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RESEARCH ARTICLE

Design of Dai architectural space based on experiential spirit of place

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ABSTRACT

The Dai ethnic group is an important ethnic minority in southern China, and its unique cultural traditions and architectural features are of great significance for the inheritance and protection of local culture. Under the influence of new urbanism and architectural ecology, contemporary architectural space design has also emerged a new way of development. After consulting a large number of relevant documents and materials, it was found that many researchers provided new ideas for the research of architectural space design, and this paper was adding its own understanding and taking this as the direction and basis. In the introduction, the significance of the research on the experiential style of place spirit was introduced, and then the academic research and analysis were carried out on the two key sentences of architectural design and experiential architectural space design; the method part put forward the constructive algorithm theory, and proposed the algorithm to provide the theoretical basis for the architectural space design based on the spiritual experience of the place; at the end of the paper, a simulation comparison experiment was carried out and the experiment was summarized and discussed; by selecting City A, based on the experimental results, the satisfaction rate before use was 16%, and the satisfaction rate after use was 58%, with a difference of 42%. Therefore, it could be seen that the architectural space design based on the spirit experience of the place studied in this paper was more popular with the citizens of the city. At the same time, with the continuous progress of society and people's thinking, the research on the architectural space design of place spiritual experience was also facing new opportunities and challenges.

1. PREFACE

(1) Research significance

Dai architecture, with its unique style and characteristics, reflects the aesthetic concepts, lifestyle, and beliefs of the Dai people in terms of structure, materials, and decoration. However, with the development of modernization, some traditional architectural methods and cultural elements are facing the risk of loss and marginalization. Therefore, it is of great research significance to preserve and promote the Dai architectural spirit in modern architectural design, as well as how to integrate it with modern life and social needs.At present, with the rapid development of social economy, the advent of the era of information media dominated by digital technology has caused a huge impact on the construction industry, and has a profound impact on people's daily life and production. At the same time, people's blind pursuit of various types and novelty has led to the gradual abandonment of most architectural spaces with historical and cultural significance, which can not improve the overall image of the city but would have a greater impact on the original space environment. Therefore, when planning and designing architectural space, the local sense and cultural spirit contained in it must be fully considered.

The surrounding buildings should be coordinated and linked to form a unique regional characteristics and cultural atmosphere.

(2) Research on architectural design

Many scholars have studied architectural design. Chel Arvind's research was related to the existing design of solar passive building technology before construction. This technology was not only applicable to passive heating/cooling, but also to the lighting of buildings (Chel, Arvind, 2018) and Geetanjali. Kodur Venkatesh proposed a comprehensive framework to mitigate fire hazards. The proposed framework involved strengthening fire safety in four key areas, and detailed strategies for improving building fire safety in these four key areas, so as to identify future research and training needs (Kodur et al., 2020). The purpose of Shoar Shahab's research was to develop a systematic method to determine and give priority to the most important factors affecting the labor productivity of construction projects according to their interrelationships, and investigated different scenarios that may affect labor productivity (Shoar, Audrius, 2019). Omotayo Oluwafemi O believed that many researchers found that some materials were suitable for replacing cement in concrete, which could reduce environmental hazards and energy consumption in concrete production. However, these materials were rarely used in today's construction industry (Omotayo et al., 2022). Huang Beijia believed that building materials had a series of environmental impacts in their entire life cycle, from the extraction, processing and transportation of raw materials to building construction, use and final demolition and disposal (Huang, 2020). Gao Shang's research found that with the development of construction towards the combination of off-site prefabrication and on-site assembly, the manufacturing and assembly of design was gaining momentum in this heterogeneous industry (Gao et al., 2020). The above studies achieved good results. However, with the continuous updating of technology, there were still some problems.

(3) Research on experiential architectural space design

How to understand experiential style in architectural space design has been analyzed by many scholars at different levels. Asfour Khaled Sayed discussed the architectural space design, which could produce the space experience that children and young people could interact with. This could give them a huge positive sense of energy and transform it into actual healing (Asfour, Khaled, 2020). Juan Yi-Kai developed a user-oriented interior design and decoration decision support system based on virtual reality. Through a case study of an office building, the four-stage decision-making process of the system was verified (Juan et al., 2021). Alhusban Ahmad A made a comparative analysis of the views of Western and Middle Eastern architects and urban designers on whether the COVID-19 would affect architecture and urban design in the short term, and what the future of home design was (Alhusban et al., 2022). Zikirov M. C analyzed the main patterns of avantgarde design practice, which was the key to the field under consideration. First of all, this was the principle and condition of post-Fordism organization building environment, which was the main economic platform for shaping social needs (Zikirov et al., 2021).

Abrishami Sepehr believed that the integration and automation of the whole design and implementation process became the key factor of the construction project. The problem of process integration, especially in the conceptual design stage, was usually manifested in many important areas, from design representation, cognition and translation to process fragmentation and the loss of design integrity (Abrishami et al., 2021). Garcia Carrizosa Helena focused on assistive technology in the context of participatory research, which was developed for people with sensory or learning disabilities to use in museums (Garcia, Helena, 2020). Boeing Geoff proposed a type of measurement and index to evaluate the physical complexity of the building environment under the scale of urban design, and extended quantitative measures such as urban planning, network science, ecosystem research, fractal geometry, statistical physics and information theory to urban morphology and the experience of fixed human beings (Boeing, 2018). These studies above showed that the spirit of place experience had a positive role in the design of architectural space, but there were still some problems.

(4) Existing problems

Due to the impact of new ideas and new concepts from outside, the development of architectural space design is rapid. With the continuous improvement of people's economic level, the demand for decoration is also increasing and higher. Many architectural designers blindly imitate the decoration style and use a large number of gorgeous decoration materials in the design, which not only causes a waste but also fails to achieve the expected effect, thus giving people a kind of illusion of well-arranged. Sometimes, in order to reflect the personality and fashion of architectural decoration, new ideas and changes are constantly tried in the process of decoration design, but the functional requirements of interior architectural decoration are ignored. There are more specious partition walls and theme walls in the space of interior design without purpose, and the floor and ceiling are also constantly decorated with various decorative layers. In addition to the promotion of social atmosphere, the decoration of the whole building is not practical enough. It is just a simple combination of some new content and new appearance.

(5) Summary

In order to meet people's higher requirements for architectural space, the research on the place spirit experiential architecture has become an urgent problem in the current field. This paper studied the building space design based on the place spirit experiential architecture. It first analyzed the principles and technical methods of the basic theory, and then gave the connotation and significance and subdivided the content. By using the algorithm, the experiment was provided with theoretical basis. Finally, the simulation experiment analysis was carried out and provides reference significance for such research. It was concluded that the effect of City A using this method was better.

2. UNDERSTANDING OF PLACE SPIRIT AND ARCHITECTURAL SPACE DESIGN

(1) Place spirit

Place spirit is the combination of local characteristics and connotation. The connotation of place spirit is more extensive and in-depth than that of local exchange. It is a kind of overall experience, which refers to a sense of space with special meaning that users feel consciously and behaviorally when participating in activities. The architect's architectural design is to create a meaningful place in which people can constantly feel its connotation and turn it into a carrier of thoughts and emotions. Space is not an abstract entity but a series of concrete events. These complex things show unique environmental characteristics through the influence of time. The architect's mission is to create a meaningful place for people to live and work in peace and contentment.

(2) Architectural space design

In the space design of buildings, the use attributes of buildings, the corresponding building standards and the geographical location are the basis of the material technology and aesthetic principles of the space design of buildings. The space environment of this building should not only meet the corresponding functional requirements, but also combine the local customs and culture, architectural characteristics, geographical environment and other psychological factors. The design goal of architectural space is to create the internal material and spiritual needs, which is to create a habitable, considerable and enjoyable living space environment centered on people.

(3) How to understand architectural space design

This paper analyzed how to understand architectural space design in the following aspects, as shown in Figure 1:

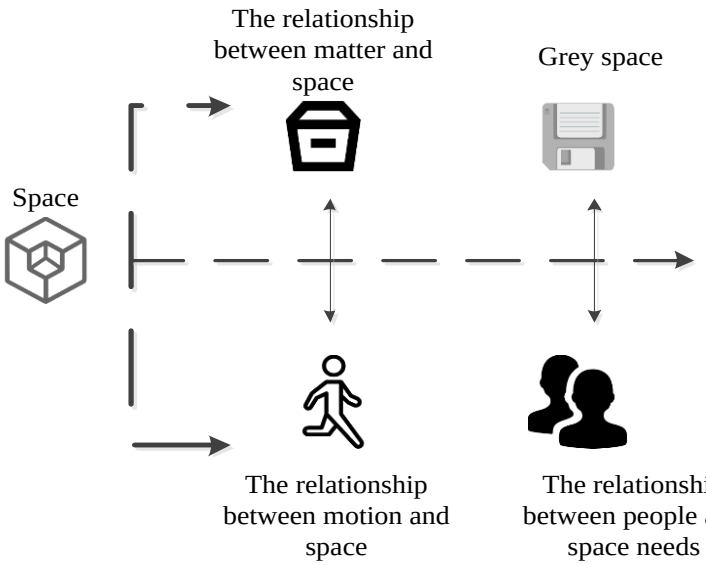

Figure 1. How to understand the architectural space design

1) The relationship between matter and space

For people, the use value of architecture is not in the material shell of space, but in its own existence. Entity is a means, while space is a space that achieves a specific goal by arranging material forms. The natural space and the void become an artificial space through the fusion of space. Space is not real, and it is the way to perceive all phenomena. The architect's work is to combine several different spaces to form an organic whole, and make use of the empty space surrounded by material. In the design of architectural space, space is more important than material. Space is the creation goal of architecture and material is the tool to create space.

2) The relationship between motion and space

From the perspective of human activities, the space of architecture is understood. People move back and forth and constantly change their positions. They walk through a series of fixed buildings and experience a strong feeling obtained from sports. The movement inside the building is contrary to the artificial order, thus bringing a continuous sense of freshness to people's vision. By entering the building, people can feel the organization of streamline, relationship, scale, etc., and feel a real and personalized feeling. The relationship between people and the elements of the surrounding environment can be felt and measured. Space can be perceived as a whole by moving from multiple angles.

People's movement is not limited to movement, and people's activities are not necessarily shuttle in space, so there is a dynamic relationship between them and space: The light emitted from the designed windows and holes would change with the passage of time. The same shape has different visual effects due to different angles of view. Through the rotation of the spatial axis, different angles are produced, thus making the same space have different effects and the space begin to flow in the sense. Architecture should not only give people free use of space, but also give people imagination, aesthetic and poetic space. All of these are beyond the scope of two-dimensional scale. Simple and static formal beauty is the real soul of architectural space.

3) Grey space

No matter how good the space is, it must be reduced in order not to become rigid. Gray space is a transition space between indoor and outdoor, that is, a lot of use of courtyards, corridors and other transition spaces. This special space erases the internal and external boundaries of the building in a sense and makes them form an organic whole. It not only keeps the indoor space, but also breaks the restrictions of closure, which is more closely connected with the outside. The connection of space eliminates the gap between indoor and outdoor, and allows the subject and object to blend with each other and the space to blend with each other, so

that the interior has a pleasant psychological feeling brought by the appropriate external space, so as to make people produce a natural whole. In the absolute space, people would experience a kind of exchange between spirit and space. As an important tool, space can alleviate the emotional estrangement caused by the partition of urban space into private and public space by modern architecture.

4) The relationship between people and space needs

People's demand for space develops from low to high levels, and from meeting material needs to psychological needs. As far as the building itself is concerned, the combination of its internal space and its external geometry is consistent. The objective existence of architecture is not affected by human would, and the material basis of this artistic expression determines its own rationality. As far as architectural design is concerned, space is both an abstraction of the life world and an emotional form. People feel the feeling of the building inside and savor every detail of the building. They deeply understand the spatial connotation of this building through their perception of space, and then upgrade to a higher level of space.

3. CHARACTERISTICS OF CURRENT ARCHITECTURAL SPACE DESIGN STRUCTURE

The characteristics of the current architectural space design structure can be detailed in the following aspects, as shown in Figure 2:

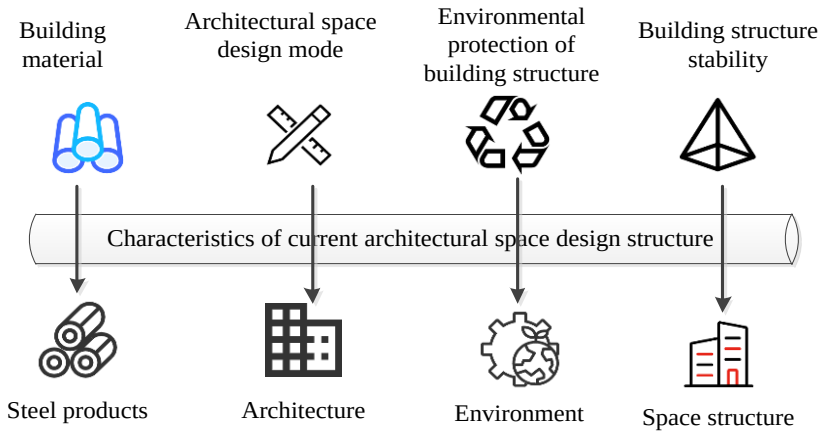

Figure 2. Features of the current architectural space design structure

1) Development of building materials

There are many kinds of materials in the design and construction of building space. The specific needs of different space parts should be considered in the design. Carbon steel is generally used in the redesign. With the development of the times, new materials have been widely used in design and construction. In the process of continuous development of science and technology, decorative materials are also constantly updated, so the design itself usually uses some new materials with good effects. In order to better adapt to the use of new materials, it is also necessary to continue to use the construction technology matching with the new materials in the construction design work. The new materials have also achieved good results in practical application.

2) Development of architectural space design

In recent years, many architects in large public buildings, especially in developed areas, have found that it is difficult to define a single architectural space design in a traditional way, while complex architectural space design is rare. Therefore, it is necessary to break this phenomenon and enrich the way of architectural space design (Kristl et al., 2020).

3) Development of environmental protection of building structures

In recent years, the cost of building materials, energy and land is much higher than before. With the deterioration of the environment, people have higher and higher requirements for the

safety of buildings. In this case, the structural design of buildings would be greatly affected. Therefore, in the design of buildings, it is necessary to ensure the quality of materials, investment and environmental protection, so as to better meet the requirements of this era.

4) Development of building structure stability

Due to the rapid development of space structures, people pay more and more attention to the stability problem. In the design process, earthquake and wind are the important factors affecting its stability. The seismic performance of reticulated shell structures has always been an important issue. In recent years, people have carried out in-depth research on it, which takes into account the interaction between the roof and the lower supporting structure and the nonlinear static method to solve the lateral seismic response of the latticed shell (Tamke et al., 2018). The results are of great significance to improve the seismic performance of reticulated shell structures. In the membrane structure with light weight and large shape change, the dynamic effect of wind force is the most important.

4. SIGNIFICANCE OF PLACE AND PLACE SPIRIT IN ARCHITECTURAL SPACE DESIGN

This paper summarized four aspects of the significance of place and place spirit in architectural space design, as shown in Figure 3:

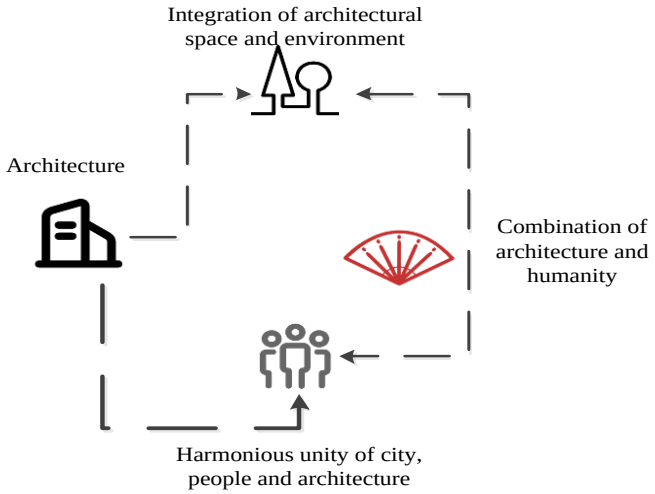

Figure 3. The significance of place and place spirit in the design of architectural space

(1) Realizing the integration of architectural space and environment

The local attribute of the building highlights the cultural background, historical and cultural context, topography and other factors of the building space. The existence of a building must have a specific environment, and the perfect architectural space design is not simply to overlap and splice the elements of the building and the environment, but to take active actions to promote the mutual recognition, absorption and integration of the building and the surrounding elements. This process can show the interaction and two-way between the two. On the one hand, the traditional architectural design is in harmony with its surrounding environment in the revision, but this is not the characteristic of its acceptance environment. The environment can recognize and accept the individual architectural personality, thus promoting the development of individual personality. Therefore, when planning and designing architectural space, it is necessary to comprehensively grasp the relationship between architecture and environment, and integrate it into the surrounding environment to achieve coordination with nature.

The overall planning focuses on integrating into the surrounding environment. On the ecological continuation axis, the surrounding natural environment conditions are good. The water system is arc-shaped, and the green space is dense. In the space layout of buildings, if the linear layout is adopted, it would have a certain impact on the surrounding curve environment, thus causing damage to the continuity and integrity of the environment. The arc-shaped design

can integrate with the surrounding environment, and integrate the building with the surrounding environment, so as to promote the continuation of the urban landscape.

(2) Realizing the harmonious unity of city, people and architecture

The city is not only the main living environment but also the main activity place of people. Architecture is an important element, which determines the space of a city. At the same time, the functions of buildings in urban space must be recognized. The architectural space of a city must have good planning and functions. In the planning and design of architectural space, attention should be paid to the combination of urban space to achieve the harmonious unity of city, people and architecture.

In the design of architectural space, the building and urban space are closely linked to improve the accessibility of each area. In addition, a series of curved bridges are set at different heights, which can not only connect a single building with the main flow center, but also provide a good outdoor public space for tourists. At the same time, the scattered functional blocks can be fully integrated into a regional whole to enhance the overall image centered on culture and art. In terms of appearance design, the art center can integrate light and simple design elements into the appearance. With white as the main keynote and through a large number of well-arranged terraces and floors, the whole building presents a simple and bright feeling, and also makes the whole space present a beautiful curve.

(3) Realizing the combination of architecture and culture

In the space planning and design of buildings, the local spirit reflected by them is not blindly copied or innovative. The local spirit expressed in a specific area should be taken as the starting point and regarded as a part of the surrounding artificial environment. At the same time, in the spiritual design of architectural space, local cultural factors must be fully integrated, so as to promote the continuation of the local context and make the design of the building have a soul, so that it can better reflect the humanities rather than simple symbolic symbols.

5. EVALUATION METHOD FOR SPACE DESIGN OF EXPERIENTIAL PLACES

In this paper, the method of comparative ranking was used to rank and score the 10 most valuable factors among the 10 influencing factors. The weight of each factor is determined according to its proportion in each factor:

$$w_y = \sum_{x=1}^{n} k_{xy} / \sum_{y=1}^{m} k_{xy} \quad (1)$$

In the formula, n and m are the number of evaluation factors, and w_y is the evaluation factor of item y.

Based on the analysis of the influence factors of green space, seats, parking spaces and the optimization of architectural landscape space, the index of residential construction cost and satisfaction is established.

Construction cost objective function: This includes the cost indicators of various construction equipment, which can be expressed by the following formula:

$$\min C = \sum_{1 \le y \ge n} a_y \times \Delta X_y \quad (2)$$

In the formula, C represents the investment cost of building garden equipment; a_y is the cost of building scenic facilities; ΔX_y is the number of scenic facilities.

According to the residents' satisfaction function, the more the number of residential landscape facilities, the higher the satisfaction of users. At the same time, with the reduction of building size, the number of buildings would increase, and the layout would become more

compact, which would affect the overall beauty and environmental planning, thus reducing the satisfaction of residents. On the whole, the functions of residents' satisfaction can be expressed as follows:

$$\max S = \sum_{1 \le y \ge n} W_y \times (X_x + \Delta X_y) \quad (3)$$

Among them, S represents satisfaction; W_y represents the weight of the equipment; X_x represents the number of landscape equipment inside the building; X_y represents the number of landscape facilities.

When the individual fitness is relatively concentrated, the crossover probability P_c and mutation probability P_m among individuals would increase; on the contrary, when the population fitness distribution is large, the values of P_c and P_m would decrease, and the probability of these two parameters would be automatically adjusted according to the following formulas:

$$P_c = \begin{cases} k_1 (f_{\max} - f') / (f_{\max} - f_{ave}) \\ k_2 \end{cases} \quad (4)$$

$$P_m = \begin{cases} k_3 (f_{\max} - f) / (f_{\max} - f_{ave}) \\ k_4 \end{cases} \quad (5)$$

In the formula, $f_{\max}$ represents the maximum fitness; f_{ave} represents average fitness; f' represents the higher fitness among multiple mating individuals; f stands for individual adaptation.

Genetic algorithm is used to correct the fitness of individuals in the population, thus ensuring the diversity of the population.

$$S(x_i, x_j) = \begin{cases} 1 - d_1(x_i, x_j) / a_1 \\ 1 - d_2(x_i, x_j) / a_2 \end{cases} \quad (6)$$

In the formula, a_1 and a_2 are niche radii, and the fitness function of the model is obtained by combining them with the fitness function of the individual:

$$\bar{f}(x_i) = f(x_i) / \sum_{j=1}^{N} S(x_i, x_j) \quad (7)$$

6. DISCUSSION ON THE SPIRITUAL EXPERIENCE ARCHITECTURE OF PLACES IN CITY A

(1) General materials

Based on the understanding of the spiritual experience of the place and the architectural space design, this paper analyzed the ideal architectural design that people needed today, and carried out the experimental analysis of the selected Cities A and B. Through the online questionnaire, the local residents' satisfaction with the urban architectural space design in which they live was investigated. First of all, big data analysis technology was used to make statistical comparison of relevant keywords searched by citizens online in the past week, such as place spirit, landscape design, space, experiential style and public art. This paper compared which city's citizens had the most frequent searches for the above key items, and then chose this city as the final sample subject of the following experiments; the design and transformation of the building space in the spirit of place experience was carried out in the city, and the carrying

capacity of urban infrastructure in sports, communications, highways, culture and other aspects was analyzed; the building space in the area was analyzed, and the comparison between the actual quantity and the expected quantity of citizens was used as the bedding for the following text; finally, 50 citizens were randomly selected as data samples through the Internet in the form of questionnaire survey, and the questionnaire was collected anonymously in the form of dissatisfaction, comparative satisfaction, satisfaction and other types. The architectural space design of place spirit experience was compared and analyzed before and after use. Finally, based on the above experimental results, the summary and discussion were carried out.

(2) Content description

The sample subject selected City A, and the sample data selected 50 random citizens of the city to conduct an online questionnaire survey. The sixth part was based on sample data to evaluate citizens' satisfaction with the changes before and after the architectural space design of the city. Table 1 showed the value-added volume and growth rate of the construction industry in City A after the design of the spiritual experience building space in the place of use, which took 2018-2022 as an example:

Table 1. Value increment and growth rate of the construction industry in A City

	Value added (100 million yuan)	Growth rate%
2018	48.4	/
2019	58.9	21.7
2020	69.4	17.8
2021	81.3	17.1
2022	92.3	13.5

(3) Key words search on architectural space design in two places

Based on the sample data in the content description, the keywords related to architectural space design in the two places were searched and counted, as shown in Figure 4:

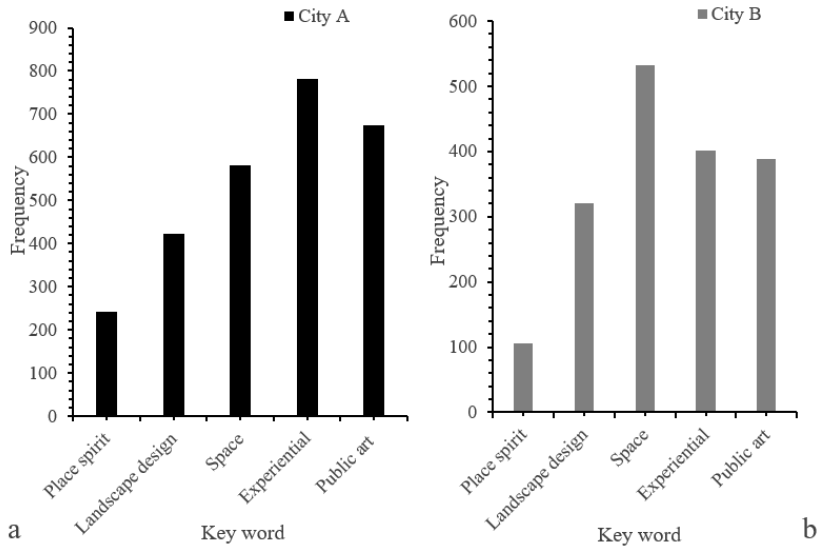

Figure 4a. Keyword search frequency in A City

Figure 4b. Keyword search frequency in B City

Figure 4. Keyword search frequency in the two cities

Figure 4a showed the search frequency of relevant keywords on the Internet in City A, and Figure 4b showed the search frequency of relevant keywords on the Internet in City B. It could

be seen from Figure 4 that within a week, the similarities between City A and City B lied in that the citizens searched for the key words of place spirit on the Internet with the least frequency among the keywords listed above. The difference was that the citizens of City A searched the most frequently for experiential space, while the citizens of City B searched the most frequently for space.

Among them, citizens of City A searched the spirit of place 241 times and landscape design 423 times. The frequency of search space was 581, and the frequency of search experience was 782. The frequency of searching public art was 674; the frequency of City B citizens searching for place spirit was 106 times, and the frequency of searching for landscape design was 321 times. The frequency of search space was 532, and the frequency of search experience was 402. The frequency of searching public art was 389. It could be seen that the frequency of search for the above five keywords was more in City A than in City B. Therefore, City A was selected as the sample subject of the architectural space design based on the spiritual experience of the place.

(4) The carrying capacity of the city's infrastructure

Based on the city selected above as the sample subject of the following experiments, the carrying capacity of the city's infrastructure before and after the use of the site spirit experience was analyzed, as shown in Figure 5:

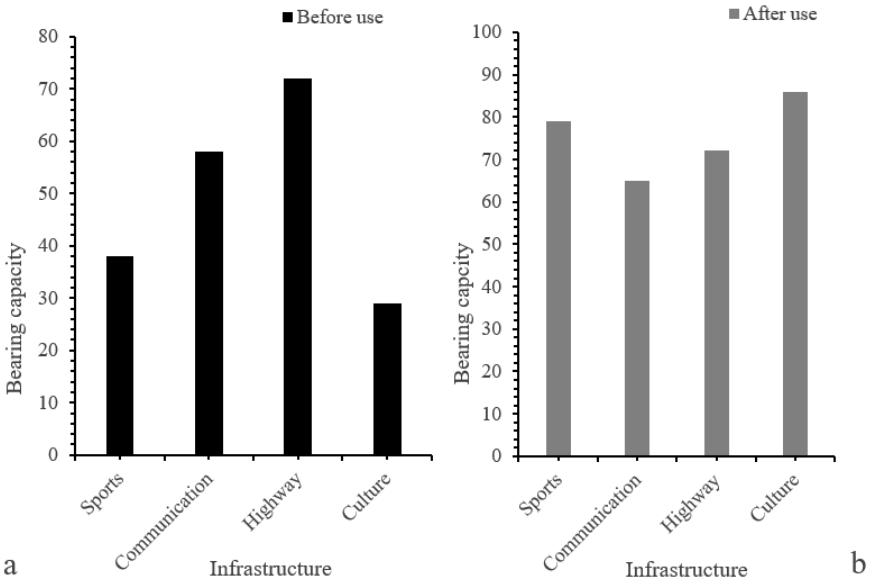

Figure 5a. Capacity of infrastructure before use

Figure 5b. Capacity of infrastructure after use

Figure 5. Comparison of the carrying capacity of the city's infrastructure

Figure 5a showed the carrying capacity of the city's infrastructure before the redesign, and Figure 5b showed the carrying capacity of the city's infrastructure after the redesign. It could be seen from Figure 5 that the carrying capacity of sports-related infrastructure after use was 41 more than that before use, and that of communication-related infrastructure after use was 7 more than that before use. The carrying capacity of highway related infrastructure remained unchanged before and after use, and the carrying capacity of culture-related infrastructure after use was 57 more than that before use. It could be seen that the carrying capacity of other infrastructure except roads increased, so it could be seen that the city did a lot of related work in order to design the spiritual experience of the building space.

(5) Analysis of the spatial structure of the building

The spatial structures of four types of buildings in the city, including parks, streets, buildings and infrastructure, were compared and analyzed, as shown in Figure 6:

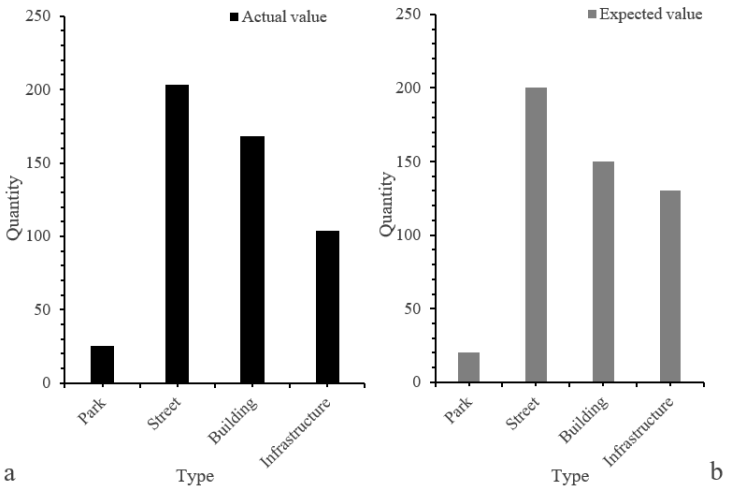

Figure 6a. Actual value of the space structure of the building

Figure 6b. Expectations of the space structure of the buildings

Figure 6. Analysis of the spatial structure of the local building area

Figure 6a showed the actual value analysis of the building space structure, and Figure 6b showed the predicted value analysis of the building space structure. As could be seen from Figure 6, there were 25 parks, 203 streets, 168 buildings and 104 infrastructure in the actual value; in the expected value, there were 20 parks, 200 streets, 150 buildings and 130 sets of infrastructure. In the comparison between the actual value and the expected value, in addition to the actual value of the infrastructure being lower than the expected value, the actual value of the other three spatial structures were higher than the expected value, so the suggestion for this place was to strengthen the infrastructure construction.

(6) Satisfaction analysis

Based on the general materials, a random online survey of citizens' satisfaction was conducted in each city, and 50 questionnaires were used to compare and analyze their satisfaction types before and after use, as shown in Figure 7:

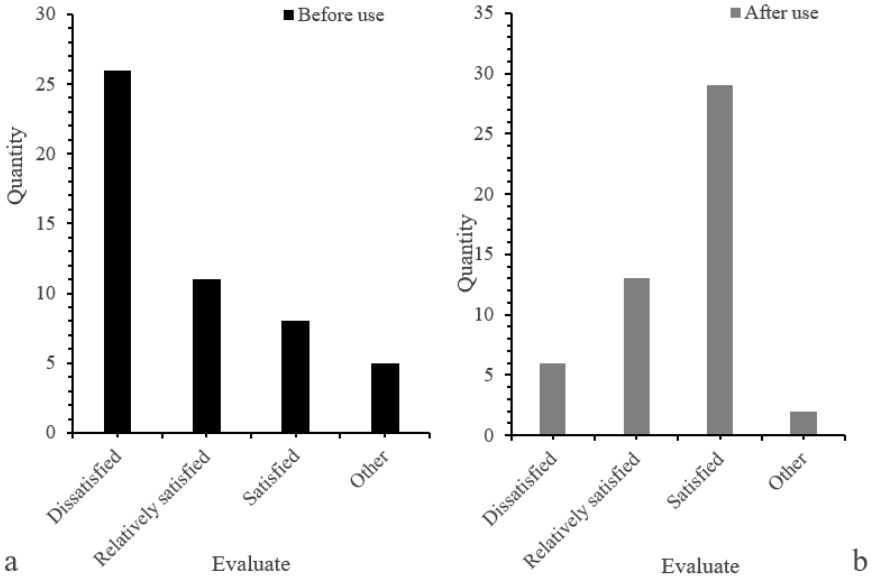

Figure 7a. Satisfaction of online citizens before using this method

Figure 7b. Satisfaction of online citizens after using this method

Figure 7. Online questionnaire survey and statistics before and after the use

Figure 7a showed the survey statistics of online citizen satisfaction questionnaire before using this method, and Figure 7b showed the survey statistics of online citizen satisfaction questionnaire after using this method. It could be seen from Figure 7 that most of the citizens before use were dissatisfied with the urban architectural space design, while most of the citizens after use were satisfied with the urban architectural space design.

Among them, there were 26 questionnaires showing dissatisfaction, 11 questionnaires showing relatively satisfaction, 8 questionnaires showing satisfaction and 5 questionnaires showing other situations; after using the questionnaire, there were 6 questionnaires showing dissatisfaction, 13 questionnaires showing relatively satisfaction, 29 questionnaires showing satisfaction and 2 questionnaires showing other situations. If the “satisfaction” type was used as the criterion to judge the quality of citizens’ evaluation of the two methods, the satisfaction rate before use was 16%, and the satisfaction rate after use was 58%, with a difference of 42%. Therefore, it could be seen that the architectural space design based on the spiritual experience of the place studied in this paper was more popular with the citizens of the city.

To sum up, this paper analyzed the architectural space design based on the spiritual experience of the place. By taking City A as the main sample, through many experiments and analysis, the satisfaction rate before use was 16%, while the satisfaction rate after use was 58%, with a difference of 42%.

7. CONCLUSIONS

The experiential design of Dai ethnic architectural space based on place spirit is a method committed to combining Dai traditional culture with modern architectural design. It focuses on integrating the cultural connotations and place spirit of Dai architecture into all aspects of architectural design from the perspectives of culture, spirit, and perception. Integrating traditional elements of Dai architecture into modern design, such as specific building structures, materials, decorative patterns, etc., to inherit and promote the unique culture and architectural style of the Dai ethnic group.This paper studied and discussed the architectural space design based on place spirit experience, and selected City A as the research object in the two cities. It studied the carrying capacity of the city’s infrastructure and the analysis of the spatial structure of the building, and finally compared and analyzed the effect satisfaction before and after using this method.

References

Abrishami, Sepehr, Jack Goulding, and Farzad Rahimian. "Generative BIM workspace for AEC conceptual design automation: Prototype development." Engineering, Construction and Architectural Management 28.2 (2021): 482-509.

Asfour, Khaled Sayed. "Healing architecture: A spatial experience praxis." Archnet-IJAR: International Journal of Architectural Research 14.2 (2020): 133-147.

Alhusban, Ahmad A., Safa A. Alhusban, and Mohammadward A. Alhusban. "How the COVID 19 pandemic would change the future of architectural design." Journal of Engineering, Design and Technology 20.1 (2022): 339-357.

Boeing, Geoff. "Measuring the complexity of urban form and design." Urban Design International 23.4 (2018): 281-292.

Chel, Arvind, and Geetanjali Kaushik. "Renewable energy technologies for sustainable development of energy efficient building." Alexandria engineering journal 57.2 (2018): 655-669.

Gao, Shang, Ruoyu Jin, and Weisheng Lu. "Design for manufacture and assembly in construction: a review." Building research & information 48.5 (2020): 538-550.

Garcia Carrizosa, Helena. "Designing technologies for museums: accessibility and participation issues." Journal of enabling technologies 14.1 (2020): 31-39.

Huang, Beijia. "A life cycle thinking framework to mitigate the environmental impact of building materials." One Earth 3.5 (2020): 564-573.

Juan, Yi-Kai, Hao-Yun Chi, and Hsing-Hung Chen. "Virtual reality-based decision support model for interior design and decoration of an office building." Engineering, Construction and Architectural Management 28.1 (2021): 229-245.

Kristl, Ziva, Alenka Temeljotov Salaj, and Athena Roumboutsos. "Sustainability and universal design aspects in heritage building refurbishment." Facilities 38.9/10 (2020): 599-623.

Kodur, Venkatesh, Puneet Kumar, and Muhammad Masood Rafi. "Fire hazard in buildings: review, assessment and strategies for improving fire safety." PSU research review 4.1 (2020): 1-23.

Omotayo, Oluwafemi O., and Chinwuba Arum. "Challenges and Prospects of Widespread Adoption of Pozzolans for Building Construction: A Statistical Assessment." International Journal of Engineering 35.10 (2022): 1929-1940.

Shoar, Shahab, and Audrius Banaitis. "Application of fuzzy fault tree analysis to identify factors influencing construction labor productivity: a high-rise building case study." Journal of Civil Engineering and Management 25.1 (2019): 41-52.

Tamke, Martin, Paul Nicholas, and Mateusz Zwierzycki. "Machine learning for architectural design: Practices and infrastructure." International Journal of Architectural Computing 16.2 (2018): 123-143.

Zikirov, M. C., Sh F. Qosimova, and L. M. Qosimov. "Direction of modern design activities." Asian Journal of Multidimensional Research (AJMR) 10.2 (2021): 11-18.