

Cascade Office Workspace Design in New Normal

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ABSTRACT

In 2020, the world entered a shocking stage, where the disease Covid-19 has become a problem for many countries. The government is preparing protocols in tackling this situation for the sake of moving the wheels of the economy by establishing a new normal for office interiors, organizational institutions, such as universities, and others. Now, the problem is not only focused on aesthetics and comfort, but also health protocols that must be part of planning considerations in designing interiors for the new normal era. This is a challenge for designers to design interiors, especially workspaces in accordance with Health protocols set by health institutions. This research is based on the design method from Rose Kilmer and the regulation of the minister of health to design the interior according to health protocols in the new normal era. The application of health protocols to the workspace can minimize the impact of transmission on employees who work and still enjoy the aesthetics and comfort that have been designed by the designer.

Keywords: Design, New Normal, Workspace

1. INTRODUCTION

The office world is growing very rapidly with many markets demands to improve employee comfort and performance. But with the presence of a contagious respiratory disease called Coronavirus Disease 2019 (covid-19) at the end of 2019 in the city of Wuhan in China, the spread of the virus is so fast that the WHO health organization on January 30, 2020 had declared the Covid-19 virus a world pandemic. This statement is a concern for the world and especially Indonesia, which is one of the countries reached by the COVID-19 virus [1]. This problem has shaken the wheels of the Indonesian economy. Community mobility is hampered by the danger of gathering close together. This is due to transmission of the Covid-19 virus and recent issue of an increase infection in the office. This had led with many markets demands to improve employee comfort and performance. However, the increase of Covid-19 clusters also happen in offices that have carried out vaccination programs. Although they have been vaccinated, that does not mean that the vaccine will protect it as a whole. It will only reduce the possibility of someone experiencing severe covid-19 symptoms [2]. The government has taken action to try to break the chain of transmission of covid-19 by applying social distancing. According to the CDC organization, social distancing must be maintained with a minimum distance of 1.8 meters or 6 feet to interact with one another [3]. This distance is determined based on the Jennison experiment research, which resulted in 2-meter rule [4].

According to the regulation of the Minister of Health of the Republic of Indonesia Number 70 of 2016, the minimum

standard for interior volume per person is 11 m³ and the minimum area is 2.3 m². However, the concern of Covid-19 incident has changed the standard volume to 13.2 m³ and an area of 4m² [5][6]. Office activities must follow the movement of health protocols in entering new normal era. The protocol used is based on KMK No. HK.01.07-MENKES-413-2020 for the Prevention and Control of Covid-19 in offices and industry [7]. The following are important coverage in office interiors:

- The interior uses materials that are chemical resistant and easy to clean.
- Frequently clean the air conditioning filter.
- Maintain the quality of air circulation and natural lighting in the interior.
- A temperature screening device.
- Maintain a minimum distance of 1.8-meters

This problem is a challenge for designers, as a problem solver, to design interiors that are in accordance with health protocols but aesthetically keep up with developing trends. This paper is the basis for designers to design workspaces that remain comfortable and minimize the transmission of the COVID-19 virus while working in the office.

2. METHOD

This study uses a process approach by the book named interior designing [8] and the method used in this paper is a case study about designing a Cascade office workspace with a health protocol. Document analysis, as a basis for designing interiors, has to have a good validity [9].

According to Rose Mary Kilmer, the design process is divided into 8 stages. Firstly, commit explains how important it is to design the project being led. Secondly, state describes field problems. Thirdly, collect is the elaboration of field data. Fourthly, analyse is the process of analysing the problems that have been described from state. Fifthly, ideate is the process of forming an idea into a solution. Sixth, choose is the best selection of design alternatives formed from the ideate stage. Implement and evaluate stages are not included because the research stops until “choose” stage on the design of the Cascade workspace [8]. Rose Mary Kilmer’s design theory are not linear but circular steps and each step has feedback as shown in Figure 1.

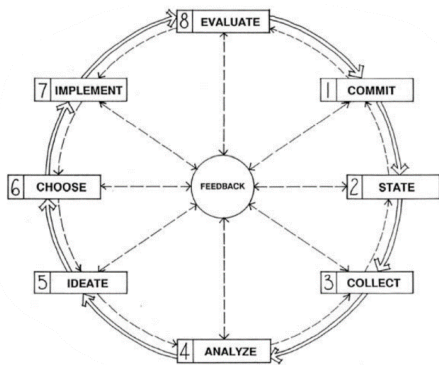


Figure 1 The design process according to Rose Mary Kilmer used in a workspace project [10]

Rose Mary Kilmer’s design process is linked with the KMK government health protocol regulation No. HK.01.07-MENKES-413-2020 [7], as a unit to design interiors according to the client’s requirement but minimize the potential for the spread of covid-19. The collection of this research uses literature studies and related field documentation in the design of the workspace.

3. BACKGROUND

3.1. Commit

Workspace is an essential part of the office during the adaptation period to the new normal, a place where employees carry out a fairly solid job. The goal is to design an accommodating room to boost employee performance room and minimize contracting Covid-19. This is a challenge for designers as problem solver and to have commitment to complete the project until the end.

3.2. State

The problems that need to be addressed as a consideration in designing the Cascade workspace can be broken down into 3 parts, namely:

- A narrow space interior but the spatial layout must adjust the health protocol.
- To create a workspace environment that minimizes the spread of covid-19.
- The protocol that must be applied, can interfere with the aesthetic elements of the interior.

3.3. Collect

Table 1 Information on the Company

Company Name	Cascade Interior Contractor
Project Address	Kwitang, Jakarta
Building Type	Shophouse
Project Type	Office
Area	25 m ²
Work Products	Designing Workspaces



Figure 2 Portrait of existing workspace (Source: Personal Document)

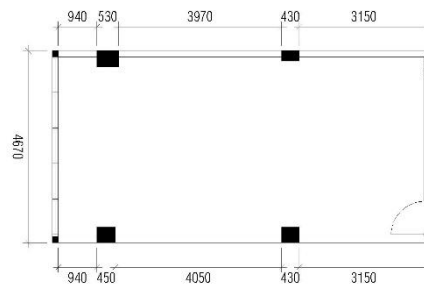


Figure 3 Plan of existing workspace (Source: Cascade)

Figure 3 shows a workspace used by 6 employees. The workspace is used for designers to design interiors, create three-dimensional visualizations and compose materials. Designer activities are included in the dense category because many interior projects enter the office with a short time to complete. So, the client needs an interior with an open space setting that is used to its fullest, maintaining the existing floor. The client would like to have a modern design style with a fun colour scheme that make the interior livelier. It also requires a place to store documents, and material samples. Health protocol guidelines are an important and mandatory part of the interior design process. Designer’s innovation in using health protocols has an

important role in minimizing the spread of covid-19 in the workspace during the new normal adaptation period.

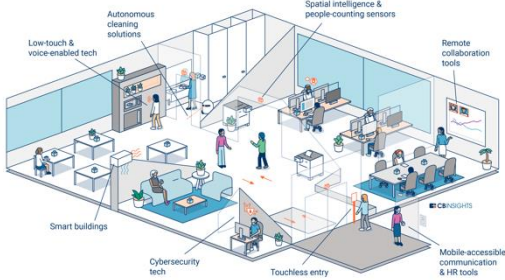


Figure 4 Office concept in the new normal adaptation period [11]

Figure 4 explains the guidelines for designing an office that innovates as a design reference during the new normal adaptation period, namely:

- Health check before entry
- Touchless entry
- Social distance counting system
- Medical devices and employee engagement
- Low touch devices and voice recognition in the office
- Autonomous cleaning device [12]

3.4. Analyze

Cascade workspaces are relatively small in size. The room must be designed optimally with adequate circulation of activities by using an open spatial system so that the space has a broad impression. It also facilitates communication and cooperation with other employees. The location of the storage has to be situated besides the work area to facilitate employee activities, so that their work performance is more efficient.



Figure 5 Cascade workspace grouping concept (Source: Personal document)

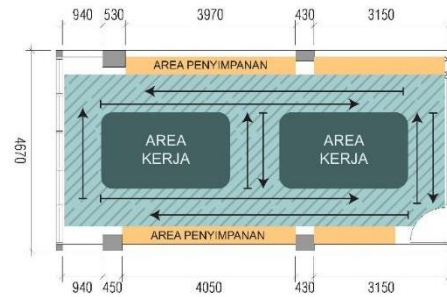


Figure 6 Cascade workspace blocking concept (Source: Personal document)

The circulation of activities in the workspace uses the opinion from the book of Julius Panero. The circulation space in general has a minimum width of 61 cm [13]. Circulation of a workspace is the most important part of physiological needs in improving employee performance and health at work, especially during the Covid-19 era.

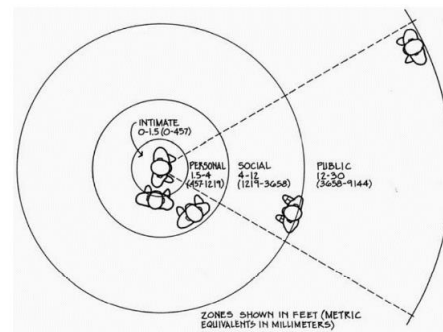


Figure 7 The metric of human spatial relationships is referred to as proxemics theory based on Edward Hall's book Hidden dimension [14] [15]

A stigma was built when the transmission of covid-19 affects human personal interaction. This also affects in the formation of activity circulation and furniture placement. This will not only minimize the spread but provide psychological and sociological comfort.

Workspace area for 6 employees is given a space that has an area of 25m². This is aimed to provide employees' comfort. Each employee has an individual standard work space area of 4m². However, it needs to be supported by a safe distance through social distancing.

Social distancing has a relationship with the placement of furniture plans with a safe distance of 1.8 meters [3]. A safe distance is certainly helped by partition barriers that separate employees from those to prevent the spread of covid-19 virus droplets more optimally.

Workspace designed by designers are based on the functions of the human body which include noise, light, temperature, humidity, and ventilation [16].

Sources of air circulation available in the workspace come from windows and artificial ventilation. According to Prasasto Satwiko, the State of Indonesia is a tropical valley country that is comfortable. However, climatically Indonesia is thermally uncomfortable even though the humidity is around 60-90% due to strength of the wind [17].

The location around the office is surrounded by tall buildings and is in front of the highway. This makes natural ventilation not ideal for air circulation in the workspace, and requires the use of artificial ventilation or air conditioning. Due to the widespread spread of covid-19, air conditioning machines need to be improved. The improvement entails sensors detecting the Covid-19 virus, self-cleaning and air purifier systems [18] [7].

The available work space is divided into 2, namely natural and artificial lighting. Good lighting can help maximize employee performance to be more focused. The Indonesian national standard formulates that workspace lighting must reach a bright standard of 350 lux. Standards can be achieved with artificial lighting supported by strategically positioned window lighting [23].

The use of an ultraviolet germicidal irradiation (UVGI) system in artificial lighting helps deactivate the potential spread of Covid-19 [18].

The design process is based on the analysed keywords and the word modern bliss is formed.

The word modern comes from the field managed by the Cascade company which is engaged in the creative industry. Designing a workspace must be based on their profession by following the latest developments in terms of innovation, shape and colour elements that describe the workspace for designers.

The word bliss was formed on the basis of the collect stage, which is to apply a fun and creative atmosphere for designers to do work activities. The atmosphere is formed by using a colour psychology approach. Colour can exert a powerful influence on the human senses to shape workspaces that enhance performance and inspire designers [19]. This is a consideration that is included in the mind map thinking process which is translated into keywords, namely modern bliss.

However, problems arise in applying health protocols that can interfere with the aesthetic visuals of the workspace. Health protocol tools that interfere with visuals can be adjusted by replacing colours according to the colour scheme to create an atmosphere of harmony. Partitions as a limitation use acrylic material as a solution because they are clear and transparent. Acrylic will not interfere with interior visuals and give a spacious impression. Acrylic partitions have properties that are not easily broken, flexible, resistant to chemical reactions and durable. It's also easy to move when needed [20][7].

3.5. Ideate

The keywords that have been generated from the analysis process become modern Bliss. Bliss's modern atmosphere is visualized in the form of a mood board. The designer and the client need to have a common perspective on the aesthetic direction that the client wants to achieve [21].



Figure 8 Cascade workspace mood board (Source: Metaphor design)

Figure 8 is a depiction of an atmosphere that resembles the factory period with the use of black bricks, wood and iron [22] integrated with a line that have clean characteristics creating a modern atmosphere. The colours on the bright mood board colour scheme liven up the atmosphere and have a psychological impact such as the colour green gives the influences of creativity, natural and fresh. Orange has the effect of giving an optimistic feeling and brightening the space. Blue gives the impression of being calm and reliable [19].

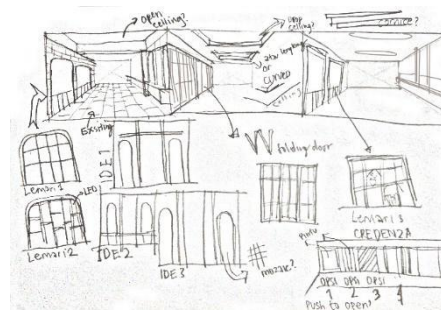


Figure 9 Cascade workspace idea sketch (Source: Personal document)

The atmosphere that is formed from the mood board becomes the basis for exploring sketches of ideas. Visualization of ideas can be done in the form of pictures or writing as concepts. The results of the selected sketches become alternative designs and are determined by the next stage.

3.6. Choose

The resultant idea that produces several alternative designs is determined to align with client's request.

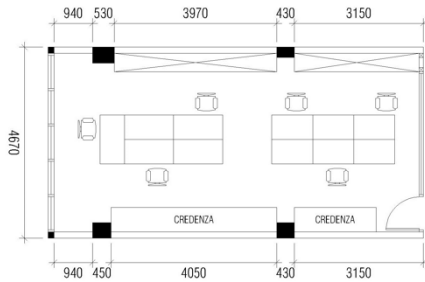


Figure 10 Final plan of the Cascade Office workspace (Source: Personal document)

The chosen floor plan has adapted the health protocol regulations by providing distance between employees, the main circulation for 1 person and facilitating employee activities because it is adjacent to the storage area.



Figure 11 Results of the Cascade workspace design process in the new adaptation period (Source: Personal Document)

The selected workspace design is a collection of the best sketches. Now the workspace has a modern atmosphere with curved shapes and bright colours creating a pleasant atmosphere. It can be seen that transparent acrylic partitions form a wider interior and do not interfere with aesthetic visuals.

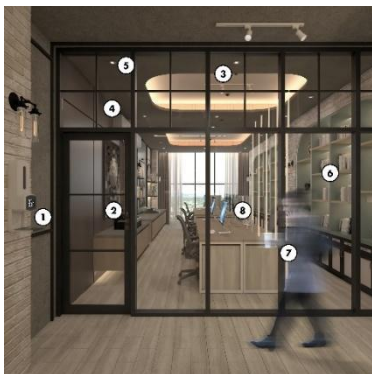


Figure 12 Results of the Cascade workspace design process in the new normal (Source: Personal Document)

Functionally, the workspace has features that minimize the spread of COVID-19:

1. Temperature checking sensor and automatic hand sanitizer through the user's hand. Checking and spraying hand sanitizers operate as a unit.
2. Automatic door handle.
3. Proximity sensors and room capacity calculations.
4. Artificial ventilation with air filters and sensors to detect the Covid-19 virus.
5. Artificial lighting with ultraviolet germicidal irradiation technology to deactivate viruses.
6. Finishing material that is easy to clean and chemical resistant using high pressure laminate for tables and cabinets.
7. Consideration of work desk placement in accordance with social distancing.
8. Acrylic partition divider for workbench.

4. CONCLUSION

The issue of the widespread spread of COVID-19 has hampered people's daily activities, especially offices in Indonesia. With a formula that has been formed from regulations and literature, an interior design was created that can minimize the spread of COVID-19 in the office during the new normal.

The workspace has a modern Bliss themed design with bright colours. Design is not only focused on aesthetics but also functional. This is done by applying features in aspects of layout arrangement, material selection and technology to work together to minimize the spread of the covid-19 virus in the new normal adaptation period.

However, all the features available in the workspace only minimize the spread of Covid-19. Therefore, users must continue to protect themselves with the discipline of wearing masks, washing hands, maintaining distance and avoiding crowds (3M) and a clean and healthy lifestyle (PHBS), as an individual responsibility. Through the cooperation of users in carrying out health protocols and new normal features in the interior, an effective workspace can be built. In conclusion, users can carry out activities smoothly during the new adaptation period.

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