Post covid-19 public space adaption: a case study of building entrances in Jakarta

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Abstract. Recently, all public facilities in Jakarta have been affected by the Covid-19 pandemic; offices and retailers are closing their stores since the beginning of the outbreak, but the other facilities such as airports, train stations, and hospitals are still open while following the new normal protocols. Additionally, to help flatten the curve of Covid-19, buildings are taking transmission caution towards their facilities and interior spaces during the pandemic. This study's main objective is to provide a review of the concepts of adaption within a building to the occurring issue of Covid-19. An entrance is the first gate or door to welcome customers, but unfortunately, buildings' entrance areas are undergoing several adjustments of space and functions. In this research, the design thinking method is combined with qualitative analysis using tools such as benefits maps to help build competitive advantage and communication strategy, what kind of activities that give height, low benefit and how easy or difficult it might be to implement the strategy. This study concludes objectives in delivering new normal protocols within the building facility with a recommendation for entrance areas to provide several tools. Fulfilling the customer's expectation is one way to increase the trust and a feeling of safety in customers' perceptions. Entrance space adaption will also give customers a positive perception of the buildings when they enter the facility. Additionally, it will also give a long-term solution for the new normal protocols taking place. Finally, the eight concept activities could be utilized as a guideline and strategy for facility and building maintenance proposals to add value to facilities' long-term solution.

1. Introduction
It has been six months since the first case COVID-19 was found in Jakarta, and two weeks after that, offices, schools, shops, and malls are urged to close its doors as preventive actions to stop the spread of this virus. Only a shortlist of public facilities such as grocery stores, health clinics, and pharmacy allowed to operate. After almost four months of restricted social access, offices and shops are starting to re-open its doors to users with a strict new health protocol. The new policy is published and forced society to live differently. Gradually society is also adapting to this so-called ‘new normal’ life [1] and people accepts that they will live surrounded by the virus until the vaccine is found.

Not only the human lifestyle is adapting to this situation, the surrounding environment and facilities where human do activities are also changing following the ‘new normal’ policy. For example, in the retail sector, this situation has shown a tendency of regression since the society is also taking
precaution steps and doing all their activities, from working, studying even groceries shopping inside the safety of their home. Thus, stores need to be redesign as a response to the ‘new normal’ policy. Not only stores but other facilities also need to redesign their spaces as well; as mention in The Jakarta Post that there is much consideration to redesign the architecture and public spaces to prevent the spread of the virus by gradually changing the society’s lifestyle and design in the early stage [2]. This lifestyle is not the first time we have seen redesign and precautions actions are taken, especially in the entrance area of a building or any other facilities, in response to a significant situation. Nineteen years ago, a terrorist attack known as the 9/11 tragedy happened and killed more 2000 people and injured thousands more; in response to this event, security measurement in airports, office buildings, shopping centers, and other public facilities have never been the same. They started to upgrade their flight and airport policies. Furthermore, they started to add securities personnel and install metal detector doors in the entrance area of public buildings, they checked every customers and user of their facilities more thoroughly to avoid any other of this similar tragedy, and it has been the standard procedure when one enters a public facility up until today. From this experience, we can see that not only people are adapting but also make their living environment according to their situation. It was a terrorist attack then, and it is the coronavirus now.

WHO mentions five cycles to prevent infections and improve healthy control; they are preparing form action, baseline assessment, developing and executing action plans, evaluating impact, and sustaining the program for a more extended period of time [3]; Based on these guidelines, the government started to create and publish policies that need to be implemented by society from various sectors, including building management. As already mentioned before, lots of businesses have been affected by the COVID-19 pandemic in Jakarta, thus building management teams need to rethink design services and redesign their layout, circulation, and other aspects needed in accordance with the new physical distancing policies in order to gain customers and users’ trust. Thus, they will feel safe to come to their facilities, whether for work or to buy goods offline rather than online. This study will look and analyse further the physical distancing policies and its implementation in various public buildings, especially in the entrance area, in anticipation of passing the virus within the facilities from the interior and space programming point of view. This study is also interested in observing which activities in the entrance area emerge from the healthy protocols and policies that are most beneficial and easier to implement in Jakarta. Furthermore, is there a new initiative that needs to be added on in the entrance area? This initiative is done to determine whether the implementations are already suitable and sufficient to slow down the virus's spread and whether these preventive actions have built confidence and safety among its users when entering a building or a facility.

Before, entrance design usually only a gate or a door complete with information design and signages. However, after 9/11, as mentioned before, entrance areas started to equip themselves with a procedure to check a bag with metal detector doors, x-ray baggage scanners or manual bag checking points, and more thorough security personnel. Nowadays, entrance areas are getting crowded with another area: health screening and checkpoint area. This entrance procedure has become a necessary ‘new normal’ procedure in public buildings and facilities to check the mask, body temperature, hand sanitizing facilities, and sometimes even self-registration application.

2. Design Thinking Methods with Benefits Map

Heerwagen points out that interior design research can take two routes: design evaluation, where research is oriented toward real settings, especially evaluating what works and what does not in a particular design’, and theory development, which focuses on understanding fundamental relationships and concepts [2]. The research of physical distancing measures, including health screening and checkpoint in public buildings' entrance area, will take the first route with qualitative methods and phenomenological approaches. Based on the determined approach, collecting qualitative data has two
stages. The first stage is collecting secondary data or desk research. All relevant data from various sources, such as books, journal articles, and websites regarding exhibition space designs and museums, are studied and analysed in this stage. The purpose of this stage includes giving general information about the topic, analysing previous studies that had been done, and determining exhibition design standards. The next stage is the primary data collection using qualitative and quantitative data collecting methods or methodological triangulation [4]. Qualitative data collection through observation of entrances area from various public facilities, such as offices, health facilities, shopping malls, etc. While quantitative data collection through questionnaires aimed to find out how user’s feel about the existed health screening and checkpoint. For this purpose, closed-questions questionnaires are designed. Both primary and secondary data were then translated using Benefit Maps (Figure 1), one of the design thinking tools used as a tool to analyse and help the team execute the best return investment. This method is used because it helps build a competitive strategy. Moreover, it helps build community strategy and useful in managing time. This method is suitable for the known context, know the users, frame insights, explore other possibilities concepts [5]. The results will then be analysed further using descriptive analysis method to find out the effectiveness of the existed health screening and checkpoint from interior design and space programming point of view.

![Benefits Maps](image)

**Figure 1.** Benefits map, a tool to analysis the best solution to gain competitive advantages

### 3. The Role of Entrance Area

An entrance area is a grounding for external and internal space; it needs to show the function of the building; not only that, there are specific purposeful necessities related to security, composition, aesthetic, and now health in that area that need to be met [6]. To give a deeper understanding of the entrance area, these are the roles of an entrance area: as welcoming space, as transition space, as a differentiator, to get information, lastly, is a role as a meeting space.

The first role is a welcoming space, where an entrance is the first area or page of the building. This role is the area that gives the first impression to the users and how users see the entrance will be the first judgment when they are first entering the building; thus, needs to represent the activity or facilities inside the building. Furthermore, the entrance’s interior layout should be wide and open to give users sufficient wiggle room and orientation. The next role as a transition space. Transition space means giving extra space for users, whether it is an entryway or a passage, to make the user’s movement from the outside to the inside area effectively and efficiently according to the prepared path.
or flow. This extra circulation space should be calculated according to the predetermined formulas; thus, the users can move around the entrance area more effectively. There is a way of creating uniqueness in every building that will differentiate one’s building with others. This uniqueness can be the designer or architect’s statement, designed through logo, colours applied in the décor, display, typography, etc. For the differentiators’ role, this specially designed statement will become the building's identity and create different environments in the entrance area. Another role of the entrance area is to get information. An entrance is like the table of content inside a book; however, unlike a table of content in a book full of words, this table of content is visualized in three-dimensional space. As an information checkpoint, a designer needs to equip the entrance area with the necessary facilities to get various information; this can be a directional map, signage, or even an information center desk. Lastly, is the entrance area role as a meeting point. With a strategic position, the entrance area is usually comfortable to find and often equipped with iconic elements, whether its furniture, accessories or even work of arts; thus, entrance areas are suitable for a meeting point.

Before COVID-19, the entrance area only has five roles, but there are two additional roles since the outbreak; the first additional role is a screening area, and the second is as a cleaning area (Figure 2). As already mentioned before that after the 9/11 tragedy, the role of the entrance as a screening role has already begun with security checkpoint, here the protocols the suspicious check belongings, such as sharp and explosive objects, are being carried out using metal detector doors as well as x-ray bag scanners or manual bag checking desk. However, after COVID-19, the screening role not only serves as security check but also as a health checkpoint to check user’s temperature or other individual whom about to enter the facilities, and also to check whether they wear a proper mask or not. In this checkpoint if one does not meet the conditions, in which body temperature needs to be below 37.5 degree Celsius and wear proper 2 or 3 ply cloth mask or medical mask, the individual are not allowed to enter the facilities and are asked to go home, however in some facilities waiting area is provided for users with body temperature slightly above 37.5 degree Celsius to sit and calm themselves down and check back within 10-15 minutes, if the body temperature has gone down accordingly they are permitted to enter the facilities. However, if it is still above 37.5 degrees Celsius, they will be asked to go home.
The second additional role is as cleaning area, which is provided due to one of the government’s health protocols. It has been said that one can keep their hand hygiene by frequently washing hands with running water, and soap can significantly reduce the risk of virus transmission. Thus, it has become a policy that everyone needs to clean their hands before entering a facility; this can be done either with water and soap or by using hand sanitizer. Cleaning facilities such as washbasin or washbowl with running are now provided in entrance areas; if the building or facilities cannot provide a washbasin or washbowl, they will provide hand sanitizer as a substitute to clean users’ hand. Furthermore, during a lockdown, there are mentions on the news, that COVID-19 transmission can be minimized using the disinfectant chamber, where people can come inside after passing into the box filled with liquid disinfectant spray and stay in the box for 1-3 minutes.

4. Activities before and after post Covid-19 at entrance area

From the interior and space programming point of view, to analyse the facilities needed in a space, we need to break down all the space activities and the requirement needed. Before COVID-19, normal activities around the entrance area, from entering the main door, security check, looking for information and direction, and so on have been taken place daily. However, after the COVID-19 outbreak and almost three months of lockdown, Jakarta has prepared for transition when certain facilities, such as offices, retail and shopping malls, are allowed to reopen and back in operation with strict health protocols. Building management started to prepare and find out the best practices for the new normal protocols’ activities.

If we break down the activities happened in the entrance area before COVID-19, there are five main activities occurred as have been mentioned before, welcoming space, transition space, differentiator, get information, and meeting point; another addition after 9/11 is security check; identity and belongings or bag check, while after COVID-19 with the new normal protocols there are more activities take place, including health checkpoint and cleaning.

From Figure 3 above, it can be seen that new normal protocols activities need to be added, not only since it is the policy, but it will also build confidence in safety and trust for the users when they enter the facility. These activities need to be considered in the layout or space programming of the entrance area to have an effective area for the users to move around with suitable physical distancing measures. This space programming also will influence the user’s behaviour before entering the facilities.
Activities A
The temperature check is the first thing about screening people with a thermal check. The building management is concerned if someone with a fever is recommended to stay at home rather than transfer the virus.

Activity B
The Mask check is one of the protocol activities that could be check directly. If the user is not using a mask, the security personnel will forbid them entering the building and will be asked them to go home.

Activity C
Washing hands with soap and running water in 40-60 seconds [7] has been considered an effective way to slow down its transmission. This activity is more time consuming since one needs to wash their hand and dry them with a clean towel or cloth.

Activity D
Washing hand before entering the building is one way to keep hygiene since it can be carried if the customer already touches everything outside the building. However, when some buildings do not have a washbasin or washbowl in their entrance space, hand sanitizer can be used as a substitute.

Activity E
After washing hands with water and soap, customers will need to make their hand dry; this activity could be tricky since drying fixtures such as towel could be passed the virus to another user, and the tissue can also be a mess. Therefore, the dryer blower needs to be certified that it is not giving another virus transmission.

Activity F
The disinfectant chamber is still a controversy from all the news that activities sanitize the whole body could give benefit or harm the health itself, The Jakarta post said using a disinfectant chamber will make physical discomfort and pain if it is used daily.

Activity G
The sign aims to give direction to the person, such as a directions path, or direction arrow and direction of queuing. Those signs are supposed to affect person’s response and herding while walking inside the building.

Activity H
Physical distance signage is used to give information on how people are supposed to sit in the chair and standing queuing or how people need to distance each other.

5. The Effect new protocols in customers behaviour.

Based on the survey online that researchers take during post covid-19 outbreak, it shows several results due to the activities that has been applied at entrance area (Figure 4). Visitors feel strongly agree that checking the temperature is necessary for 90%, and 64.5% of visitors believe that checking temperature will give safety feels. The following result, 74% of the visitor, believes that mask screening is giving benefits. It shows that the protocols of using a mask are also a necessity to do before entering the cleaning zone. However, the disinfectant chambers are shows vice versa, since the surveys showing only 29% of visitor that feels benefit if using those chambers and 32% visitors are fells neutral about the benefits of disinfectant chambers.
The surveys show 45% of cleaning activities. Most visitors are willing to wash hands with water and soap, and 29% of visitors choose to clean hands with an available sanitizer, while 25.8% use their hand sanitizer. For drying hand after washing hand with water, 61.3% visitors prefer drying hand with available tissue dan 35.5% prefer choosing a dryer machine dan 3.2% using other ways. Nevertheless, to sum up, the result came from the surveys; all the New normal protocols positively impacted the visitor. The activities are coming from the visitors' willingness to do several protocols before entering the building. The activities adding some fixtures such as signage and a divider also positively impact customer expectations when they are entering the building. Another effect is how they play roles to do the protocols; therefore, they expect not to receive the virus transmission.

Regarding those beneficial effects from the surveys, this research places points of benefits as a subject from the visitor's point of view. For the building management, the point of view is how easy or difficult to implement and facilitate all of the new standard protocols activity in their building entrance. Figure 5 is resulted from the analysis mapping of the new normal protocols activities before entering the building.
Conclusions

In conclusion, the adaptation of the entrance area in a building needs to be done. This entrance adjustment will shape people's behaviour to avoid virus transmission and be more attentive about health and hygiene during activities in the pandemic era. This situation might be a new experience for everyone, but this new normal protocol is one of the determinations not to create a new transmission classification.

The series of new normal protocols signs, symbols of the directory is in the third dimension. They need to be upgraded as a first impression and for communicating new services concepts. When customers are unfamiliar with setting up a particular service, they will look for the environmental sign to help them categorize the place and form their quality expectations. Signs are elements that refer to an example of explicit communication to the users of its facility. Signage could be displayed on the exterior and interior of the structure, such as direction on how to practice the social distancing, using the lift, or practicing another new way. Symbols and artifacts may include communication less directly than signs; this implicit cue to users about the meaning of the norms and expected behaviour.

The Second elements to be upgraded are spatial Layout and Functionality; spatial layout refers to how applied a new device needs due to the new behaviour change. All equipment and arrangement of the furnishing, the spatial relationship among them also need to be recalculated. Those items' size and shape will affect this adaption somewhat, giving effect to the visitor perception due to the building facility's responsiveness.

There will also be a new adaption to be facilitated in every building due to the COVID-19 pandemic. Such a limitation of 10-person max in people gathering, and physical distancing for 1.5m - 2 m way of suggesting by the WHO organization [8] another regulation such as a suggestion not to bring any children and seniors outside the house, the layout space will be needed improvement and adjustment, especially the dining area, queuing area, and public toilets..
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