Civil Engineering and Architecture 10(7): 3243-3252, 2022 http://www.hrpub.org
DOI: 10.13189/cea.2022.100734

Changes in the Intensity of Flat Communal Spaces in the New Normal Era of Pandemic COVID-19 (Case Study of Penjaringan Sari Surabaya Flats)

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Received April 22, 2022; Revised August 6, 2022; Accepted October 11, 2022

Cite This Paper in the Following Citation Styles

(a): *[1] Dyan Agustin, Niniek Anggriani, Sherly de Yong, Ardian Jaya Prasetya, Farida Pulansari , "Changes in the Intensity of Flat Communal Spaces in the New Normal Era of Pandemic COVID-19 (Case Study of Penjaringan Sari Surabaya Flats)," Civil Engineering and Architecture, Vol. 10, No. 7, pp. 3243 - 3252, 2022. DOI: 10.13189/cea.2022.100734.*

(b): *Dyan Agustin, Niniek Anggriani, Sherly de Yong, Ardian Jaya Prasetya, Farida Pulansari (2022). Changes in the Intensity of Flat Communal Spaces in the New Normal Era of Pandemic COVID-19 (Case Study of Penjaringan Sari Surabaya Flats). Civil Engineering and Architecture, 10(7), 3243 - 3252. DOI: 10.13189/cea.2022.100734.*

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Abstract One of the necessities of apartment dwellers is social interaction, which occurs in communal areas. As a result of the COVID-19 epidemic, there are restrictions on social interaction and a call to remain at home. The COVID-19 epidemic alters the function of social rooms in apartments. This study employs a qualitative descriptive approach, characterizing the pattern using a rationalistic approach and explaining the condition of the item. This study aims to determine the number and impact of changes in the intensity of the communal space in apartment buildings as a space for social contact between inhabitants in the new normal period. Changes in the utilization pattern of community space in flats for formal activities, such as the communal, space in the RW and field halls with RT/RW meeting activities, range from high to low intensity. In the meantime, the level of informal activities in communal spaces such as the lobby, gardens/gazebos, and kiosks tends to grow, as speaking, sitting, and playing become more prevalent. Observations indicate that physical adaptations to this pandemic condition remain minimal, at only 17 percent. This is due to a lack of finance and public information regarding how to alter the building's physical components in response to the epidemic. As a result of the cancellation of many gathering events, such as RT/RW meetings, routine recitations, etc., the non-physical level of the epidemic is relatively high, at approximately 66 percent.

Keywords Communal Space, Flats, New Normal, COVID-19, Behaviour

1. Introduction

As much as the need to interact or congregate with others is a fundamental human need [1], flats are designed to suit this need. The architecture of apartments includes a communal or shared space that serves as a public space for the occupants of the apartments and as a forum for social interaction [2]. Community space allows social events and is open to the public; it is a space that is used by the entire community [3–5]. The importance of common space in a condo comes from the fact that it can be used to host community events that bring people together [6, 7].

Currently, we are all suffering from the COVID-19 pandemic, which has resulted in restrictions on social interaction and the establishment of physical separation to prevent the virus's spread. The COVID-19 pandemic has a profound impact on and alters human lifestyles, including activity patterns, the economy, and urban infrastructure, among others [8]. Multiple studies have demonstrated that

this virus is transmitted through airborne coughing or talking [9] and inhalation [10]. Implementing clean and healthy lifestyle habits, such as hand washing, cough etiquette, and physical separation, is one method for preventing the transmission of COVID-19 [11]. Hygiene has been identified as a preventative measure against the propagation of the virus [12]. Several coronaviruses are less likely to live if you wash your hands with soap for at least 20 seconds under warm water [13].

Through the Task Force for the Acceleration of COVID-19 Mitigation, the Indonesian government tries to make rules for physical restrictions between humans or Physical Distancing, especially in shared spaces. The Indonesian government is preparing for a new phase called the new normal [14,15]. New normal is a change in people's behavior to continue the normal activities during the COVID-19 pandemic while still implementing health protocols to prevent the virus transmission. The main principle of the new normal is to stay active but still maintain social distance and reduce physical contact with other people [16]. The problem that occurs in flats at this time is that there is a change in the pattern of utilization of communal space due to the new normal. For example, reduced interaction with neighbors for fear of being infected; a decrease in people who worship in the Islamic prayer room; and so on. Certainly, this will ultimately affect the psychology of the residents of the flats in fulfilling the need for healthy social interaction in the new normal era. For this reason, the purpose of this study is to determine the pattern of changes in the intensity of communal space in flats to provide a reference solution for adapting the adaptation of communal spaces following the new normal rules. Thus, it is hoped that later residents of the flats will still be able to interact socially without causing the potential for COVID-19 transmission.

The research was conducted in Penjaringan Sari flats, Surabaya, where Penjaringan Sari flats have a greater variety of communal spaces, for example, the existence of a shared kitchen and shared bathroom located in residential blocks; courtyards; courtyards in several blocks; early childhood education; and so on. By watching how different types of communal spaces are used in apartments before and during the pandemic, we can get a better idea of how they were used before and during the pandemic.

2. Materials and Methods

The purpose of this study was to determine the utilization pattern of the communal space of flats in the new normal era as a forum for the interaction of their occupants with the descriptive qualitative research method by describing the pattern using a rationalistic approach. This method is a different approach from the framework, consisting of theories built from understanding the conclusions of a previous study [17]. The reason for choosing a qualitative descriptive research design is that the researcher wants to describe the observed conditions in the field, namely the condition of the communal space in flats, more specifically, transparently, and deeply. The schematic thinking stage is described in Figure 1. The research sample selected was a group of residents of flats in Penjaringan Sari 1, 2, and 3 Surabaya, especially those who were active in social interaction, both men and women. The determination of the sample is also based on the joint activities carried out at a particular time and the number of users of the communal space. The results of data analysis are in the form of exposure, that is, by the conditions of the situation under consideration by considering several variables, including the nature of the activity, the frequency of the activity, the space used, the scale of the activity, and the range [17].

Observations were made at each corridor location, which were divided into three parts of time in the morning (08.00–10.00 WIB), afternoon (11.00–13.00 WIB) and evening (18.00–21.00) on weekends and weekdays. The sampling time is based on the most active time identified in previous studies. The average duration for each observation is 100 minutes, divided up into 10 minutes for each block in each hour of observation.

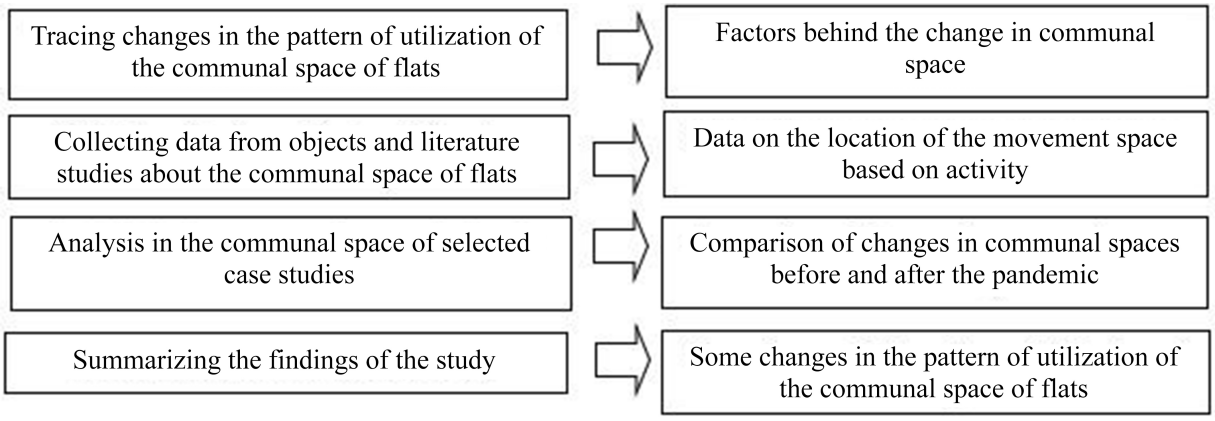


Figure 1. Schematic of the Thinking Stage

According to the data obtained based on the results of interviews, there are several joint activities such as recitation, counseling from the village, celebrations, sitting, relaxing, chatting, playing and so on. An analysis was carried out that showed the use of communal space, there were planned and unplanned ones. Activities that are planned and routinely carried out are included in formal categories, for example, counseling, celebrations, and recitations. Meanwhile, activities that are incidental and unplanned are included in the informal category, for example, sitting, chatting with neighbors, and playing. Overall, the number of residents observed was 150 people, with a distribution of 34% of children, 20% of teenagers, and 46% of adults. Women as the most significant corridor users reached 60%, followed by 40% of children. The dominance of women in the corridor area shows that many activities are carried out by women as housewives. The communal corridor space for children is an ecologically important environment as a playground [7]. Teenagers use less communal corridor space because they tend to be far from their parents, and it is easy to find it to get along with friends who are far away. Elderly residents were observed the least because they were more in the dwelling and did not like to be in the corridor because they felt disoriented [18].

3. Results and Discussion

Flats are separate and/or self-contained constructed buildings for residential purposes and divided into functionally structured parts. The building is built with residential units that can be owned and used separately with shared interests, shared objects, and shared land. Various efforts have been made by the government so that the impact of the pandemic does not affect people's lives much. The policies issued refer to the health standards set to save people's lives so that the government can carry out its duties and functions. New Normal is a new way of life or a new way of carrying out life activities during the unfinished COVID-19 pandemic.

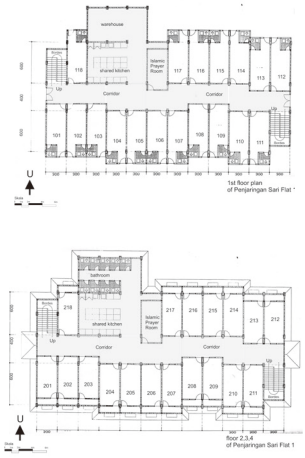
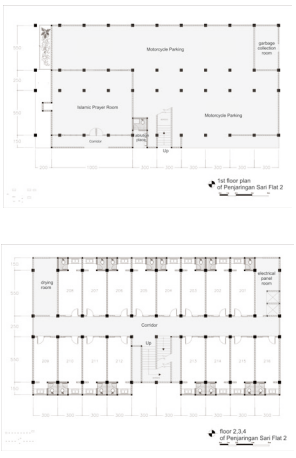
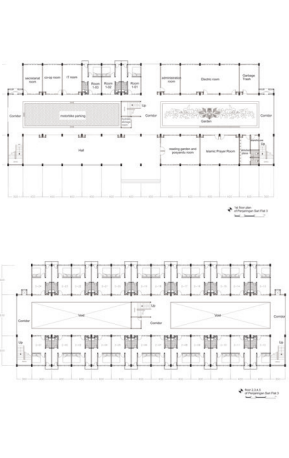
For this reason, preventive measures are needed by implementing the following steps [19]: Hand sanitizer and soap; avoid touching your eyes, nose, and mouth; and practice coughing or sneezing etiquette by covering your nose and mouth with the inside of your upper arm or a tissue; maintaining a distance of at least 1 meter from people who experience respiratory symptoms; sunbathing for about 10-15 minutes before 9 am and after 3 pm; room ventilation.

Social distancing in space cannot be separated from user activities in the new normal and health context to prevent the rapid spread of the virus. The division of distance in the interior or social space, such as the distance in a safe social zone, ranges from 120 to 365cm [20]. The social zone with comfortable, conversational activities is 100 to 200 cm [21]. Social distance is the distance when people talking are not too close or too close, so a safe distance is needed when speaking, which is at least 1.20 m. This opinion is adjusted to the health protocol standard issued by the government, namely a safe distance when in public places of at least 1 m. As for the maximum distance, DK Ching said the maximum distance is around 3.60 m.

The research was done at the Penjaringan Sari flats in Surabaya by looking at both non-physical and physical data, such as the shape of the communal space, how big it was, and how well it was taken care of (Table 1). The physical data of the building is gathered by looking at it in the common area. This helps to figure out the building's condition and the facilities that are already there.

Social interaction is a relationship between two or more human individuals where the behavior of one individual affects, changes, or improves the behavior of other individuals. Social interaction is the key to social life because there can be no life together without interaction. Several external factors affect the frequency of social interactions, namely the character of the occupants; the location of social interaction close to the residence or close to the center of the crowd, such as shops and the main terrace of the Rusunawa; the height of the floor; and the type of profession. Residents with a high social spirit and residents who work as housewives often carry out social interactions in flats. The existence of a communal space should be placed relatively close to the residential location of residents. Still, the placement should be such that it does not interfere with the privacy of the family [22].

Table 1. The condition of the existing communal space in the residential block of the Penjaringan Sari

	Penjaringan Sari	Penjaringan Sari 2	Penjaringan Sari 3
Communal space			
Number of Floors	4	4	5
Residential type	18 m^2	21 m^2	24 m^2
Number of occupancy in 1 floor	18	16	24
Number of occupancy in 1 block	72	48	99
Number of block	3	6	1
Corridor	Located in the center of each floor flanked by residential areas facing each other with a width of 3 meters (double-loaded system).	situated in the center of each floor flanked by residential facing each other with a width of 3 meters (dual loaded system)	in the form of a single loaded system by placing a garden in the middle area of the flat building
Shared kitchen	The shared kitchen is provided. But currently, it is used for certain events such as cooking for celebrations, warehouses, etc	No shared kitchen	No shared kitchen
Shared bathroom	a shared bathroom is provided where two dwellings have one shared bathroom	No shared bathroom	No shared bathroom
Motorcycle Parking Only	located on the 1st floor/ground floor of a residential block by utilizing the unused shared kitchen and warehouse space	situated on the 1st floor/ground floor of each block. Besides, it's also in the courtyard, which is between two blocks	is on the ground floor in the middle of the building
Islamic Prayer Room	The prayer room at PS 1 is located on the 3rd floor of each block. Residents use the shared kitchen area that is not used to become a prayer room that all residents in one block can use	located on the ground floor / 1st floor and can be used by all residents of the flat	located on the ground floor of Penjaringan Sari 3 flat
RT Hall	located on the 2nd floor in the same area as the residential area	Located on the first floor between 2 blocks.	
Lobby	No lobby	No lobby	Located on the ground floor of the block

3.1. Existing Condition of Study Area

The land allotment around the Penjaringan Sari flats is dominated by housing and settlements, and many factories are being built around the flats. This makes the location of the Penjaringan Sari flat a densely populated area. Penjaringan Sari flats consist of Penjaringan Sari 1 (PS 1), Penjaringan Sari 2 (PS 2), Penjaringan Sari 3 (PS 3) and Penjaringan Sari 4 (PS4). PS 1 consists of 3 blocks, namely block A, block B, and block C, with an area of approximately 800 m2 per block and consists of four floors, while on each floor, there are 18/19 rental units (residential or business) each with an area of 18 m2. PS 2 consists of six blocks, namely DA, DB, EA, EB, FA, and FB blocks. Meanwhile, the PS 3 and PS 4 flats only consist of 1 block.

Communal space in flats is divided into two types, namely: communal space, which is inside the residential block; and communal space outside the residential block, which is shared by all residents of the apartment in all blocks.

Communal spaces in residential blocks are not all the same between blocks, depending on the area of the dwelling, the area of the block, and the habits of the occupants [17]. For example, in a dwelling of type 18 m2 in the Penjaringan Sari flat in Surabaya, there is a communal kitchen with a shared kitchen due to the tiny residential area [23]. In the meantime, the government gives all the residents of all the apartment blocks a shared space where they can do things together, as shown in Table 2.

3.2. Changes in Communal Space Utilization Patterns in the New Normal era

Based on the description of the use of communal space in the Penjaringan Sari before, it was found that several patterns of communal space utilization changed before the pandemic and after the pandemic, as summarized in Table 3. Some activities change in the new normal era and occur from the non-physical side, such as reduced formal activities such as meetings and routine recitations. Meanwhile, from a physical point of view, it has not changed much due to the unavailability of sufficient funds to carry out renovations according to pandemic conditions by health requirements. Based on these five parameters, the pattern of communal space utilization is divided into three groups:

a. High-intensity pattern

The use of communal space with high intensity has not changed much, primarily done in informal activities such as chatting, playing, sitting, and sitting. This is because this activity is what they can do during a pandemic to reduce saturation in a reasonably narrow dwelling. Besides, when they finish online school, school children immediately play in several communal spaces, one of which is the corridor. The frequency of activities is dominated by activities within hours, for example, sitting, playing, and chatting.

b. Moderate Intensity Pattern

Activities with moderate intensity occur like formal activities before the pandemic, such as RT meetings. But during this pandemic, residents did not hold RT meetings in large numbers and only held meetings via WhatsApp so the intensity turned out to be below. This is because of the government's appeal not to gather in large numbers as well as the RT hall which is relatively narrow and there has been no attempt to create barriers between people to implement physical distancing.

As for the frequency of activities before the pandemic, moderate-intensity occurred at weekly and monthly frequencies, such as gymnastics, RW meetings, recitations, etc. However, it has decreased to low intensity during the pandemic.

c. Low-intensity pattern

The nature of formal activities has decreased quite sharply to low intensity because formal activities that gather a lot of people are not permitted, such as RT/RW meetings, routine recitations, etc. At the same time, the frequency of activities during the pandemic occurred mainly in activities with weekly and monthly frequencies, such as community service, RT/RW meetings, Integrated Healthcare Center etc.

Observations on changes in the communal space in Penjaringan Sari flats were also carried out in terms of physical and non-physical changes (Table 4). Physical changes are physically changing buildings or furniture to adapt during a pandemic. Meanwhile, non-physical changes change behavior/behavior settings to adapt during a pandemic.

Table 2. The existing condition of the combined communal space of the Penjaringan Sari Flats

No	Communal Space	Information
1	Garden and gazebo	The garden and gazebo are shared facilities that are used to sit, chat, relax while enjoying the view of the garden in the apartment area.
2	Paud	Early childhood education facilities are provided by the government to facilitate early childhood education in the apartment area.
3	Field	The field is a shared facility provided for sports activities, playing, gathering, and so on.
4	RW Hall	The Penjaringan Sari Flats consist of 7 RTs incorporated into one RW. The government provides RW halls that can be used together, for example meetings and other administrative service activities
5	Stall	The residents of the flat use the kiosk to sell. There are various types of sales at this kiosk, including food and daily necessities.

Table 3. The intensity of communal spaces before the pandemic and during the pandemic

No	Parameter Pattern	Intensity before the pandemic			Intensity during a pandemic		
		High	Medium	Low	High	Medium	Low
1	Nature of Activities						
	Formal		v				v
	Informal	v			v		
2	Activity Frequency						
	O'clock	v			v		
	Daily		v			v	
	Weekly		v				v
	Monthly		v				v
3	Activity time						
	Morning			v			v
	Afternoon		v		v		
	Evening	v					v
4	Activity scale						
	Small group		v		v		
	Big group	v	v				v
5	Range distance						
	Close	v			v		
	Currently		v			v	
	Far			v		v	

Table 4. Physical and Non-Physical Changes in Communal Spaces during the Covid-19 Pandemic

No	Communal Space	Physical changes		Information	Non-Physical Change		Information
		High	Low		High	Low	
1	Corridor		v	The shape of the corridor remains unchanged physically.		v	Only a few residents wear masks when Chatting, Playing.
2	Islamic Prayer Room		v	The interior of the prayer room is fixed, there is no barrier between worshipers, and there is no handwashing sink		v	Congregants do not wear masks, and there is no distance during prayer/worship.
3	Lobby	v		There are hand washing sinks and disinfectant booths in each lobby area/entrance to each block	v		Reduced activity in the lobby due to complying with the advice not to gather in large numbers
4	Field		v	No physical changes	v		Rarely do activities in the field in large quantities.
5	Garden/ gazebo		v	No physical changes	v		Residents sit sitting by keeping their distance and not in groups and wearing masks.
6	RT/RW Balai Hall		v	No physical changes	v		Residents do not hold RW / RT meetings during the pandemic. Coordination is done online.
Percentage (%)		17	83		66	34	

The success of using high-intensity communal spaces is primarily influenced by how residents respond to the current pandemic. But because of the need for social interaction, residents try to utilize and use communal spaces by making non-physical changes, meaning that residents try to reduce the number of people. For now, physical changes have not been carried out much due to the absence of government funding and support. For example, being able to only make handwashing sinks in each block, disinfectant booths, etc. From the results of the study, it was found that the percentage of physical changes was low at around 17%, while for non-physical changes, it was pretty high at about 66%. Thus, the occupants of the Penjaringan Sari flats in Surabaya made more non-physical changes than physical ones.

3.3. The Proposed Communal Space Design in the New Normal era

Based on the results of the analysis of the pattern of utilization of the communal space of Rusunawa in the pandemic era, there are several things that can be used as data for design, including the density matrix below (Table 5):

Table 5. Communal space density matrix in flats in the new normal era

No	Communal Space	Density		
		Low	Medium	High
1	Corridor			v
2	Islamic Prayer Room	v		
3	Lobby		v	
4	Field	v		
5	Garden/ gazebo			v
6	RT/RW Balai Hall	v		

a. In formal activities that decrease during a pandemic, for example, recitations, RT meetings and so on, it is necessary to make physical changes to the communal space of flats so that the intensity can increase again.
b. In non-formal activities that remain high during a pandemic, for example, chatting with neighbors, playing and so on, it is necessary to make physical and non-physical changes so that there is no transmission of covid 19

As for some suggestions for a physical design in the communal space of flats, among others:

a. Islamic Prayer Room: Create a partition or barrier between spaces to create physical distancing. This is intended so that residents of the flats can still carry out formal activities such as worship. The bulkhead material is made of transparent acrylic with a height as high as a human standing so that when worshiping, it is safe from droplets but can still see the person next to it (Figure 2)

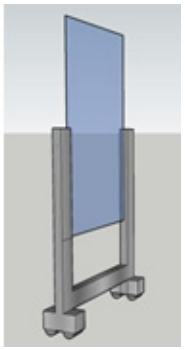


Figure 2. The design of acrylic barrier

b. Garden/ gazebo: Build the mini garden in corridors, parks, or free land/spaces for food security and reduce the intensity of residents shopping at the market. Furthermore, the design adjustment will reduce the number of people outside the flats going in and out of the flats. Hopefully, the transformation of vacant land into mini gardens would start a new lifestyle through the utilization of narrow land and mini gardens.
c. Corridor: Provide chairs in front of the flats for residents to sit while chatting with their neighbors to build a safe distance (physical distancing). The seat is limited by a shelf to put a bucket of water. The function of this bucket is for residents to get used to washing hands (Figure 3). This seat is also equipped with a shoe rack/sandals / toy box to make it look neat in the front area of the residence

Figure 3. The design of the sink, mini garden and chairs in front of each flat

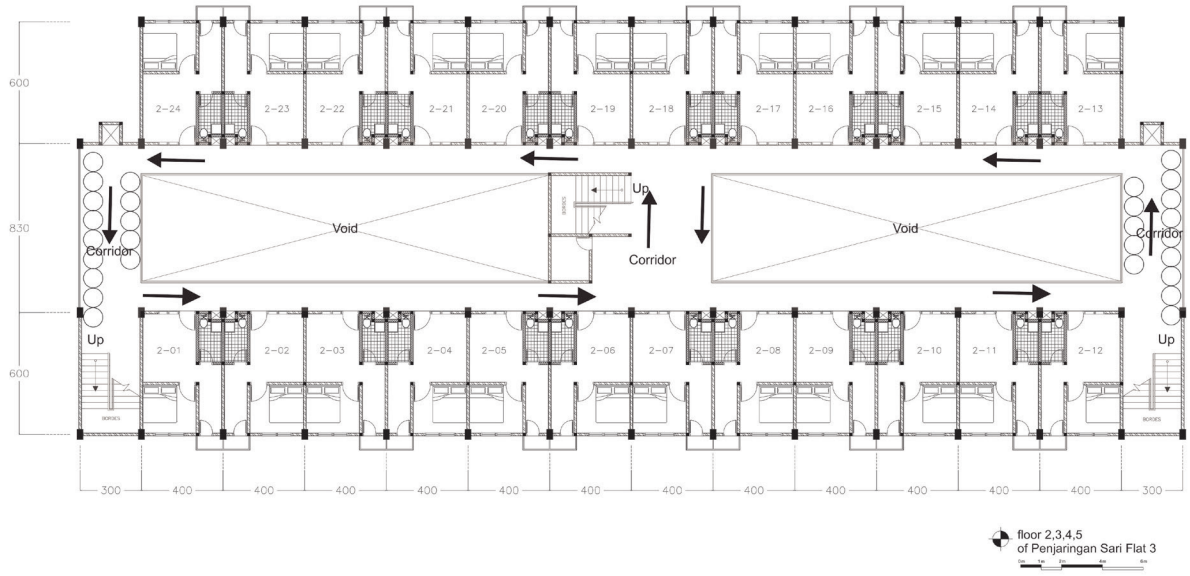


Figure 4. Flat residential area sign design

d. On each floor visited by many people, signs/symbols need to be made in order to direct the circulation so that they do not cross paths. The residents can apply social distancing with a distance of one meter. This design will have an impact on residents and visitors in living a new lifestyle with the existing design (Figure 4).

4. Conclusions

This research describes a pattern of changes in the use of communal space in flats that were found during the pandemic. Changes in the pattern of use of communal space in flats, such as for formal activities, the intensity changes from high to low, for example, the communal space in the RW and field halls with RT/RW meeting activities, routine recitations, and seventeen events that were not held during this pandemic. Meanwhile, the intensity of informal activities tends to increase in communal spaces in the lobby, gardens/gazebos, and kiosks with chatting, sitting, and playing activities. Meanwhile, based on observations, physical adjustments to this pandemic condition are still low, at only around 17%. This is due to the funding factor and a lack of public knowledge about how to change the physical elements of the building in response to the pandemic. Meanwhile, from non-physical levels, it is quite high at around 66% due to many gathering activities that have been canceled during the pandemic. For example, there are no RT/RW meetings, routine recitations, gymnastics, competition events, and so on. The design arrangement can be applied to utilize communal space in the pandemic era, including creating a barrier for physical distancing; building a mini garden; providing chairs and sink at the entrance of the flat; seating arrangement; providing an acrylic barrier in the praying room; and providing a sign/symbol for direct circulation. The results of the study are expected to be useful for various parties, including the general public, residents, the government, and researchers in the housing and interior fields, to be able to develop future designs for communal spaces in flats so that, besides residents, they can continue to interact socially, they also maintain health protocols and break the transmission of COVID-19.

Acknowledgments

UPN Veteran East Java for the support in this research. Hopefully, the results of this research can be useful for UPN Veteran East Java in particular and society in general.

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