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Analysis on the Study of Integrated Planning Path of Architectural Design and Landscape Design

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Abstract: *Throughout the ages, people's pursuit of a unified and harmonious architectural environment has never stopped. When embarking on a construction project, it integrates architectural design and landscape design into integrated planning, fully integrating architectural space, landscape environment and humanistic environment, thereby forming an architectural design that integrates internal and external environments. This article aims to study the integrated planning path of architectural design and landscape design. This article first analyzes the embodiment of the integration of architectural design and landscape design, classifies the buildings in the landscape environment according to different functions and morphological characteristics, and summarizes the relationship between the building and the landscape. This paper studies the integrated planning path of architecture and landscape design from the aspects of integration under the display of landscape commonality, integration of architecture and environment under the interconnection of scenes, etc., and explores effective strategies under specific measures. The survey data of tourists on the ideal choice of architecture and landscape design in Natural Scenic Area A shows that 86.27% of them prefer to preserve the natural scenery, and 50% of them are in favor of abundant supporting facilities. Therefore, natural tourist areas should add more natural elements to retain the characteristics of their natural tourist areas.*

Keywords: *Architectural Design, Landscape Planning, Integrated Design, Integrated Integration*

1. Introduction

In recent years, the concepts and standards of architectural design and landscape design have been continuously improved [1]. In architectural design, the architectural work from design to application is a multi-disciplinary system engineering [2-3]. The whole process requires the coordination and cooperation of many masters in design, architecture, and landscape [4]. However, due to the design process, it is easy to produce space flow obstacles and different design styles. These problems caused a lot of repetitive work in the architectural design process [5-6]. The integration of architecture and landscape design plays a key role in solving such problems.

Researches based on the integration of architecture and landscape design continue to develop. For example, Shan P believes that the internal and external boundaries of the building should be blurred through the landscaping of landscape elements, so that the external landscape space can naturally infiltrate the internal space of the building, so as to achieve the effect of space continuity [7]; Donnelly S believes that through the sight guidance of the building entrance and window frames, the mutual penetration and integration of the building and the landscape can be formed in the visual appreciation [8].

This article aims to study the integrated planning path of architectural design and landscape design. This article first analyzes the embodiment of the integration of architectural design and landscape design, classifies the buildings in the landscape environment according to different functions and morphological characteristics, and summarizes the relationship between the building and the landscape. This paper studies the integrated planning path of architecture and landscape design from the aspects of integration under the display of landscape commonality, integration of architecture and environment under the interconnection of scenes, etc., and explores effective strategies under specific measures.

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2. Analysis of the Integrated Planning Path of Architectural Design and Landscape Design

2.1. Embodiment of the Integration of Architectural Design and Landscape Design

(1) The integration of architecture and landscape under the interconnection of scenes

1) Conception

First of all, considering the environmental conditions, focusing on the emotional interaction between people and the environment. If the building environment is surrounded by water, the designer can build a pavilion and plant plums in the surroundings. The quality of the plum blossoms echoes the surrounding environment. Visitors can be present in it. Infinite poetry emerges in an instant, and you will experience the noble quality of plum blossoms while you are on the scene.

Secondly, in terms of history and culture, Chinese culture has a long history, and the historical culture, events, and character stories that exist in various places are different, with different characteristics [9-10]. In the architectural design, the local culture can be effectively infiltrated and the architectural environment combining with regional culture, by showing local culture, arouse the emotional resonance of tourists.

Finally, consider the functions and passenger needs, follow the human-oriented principle, combine with the environment, and emphasize complete functions and good emotional experience. For example, the integrated experience corridors such as trails, seats, and vernacular vegetation display are added to the architectural design of the hotel, integrating art into the natural landscape, and providing passengers with a different emotional experience.

2) Naming

In architectural design, natural scenery can only implicitly express the actual meaning, and its expression is not intuitive. Therefore, through the form of naming, the intention can be better interpreted, playing the role of topic, and at the same time, poetic naming can allow passengers to expand their imagination, and then achieve a multiplier effect with half the effort. Therefore, in architectural design, house names, scenery names, stone carvings, etc. can be used to interpret the themes while forming a literary artistic conception outside the scenery. In the actual landscape design, the scenery according to the theme can effectively play a leading role [11-12].

3) Take materials

The so-called selection of materials refers to the selection of landscape design materials. In architectural design, you can choose relevant framing elements, such as forest, flowers, water, stones, etc. The theme and emotional tone match, which will further resonate with tourists.

4) Landscaping

There is no fixed pattern in architectural design. In its landscape design environment, if you want to achieve contextual communication, it should mainly be developed in the form of spatial layout, metaphorical empathy, narration, and virtuality. In terms of spatial layout, spatial layout is the core focus of landscaping in architectural design, which is very similar to the expression of space scenes such as literature and painting.

In terms of metaphorical empathy, the use of scenes and landscape elements to narrate stories enables visitors to better understand the environment and arouse emotional resonance among visitors in their thinking. Virtually, advanced landscaping technologies are used to create virtual environmental effects in architectural landscape architecture, such as optical technology and electrical technology.

(2) Integration under the display of landscape commonality

First of all, natural integration. A good landscaping atmosphere can effectively attract a large number of tourists, and it can also perfectly show the local art and culture. The artificial beauty is effectively integrated into the natural beauty, and it is perfectly compatible with the natural beauty. The architecture and the landscape collide with each other to realize the benign development of the rural landscape architecture.

Secondly, the pursuit of space is the beauty of artistic conception. The traditional Chinese landscape and humanistic spirit strongly emphasizes the importance of artistic conception, which is also reflected in ancient poems. Therefore, in the design of landscape architecture, we should pay attention to the beauty of artistic conception. The sense of belonging and identity in the spirit of the place in the

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architectural landscape will bring a unique style to the architectural scene and help to leave special memories for people. Therefore, in architecture and landscape design, attention should be paid to the construction of the spiritual space of the place.

Again, the connotation of humanities. Humanistic landscape implantation, contemporary architecture focuses on humanistic spiritual care. Compared with natural landscape, humanistic landscape pays more attention to humanistic spirit and cultural sentiment. Landscape and architectural design should pay attention to the implantation of humanities and culture. Such a pursuit of landscape makes the building full of vitality.

Finally, the dialogue of skills. The artistic beauty of technology and materials in architecture, with the continuous advancement of science and technology at this stage, has gradually reduced the restrictions on the form of technology. Many high-end technologies are gradually realized in architectural design, and some whimsical ideas have gradually become reality. Therefore, when building architectural design, it is necessary to pay attention to the introduction of high-tech, but it is necessary to make reasonable use of technology and material science to effectively demonstrate the beauty of art.

2.2. Strategies for the Integrated Planning Path of Architecture and Landscape Design Integration

(1) Architectural deployment and organization method and integration of landscape axis

The deployment and organization of the building should strengthen and conform to the existing landscape axis, so that the building units and group directions are consistent with the landscape structure, and the building can be incorporated into the existing axis system in terms of positioning and orientation; the building is located on the existing axis or the orientation of the shape is closely related to the existing landscape control axis, so that the building and the landscape are structurally integrated, and the building and the scenic environment are integrated.

(2) The image of the building is in harmony with the scale of the landscape

The absolute scale of the building in the landscape environment of the scenic area should also consider the psychological conditions of the public's behavior, so that its scale and proportion meet the requirements of tourists. The relative scale refers to when the building is juxtaposed with the landscape environment of the scenic spot, the perception of the building space formed by its size is influenced by the visual illusion, and the so-called relative scale is formed. In addition, the scale is also affected by changes in viewing distance and external scenery.

(3) Integration of architectural volume and landscape scale

The scale of the building, the thickness of the building components, the color, the viewing distance between the main body and the building all have a certain impact on the viewer's sense of volume. The scale of the building can be designed according to the theory of visual analysis, so that the scale of the building and the surrounding landscape will have a certain fusion effect.

(4) Architectural details are in harmony with the landscape scale

Buildings of the same size, because of the different levels of architectural details, will produce different visual experience for viewers. Therefore, the architectural design in the scenic environment should be coordinated with the scale of the landscape. Through detailed design of steps, building components, etc., a balanced proportional relationship between the building and the landscape can be generated, so that the building and the landscape environment can be harmonious.

(5) Integration of space atmosphere

The atmosphere of the architectural space should first comply with the needs of the nature and function of the building. The landscape should be the dominant element in the landscape environment of the scenic area, so the architectural space atmosphere should respond to this.

There is a direct relationship between the main movement and the landscape experience. From then on, in the road design process of the building, the landscape experience experience has a certain continuity, so that visitors can have a sense of identity and integration in the tour experience. Through the construction of the architectural frame, the virtual and real space are combined to form the continuity of the sight of tourists and the virtual fusion.

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2.3. Specific Optimal Green Landscape Construction Distribution Design Method

When designing the optimal landscape construction distribution, the expert scoring rules are used to score the green value of the landscape to form an evaluation matrix. The specific optimal green landscape construction distribution design method is as follows:

(1) The average value and standard deviation of the parameters in the matrix can be calculated using the following formula:

$$\text{mean} = \frac{\min + 4\bmod al + \max}{P} \tag{1}$$

$$\text{st}dev = \frac{\max - \min}{p} \tag{2}$$

Among them, p is the number of experts participating in the scoring.

3. Analysis of the Integrated Planning Path of Architectural Design and Landscape Design

3.1. Research Methods and Research Design

(1) On-site investigation

Through on-site investigation of the natural scenic area of A, the tourist area is analyzed from the aspects of constituent elements and spatial form. Recording methods include photographs, surveys, questionnaires, etc., to conduct research on the research objects, collect the original data of their designs and use them as first-hand data on the status quo of the scenic spot, as the basis for this research.

(2) Analysis and comparison method

Through investigation and analysis, we will classify and compare them, summarize the commonalities and individualities, and summarize what are the elements required for the landscape design of the entrance space of the natural tourist area.

(4) Questionnaire survey:

This study conducted questionnaires from the aspects of scenic design satisfaction, scenic architectural design and landscape design for tourists to choose from. A total of 220 questionnaires were sent out and 204 valid questionnaires were returned, with an effective rate of 92.73%.

4. Analysis of Data Analysis of Integrated Planning Path of Architectural Design and Landscape Design

4.1. Tourist Satisfaction of Natural Scenic Spot A

In the satisfaction survey on the quality of Scenic Spot A, the results are shown in Table 1: 61.76% think that the overall impression is relatively satisfactory, 58.3% think that the connotation of the landscape is general, and 70.10% think that the cultural charm accounts for 70.10%, and 37.25% think that the ecological environment is very satisfactory.

Table 1: Satisfaction survey of scenic spot quality

	Very satisfied (%)	Relatively satisfied (%)	Fair (%)	Poor (%)
Overall impression	21.08	61.76	11.76	3.92
Landscape connotation	15.69	24.02	58.3	1.96
Cultural charm	16.67	13.24	70.10	0
ecosystem	37.25	36.27	23.04	3.43
Scenic spot identification system	31.37	50.98	13.24	4.41
Landscape quality	65.69	20.59	8.82	4.90

It can be seen from Figure 1 that tourists have a high degree of satisfaction with the quality of the natural landscape, their overall impression and the identification system of the scenic spot are relatively satisfactory, and their satisfaction with the connotation of the landscape, cultural charm, and ecological

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environment is average. The reason is that the increasing number of tourists, uncivilized behaviors of some tourists, and improper management have caused the overall information of the scenic spot to decline, which has damaged the ecological and landscape connotation of the scenic spot.

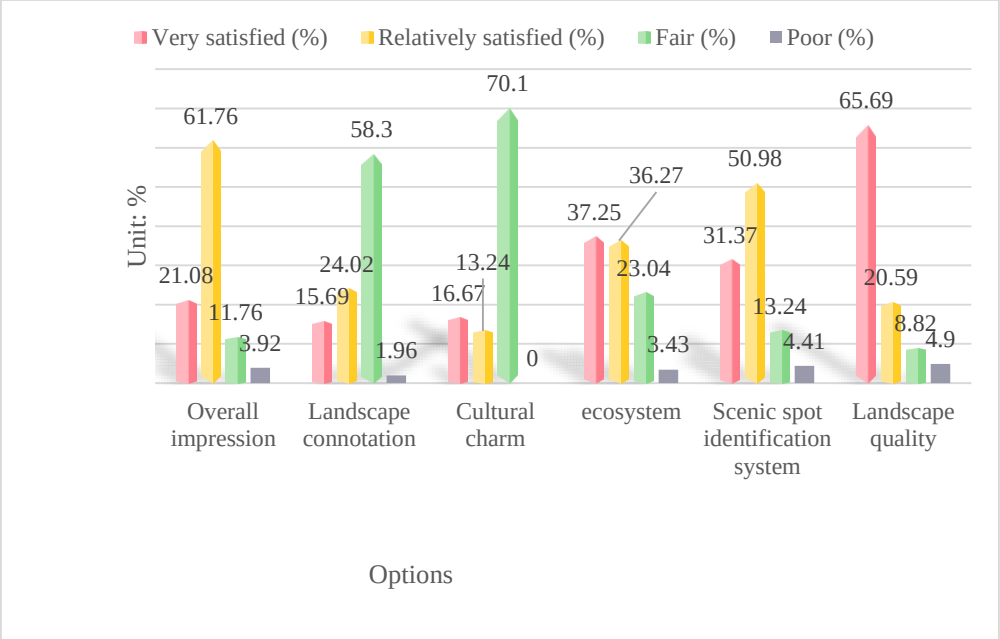

Figure 1: Satisfaction survey of scenic spot quality

4.2. Tourists' Ideal Architectural and Landscape Design Methods

In the questionnaire, according to the tourists' ideal choice for the architectural and landscape design of Natural Scenic Area A, the final results are shown in Table 2: Among the 204 tourists, 86.27% of them like to preserve the natural scenery, and they are in favor of rich supporting facilities. Facility-based accounted for 50%, and historical and cultural accounted for 43.63%.

Table 2: Tourists' ideal architectural and landscape design methods

	Numbering	Number of people in favor	Percentage
Preserve the natural scenery	1	176	86.27%
Artificial transformation	2	74	36.27%
Focus on history and culture	3	89	43.63%
Mainly shopping service	4	41	20.10%
Focus on learning history, preparation and other knowledge	5	57	27.94%
Based on abundant supporting facilities	6	102	50%

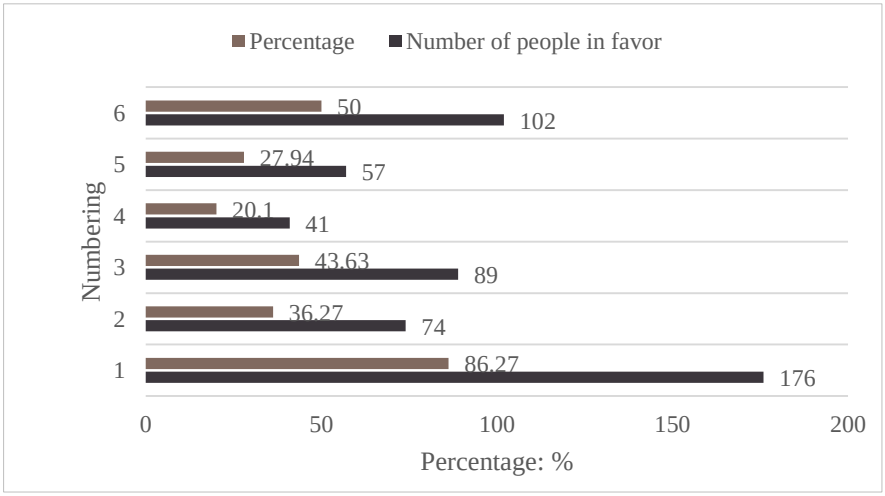

Figure 2: Tourists' ideal architectural and landscape design methods

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As can be seen from Figure 2, everyone still likes scenic spots with mainly natural scenery and complete supporting facilities. Therefore, natural tourist areas should be based on natural resources, and should not be mixed with unnecessary service facilities, which will damage the ecological environment. And more natural elements should be added to retain the characteristics of its natural tourist area.

5. Conclusion

With the renewal of the concept, the corresponding design specifications and evaluation standards are constantly updated, and designers need an overall solution to scientifically coordinate the design procedures of buildings and landscapes. Therefore, this study proposes an integrated planning path for the integration of architectural design and landscape design. This article first analyzes the embodiment of the integration of architectural design and landscape design, classifies the buildings in the landscape environment according to different functions and morphological characteristics, and summarizes the relationship between the building and the landscape. This paper studies the integrated planning path of architecture and landscape design from the aspects of fusion under the display of landscape commonality and integration of architecture and environment under the interconnection of scenes. The connotations of integration and integration will be practically applied to architecture and landscape design, and bring some new ideas to the research of architectural design.

References

[1] John, L, Cotterell. Effects of School Architectural Design on Student and Teacher Anxiety[J]. Environment and Behavior, 2016, 16(4):455-479.
[2] Hong S W , Schaumann D , Kalay Y E . Human behavior simulation in architectural design projects: An observational study in an academic course[J]. Computers Environment & Urban Systems, 2016, 60(NOV.):1-11.
[3] Bajinovci B . Challenges of Architectural Design in relation to Environment and Air Pollution. A Case study: Prishtina's first public parking garage[J]. Journal of Science Humanities and Arts - JOSHA, 2016, 3(7):22.
[4] Kocyigit F B . Effect of music on Turkish medical schools' architectural design in the Seljuk and Ottoman period[J]. Acoustical Society of America Journal, 2016, 140(4):2970-2970.
[5] Woods E . Harnessing the Power of Architectural Design Principles[J]. IEEE Software, 2016, 33(4):15-17.
[6] Field J L , Marx E , Easter M , et al. Ecosystem model parameterization and adaptation for sustainable cellulosic biofuel landscape design[J]. Global Change Biology Bioenergy, 2016, 8(6):1106-1123.
[7] Shan P , Sun W . Auxiliary use and detail optimization of computer VR technology in landscape design[J]. Arabian Journal of Geosciences, 2021, 14(9):1-14.
[8] Donnelly S , Dean S J , Razavy S , et al. Measuring the impact of an interdisciplinary learning project on nursing, architecture and landscape design students' empathy[J]. PLoS ONE, 2019, 14(10):e0215795.
[9] Roggema R . From Nature-Based to Nature-Driven: Landscape First for the Design of Moeder Zernike in Groningen[J]. Sustainability, 2021, 13(4):2368.
[10] Davies L , Fradera R , Riesch H , et al. Surveying the citizen science landscape: an exploration of the design, delivery and impact of citizen science through the lens of the Open Air Laboratories (OPAL) programme[J]. BMC Ecology, 2016, 16(1):1-13.
[11] Sun W , Yang X , Shan P . Research on Ice and Snow Landscape Design and Visual Aesthetic Effect in Coastal Cold City[J]. Journal of Coastal Research, 2020, 115(sp1):292.
[12] He J . Translation and Writing of Bilingual Language Landscape in Coastal Landscape Design of Coastal Cities[J]. Journal of Coastal Research, 2020, 115(sp1):154.