variety of seating, including for individuals.

Overall, ZOID Coworking Space was considered capable of combining modern, Biophilic, and Zen elements harmoniously. The majority of respondents felt this design was ergonomic, comfortable, and worthy of implementation, especially in Samarinda which still rarely has coworking spaces with such a natural concept. Although a small portion of respondents felt the need for strengthening the identity so it does not seem like a conventional hotel or office, the majority agreed that this design successfully created a productive, relaxed, and pleasant work atmosphere.

CONCLUSION

From the design that has been arranged, it can be concluded that ZOID Coworking integrates an ergonomic approach with Biophilic and Modern Zen concepts in the overall appearance of the building and interior of the Coworking Space. The space is divided based on work functions, such as, private room, meeting room, Coworking room, mini restaurant, hallway/lounge, pantry, hall, rooftop, food court, staff room, prayer room, janitor, toilet etc. Earth tone colors create a calm atmosphere, supported by natural lighting from large glass openings, skylights in the hall, as well as lights with comfortable intensity. The use of ergonomic furniture and space, such as posture-adjusting chairs, adjustable tables, spatial arrangement that supports movement, and a relaxation area is available on the rooftop with the provision of various food courts for user comfort. Where users are given a lot of freedom in choosing the provided space to work, both in terms of location needs and supporting facilities in increasing flexibility and productivity.

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