Biophilic Concept as a Public Space Design

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ABSTRACT

The COVID-19 pandemic that occurred at the end of 2019 has made many changes in all aspects of life, from offices, education, entertainment, and even how to socialize in daily activities. One sector that is quite impacted is commercial space. Some commercial spaces were forced to stop their activities due to the high number of covid cases that hit Jakarta in particular. But over time, cases have now begun to decline and improve. This has made many commercial industries start to revive to start new habits and lives after the previous pandemic. public areas are one of the places that are now starting to reopen after almost 2 years of social restrictions, one of which is a cafe which is a gathering place and socializes for most people in Indonesia, especially in the city of Jakarta. With the reopening of cafes today many offers new concepts to make it comfortable and safe for visitors who come. The biophilic concept is taken because this concept is very appropriate to be realized during a pandemic. With an open area, the air circulation that customers get feels safe, besides that the use of open space is also beneficial both in terms of lighting and air circulation which is expected to be one of the answers to the new concept that will be used in the future after the pandemic. The methodology used is a qualitative method with a phenomenological approach. Qualitative observation data is collected by documenting all kinds of information and conducting direct surveys on the location. The purpose of this research can be useful for future public space design and become a design reference for the current era of new habits. and hopefully, in the future, this research can always be improved and updated along with the development of technology that is increasingly developing.

Keywords: *Biophilic, Interior Design, Public Space Design*

INTRODUCTION

The COVID-19 pandemic has been occurring for two years and has significantly altered all areas of life worldwide. Despite implementing various new habit adjustments (IMR) or what is referred to as the new normal era, residents of Jakarta are now accustomed to coexisting with Covid-19, and numerous are beginning to resume their routine habits. The IMR period commences with the issue of the Decree of the Minister of Health of the Republic of Indonesia (No. HK.01.07/MENKES/382/2020) concerning the health protocol for the Indonesian people to carry out activities in public places and facilities for preventing and controlling COVID-19 (Muhyiddin & Nugroho, 2020).This is a guideline for the operation of all community business actors' community.

Following the global pandemic of the last two years, the human urge for social interaction has caused meeting places or public spaces to compete to create a comfortable and safe space for visitors. A cafe is one of the most popular public spaces; at first, the cafe was merely a location to sell food and drinks. However, as time passed, the cafe's function shifted to gathering, socializing, and relaxing; in some modern countries, the café has even become a place of employment. The layout of a commercial space, in this case, a cafe, is a communication tool designed to suit the needs of consumers as well as an attempt to understand their necessities and wishes. Commercial space layout is a determinant of enhancing its customers' productivity; thus, an optimal layout design is required to suit service needs and the regulations for complying with current health protocols. Several aspects, including space needs, user activity studies, facility studies, ergonomics, anthropometry, and room circulation, support and play a role in cafe furniture arrangement design. As a result of these considerations, it is possible to design a space that gives comfort while also increasing the productivity of those who use it. Furthermore, adapting new habits employed in Indonesia now necessitates various changes that existing cafe businesses must make.

This research aimed to understand and determine changes in furniture arrangement caused by applying health protocols to adopting new habits by using one of the cafés in the West Jakarta area as a case study. This research expects to provide new knowledge and suggestions for interior arrangement design in adopting new habits.

LITERATURE REVIEW

Cafe

The word Cafe (or *Kafe* in Indonesian language) means 1. a place to drink coffee where visitors are entertained by music; 2. a place where visitors can order drinks such as coffee, beer, and cakes (Kamus Besar Bahasa Indonesia, 2008). Currently, cafes have become one of the places to gather that is favored by all ages, from children to adults. After the Covid-19 pandemic, cafes have also become an alternative to working and learning together. Cafe is a business in the food sector that operates in the commercial sector. Cafes usually offer light meals with informal service and atmosphere (no standardized service). Cafes provide a smaller menu compared to restaurants, but they offer a comfortable place and atmosphere for visitors to relax and gather together.

Circulation Flow

According to Pujianto and Vallery (2021), there are many sorts of service systems that are often utilised in a café or restaurant. These are some examples:

1. Self service
2. Waiter and waitress service
3. Counter service
4. Automatic vending
5. Delivery Service

Usually most cafe visitors will use waiter/waitress services because most visitors who come will immediately find a seat that suits their needs and then order food through the waiter/waiters. In addition, one of the advantages that the cafe wants to highlight is the service system carried out by the cafe. So they are competing to present the most impressive service for visitors. To create a comfortable cafe for visitors, not only prioritizing services but in terms of interior, ergonomics, circulation must be built simultaneously to get a good atmosphere and according to the needs of cafe visitors.

The standard circulation size for circulation and anthropometry, according to Panero and Zelnik (1979), is as follows.

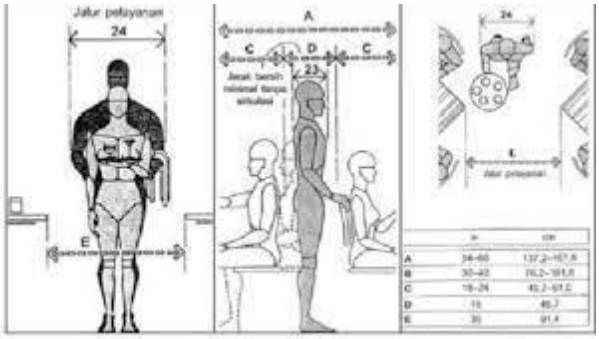

Figure 1. Human Circulation
(Source: Panero & Zelnik, 1979)

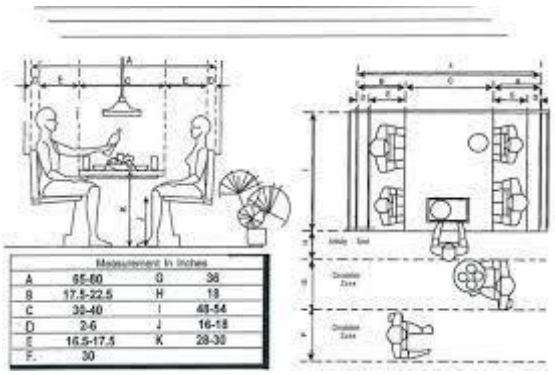

Figure 2. Circulation Distance Standard
(Source: Panero & Zelnik, 1979)

Good circulation is a human flow system that does not cause crossing or collision when passing each other. Crossing usually occurs because there is no alternative road that can be passed. In addition, the narrow size of the road can also affect collisions between visitors who come. This is something that needs to be considered in designing a cafe.

New Habit Adaptation

Adapting to new habits is a step in adopting a new life to preserve productivity throughout the Covid-19 pandemic through Covid-19 transmission preventive behavior. This new habit adaptation is implemented in stages under existing geographical conditions (Hanifah et al., 2021). With the current situation of the Covid-19 pandemic progressively improving, the government has now begun to allow social activities for residents of the Special Capital Region of Jakarta, or DKI Jakarta. From reopening

physical schools and non-essential workplace activities to entertainment locations such as parks, restaurants, and shopping malls. Thus, this has led to an improvement in economic and social conditions for Indonesians, particularly in the DKI Jakarta (Muhyiddin & Nugroho, 2020).

The food-restaurant management industry is a relatively problematic sector for Covid-19 transmission; hence the government restricts the Adaptation of New Habits (IMR) pattern. According to Muhyiddin and Nugroho (2020), managers and consumers have separate health protocols in the food industry, and there are 12 standard IMR health protocol points for managers, including:

1. Employees are obliged to wash their hands before entering the facility.
2. Body temperature checks for all staff and visitors entering the dining area
3. Employees of the Production Department must change their attire and utilize personal protection equipment (hairnet, masks, etc.)
4. Ensure that visitors and employees are healthy
5. Provide hand washing stations and/or hand sanitizer at-entry
6. The spacing between seats between customers is at least 1 meter
7. Provide hand sanitizer and paper towels at each table
8. Wrap the table's provided silverware.
9. The restaurant's capacity is filled following the conditions governing the level of Covid-19 transmission.
10. Separated trash containers must be sealed.
11. Disinfect three times daily, particularly in places that are frequently touched by many people (every 4 hours)

Nine common health protocol elements relate to users/customers, including:

1. Ensure your health is in optimal condition
2. Always wear a mask when not eating.
3. Wash your hands frequently with soap and running water or use hand sanitiser
4. Refrain from touching your face or the restaurant's surfaces.
5. Select a nutritious meal
6. Maintain a safe distance from other consumers.
7. Use the authorized trash cans to dispose of trash.
8. Maintain a clean appearance.
9. Perform non-cash payments if possible.

Based on some of the factors raised above, this impacts the state of the behavior of restaurant/café patrons, resulting in the establishment's interior design. This shift becomes a new benchmark in restaurant/café design, which may be utilized as a new reference in a design suited to new habits following Covid-19 (Putri & Sari, 2021).

RESEARCH METHODOLOGY

This research uses a qualitative method with a phenomenological approach. Changes in habits caused by the Covid-19 pandemic require new considerations for interior design in a space, especially in the dining room. Qualitative observation data is collected by documenting all kinds of information and conducting direct surveys to the location. Qualitative observation data is collected by documenting all kinds of information and conducting direct surveys to the location. starting with a survey of the field, interviews with employees and some visitors who come, after that primary data collection is carried out. After the data is collected, the data analysis stage, literature study, and brainstorming stage are carried out to determine the concepts and themes that will be used in the research. The last stage is the implementation of the concepts obtained into a design.

FINDINGS

In order to create concepts employed in this design, analysis is generated using space user activities and space circulation patterns. As indicated in Table 1, space users' activities are divided into two categories: visitor and staff activities.

Table 1. Space User Activity

User Activity	
Staff (09.00-22.30 Waktu Indonesia Bara/*Western Indonesia Time)*	Visitor (10.00-22.00 Waktu Indonesia Bara/*Western Indonesia Time)*
Preparing Opening	Enter and looking for menu
Opening café	Select menu and paying
Serve customer	Dine in
Cleaning	Eating, Chatting, Working
Updating stock	Wash hand, Toilet
Closing	
Cleaning	

Figure 1 shows how the data analysis was subsequently performed on the previously completed survey findings:

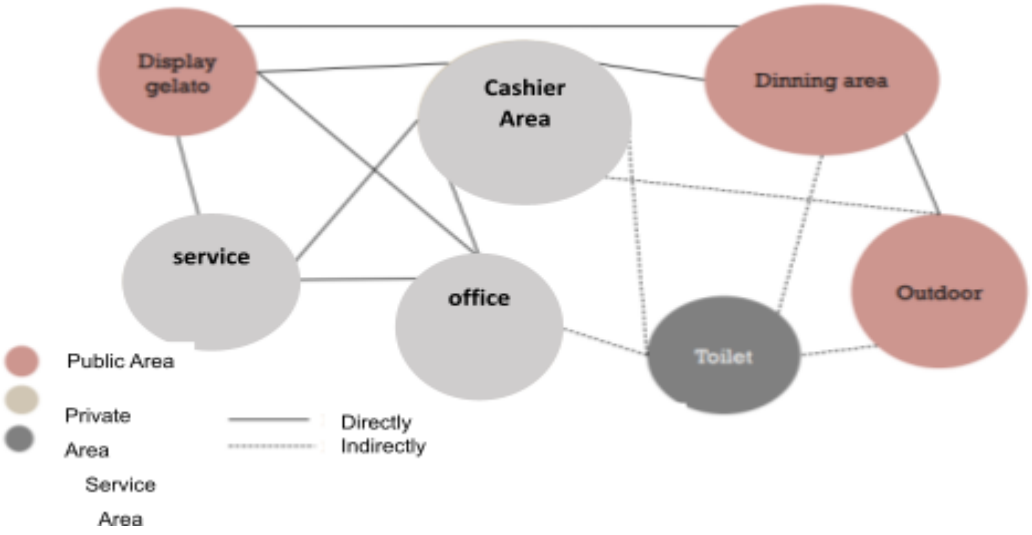

Figure 1. Space Proximity Diagram

Design Concept

The design concept was based on the *Vilo Gelato* logo and the adoption of new habits at the time. It begins by mind mapping and subsequently analyze to create a design concept.

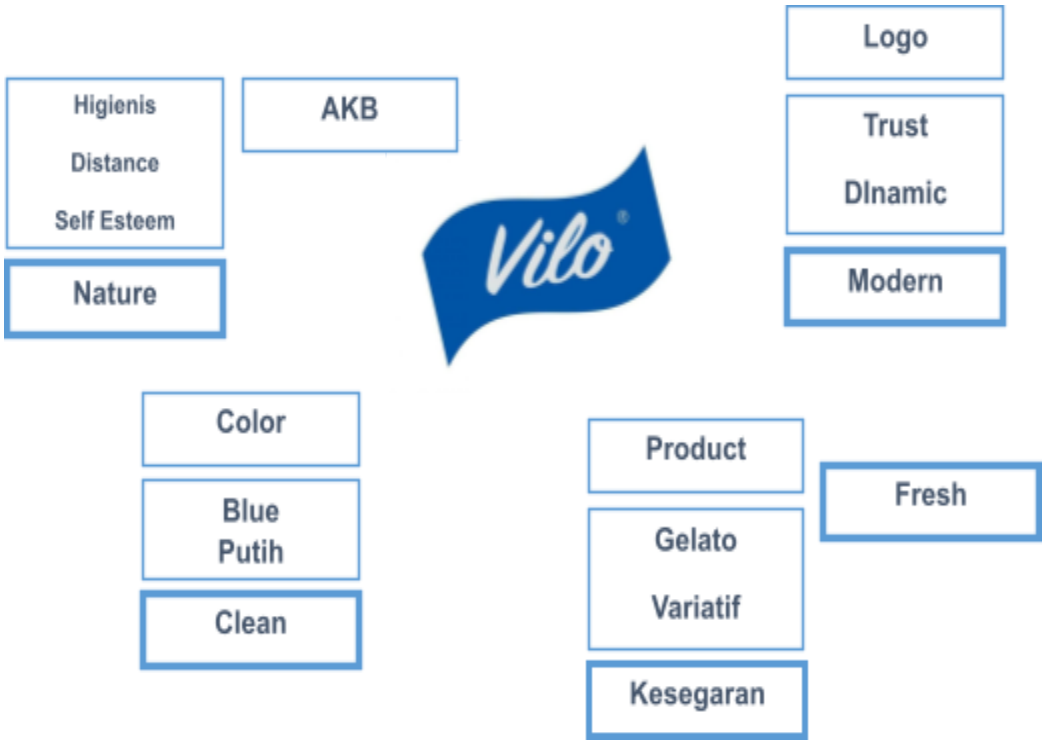

Figure 2. Mind-mapping
(Source: Author's personal collection)

The analysis stage is based on the mind-mapping to produce four keywords in the form of Nature, Clean, Fresh, and Modern, which develop a concept derived from the four keywords called *Modern Biophilic*.

Kellert (2018) used the term biophilic to describe incorporating aspects of the built environment into space to provide benefits and a link between humans and nature in a building following the development of this modern period. Humans have characteristics that focus on the life of the world and the processes that occur within it; hence humans require nature to balance their bodily, intellectual, aesthetic, cognitive, and spiritual requirements (Kellert, 2018).

Due to the global pandemic, biophilic design is still in its early stages in the interior design market, making ideas that interact with nature a much-needed consideration. This is performed to reflect natural components that can enter an interior space since humans can obtain experience directly, indirectly, and symbolically based on the demands of the environment they create. Biophilic is also strongly tied to the vernacular dimension; this implies that vernacular design is a way to create a space that can integrate culture and ecology. The biophilic design has two dimensions: organic and vernacular, which will be utilized as a reference for the space-forming elements in the design with the biophilic concept.

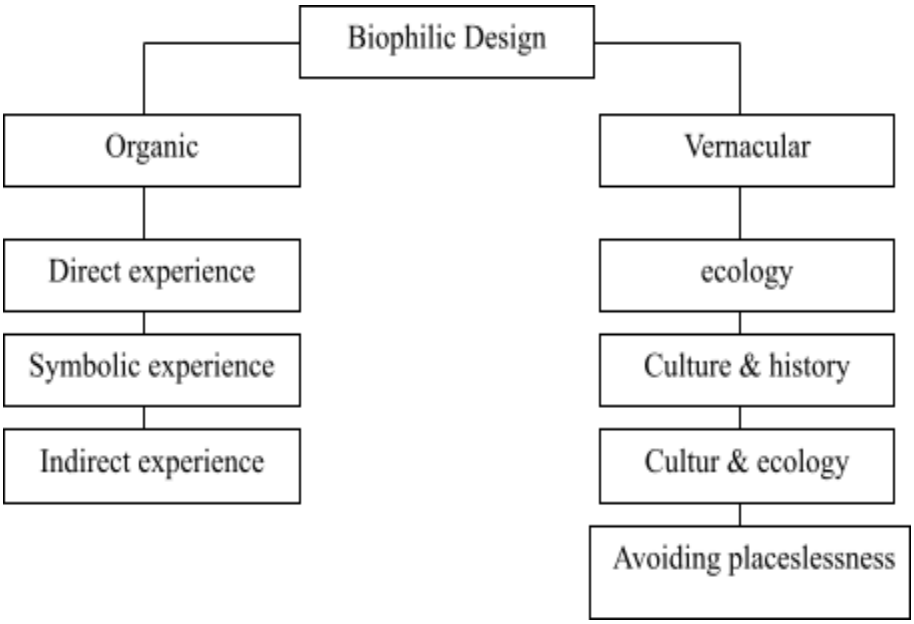

Figure 3. Biophilic Design Element
(Source: Sumartono, 2017)

The two biophilic dimensions each include six elements that can be incorporated into a design. Each element comprises 72 design attributes utilized as elements and attributes for designers to synergise between space and the built environment (Huelat, 2008). Biophilic is utilized to return visitors to the comfort and novelty of an adaptation in this era of new habits. Various natural features in space bring the outside into an interior-made area indirectly. The biophilic design can help to produce a healthier and more productive existence, and it can be combined with a modern style to appear more acceptable to today's millennials.

Color Concept

The colors utilized are those with natural features. This color is commonly utilized in biophilic concepts since it has a calming effect inside and outside.

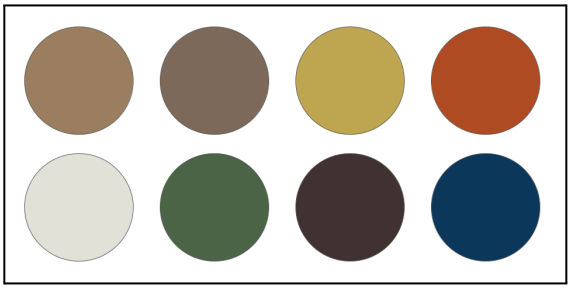

Figure 5. Color Scheme
(Source: Author's personal collection)

Shape Concept

The form used in this design is more dynamic, allowing it to vary in response to changes and adjustments in the current period of new habits. This shape is more commonly found in home furnishings.

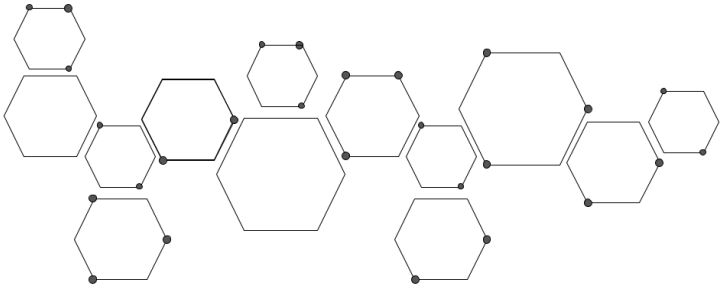

Figure 6. Shape Concept
(Source: Author's personal collection)

Material Concept

Natural components will be used through natural materials such as solid wood, stone, glass, and exposed cement and combined with modern elements such as gold lists to create a sense of novelty in adapting new habits at this time (Browning & Ryan, 2020).

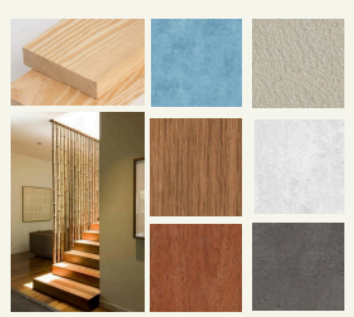

Figure 7. Material Concept
(Source: Author's personal collection)

Furniture Concept

The furniture utilized has an elegant appearance and an eco-design concept that promotes sustainable economic, social, and environmental principles; consequently, the furniture concept employed pays attention to all parts of the design, from planning through manufacturing. Furthermore, the furniture utilized has a simple shape but a modern value (Panero & Zelnik, 1979).

Figure 8. Furniture Concept
(Source: Author's personal collection)

Proceed to the planning stage of the furniture floor plan, along with the circulation pattern employed, based on the outcomes of the concept that has been created (Dul & Weerdmeester, 2008).

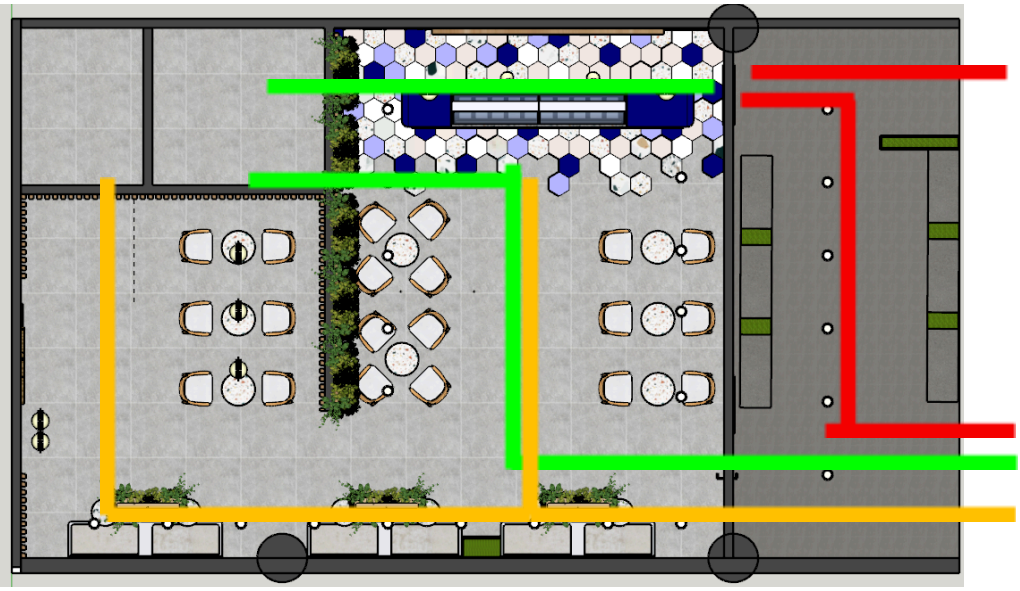

Figure 9. Layout Furniture and Human Circulation
(Source: Neufert et al., 2000)

There are three visitor lines created in the layout image above:

- Green line: the employee circulation flow, calculated based on the employee's activities from arrival to completion. The majority of employees are in the green zone.
- Yellow line: the flow of dine-in visitors. The majority of the diners are in the yellow zone dining area.
- Red Line: The flow of visitors to take away or online motorbike taxis online occurs solely outside of the area, which is helped by seating amenities. This is conducted to prevent cracking or accumulation in the checkout area.

Generally, the dining area per visitor occupies around 70% of the entire area of the room, with a circulation area of 70 cm2 for each guest.

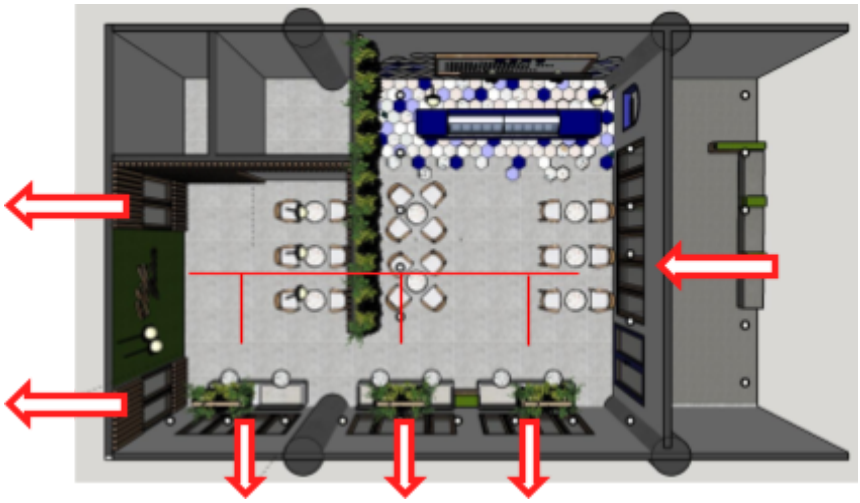

Figure 10. Air Circulation
(Source: Author's personal collection)

The arrows indicate the path into and out of the Nagin. Circulation is designed to meet the needs of adapting to new habits by circulating air that flows through many open windows, making visitors feel safe and comfortable in the room. Furthermore, utilizing a fan increases the flow of air (Dul & Weerdmeester, 2008).

Table 2. Furniture Layout Data After Adaptation of New Habits

Variable	Adaptation of New Habits
Space Requirements	• Large windows for ventilation • There is much greenery to filter the air naturally • Assisted lighting with natural lighting • Ventilation is assisted by the air conditioner and fan • Placement of high ceilings to provide good air circulation
Facilities	• Seating facilities are more spacious, although capacity has been reduced. • Signage facilities are cleaned neater and adjusted to the design concept • Floor sign facilities are created according to the design concept
Ergonomics	• Table and visitor sizes adjust to ergonomic standards • Circulation between visitors is adjusted according to the rules for adapting to new habits

CONCLUSION

Based on the preceding discussion, it was discovered that a provision governing the use of health protocols during the adaptation period to new habits currently necessitates using several additional facilities to support these changes. Layout improvements were made to include additional facilities to optimize the interaction and circulation of the new area. A body temperature checking area, barcode scanning area, hand washing area, visitor distance indication, and health procedure markers are now required. Furthermore, sitting amenities are established at a distance under current requirements.

Furthermore, one of the benefits of this design is separating the area between the on-site dining area and the takeout area; employing a separate area will prevent congestion and collisions between visitors. Because a good layout according to needs can raise the quality and quality of the users of the space in it, this can be used as a design reference during the adaptation phase for new habits. While for further research, an analysis can be carried out in terms of ergonomics, materials, and others in order to get a novelty about the interior design industry in the future after the pandemic.

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