

Optimization and Exploration of Office Space Design in the Post-epidemic Era

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ABSTRACT

As an infectious disease that may accompany the future life of mankind for a long time, COVID-19 has gradually changed people's working environment, forcing us to accelerate and deeply consider adopting a different and more flexible model to achieve sustainable work and life. This article explores the future office space model under the background of the post-epidemic era, integrates the environmental elements of office space in the current post-epidemic era from the perspective of professional practitioners, analyzes the background of the era, and research purposes, and sorts out relevant theories and materials related to office space, cases and questionnaire surveys are used as theoretical basis support. From the perspective of interior design, discuss the two aspects of people and space in the office, construct the relationship between the two, and clarify the importance of the relationship between people and the space environment in the office scene, and the necessity of physiological function and psychological construction in the work, and explore how to propose strategies for the optimization of office space design in the post-epidemic era. Strive to realize the most possible practicality and innovation of the future office space model.

Keywords: Post-epidemic era, Optimization of office space design. Space layout and function, Health safety and collaboration, Future office models

1. Introduction

The outbreak of the new crown pneumonia epidemic in 2019 has had a severe impact on the entire social production, economic activities, and social development. As the epidemic gradually dissipates and is under control, the resumption of work and production has been accelerated, and the entire social environment has gradually returned to the right track. At the same time, the design optimization of the office space environment also gave birth to a new context. As society pays more and more attention to people in the post-epidemic era, more scholars and people in society are concerned about the positive and negative health effects of the office environment on employees. For example, at the end of the 20th century, the sick building syndrome mentioned by Burge et al., the impact of the physical environment of office space on people's physiology and psychology, and so on. In the post-epidemic era, the office's focus on the space environment has been brought back to the basic line. Measures such as strict protection, closed places, and social distancing are all helping us contain the epidemic and resume production and life as soon as possible. The impact of this epidemic on the whole society will be very far-reaching. In the "post-epidemic era" where the epidemic starts and lasts for a long time, the work and lifestyle of the office space have undergone fundamental changes (Youseff, 2021). It is certain that the current office

space environment has changed. It is not suitable for the current post-epidemic era. The design optimization of the office space environment needs to consider the epidemic and the future and face the new normal of office in the "post-epidemic era" with a high degree of adaptability. You Chunxue said in the article *"post-epidemic era collaborative office space"* published in 2022, The continuation and long-term spread of the global epidemic has subverted the original life, and it has affected every organization and everyone in the world. With new changes in our daily lives and work patterns, come new unmet needs. As one of the fields most impacted and deeply affected by the new crown epidemic, office space must continue to evolve and change in order to adapt to the changes in the post-epidemic era.

The necessity of optimizing office space in the post-epidemic era

The development of the novel coronavirus pneumonia epidemic is very fast, and the international economic, technological, cultural, security, and political situation has ushered in major adjustments as emergencies. The impact of the epidemic will not last, but in many aspects, its impact may be a lasting huge social impact, which will affect the social structure and survival mode. A huge and irreversible impact. At the same time, it will cause people's deep reflection, and this deeper and deeper reflection can even lead to major reforms in human economic structure and social management. Therefore, the purpose of office space optimization is to cure negative emotions to a certain extent, so as to relatively reduce stress and relieve mental fatigue. It means that the impact of the office environment on people's health is increasingly valued (Arup, 2021). This has to require the design and optimization of the office space in one of the densely populated areas.

Exposed problems in office space in the post-pandemic era

BabapourChafi et al, (2021) Compared with the pre-epidemic office space design, there are relatively few mature offices space design practices for the post-epidemic era. Most enterprises still use the original layout structure and working mode, but ignore the differences caused by different backgrounds of the times, resulting in the following problem. From the perspective of design, there is a lack of environmental considerations for the epidemic. such as: the lack of flexibility of the conference space, the poor ductility of the office area; the low security of public facilities, etc. At the same time, due to the increase in virtual meetings, the psychological state of online and offline staff has also changed. Li Shu said this in her 2022 article "Research on Healthy Design Strategies for Commercial Office Spaces", Many collaboration spaces ignore the impact of the site on the psychology of employees, resulting in a decrease in collaboration efficiency. From the perspective of enterprise humanistic care, no matter before and after the epidemic, the activity space provided by many companies for employees is often extremely unreasonable, and it is still efficiency-oriented, ignoring the new needs arising from the change of the age structure of employees. The space design lacks consideration of the characteristics of different groups of people (Briarcliff Manor retrospect), which directly affects the work efficiency that enterprises pay attention to the problem. In addition, with the increase of virtual collaboration in the post-epidemic period, employees' sense of belonging has decreased. Most office spaces lack the transmission of corporate culture, concepts, and other elements, resulting in employees' sense of honor and identity with the enterprise (Zhou Xiaoxue. Skilled Talents' Sense of Professional Mission and Its Influence on Creativity, 2021). Since the COVID-19 pandemic continued in 2109 and its impact on work efficiency, the existing layout, functional space, health concept, and space usage frequency of more and more office spaces cannot adapt well to the post-pandemic era. Use in context (You Chunxue, 2022). The recovery of production and life ushered in a turning point, but the office space, as one of the most densely populated areas in the urban complex, the spatial layout and functions brought by most of the current workspaces are not suitable for post-epidemic office needs, As well as a new round of imperfect

health and safety safeguards (Sasaki N, 2021). Therefore, it is necessary to combine the new requirements of the post-epidemic era from the perspective of office space interior design, integrate the current environmental elements, explore more diverse, more flexible, more secure, and different office models to promote work coordination, and improve work efficiency, to bring more good office experience to users.

The article "Office Space in the Post-epidemic Era" released by Arup Engineering Consulting Company, investigates the emerging difficulties facing the gradual return to normal work in Asia, including office space health, layout patterns, new needs, personal safety, and space ownership. Sex was once a hot topic of concern. In the era of the epidemic resurgence at any time, people have different needs for the current office space. The main research purpose of this paper is to Re-optimize the layout and functions of office space, explore the office space model adapted to the post-epidemic era, consider more flexible office space, and pay attention to the happiness of office workers in the post-epidemic era. This study takes the existing office space in China as the career, analyzes the nature of the industry, studies the behavior of the office crowd and the corresponding psychology of the crowd, and understands the needs of the industry. Discuss new ideas and strategies for office space design optimization in the post-epidemic era. Adapt to new working models and health and safety requirements to promote work-life balance and overall well-being. Providing offices with a safe, healthy, flexible, and effective work environment in the post-pandemic era, while meeting organizational needs and sustainability goals. Based on the background of the study, the research question in this study is;

- i. How to re-evaluate and optimize the layout and functions of office space according to the changes of the epidemic and changes in demand?
- ii. How to protect the health and safety of employees in the post-pandemic era in order to promote social interaction and cooperation among employees?
- iii. What changes has the epidemic brought to the current usage patterns and demands of office space, and how to adapt and solve these changes?

The uncertainty and repeated outbreaks of the epidemic have aroused great concern for the health and safety of office workers. The design of office space in the post-epidemic era needs to start with a safer, healthier, and more flexible office space environment. The optimization of office space will help improve work efficiency and productivity in the post-epidemic era, and optimize office space layout, health, and safety. Support facilities that support and coordinate the way they work and collaborate, increasing the productivity and creativity of teams. It is conducive to alleviating the impact on working patterns and demands and exploring more flexible and multi-functional office spaces that can adapt to different working patterns and changing demands. The design optimization and exploration of office space in the post-epidemic era can create a healthier, more flexible, efficient, and sustainable office environment for the office population, improve the work experience and productivity of the office population, and provide a basis for the subsequent development of the office space with the development of the epidemic. Design optimization adjustment provides guidance and reference.

In the design optimization and exploration of office space in the post-epidemic era, the following problems and limitations may be encountered:

Uncertainty about the development of the epidemic

There may be greater uncertainty in the needs and requirements of office space in the post-pandemic era. The development and changes of the epidemic are difficult to predict accurately, so we may

face difficulties in this exploration of the optimal design of office space in the post-epidemic era. Need to be flexible to deal with uncertainty, constantly adjust and adapt to changing demands.

Inconsistent needs in the post-epidemic era

Different organizations and individuals may have diverse demands on office space. Some organizations may focus more on health and safety, while others may focus more on flexibility and innovation. Individual preferences for space layout, equipment, social distancing, etc. may also vary. Therefore, designing and optimizing office space requires comprehensive consideration of different needs and finding a balance point.

Technical and Facility Requirements

The design of office space in the post-epidemic era may need to consider more technical and facility requirements. For example, enhanced ventilation systems, intelligent equipment, contactless technology, etc. These requirements may require additional investment and technical support, which may be challenging for some organizations with limited resources.

Sustainability and environmental impact

The design optimization and exploration of office space in the post-epidemic era will be affected by sustainability and the environment. For example, reducing energy consumption, optimizing material selection, improving waste management, etc. However, certain sustainability measures may require additional investment or technical support, and some organizations may face economic and technical constraints.

In general, the optimization and exploration of office space design in the post-pandemic era face a series of problems and limitations. When dealing with these issues, it is necessary to respond flexibly to uncertainties, comprehensively consider different needs, and find a balance point. At the same time, the requirements of technology, facilities, social interaction, sustainability, etc. also need to be fully considered. This requires good cooperation between designers' researchers and relevant stakeholders in the future to jointly explore and solve these problems, to provide optimized office space solutions for the post-epidemic era.

2. Literature review

Office design is a hot topic today. Everyone cares not only about the workplace but also about the layout of the desk and even the working mode. In fact, how to design a workplace involves higher-level business decisions behind it. The new crown epidemic has changed the way we work, how everyone can adapt to work flexibly, and rethink the way of working in the future, and how the office layout can adapt to the new environment to maintain social distance and provide more efficient circulation patterns, and cleaner workspace. Find new space design optimization strategies to provide design references for future office space. The emergence of the new crown pneumonia epidemic has made people have higher and higher requirements for interior space design, especially for the rationality and functionality of the space layout. The problems exposed by traditional office space design during the epidemic should arouse people's great attention. How to effectively improve the working and living environment, divide the office space more reasonably, and carry out green and healthy office space design is the new development direction of office space design in the post-epidemic era. This office space design can not only effectively improve people's working and living environment, separate office space more reasonably, but also reposition people's aesthetic concept and way of thinking, focusing on the harmonious relationship between man and architecture, man and nature (Sun Yujie,2020). Environmental protection is also an extremely important part of the

"post-epidemic era". Some even advocate providing a "medical-grade" environment to ensure the resumption of work and production. There are two main issues that have attracted more attention: one is the public's concern about air quality, and the other is strong disinfection measures. After experiencing the epidemic, people's awareness of public health safety has improved, and many hygiene protection habits will be retained to form a normal state. Relevant measures can better protect the health of employees. This is not only physical protection, but also an important way to bring employees a sense of security. When we talk about the sense of safety in the place, in the past, we paid more attention to facilities and public security, while the sense of public health safety came in the latter stage (Wang Yibao, 2020). The panic of infection and contact brought about by the new crown pneumonia epidemic has become an "office" in the post-epidemic era. One of the problems that the environment focuses on. The design that brings a sense of comfort and safety can not only provide a more comfortable environment, but also eliminate employees' concerns, soothe their sensitive emotions, and play a positive role in adjusting employees' working conditions and improving work efficiency.

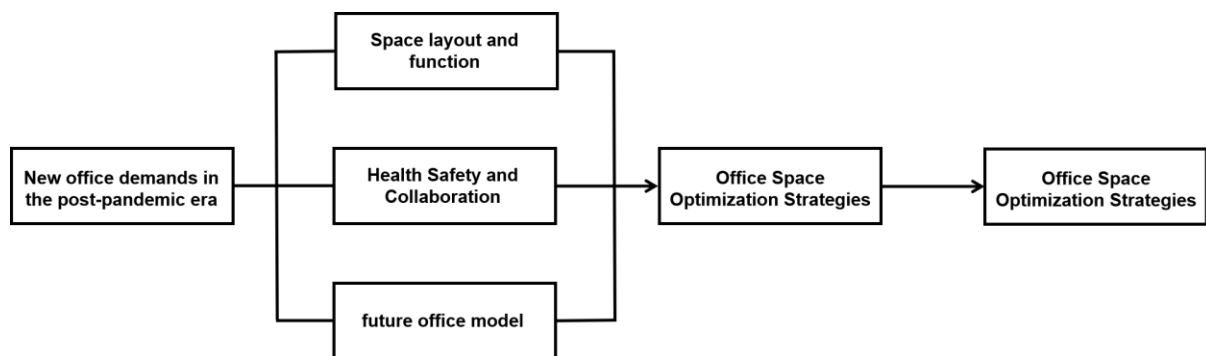
Work patterns in modern society have never been more diverse than they are today. In the post-epidemic era, more and more multinational companies are adopting a "hybrid model" in their daily operations, and this model is gradually affecting the company's requirements for office space (Zhang Jiahao, 2022). With the development of information technology and the acceleration of digital transformation, many large global Internet companies such as Google, Twitter, Amazon, and Microsoft have taken the lead in entering the era of remote office. The International Data Corporation (IDC) predicts that by 2023, 70% of the 2,000 global companies or organizations tracked by IDC will adopt remote or hybrid office-first working models. More and more domestic companies are also actively or passively exploring the remote office model under the background of the epidemic. In fact, the pure remote office has limited applicability. Most companies choose the hybrid office model (*Hybrid Work*), that is, integrated remote office. There are two types of office buildings in the shift system, allowing employees to choose their own office location for a certain period, and work collectively in the office at other times. The emergence of the new office form of hybrid office has solved many practical problems in the post-epidemic era and caused some controversy. In April 2022, Apple in the United States adopted a "hybrid office" work plan in stages, requiring employees who had previously adopted all telecommuting to work three days a week, and some employees protested or even resigned. In June 2022, Tesla in an email sent to executives and employees, founder Elon Musk clearly asked to give up telecommuting and stipulated that subordinates should work in the office at least 40 hours a week. The email stated that Tesla is an automobile manufacturing company, assembly. It is impractical for workers to be on the front line of the workshop to complete their work. Telecommuting is impractical. Overall, there are still some important issues surrounding the hybrid office that need to be further discussed: that is, in the context of the accelerated digital transformation of the whole society, how to fully evaluate the impact of the hybrid office model on the development of enterprises and how enterprises should implement the hybrid office model. How to seize opportunities and deal with challenges (Liu Zhihua & Liu Shan, 2023).

Hybrid office mode will become the mainstream trend in the future. This means employees will have the flexibility to switch between in-office and remote work. The organization will provide flexible work arrangements and technical support to meet the different work needs of employees and improve work efficiency and productivity. Flexible space layout: Office space will become more flexible and adjustable. Movable partitions, furniture, and equipment will be used to create flexible work areas and multifunctional spaces. This allows the space to be adjusted and reconfigured as needed for different types of work tasks and teamwork. Personalized workspace:

Employees' individual needs and work styles will receive more attention. The office space will provide a variety of work areas and work mode options to meet the needs of different employees. A personalized workspace will help increase employee engagement and job satisfaction. These trends will continue to develop and evolve over time post-pandemic. Organizations need to pay close attention to these trends and adapt and adjust based on actual needs and employee feedback to create the workplace of the future.

F.W.Taylor The prototype proposed in the interior design of office space has an important guiding significance for the optimization and exploration of office space in the post-epidemic era, because it focuses on the close connection between space and people, and makes flexible changes in combination with unexpected environmental factors. In this regard, considering the background of the current post-epidemic era and combining the three main elements involved in this model, focusing on exploring the environmental elements and population behavior demands in the post-epidemic era. The theoretical framework of this paper mainly includes three main elements: spatial layout and function, health, safety and collaboration, and future office mode.

Figure 1: A schematic diagram of the theoretical framework



After the outbreak era of office space design need to consider the space layout and function, health, safety and collaboration, the future office mode, and need to pay more attention to employee health and safety, and provide flexibility and adaptability, to adapt to the new work mode and demand, through reasonable planning and design, can provide a suitable working environment, promote the staff's work efficiency, creativity and happiness.

3. Methodology

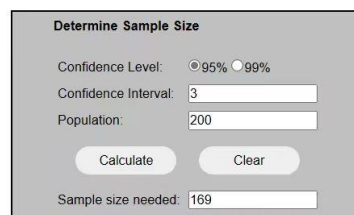
As for the discussion of the development and trend of office space in the post-epidemic era, in order to fully understand the dynamics of the industry, draw lessons from the research field of domestic and foreign scholars, combined with the theory of remote data analysis. Using the interior design theory of office space combined with the current background of the post-epidemic era provides a strategic reference for the optimization of office space design.

Population and sample

This research adopts a quantitative method and takes the form of an online questionnaire as a tool for data collection. Efficient questionnaires can collect detailed data on respondents. The questionnaires were collected from office workers aged between 25 and 40. These participants were actively sampled for the questionnaire because they were the subject users of the office space.

According to McGehee (2012), the questionnaire is an open-ended and discovery-oriented method that can identify the correlation and difference between different variables, so the statistical results are directly described in an intuitive bar table, and the inductive description Analyzes subject test data (Clarke & Braun, 2014). Through efficient questionnaires sent to multiple respondents at the same time, through the collection of office space optimization demand data in the post-epidemic era, quantitative comparative research between different age groups or conditions, and statistical analysis of the final data, the relationship between different variables can be determined. Analyze and draw conclusions faster. Make analyses more consistent and comparable, increasing the reliability and credibility of research results. This data collection adopts the method of questionnaire survey, which refers to the method of collecting data by formulating a detailed and careful questionnaire and asking the respondents to answer it accordingly. This questionnaire will be a set of questions related to the research objectives. It is a common tool used to collect data in social survey research activities. This survey made accurate and specific measurements of the demand for office space in the post-epidemic era and the process of problems and applied sociological statistical methods to describe and analyze the quantity to obtain the required survey data (Xiao Haohui,1995). The questionnaire is an open-ended and discovery-oriented method that can identify the correlation and difference between different variables, so the statistical results are directly described in an intuitive bar table, and the inductive description analyzes subject test data (Clarke & Braun, 2014).

Figure 2: Population and sample size



The image shows a web-based calculator titled "Determine Sample Size". It has three input fields: "Confidence Level" with radio buttons for 95% (selected) and 99%; "Confidence Interval" with a text input field containing the value "3"; and "Population" with a text input field containing the value "200". Below these fields are two buttons: "Calculate" and "Clear". At the bottom, there is a label "Sample size needed:" followed by a text input field displaying the value "169".

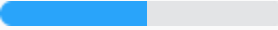
4. Results of the Study

In this study, the form of an online questionnaire was used as a tool for data collection. The analysis of the sample population was completed through a questionnaire survey. A total of 200 people participated in this questionnaire. After mastering the basic characteristics, basic demands, and satisfaction of users, explore users' demands for office space and the problems that arise in the post-epidemic era. Based on the statistical results, analyze the basic demands, satisfaction, and exposure issues of users in this age group, and create design optimization strategies based on the data analysis results.

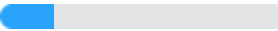
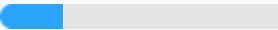
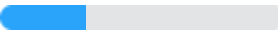
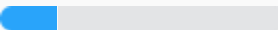
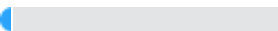
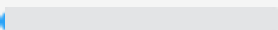
In the valid collection of gender issues, men account for 48.29% and women account for 51.71%. The ratio of males and females participating in this single topic selection is relatively close, and the ratio of males and females is relatively balanced. According to the age segment data table, in the data sampling of 205 people. Among them, the number of people aged 31-33 is the largest, accounting for 32.19%; followed by people aged 28-30, accounting for 23.9%; people aged 34-36 accounting for 20%; people aged 25-27 accounting for 17.56%; people over 40 years old accounted for 1.4%. In the collection about whether the current work status after the COVID-19 pandemic is online work or offline work. According to the data table, 86.91% of them answered that they were working offline, indicating that they were working offline after the epidemic ended; 12.12%

answered that they were working online. In "Now that you have gradually returned to offline office and study, what aspects of office space do you pay more attention to"? Among the questions: According to the data table, when answering this multiple-choice question, the respondents paid the most attention to flexible and diverse workspaces (60.98%), followed by healthy eating and rest areas (51.22%), and compared attention to air purification and ventilation (50.24%), green sustainable ecology (47.32%) and adequacy of personal privacy space (38.54%). In "What do you think is the problem with your current office space in the post-epidemic era?" According to the data table, it is found that: In the office space after the epidemic, the biggest problem is that the original space layout is no longer suitable for the current environment, accounting for 72.68%. Second, 55.12% considered the lack of flexible space to be a problem. Normalizing the healthy environment was another issue, accounting for 57.07%. In addition, 60.49% of people think that sharing private space with zero activities is also a problem.

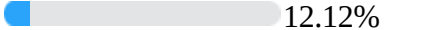
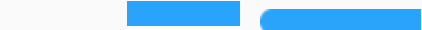
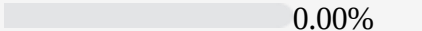
1. Your gender [single choice]

option	subtotal	proportion
Male	99	 48.29%
Female	106	 51.71%
Valid person-time	205	

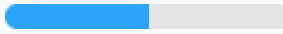
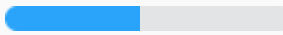
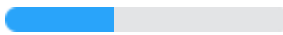
2. Your age [single choice]

option	subtotal	proportion
25~27	36	 17.56%
28~30	49	 23.9%
31~33	66	 32.19%
34~36	41	 20%
37~39	5	 2.4%
Over40	3	 1.4%
Valid person-time	205	

3. What is your current work status? [single choice]

option	subtotal	proportion
On the job, can work remotely from home.	25	 12.12%
On the job, need to go to the office to work	178	 86.91%
Unemployed	2	 0.97%
Other (please specify)	0	 0.00%
Valid person-time	205	

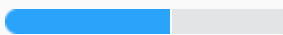
4. Now that offline office and learning are resumed, what aspects of office space do you pay more attention to? [multiple choice]

option	subtotal	proportion
flexible and diverse work spaces	125	 60.98%
Healthy eating and rest areas	105	 51.22%
Air Purification and Ventilation	103	 50.24%
green and sustainable ecology	97	 47.32%
sufficient personal privacy space	79	 38.54%
Valid person-time	205	

5. What are the problems in the office space in the post-epidemic era? [multiple choice]

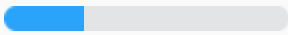
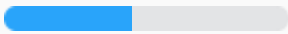
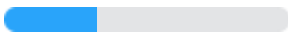
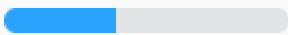
option	subtotal	proportion
The original spatial layout is no longer suitable for the current environment	149	 72.68%
The lack of flexible space	113	 55.12%
The normalization of a healthy environment	117	 57.07%
The sharing of private spaces with zero activities;	124	 60.49%
Valid person-time	205	

6. What do you think are the changes in people's office psychology in the post-epidemic era? [multiple choice]

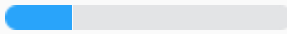
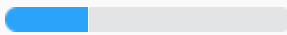
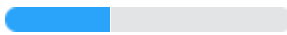
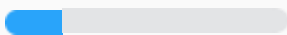
option	subtotal	proportion
Decreased sense of security	97	 47.32%
Decreased sense of belonging	119	 58.05%
Increased sense of isolation	159	 77.56%
Increased empathy	128	 62.44%
Valid person-time	205	

7. What do you think will be the new demands of the office in the post-pandemic era? [multiple choice]

option	subtotal	proportion
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Environmental safety needs	94	 45.85%
Personal health needs	59	 28.78%
Social safety needs	113	 55.12%
Belonging needs	93	 45.37%
Social needs	67	 32.68%
Assistance needs	82	 40%
Valid person-time	205	

8.What new changes do you think the office model will have in the post-pandemic era?
[multiple choice]

option	subtotal	proportion
Face-to-face collaboration	82	 40%
Virtual collaboration	49	 23.9%
Healthy and flexible workspace	101	 49.27%
Safe social distance	60	 29.27%
Diversified working models	76	 37.07%
Cross-functional teams	31	 15.12%
Hybrid office model	89	 43.41%
Valid person-time	205	

In "What do you think will happen to people's psychology in the office space in the post-epidemic era?" "According to the data table found that in the post-epidemic office psychology, most people feel a decrease in their sense of security and belonging, accounting for 47.32% and 58.05% of the effective fillings respectively. 77.56% of people feel more isolated after the epidemic, which shows that the epidemic has negatively affected people's social and emotional connections. However, 62.44% of people said that after the epidemic, they paid more attention to the feelings of others and showed more compassion and empathy.

In "What do you think will be the new demand for office space in the post-pandemic era?", according to the data table, we can find that social security needs and environmental security needs are the two most concerned aspects of respondents, accounting for 55.12% and 45.85% respectively. This shows that in the post-pandemic office, employees are more concerned about the health and safety of themselves and their teams. The third highest proportion is the need for assistance, accounting for 40%. This shows that employees' needs for support and assistance at work are also important. Belonging needs and social needs accounted for 45.37% and 32.68% respectively. This suggests that workers still need to feel a sense of team cohesion and social connection in a post-pandemic

office. Personal health needs accounted for 28.78%. This shows that employees are paying more attention to their own health and safety in the post-epidemic office.

In "What new changes do you think the office model will have in the era after the pandemic?", according to the data table, the most popular option is "Healthy and flexible workspace", accounting for 49.27%. Followed by the "Hybrid office model", accounting for 43.41%. The proportions of other options are: Face-to-face collaboration 40%, Diversified working models 37.07%, Virtual collaboration 23.9%, Safe social distance 29.27%, Cross-functional teams 15.12%.

Based on comprehensive data analysis, the following conclusions can be drawn: In the post-epidemic office mode, people pay more attention to health and a flexible working environment, and at the same time hope to maintain face-to-face cooperation. In addition, diverse working models and cross-functional teams have also received some attention. While the rates of virtual collaboration and cross-functional teams are low, they remain a concern for some. The mixed office model has a high proportion, and it may become a mainstream trend, driven by the post-epidemic office trend. The office style in the post-epidemic era has undergone fundamental changes, and many organizations and enterprises will have to adapt to the new environment and adopt a hybrid office approach. However, hybrid work can also lead to reduced interaction and communication between employees and colleagues, changes to employees' work-life balance, and changes in organizational culture and values. Therefore, new challenges and opportunities have emerged in the post-epidemic office, with modern HR technology, organizations can more easily transition to a hybrid work model by collecting, managing, and analyzing data across all teams, regardless of location. Technology can support employee onboarding, upskilling, and development. By leveraging technology effectively, businesses can provide employees with everything they need throughout their service life, such as collaboration tools, cloud technology, and more. Organizations should ideally enter a new normal in which employees, whether remote or on-site, are productively engaged, engaged, and feel a sense of belonging in an inclusive hybrid working model.

5. Discussion and Recommendation

This article explores the design optimization trend of office space in the post-epidemic era. Based on the historical development and current situation of office space, through many literature research and actual case analysis, it integrates the current problems that are not suitable for the development of office space in the new era. The questionnaire survey analyzes people's current appeals and suggestions and uses interior design theory to introduce discussions, and provides directional strategies for problem-solving. In the new post-epidemic era, the relationship between people and space has quietly changed. When designing a space, designers often pay attention to the function of the space, while ignoring the psychological and emotional changes of people in the space, as well as the impact of these two factors on the space. Under the baptism of the epidemic, it is necessary to add sentiment analysis methods to the design. This is mainly reflected in fundamental aspects such as intuitive design, functional space, health and well-being, and future development. In the specific design of office space, we must pay attention to the rationality of space division and moving lines, and deal with issues such as the relevance of internal space.

Office space optimization strategies in the post-pandemic era

1. Space layout and function

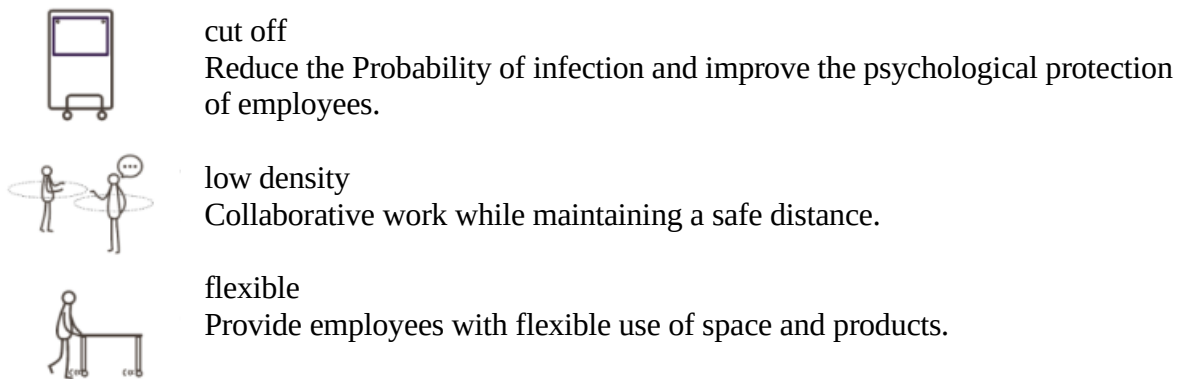


Figure 2: Space layout and function optimization

<http://src.leju.com/imp/imp/deal/94/ca/1/.png>

Re-evaluate the design of office areas to create flexible work areas. Introduce movable partitions, office furniture, and equipment so that the spatial layout configuration can be adjusted as required. It can support social distancing and hygiene requirements while meeting the needs of employees to work collaboratively and independently. Re-evaluate the function of the office space and design it as a multifunctional area. In addition to the work area, different types of spaces such as meeting rooms, communication areas, rest areas, and independent work areas are divided to meet the different needs of employees. Also, increase the distance between employee work areas to meet social distancing requirements. Reduce the number of seats, space them out, and add screens or dividers to provide additional protection. Optimize climate control and ventilation systems in office spaces to ensure good air circulation. Increase indoor air filtration and purification equipment to improve indoor air quality and reduce the risk of virus transmission. Finally, sustainable, and environmentally friendly office space design will also be an inevitable trend in the future. Introduce indoor plants, natural light, and energy-saving lamps, and provide comfortable work chairs and a humanized work environment to improve employee comfort and work efficiency.

2. Health safety and collaboration

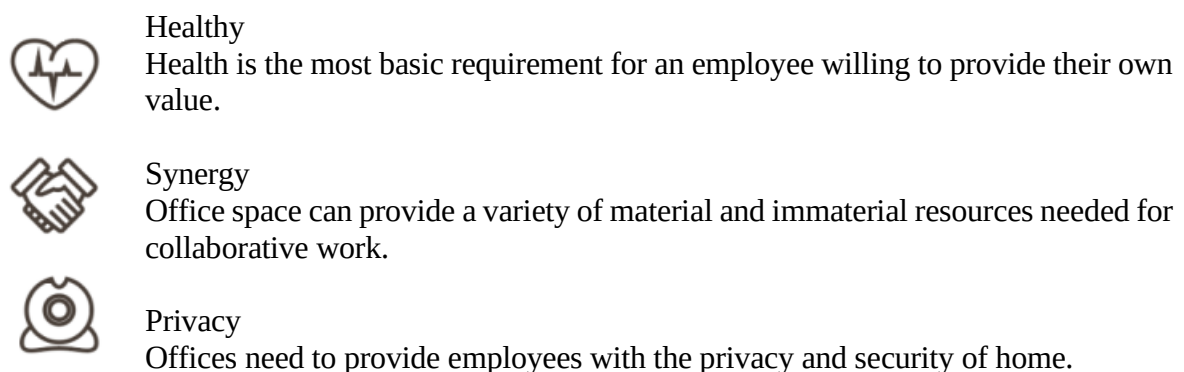


figure 2: health safety and collaborative optimization

<http://src.leju.com/imp/imp/deal/c4/bb/1/.png>

3 Future office model

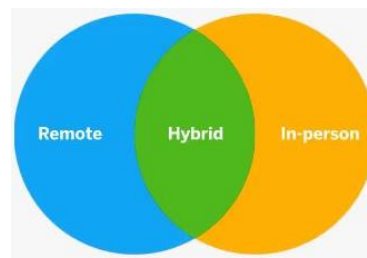


Figure 3: hybrid office

<https://www.sap.cn/dam/application/shared/graphics/hybrid-workspace-graphic>.

A hybrid office model combines remote work with on-site work, allowing some or all employees the flexibility to choose where and when they work. Businesses can allocate employee time in the office by day, by team, or as needed. According to Gartner, "The choice of when and where to work will be primarily driven by the ability to maximize employee productivity and engagement." Not every work environment or industry is suitable for a hybrid work model, which works best for employees who work from computers and do not need to be on-site. In a recent report, McKinsey explored telecommuting without compromising productivity. According to the report, "Around 20% to 25% of workers in advanced economies are able to work from home three to five days a week. This means that the proportion of telecommuting is four to five times higher than before the outbreak." The hybrid working model is not a temporary model or a stopgap solution, but a future working model, a flexible and resilient work environment that can adapt to future development. A hybrid working model combines in-office and remote working to provide employees with more flexibility and support. In a hybrid work environment, employees generally enjoy more autonomy and a better work-life balance, resulting in higher levels of engagement. By building a more productive, healthier, and more stable workforce, businesses will benefit enormously.

5.1. Practical implication of the study

For the overall data collection and analysis, it is a good method to discover the actual situation of the existing problems in the office space in the current post-epidemic era and the demands of the target population. The biggest purpose is to collect and accumulate various scientific and educational attributes of the post-epidemic office workers. basic information. Actual research on the optimization of office space in the post-epidemic era, can provide guidance and reference for enterprises, help them create a more adaptable working environment, improve employees' work experience and performance, and promote the sustainable development of enterprises.

5.2. Recommendations and suggestions for further studies

Due to the unforeseen epidemic, the epidemic trend will continue to evolve, and further research on office space optimization will be adjusted and adapted according to the epidemic trend. Flexibility, health and safety, digital transformation, and social interaction will be the focus of future office research to address the challenges posed by the pandemic and provide office space solutions adapted to the future.

6. Conclusion

This article discusses the design optimization and exploration of office space in the post-epidemic era. Based on the analysis of the current post-epidemic era office space design needs and status quo, it sorts out the existing spatial layout and functions that do not adapt to the current background, as

well as health, safety, and Collaborative relationship problems, through the design optimization exploration of interior design theory, try to solve these problems. Office space is a relatively professional systematic design. People will have a long period of time and stay in the office space for a long time. Therefore, when the epidemic situation cannot be controlled, it is necessary to plan for future design. This must be done Think about the development of future office models. This is mainly reflected in the basic aspects of intuitive design, functional space, mixed office trends, and the expression of individual design. Based on the needs of the office population in the post-epidemic era, this paper concentrates on the optimization of office space design on three elements, which are divided into re-evaluation and optimization of space layout and functions. The predictable adjustment of office space should be based on the comfort of people in the space. Combined with the current environment affected by the epidemic, the following conclusions are drawn: the optimization of office space design should follow the planning of the space according to the function, and establish a multi-functional regional space. The functions of the spaces can overlap each other to form new functions. More importantly, it is necessary to carefully explore the behavioral characteristics and psychology of the users, and design a new space with high comfort. Second, more respect should be paid to the two-way physical and psychological needs of office workers. Lessons from the epidemic will make health and safety an important consideration in office space design. Promote the healthy collaboration of office workers, ensure the basic safety of the crowd, pay attention to the reorganization and creation of space health and safety in the design, create a physically comfortable, emotionally pleasant, and relaxed office space, and provide a better environment. Collaborative environment, people-oriented office space goals. The third is the mixed office environment of digital work. In the future development of the post-epidemic era, digital tools and technologies will be more widely used in the office environment. The mixed office space work mode combines traditional offices and shared office spaces. Offices will become more flexible, offering various types of work areas, with the ability to choose the most suitable work environment according to the needs of the task. The optimization and exploration process of office space design in the post-epidemic era, is more combined with the current epidemic background research, focusing on the discussion and research of crowd behavior patterns, focusing on reflection and summary, aiming to provide a summary for the optimization of office space design under the current background suggestion. Since this article is not aimed at the actual landing design project, it is impossible to develop more space functions, but this article is aimed at the design optimization and exploration of office space in the current post-epidemic era. It is a guiding suggestion strategy, which is currently representative.

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