

New Normal Interior Architecture :Space in Hotel Design

By

Nilubon Puraprom

University of Phayao, Thailand

E-mail : Nilubon.su@up.ac.th

Udomsub Dangkhawkeaw

University of Phayao, Thailand

E-mail : maggo6060@gmail.com

Abstract

In the year 2021, the world has been facing the Covid 19 -pandemic .The tourism industry in Northern Thailand was affected by restricted travel, and the country lockdown and Social distancing practical guidance effect all physical environment, especially in public areas such as hotels must adjust the interior layout for the new use of space .The research aimed to propose guideline for design new normal interior architecture of hotel for the future .This study emphasized research through surveys and assessments of elements within a building to design a space for the new normal, using minimized spread of virus as key criteria .Results showed that the public areas of the hotel must contain :openings for ventilation within the building, limiting users number with rotate to reduce time of use, space for personal distancing, and interior decoration that uses surface materials that are easy to sanitize .Within an interior privacy atmosphere that lead to green space perspective, it enable guests who must have a longer stay experience happiness and leisure in the new normal environment

Keywords —Space, Hotel, Covid19-, New normal, Spread of virus, Thailand

Introduction

In late 2019, the world was introduced to an emerging disease that caused patients to develop pneumonia of unknown cause for the first time in Wuhan, Hubei Province, People's Republic of China .Later, it was found that this disease was caused by a new strain of corona virus .The World Health Organization designated it as COVID) 19-Suraiya et al.,) (2020World Health Organization Thailand, .(2020Until 2020, COVID 19-had spread across the world and the outbreak had resulted in a large number of infections and deaths in Europe, America and Asia .

On January 13, 2020, Thailand found the first case of COVID-19 and is considered the first patient found outside China)Suraya et al., 2020 .(The COVID-19 epidemic situation in Thailand in that year continued to occur, but the number of cases was not very high .From April 2021 onwards, the number of infections had increased rapidly and spread widely, which inevitably had a heavy impact on the economy, especially the loss of revenue from the tourism industry .In 2018)before the epidemic(, Thailand had a high tourism income of 16 %of the country's total GDP)Krungthai COMPASS, 2020 .(Moreover, more than 61 %of all tourism revenues come from foreign tourists .As a result, the number of tourists dropped by 83.21 %in 2020 due to the impact of global lockdowns and travel bans)Ministry of Tourism & Sports, 2021.(

In the first quarter of 2021, Thailand's hotel business was hit hard, with a 63.9 %drop in growth)Office of the National Economic and Social Development Council, 2021 .(In March 2020, hotel occupancy rates in Asia and the Pacific dropped to 28.3) %Ministry of Tourism & Sports, 2020 (as a result of the unpredictable epidemic .Due to the aforementioned worrying situation, the hotel business needs to have a great adaptation in terms of space utilization and service .This research aimed to present an interior design that supports changing applications under the safety measures against COVID-19 .This was to build confidence in the use of hotel spaces and services for customers during the epidemic crisis .The pattern of tourism and the use of hotel services had changed.

Research Objectives

As mentioned above, it had been the source of research on the adaptation of hotel spaces in a new normal way .The aim was to propose ways to improve the interior space to cope with short-term tourism after the easing of epidemic prevention measures as a guideline to support future hotel users .There were two objectives:

- 1) To study the interior architecture of the hotel that were suitable for the new normal tourism under the standards to reduce the spread of COVID19-
- 2) To propose design guidelines for hotels that could accommodate tourists based on new normal concepts

The research focused on answering the question, “What should be the design of new normal hotel spaces to reduce the spread of COVID-19?” In this regard, research was carried out in accordance with the concept of new way of tourism in Thailand "Amazing Thailand Safety & Health Administration)SHA" (, which meant tourism's sanitation and safety standards)Ministry of Tourism & Sports, 2020 .(Standard measures had been established to reduce the spread of COVID-19 to support tourism, as shown in the conceptual framework in Figure 1.

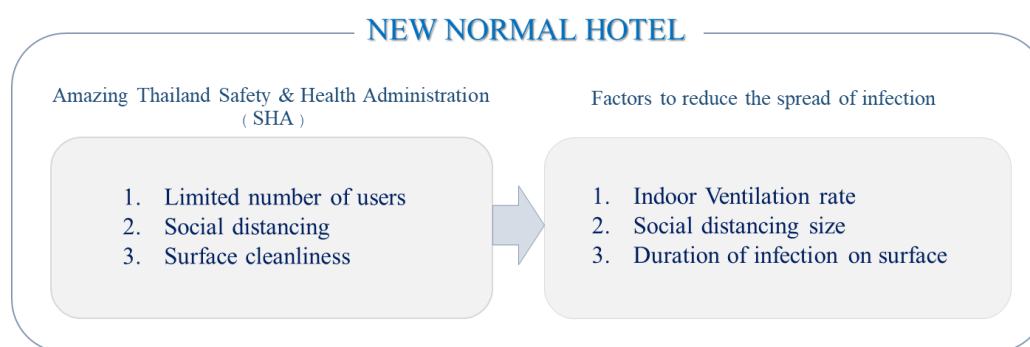


Figure 1 Conceptual Framework

Moreover, guidelines for improving the areas within Thai hotels were presented to give tourists or hotel guests confidence in measures to reduce the spread of COVID-19 in the form of spatial management and new normal interior design for hotel establishments.

Literature Review

According to the research conceptual framework, data study guidelines could be divided into two main parts :details of hygiene standards for tourists and factors in reducing the spread of COVID-19, leading to the creation of new normal hotel space design guidelines . Details related to the study were given below.

Amazing Thailand Safety and Health Administration) SHA(

SHA is a sanitation standard for tourists created by the cooperation of the Tourism Authority of Thailand and the Department of Disease Control .The objective was to ensure sanitation and standardized service to reduce the risk of the spread of COVID-19 for tourists)Ministry of Tourism & Sports, 2020 .(There were provisions for practices related to the arrangement of common areas, dining areas, and hotel room areas .The results could be summarized as shown in Table 1.

Table 1 shows tourist hygiene (SHA) standards for hotel establishments.

Common Area (Hotel Lobby)
1) The temperature of employees and service recipients is checked every time and a sign is given to those who have passed the screening.
2) Employees and service recipients are registered as well as travel history.
3) Only service recipients who wear cloth masks or hygienic masks are allowed to use the service in the hotel.
4) Adequate service areas are available for handwashing with soap and water or alcohol gel for hand hygiene.
5) There is a waiting area and there must be a social distance of 1-2 meters.
6) There is an appropriate reception area and social distancing of 1-2 meters.
Hotel Restaurant
1) There is a one-way entrance for service recipients. In the event that there are multiple entrances and exits, there must be a screening point for every route.
2) The temperature of employees and service recipients is checked every time and a sign is given to those who have passed the screening. (If the temperature exceeds 37.5 degrees Celsius, they are forbidden to operate or use the service, and advise them to see a doctor)
3) Employees and service recipients are registered as well as travel history.
4) Adequate service areas are available for handwashing with soap and water or alcohol gel for hand hygiene.
5) There is a queue area and there must be a social distance of 1-2 meters.
Guest Room
1) Rooms are cleaned regularly and common contact surfaces are cleaned at least every 2 hours, such as bathroom door handles.
2) Garbage bins with closed lids, general and recyclable waste segregation, tight bag closures, and hygienic collection of garbage in garbage shelters are in place to prevent animals and disease-carrying insects to wait for the responsible agency to dispose of the waste.
3) Food is covered every time while serving for room service according to restaurant standards.
4) Disinfectant sterilized cloth is used for safe cleaning of the room.
5) The equipment or cleaning cloth must be cleaned after every use with anti-virus products. The product manual or instructions should be followed.
6) The corridors of the rooms are regularly cleaned with disinfectants.
7) Air conditioners are positioned in all rooms for air circulation and windows are opened for fresh air during room cleaning.

Note. Adapted from *Amazing Thailand Safety and Health Administration)SHA) (p.19-21(, by Ministry of Tourism & Sports, 2020.*

Factors of reducing the spread of COVID-19

COVID-19 is a respiratory infection that can be transmitted to the body through the nose, mouth, and through contact with secreted aerosols, which can spread the infection without the patient showing symptoms)Buonanno, et., al., 2020 .(Risks in different areas could be reduced by managing to reduce the spread of COVID-19 in 3 ways:

Indoor Ventilation rate

The characteristic of COVID-19 is that the pathogen can be transmitted through aerosols of respiratory secretions or saliva, especially in areas with congestion, high population density, and no social distancing .An important factor is the air circulation in the area .In poorly ventilated areas or enclosed areas, aerosols increase over time)Amon Leelarasamee, 2020 .(In areas with good ventilation rates, the risk of infection is reduced .Appropriate ventilation rates

in buildings can reduce the risk of infection by 3-5 times)Krischat Wongwilikit et al., 2021 .(There are two forms of ventilation in a building :natural ventilation and air conditioning ventilation.

Natural ventilation can be considered a budget-friendly ventilation method and can be easily adapted if the facility is located in the right environment .There must be no other people outside or around the building or crowded nearby buildings .This can be done by opening air vents through the building for ventilation by providing at least two vents on both sides of the room to allow air in and out to allow air to circulate throughout the building)Department of Health, 2021.(

Social distancing size

Most cases of COVID-19 infections are caused by exposure to secretions of infected people through a droplet transmission mechanism .The secretions contain droplets of three sizes :large, medium and small .Droplets smaller than 6 microns are highly capable of spreading COVID-19 .Small droplets are lightweight, float in the air, and fall about 6 feet to the ground)The Association of Siamese Architects under Royal Patronage, 2020 .(If an infected person coughs or sneezes within 1 meter, they can spread the infection to others)Suraiya et al., 2020 .(In general, the droplets of secretions can spread in a distance of 1-2 meters, so there must be a partition in the dining area at a height of about 60 centimeters to keep distance and reduce the spread of COVID-19)Chen Ren, et., al., 2021 .(Normally, the common areas of hotel establishments are occupied by a large number of users, therefore it is imperative to adjust the service model as shown in Table 2)Department of Health, Ministry of Public Health .2019, p.28.(

Table 2 shows improvements in the service model and utilization of hotel spaces.

- | |
|---|
| 1) There is a clear zoning in the service. |
| 2) There is a limit on the number of people per area. |
| 3) A minimum of 1 meter of social distancing is required. |
| 4) There is a service point for washing hands with soap or alcohol for customers. |
| 5) There is a one-way route to avoid crossing each other. |
| 6) There is a boundary of the service recipient's area based on the principle of social distancing. |
| 7) There should be a transparent partition at the information counter. |
| 8) An automatic door opening and closing system should be used. |

Note. Adapted from Public health practices to prevent the spread of the Coronavirus Disease 2019 (Covid-19), Issue 1 (p.28-29). by Department of Health, 2021

Duration of COVID-19 virus on the surface

Although the transmission of COVID-19 occurs mainly through droplets caused by airborne secretions, COVID-19 infections have been found to be transmitted through contact with various surfaces .In particular, the infection is exposed through unwashed hands and in contact with the eyes or during eating)Zhang, et, al., 2021.(

Exposure to COVID-19 may not be the main cause of cluster outbreaks)Amon Leelarasami, 2020 .(The duration of survival on COVID-19 surfaces, especially interior surfaces with high exposure in public spaces, plays an important role in reducing the risk of infection through exposure such as selection of materials that are easy to clean, and do not harbor germs and dirt on the material surface .The Association of Siamese Architects has specified the duration of life of COVID-19 at various temperatures as follows)Department of Health Service Support, Association of Siamese Architects .P.5:(

Table 3 shows the duration of COVID-19 infection on various surfaces.

Materials	Temperature (C)	Duration
Iron	20	48 hours
Aluminum	21	2-8 hours
Metal	At room temperature	5 days
Wood	At room temperature	4 days
Glass, Mirror	At room temperature	4 days
Plastic	22-25	< 5 days
PVC	21	5 days

Note. Adapted from Management of buildings and facilities for safety from COVID-19 infection (p.5), by The Association of Siamese Architects under Royal Patronage, 2020.

Table 3 shows that COVID-19 can live on surfaces of interior materials at 21 degrees Celsius (air-conditioning on) for as long as 8 hours to 5 days, or at room temperature in Thailand located in the humid tropics.

Therefore, it is imperative that all types of public services be disinfected on all surfaces, especially on door handles, windows or other frequently touched surfaces. The best disinfection method is wipes (World Health Organization, 2021, p.2). (The nature of the material surface is important. A smooth, non-grooved or rough surface will be able to clean the infection better than other surfaces.)

Scope of study

Aung Kham Hotel, Phayao Province, Thailand has been designated as a research area. Criteria for welcoming domestic tourists were assessed by selecting from three key factors:

1. The infection rate is low.
2. It is an unseen tourist area, not crowded.
3. It is easy to travel by private car from nearby main provinces

The number of Covid-19 cases in Phayao province since January 12, 2020–August 19, 2021, has a cumulative total of 15,577 cases out of 1,234,487 cases in the country (accounting for 1.26 % of the total) (Ministry of Public Health, 2021). (Therefore, it is considered to be one of the provinces with the lowest number of infected people in the country. As shown in Figure 2, Phayao Province is classified as a green area with a rate of not more than 100 infected people. During the third wave of the outbreak in Thailand, which is considered to be the most infected, the northern region of the country still found the number of infected people in each province not more than 500.

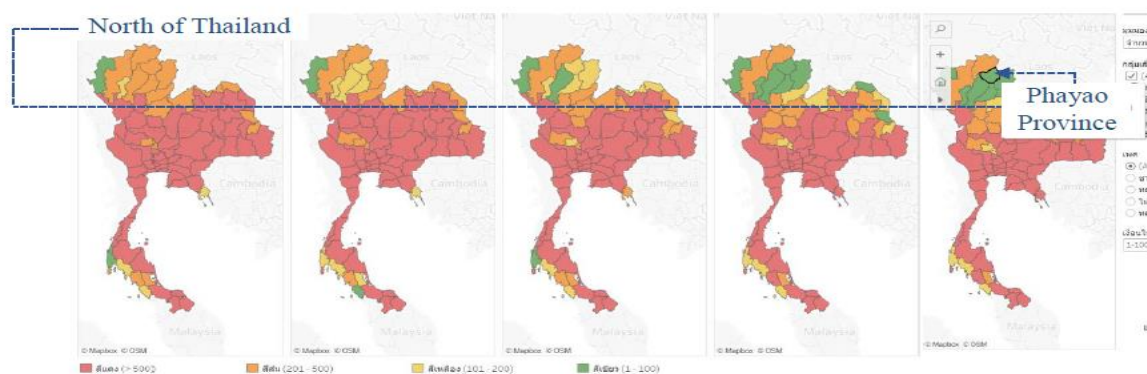


Figure 2 shows the color zoning of the infected area.

Note. Situation by province showing daily historical results, ministry of public health, 2021 .
<https://ddc.moph.go.th/covid19-dashboard/?dashboard=earlier-map>

Since it is a province in the north of Thailand, it has a geographical feature of plains and mountains, fertile with mixed forests, as a secondary city that is not far from the main tourist city of the north together with the secondary factor of long-stay health tourism trends . Moreover, the Euang Kham Hotel, Phayao Province has a spatial physical readiness because the University Hospital of Phayao is located in the same area, thus there is a possibility for improvement to accommodate new types of tourists in the future.

Research Methods

This study was applied research using multiple methodology .Qualitative and quantitative data collection was used for collecting variable data to create a new normal hotel space design, as shown in the data collection process in Figure 3.

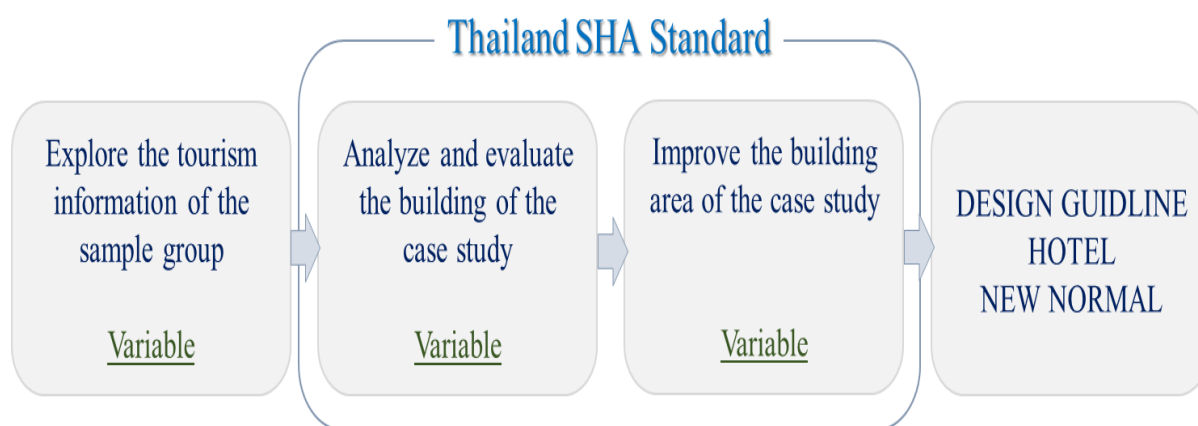


Figure 3 shows conceptual framework

Data were collected from the sample group, namely the population and tourists or travelers entering Phayao province by randomly giving out a questionnaire of 303 people out of a total of 3,818 tourists in 2021)Tourism Authority of Thailand, 2021 .(The sample size criterion for Krejcie, R., & Morgan, D.W) .1970 (was conducted by surveying tourism and hotel overnight stays both before and after the COVID-19 pandemic .

A satisfaction assessment was conducted in terms of site improvements to reduce the spread of COVID-19 to test the hypothesis that “Tourists were confident about using a new normal hotel with the concept of reducing the spread of COVID-19”.

A statistical approach was used to test the relationship of the two variables and the conclusions were drawn to create a new normal hotel design approach to accommodate tourists during and after the COVID 19-pandemic.

Research Results

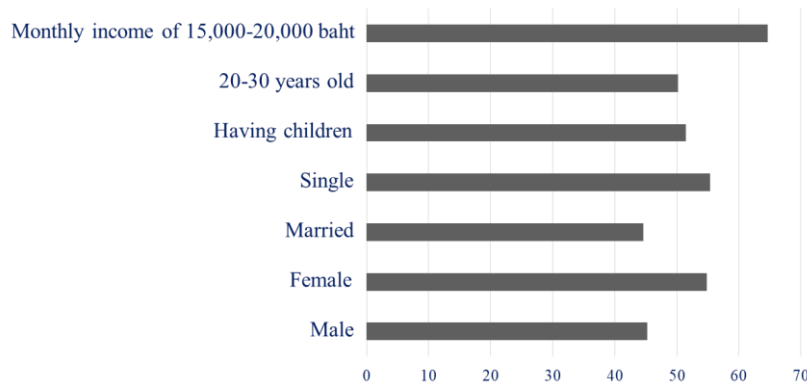
The step-by-step data analysis can be classified in detail into 3 parts:

Analysis of general data on tourism and hotel accommodation usage of the sample group)results of hypothesis(

The results of the questionnaire of 303 people found that most were aged between 20-30 years, more than 55 %were single, and 52 %had no children.

Table 4 shows the general information of the sample (n=303).

General information	Percent (%)
Monthly income of 15,000-20,000 baht	64.7
20-30 years old	50.2
Having children	51.5
Single	55.4
Married	44.6
Female	54.8
Male	45.2



When asked about travel and hotel stays, the majority)57.4 (%tended to stay one to two nights in a hotel at a time .Most of the respondents)94.4 (%were concerned about crowding, being in enclosed spaces with poor ventilation, and having germs on surfaces .If hotels limit the number of occupants, natural circulation and ventilation, routing and use of easy-to-clean interior materials, the sample was expected to have a high level of service satisfaction as shown in Table 5-6.

Table 5 show information on tourism and staying in hotels (n=303)

Information on tourism and staying in hotels	Percent (%)
The trend of overnight stays after the COVID-19 period is 1-2 nights.	57.4
There are concerns about the congestion of people, being in enclosed spaces with poor ventilation and germs on surfaces in various areas.	94.4

Table 6 shows satisfaction level of management to reduce the spread of COVID-19 (n=303)

satisfaction level of management to reduce the spread of COVID-19	Mean	Std.Deviation
Number of occupants in the building area should be appropriately limited.	3.59	.930
Natural ventilation system is used.	3.47	.923
Traffic routing is defined.	3.56	.960
Easy-to-clean interior materials are used.	3.62	.927

According to the Chi-square tests correlation test on whether hotel use concerns were correlated with building trust in occupancy using user limitations, it was found that there was a significant correlation at the 0.00 level .

Table 7 shows the correlation test using Chi-Square Tests.

Case Processing Summary								
		Cases						
		Valid		Missing		Total		
		N	Percent	N	Percent	N	Percent	
Limited number of users * Concerns about hotel services		303	100.0%	0	0.0%	303	100.0%	
Limited number of users * Concerns about hotel service (Cross-tabulation)								
		Concerns about hotel service					Total	
		Congestion of people	Being in enclosed spaces with poor ventilation	Germs on surfaces in various areas	All of the above			
Limited number of users	lowest	Count	2	1	0	7	10	
		% of Total	0.7%	0.3%	0.0%	2.3%	3.3%	
	low	Count	0	0	2	26	28	
		% of Total	0.0%	0.0%	0.7%	8.6%	9.2%	
	moderate	Count	0	1	3	106	110	
		% of Total	0.0%	0.3%	1.0%	35.0%	36.3%	
	high	Count	1	0	2	107	110	
		% of Total	0.3%	0.0%	0.7%	35.3%	36.3%	
	highest	Count	3	0	2	40	45	
		% of Total	1.0%	0.0%	0.7%	13.2%	14.9%	
	Total		Count	6	2	9	286	303
			% of Total	2.0%	0.7%	3.0%	94.4%	100.0%
	Chi-Square Tests							
			Value	df	Asymp. Sig. (2-sided)			
Pearson Chi-Square		42.991 ^a	12	.000				
Likelihood Ratio		24.687	12	.016				
Linear-by-Linear Association		.678	1	.410				
N of Valid Cases		303						
a. 15 cells (75.0%) have expected count less than 5. The minimum expected count is .07.								

The results of the analysis could be described that most of the customers who were concerned about the use of the hotel would be more confident in using the service if the hotel limited the number of users in various parts of the building.

Therefore, building improvements to support tourism after COVID-19 must be done under the concept of limiting the use of space to reduce congestion and the risk of spreading disease. Consistent with the research of Kim, Y. & Liu, A. (2022), customers would have confidence in the service when social distancing measures and user restrictions were in place. Moreover, this was to ensure hotel service to customers along with social distancing in each area and the use of easy-to-clean interior materials.

Pre-renovation building analysis

The research was conducted within the scope of a case study using the Aung Kham Hotel, a hotel located in Phayao University district, northern Thailand. This hotel was suitable for offering several improvements as a new normal hotel:

The condition is located in a shady environment, spacious, lots of trees, cool air, and good ventilation. The total area of the hotel is 68,000 square meters. The layout of the building is lined up along the hillside, providing a view of the beautiful trees and mountain ranges of northern Thailand's geography.



Figure 4 shows the location of the case study.

The appearance of the building is a single-storey building, allowing traffic between the buildings without overlapping. The building structure is reinforced concrete columns and beams, masonry walls and gable roof, thus improving the space without affecting the main structure of the building.

Due to the construction of the building for a long time, it may deteriorate over time and the interior of the building is not yet conducive to tourist accommodation. The main problem encountered was the openings that were not well ventilated, and therefore the interior was filled with moisture and heat build-up from the ground. Improvements must be made to allow openings for better air ventilation.



Figure 5 shows the pre-renovation characteristics of the building in the case study.

Comparative analysis of data for building renovation in case study

The study is a comparative analysis of literature reviews leading to the creation of a conceptual framework design approach .For the social distancing, a human typically uses 1.40 square meters)Panero, J., & Zelnik, M .1979 .(However, if a new normal area with social distancing to reduce the risk of COVID-19 through droplets of secretions is required, the area must be 4.70 square meters per person or not less than 4.00 square meters per person.

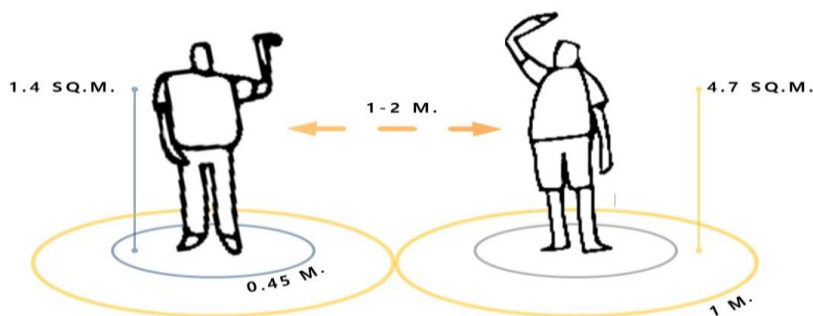


Figure 6 shows social distancing.

A comparative analysis of the literature reviews and standards)SHA (on outdoor air circulation, social distancing and surface germ duration was carried out to lead to a new normal hotel design .The results are shown in Table 8 .

Table 8 shows a comparative analysis of the data leading to a summary of design guidelines.

Comparative data	Amazing Thailand Safety and Health Administration (SHA)	Air circulation in building	Social distancing	Duration of pathogens on surface	New Normal Hotel Design
Screening point	<ul style="list-style-type: none"> - There is a temperature check point. - There is a point of registration history. 				<ol style="list-style-type: none"> 1. There is a temperature check point. 2. There is a point of registration history. 3. There is a one-way walking route. 4. Social distance is set at 1 meter. 5. There is a limit of 1 person per 4 sq m. 6. There should be a transparent partition at the information counter. 7. There should be an appropriate hand washing point. 8. The automatic door opening and closing system should be used. 9. Smooth surfaces should be used. 10. Natural air circulation is achieved by allowing the wind to blow through the building. 11. There are vents on at least two sides of the room. 12. Separate air conditioning systems should be used.
Social distancing	<ul style="list-style-type: none"> - There is one-way entrance channel. 		<ul style="list-style-type: none"> - There is one-way entrance channel to avoid crossing each other. - Social distance is set at 1 meter. - The service recipient's area boundary is defined based on the principle of social distancing. - The number of people per area must be appropriately limited. - There should be a transparent partition at the information counter. 		
Duration of pathogens on surfaces	<ul style="list-style-type: none"> - There should be an appropriate hand washing point. 			<ul style="list-style-type: none"> - Germs can remain on the interior surface for 8 hours to 5 days at 21 degrees Celsius or room temperature. 	
	<ul style="list-style-type: none"> - Common contact surfaces should be cleaned every 2 hours. 		<ul style="list-style-type: none"> - The automatic door opening and closing system should be used. 	<ul style="list-style-type: none"> - Disinfection by wiping method should be done. - Smooth surfaces are easier to wipe clean than other surfaces. 	
	<ul style="list-style-type: none"> - The corridor should be cleaned with disinfectant. 				
Air circulation in building	<ul style="list-style-type: none"> - Good air circulation is achieved by opening windows and air conditioning properly. 	<ul style="list-style-type: none"> - Natural air circulation can be achieved by allowing the wind to blow through the building (Public Area). - Separate air conditioning systems (Private Room) should be used. 			

Discussions

The impact of the COVID-19 outbreak has forced Thailand's tourism businesses to adapt to the Amazing Thailand Safety and Health Administration (SHA) standards to reduce the spread of infection. Hotels must be safe to use in different spaces to ensure safe service for customers. After the relaxation of government measures, the tourism business sector will recover mainly through domestic tourism. Secondary city tourism with a component that facilitates private tourism will be an attractive target for new normal tourism. Phayao Province, Northern Thailand is suitable as followed:

- 1) The infection rate is low. From 2020 to 2021, there are 1.26 % of the total number of COVID-19 cases in the country.
- 2) It is an unseen tourist area, perfect natural environment, low population ratio and near hospital, so it corresponds to the long-stay vacation for health in the future.
- 3) It is easy to travel by private car from nearby main provinces and reduce the risk of traveling by public transportation.

According to the data collection of 303 tourists or travelers who came to Phayao Province in the year 2021 during the Covid19- outbreak, it was found that most of them were between the ages of 20 and 30, more than 55 percent were single and 52 percent had no children. Therefore, it was reflected that vulnerable groups such as the elderly and children or family tourism had lower rates of tourism travel because of the risk of infection during the severe outbreak in Thailand.

The samples of 57.4 % were likely to stay in a hotel for 1-2 nights per visit. However, 94.4 percent of them were concerned about service in hotel areas, congestion, living in enclosed spaces with poor ventilation and germs on surfaces.

In testing the hypothesis that "tourists were more confident in the new normal hotel services with the concept of reducing the spread of COVID-19", it was found that if the hotel had measures to limit the number of users in different areas, customers would have more confidence in the service.

Therefore, the design of the hotel area from the case study of "Euang Kham Hotel" to support the new normal tourism during the epidemic of COVID-19, the new normal hotel therefore need to control the use of common areas, which were public service points, based on three principles:

1. Natural air circulation in the building is done by making the wind blow through the building.
2. There should be a limit on the number of people by setting social distancing according to the size of the common area.
3. Interior materials with smooth surface and easy to clean are used to avoid germs.

Space in Hotel Design

The hotel's public service areas, such as lobby, and restaurant, are more densely populated than other areas, so what should be done to reduce the risk of contracting COVID-19 through droplets from secretions: firstly, if the project environment is suitable, a natural air circulation system can be used by opening the vents to allow the wind to pass through at least

on both sides or partially heated air is directed to the top of the double stacked gable roof to increase the comfort of the building occupants as shown in Figure 7.



Figure 7 shows the design of openings for natural ventilation through the interior of the building.

Secondly, in the lobby and restaurant sections, in addition to the usual functional arrangements, there must be additional internal elements in terms of COVID-19 screening measures, in particular the restriction of the number of people, and social distancing of 1-2 meters.

Table 10 shows the arrangement of areas to reduce the risk of COVID-19.

Arrangement of areas	Case Study	
	Lobby	Restaurant
There is a temperature check point.	Entrance area	Entrance area
There is a point of registration history.	Entrance area	Entrance area
There should be a transparent partition at the information counter.	Front area	Front area
There is one-way entrance channel.	Separation of entry and exit routes	Separation of entry and exit routes
Social distance is set at 1 meter (1 person per 4 sq m.).	In the total area of 360 square meters, the use of the space can be limited to no more than 90 people at a time (including service staff).	In the total area of 512 square meters, the use of the space can be limited to no more than 128 people at a time (including service staff).
There is a limit on the number of people by specifying that the area can be used by 1 person per 4 sq m. (the area for sitting and eating is 2 sqm. per person).		

Lobby

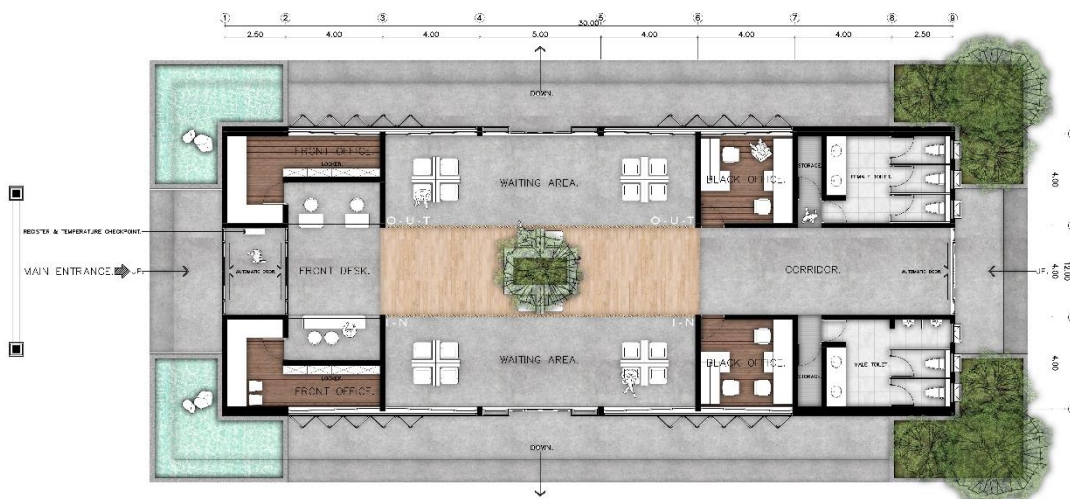


Figure 8 shows the arrangement of areas to reduce the risk of COVID 19-at the lobby.

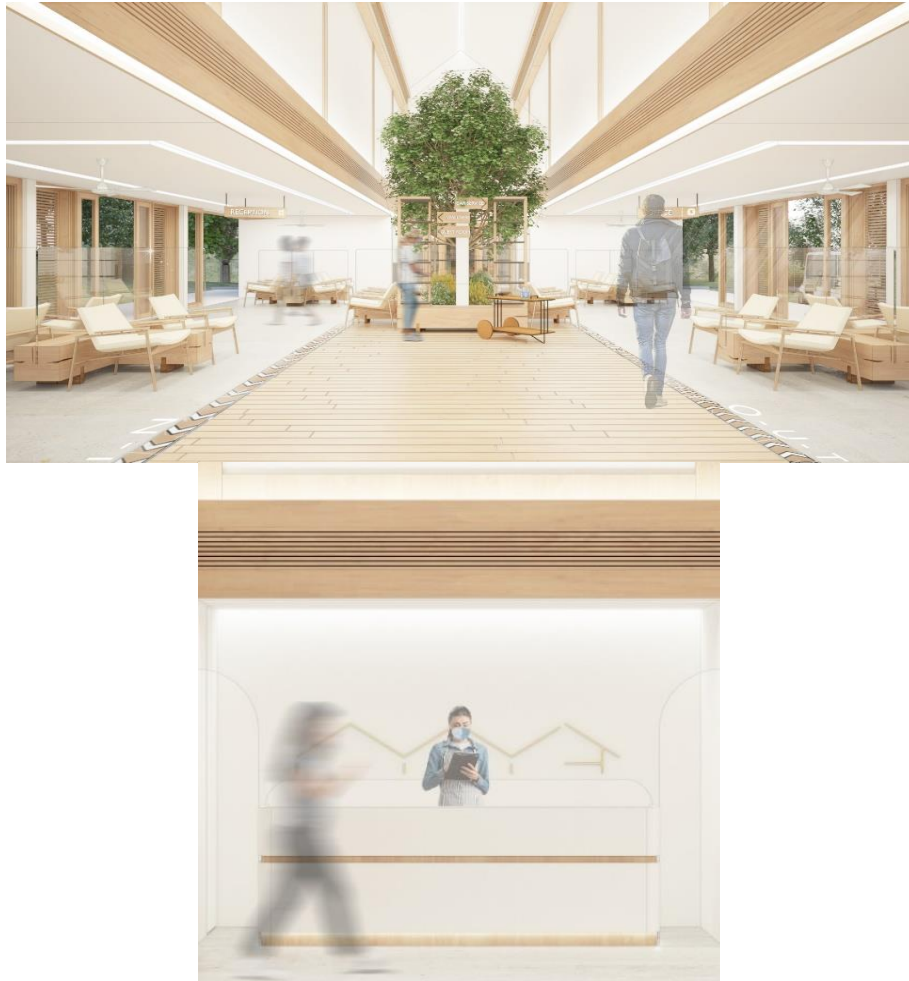


Figure 9 shows the corridors and social distances at the lobby.

Restaurant

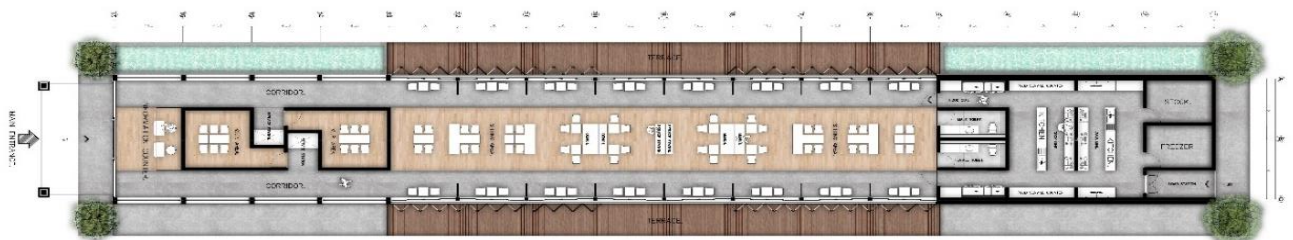


Figure 10 shows the arrangement of areas to reduce the risk of COVID 19-at the restaurant.



Figure 11 shows the corridors and social distances at the restaurant.

Thirdly, since COVID-19 can live on surfaces of materials from 48 hours to 5 days, frequently touched surfaces must be wiped clean. The materials used for interior decoration in the context of the location of the “Ruen Eueang Kham Hotel ”or similar projects should be smooth surfaces to reduce the accumulation of germs. Suitable materials such as steel, aluminum, smooth wood, glass or synthetic leather for upholstering chair or sofa furniture to support the customer must be considered.

However, designing a hotel under the new normal concept must consider the aesthetic factor to meet the target group of tourism-oriented hotels. Therefore, designers must pay attention to the aesthetic factor of the space in the space along with the design of the space to reduce the risk of contracting COVID-19. For example, the case study of “Ruen Euang Kham Hotel ”aims to design a hotel as a long-stay health tourism. The use of space in the midst of comfortable conditions through natural ventilation is the focus by means of opening all views to the surrounding green spaces of the project under simple privacy for peace, comfort and safety to relax.

Suggestion

The rooms in the hotel are private spaces. The use should not be mixed between the guests. Importantly, it should be classified as a low-risk area of the hotel's COVID-19 infection. Therefore, the use of a split air conditioning system in the room must be achieved by considering as many window openings as possible to provide a private view of the outdoor green spaces. This may be in line with future leisure needs where the customer may spend a longer stay in the room.



Figure 12 shows the atmosphere in the guest room.

Acknowledement

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