

Design of the new comprehensive building of Shanghai Normal University with the idea of environmental co-physiological

Han Guihong¹, Wu Wei²

¹Shanghai Institute of Technology, Shanghai, China

²Shanghai Film Ying Xiang Architectural Design Co. Ltd. Shanghai, China

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Abstract: The article focuses on material spatial planning on the campus of modern university, the general lack of design expression and internal vitality based on the symbiosis of building and environment based on humanization, combined with the new comprehensive building project of Shanghai Normal University (Shanghai Normal University of Tourism College), from the aspects of spatial planning thinking, road network organization association, spatial aggregation node, To sort out the campus architectural design strategy based on the symbiosis of the environment. It is of great value to explore the construction of the humanities field of university campus, and it is of reference for the practice of university campus planning and construction and decision-making consultation.

1. Introduction

The term “university” dates back to the Latin “universitas”, and its connotation sits to a social phenomenon in which spontaneous organizations similar to community activities gather in city-states and exchange knowledge to impart wisdom. Therefore, the fundamental of the university is its “spiritual light”, the university field at the beginning, it permeates the opening, communication and convergence. The realization of the university's humanities field directly points to the open, social and urban construction of campus planning and construction, a symbiotic construction strategy of campus environment^[1]. In combination with the project of building a new complex in Shanghai University of Tourism (Shanghai University of Tourism), this paper tries to use symbiotic thinking, urban image and other thinking methods, from the aspects of spatial planning thinking, road network organization association, spatial aggregation node, sort out the design strategy of campus building based on environmental symbiosis, with a view to exploring the way of realizing the humanities field of university campuses. And for the university campus planning and construction practice and decision-making consulting to provide reference significance.

2. Project entry and design ideas

2.1 Timing opportunity

From the campus construction timing situation, the new comprehensive building project of Shanghai University (Shanghai Tourism College) as a key project of campus construction, facing the opportunity of integration with the overall space planning of the original campus building, related to the overall environmental effect of the campus, has a very special significance.

2.2 Location advantage

From the campus location environment (Figure 1), the project is located at the northern end of the main axis of the Feng Xian Campus of Shanghai Normal University (Shanghai Tourism College), the location is important and leading. In order to cut in, the campus environment into the overall space construction strategy, has feasible effectiveness.

2.3 Large-scale function is important

from the scale of the building, investment and scale is large, of which the land area is 16400 m², the proposed complex is 9 floors (with part of the podium), the total construction area of 18290m². The building is a class of high-rise, architectural design life of 50 years, fire-resistant grade for one level. The comprehensive and diversified function of project-bearing education is of great significance to the relationship between the campus human environment, and the potential field identification elements transmitted by the project include leading, identification, correlation, polymerization, symbiosis, etc., which are of great value to the construction of radiation with the campus as a whole.

2.4 Design intention

The design of the new complex draws on the inspiration of urban image, symbiotic thought and other thinking methods, focuses on the overall space construction of the campus, and adopts the design strategy based on the environment symbiotic attitude of the original building.

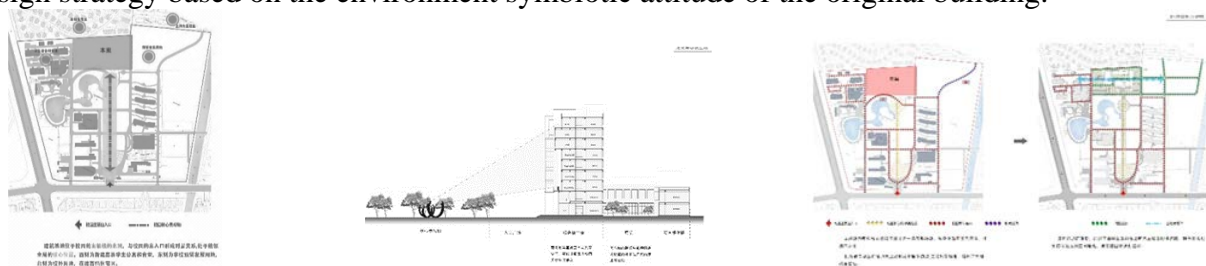


Fig1 project base analysis Fig2 Indoor and outdoor landscapes Fig3 transport route organization

3. Environmental Symbiosis Strategy I : Introducing the concept of spatial planning and leading the overall image of the campus environment

The concept of spatial planning originates from the field of urban design, which is the organization of the whole spatial sequence and the construction of the whole urban image of the campus field, which is the active design strategy based on environmental symbiosis, which is based on the complex synthesis of the large spatial scale and function of the university campus.^[2]

3.1 Pay attention to the overall architectural space layout, and the original building constitutes the whole building community, to build the campus field function of the structural carrier.

This is based on the two-dimensional plane on the campus function of the overall layout concept, transmission of the urban spatial structure research perspective, this design research two-dimensional analysis approach began Noni map in the 18th century, has the aesthetic significance of the format tower category. In transcendental reductionism, Koestler puts forward the term “holon” to express the whole and the local, expressing the meaning value of the whole often transcending the sum of the parts. The widespread dissemination of this view has since included the field of design.

Therefore, on the one hand, the establishment of the complex and terrain and surrounding buildings of the unified relationship, as shown in Figure 1 general plane. The main building of the complex will be arranged symmetrically along the campus axis, become the end of the existing landscape axis of the campus, established the framework of the framework spindle of the spatial syntax, thus leading the exhibition of the overall campus functional community.

On the other hand, the unified layout of the complex itself. The main building plane is arranged in U-shaped, middle walkway to improve the utilization rate of the plane. Buildings, elevators vertical traffic arrangement in the north side of the building in the middle and end, the flow line is simple, compact, toilets and other auxiliary rooms are also arranged on the north side, the south to the room left to the main functional room.

3.2 Strengthen spatial penetration and association, shape spatial aesthetics, and construct the image of campus unified environment.

Kevin Lynch's famous theory of urban imagery has given us a lot of inspiration. Environmental image sinuses the mind's perceptual image of the external environment is a co-product of direct feeling and experience, which is used to perceive information, guide behavior, and thus promote environmental education. Image information usually and importantly includes architectural identification, spatial form and building relevance.

This case from a three-dimensional point of view of the building's external “background” into the building surrounded by the internal “graphics” space to consider, and enrich these external space, so that it has the characteristics of the format tower, so as to give people the corresponding field image on the feeling, thus giving people a more fresh and diverse spatial aesthetic experience; This is also the current focus on space aesthetics of the new discipline trend. A good image can give the user a very important sense of belonging emotionally, thus enhancing the corresponding sense of field.^[3]

The first is the spatial construction of identity, the campus three-dimensional spatial connection relationship research, the use of spatial syntax axis analysis, the complex building is located at the northern end of the main axis of the campus, with the main entrance of the campus to form a landscape relationship, in the core position of the overall leader, become the Master University (Shanghai Tourism College) The iconic building of the Feng Xian Campus. In addition, the style of the complex and the original architectural style of the campus, shaping a dignified atmosphere of the campus space atmosphere. It is beneficial to the identification and overall environmental image of the axis construction that forms the campus field domain.

Secondly, the construction of a multi-meaning space form, the form of the new integrated building project main building design for nine floors, the west side of the layout of the general amount of multi-functional hall, the north side of the layout of the two floors of the ladder classroom as the main function of the annex building, with the main building with a corridor connection, forming a whole, but also enclosed out a semi-open interior space, This kind of ambiguous type of building courtyard space, very endogenous, the activation of the campus field area has great potential.

In addition, the establishment of spatial penetration, according to the special nature of the environment in which the building is located, cleverly will be the south side of the landscape to better introduce the interior of the building. In the middle and top of the building to do a virtual treatment. The use of a platform-style balcony or transparent glass, layout of the foyer, open exchange area and other shared space, in the warm sunshine, the campus beauty will be at the bottom of the eye. (Figure 2)

3.3 Blending man-made and natural and practicing sustainable ecological strategies

In the relationship between architecture and environment, in-depth analysis of the surrounding environment and climate characteristics, fully explore the site's positive factors, transform its negative factors. Considering the spatial replacement effect of the building on the environment, the use of garden green planting, micro-terrain and other technologies, the construction of network ecological matrix, environmental immersion, and ecological compensation for the natural environment.

4. Environmental Symbiosis Strategy II: Establishing a gradient-diversity path system and creating an organic network of human culture with great accessibility

The campus path system is the base structure carrier that relates to the humanistic environment of the campus, in which the road and square have a direct influence on the associated organization of the campus function building, the accessibility of the flow of people logistics, and the communication and transmission of information. The new complex project focuses on the gradient human-car diversion, the coordination of the links between the various functional buildings, and the

diversion of motor vehicle flow (Figure 4).

Gradient man-car diversion: First of all, pay attention to the pedestrian flow of people and entrance guidance space, the new comprehensive building, located in Shanghai Normal University (Shanghai Tourism College) Feng Xian Campus, the northern end of the main axis, according to the current situation of the school research, a large number of teachers and students from the south and west side of the base. The main building in the south of the central with the main entrance, and has an entrance square, to welcome the attitude of the vast number of teachers and students, to meet the crowd, for teachers and students to provide a good outdoor exchange platform. The multi-functional reporting hall is equipped with separate entrances and exits for flexible use, with the main traffic entrance situated on the south side and the evacuation and stage-assisted entrances on the west side. The north side annex is primarily a step-by-step classroom and exhibition laboratory, accessible through the auxiliary entrance on the north-west side or through the entrance to the inner courtyard on the east side. Secondly, the route of the effective motor vehicle flow is constructed, the ring road network is set up around the building, and the whole road network of the campus is connected organically, the communication path is formed smoothly, and the topological continuity of the road network has the function of the core body. At the same time pay attention to building safety, in the main building on the south side of the fire-fighting high-rise, to meet the fire requirements.

Combing and adjusting the links between the various functional buildings: combined with the current situation of the campus road network, the south side of the base of the curved road into an east-west straight line, the east side of the base arc path made adjustments, not only eliminate redundant space, adjusted site rules, smooth road network, conducive to the formation of the north side of the horizontal development of the spatial axis, improve the campus road network planning structure.

Diversion of motor vehicle flow: Near the main entrance on the south side of the building, there are 20 ground motor vehicle parking spaces, combined with surrounding roads and greenery, and 160 bicycle parking spaces to meet the daily parking needs of teachers and students. On the east side of the building, an underground motor vehicle depot is set up to enter and exit the vehicle slot, which can be easily accessed by the campus road, reducing the interference of the main traffic on the north side. On the ground floor, a series of equipment rooms are furnished, and an underground garage and bicycle parking garage are set up to accommodate about 31 motor vehicles and 195 bicycles.

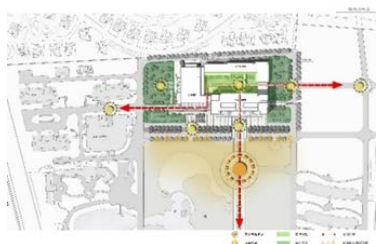


Figure 4 landscape analysis



Figure 5 Iconic new complex effect

5. Environmental symbiosis strategy III: strengthen the spirit of the place, create a people-oriented multi-meaning aggregation of the node space. This gives birth to events and stimulates the inner life of campus fields

The so-called “place spirit” is a field space that can bring people a kind of spiritual strength, spiritual belonging and spiritual leadership. The influence of infecting people at the spiritual level, so that people are educated and edified.

5.1 Creating a space for convergence and communication with ambiguity

Large to the memory of a city, to a school infection, often depends on people and places of the relationship, which also affects the campus deep cultural and ecological problems.

Focus on the creation of places to facilitate communication, activities, and events. The scheme is targeted at the campus road network, around the accessibility of the corresponding combing

adjustment. From the student apartment to the east, through a slope, along the report hall forward, you can reach the entrance square of the complex, from which to pick up the level, into the main building. If attracted by the curved walls and interior light in front of the report hall, you can go through the colonnades of the report hall, to the lush interior courtyard, the building is surrounded by a quiet outdoor space, trees and flowers perform the four seasons changes, landscapes and skits to provide people with room to stay, where to fly ideas, collision sparks, meet chance, story, You can also think about it alone; maybe it's someone, something, a scene, a fragment. Polysemy and ambiguity is its best definition^[4].

The interior courtyard wall will use transparent glass, so that the indoor and outdoor landscape of natural penetration and blend, blurring the boundaries of the interior and exterior. If you continue to move forward, to the glass corridor below, this is a fuzzy gray space, with functional carrying polysemy, but also full of spatial elasticity and post-active. Then go left to enter the stairs classroom area, and to the right you can enter the main building of the complex. After experiencing a series of light and dark, high and low, wide and narrow changes of space, functional multi-meaning aggregation and stacking space, and then east, through the two-story porch, out of the building, along the well-regulated road network, can reach the campus of the headquarters of the University (Figure 4).

5.2 Highlight aesthetic identity and enhance the sense of belonging in the field

The purpose of design, to create beauty, guide people to enhance the aesthetic. Modern higher education pays attention to quality education, and holds that education is not only done in the classroom, but also the humanistic atmosphere and cultural ecological environment of the campus should be an extension of education. Therefore, actively create aesthetic identity, enhance the quality of campus environment, enhance the sense of belonging to the field space environment, which brings about the deep spiritual satisfaction, will form a part of visual memory. The aesthetic pleasure that comes with it is a typical extension of education.

Shanghai Normal University (Shanghai Tourism College) complex is located on the campus's central axis, with a significant geographical location, as an iconic building, its design is very important. Its design to simple, elegant for the purpose. The simple and orderly arrangement of the cube mass forms a unique sense of rhythm and rhythm. Facade composition using the classic three-segment composition, the building uses red brick, color elegant connotation rich, and the overall tone of the campus in harmony, rich in college temperament. The program starts from the overall environment of the campus and the characteristics of the building itself, so that the comprehensive building can be integrated into the overall environment of the campus, and highlight its own characteristics, releasing more artistic charm (Figure5).

5.3 Materialized humanistic carrier, shaping the landscape that inspires association to cleanse the mind

Combined with activity node space, green space, there is a theme to create a point or linear skit facilities and other physical landscape. The materialized form that carries the rich humanistic connotation often brings the unforgettable environmental effect of washing people's hearts. Project combined with landscape nodes set a number of scene memory, is the teachers and students inadvertently, hidden in the roadside green belt, there is a strip of human landscape belt, including the human theme sculpture skits, and color, scale, space are very harmonious, not from the main slow footsteps, the space experience becomes rich, Humanism has made walking a kind of enjoyment, empty but rich humanistic carrier, there is a kind of university place spiritual existence, the soul has a place. The square is landscaped with "youth" theme sculpture face-shaped landscape, which produces a strong visual appeal, and the scene atmosphere is warm and impressive.

6. Conclusion

The modern university campus carries the mission of constructing the humanities field to realize the environment and educate people. As the materialization of campus environment, the value of

architectural design lies precisely in that it can create a specific environment, inject a certain spirit into the site, and meet the demand of people's pre-set academic ecological environment. This paper combines the new comprehensive building project of Shanghai University (Shanghai Tourism College) to focus on the design strategy of campus building based on environmental symbiosis, which transmits the concept of sustainable development. It provides a positive and useful reference for the practice of university campus planning and construction and decision-making consultation.

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