

Research on the Design of Communication Space of the Teaching Building

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Abstract: To the communication space of teaching building of colleges and universities as the object of research, access to relevant literature, reference design based on the current research at home and abroad to make the teaching building on, based on the demand from modern human teaching model, utilizes the environmental behavior, psychology and other architectural theory, the method of humanized design to explore the communication space gives a comprehensive introduction.

Keywords: Teaching buildings; Communication space; Design method

1. Introduction

With the continuous development of the cause of higher education, people besides puts forward higher requirements to the teaching environment, to reflect the real learning and living space are also put forward higher requirements, which introduces the design concept of campus communication space, its material ring is an important part of the campus, to create a campus environment has important significance of higher education quality. Currently, the problem of college students' mental health, academic exchange and the fusion, the problems such as the reform of education model, teaching building communication space design research is increasingly important. However, the domestic space design of teaching building's communication research is less.

2. The Definition of Communication Space

"Space is basically by an object with the feeling he relationship between the people." - brought Luranraison. It follows that space is the bridge of people and the environment interaction, while visible space and communication space is the people and the environment agree with each other, promote each other to create a conducive to the space of human communication, which is the place of people communicate with each other and convey information and emotion[1].

3. The Role of the Construction of Teaching Communication Space

3.1. The transition between the functional space

Communication space is less a function space as a specific space function, but it is a functional space connection link, is a transitional significance of space. It not only on the form and space played a role, which forms a connecting link between the preceding role in traffic also not allow to ignore. Tend to set the horizontal or vertical

transportation of intercourse space, and set up the visual center, have the effect of evacuation of people and create the space is little high[2]. In addition, the hall or the atrium communication space also shoulder the role conversion between indoor and outdoor scene, in order to realize the internal and external environment of mutual penetration. When the communication space design to meet the requirement of specification, a better achieve its functions.

3.2. Emotional communication

With the development of the society, students' intercourse space in teaching building emotional communication put forward higher requirements, the modern college teaching advocates the students and students, students and teacher exchanges and interaction, in communication, and so, achieve the goal of teaching. Contact space because of its rich space form, traffic, so it's suitable to promote the emotional communication between people. Spacious open space can make people free to express themselves, show themselves, the soul of freedom here, collision, sublimation, experience the fun of the share, grow up together.

3.3. The expression of art

Function space for a specific function, the space form also will be fixed. By contrast, communication space is not at all. Contact space processing, space design will be more flexible in form, often pay more attention to in the design of the user experience in the space, can reflect the design concept of stylist. Thus, the communication space is often the most splendid art part of the architecture of space system climax.

3.4. Cultural education

Teaching building communication space is the role of the deep culture education function, university teaching

building is the space that the students learning, students receive knowledge here, however, with the development of the society, the social demand for talents not only professional knowledge, but now the demand is all aspects of personnel, including their personal qualities and social skills, etc. Therefore, the teaching building communication space has played an important role here, it provides the necessary place to cultivate compound talents. Second communication architecture is the carrier of campus culture, and good communication space design can be a very good spirit school of humanities and history and culture, every successful university have their own special culture, special history, teaching building of the communication space is the outward sign of the culture, the school of each building, each building space which can be used to interpret their own special school culture.

4. Communication Space Design Technique Research

4.1. Function layout

Due to the nature of modern education, the function and interaction space and more or less have a certain item. So how to grasp the connection between them in the design, reasonable arrangement of the functional space become the primary task of our design the teaching building. The combination between different functions, under the influence of many factors present a colorful space layout, space patterns to form a variety of communication.

1) Linear layout

This kind of layout is more common, usually in the relatively small size of the construction of teaching application[4]. It is the feature of the function body to use a horizontal transportation together, and joint entrances on the function, convenient traffic evacuation. Common such as "a" type, "L" type, "U" type and "V" type, "S" type, "Z" and "workers" glyph shape, etc. Using linear layout, each functional block links between more closely, have very strong flexibility in graphic design, make the forming sequence of intercourse space, form the main body of communication atmosphere.

2) With the layout

Courtyard layout is also a kind of traditional way of communication space layout, is common in universities. It is a multiple function body are connected by a linear traffic space into a relatively closed courtyard space, the internal ring corridor as a transportation system, make the function body around the courtyard landscape composed of a group[3]. Courtyard layout is divided into open type courtyard and introverted courtyard. Form a closed or semi-closed outdoor patio space for students, provide a place can communication.

3) Herringbone layout

The layout of a very strong sex to a, a very clear structure, in a linear traffic space series many a function body. He

has the advantage of the function of body on the use of each other, but also has the certain item. The herringbone layout, on the main line traffic also can have in the development of space, it can continue to use this structure if the land expansion of the new city. It has great flexibility, rendering was born long, structure and pure and fresh, suitable for large-scale construction of teaching. The layout of the outer space is a kind of open space, to form the multiple communication space, and can better adapt to the change of the terrain, especially the slope.

4) Around the layout

Surround type layout refers to the graphic center as the origin, the function body decorated around the center; Or circular arc line as the main line, the other buildings in arc line connection and radiation. In the teaching building, the center origin often appears in the function body of Shared space, such as square, the atrium is concentrated evacuation space, etc. All functions are independent each other, the structure is clear, the evacuation of users. Its center and centrality is very strong, the structure is clear, stream of people to bypass on the origin and radiation, can form relatively large and wide range of communication space.

5) Grid layout

This layout first will base into crisscrossed network, decorate each functions in the network, the layout of the form a network. In the form of the network layout, formed a number of internal courtyard space, and compact layout, using fully on the station. Due to the use of standardized, modular method, the construction of a building can standardize, balance in his hand, there is a strong spatial adaptability. The network layout makes the teaching building is the continuous extension of elastic space, in the middle of the network, the formation of multiple communication space, with a functional areas closely linked.

4.2. The atmosphere of communication space construction

1) The sequence of space

Sequence of feeling of the space refers to the various functional space according to certain way to organize, can not only meet the needs of function and traffic flow, but also from psychological or give a person with a certain continuity implications on the vision. Make people in space experience, often add the dimension of "time" to come in. Over time, people in the space, in turn, through the formation of a series of space to experience. When create a sense of space sequence, continuous, rhythm, must pay attention to the space. Need both unity, there is need to abound change. To do the other again at the same time, at the head of the global main space, secondary space auxiliary to cooperate, so all kinds of spatial interaction, entity.

2) Space penetration and infiltration

Like building external different size with each other, teaching building internal space also needs of different types of space are intertwined, and internal space form so as to create a rich and colorful. The penetration is mainly embodied in the one. Some of the functions of communication space. Such as sharing atrium and vertical traffic elements, such as stair of the elevator and so on, can realize transverse and vertical interlock. This mutual penetration of the atrium space and traffic space on the vision, interior space is more active. In addition, the gallery space often cannot exist alone, it needs to be connected with hall or other types of space. With penetrating each other between the different space, also enriched the liquidity of indoor public space building. At the same time, the internal space of weaving and weaving, extended the users in traffic flow, increase the spatial hierarchy, virtually also increases the chances of communication between people.

3) *The level of the clear and orderly*

College teaching building interior space often have to accommodate a variety of different activities. On the one hand, it as a public activity place should have foreign publicity and openness, can accommodate export-oriented activities such as teaching, meeting, exhibition. On the other hand may be communication and thinking as a space for introverts, should have a certain sense and privacy, in this way can make people stop. In terms of build public space hierarchy, basically has the following two ways:

Digging: large scale space in some special time course can meet the requirement for people's evacuation, but after stream of people is "front neglect pommel horse dilute" scene. Will large scale space by parapet walls, flooring and ceiling design and other ancillary facilities allocation out one small scale, with areas of small space. These spaces can attract users to stop and make up for the deficiency of the former.

Three dimensional design: three-dimensional design refers to the three-dimensional space through the different elevation of the space of the design, to reflect the level of space. Especially in the atrium space, different elevation level to accommodate the activities each are not identical, but at the same time in sight is interconnected, the "see and be seen" state to the user brought different views, so as to enrich the space hierarchy.

4) *Appropriate spatial scale*

Scale is one of the standards to measure the beauty and comfort of architecture space. The scale of architecture refers to the question of the relationship between the impression and the actual size of the building space. Appropriate scale is an important condition in teaching architectural design, and the appropriate scale of building space can make the students have a strong sense of belonging and a sense of domain. According to the user's behavior and psychological characteristics, in architec-

tural design teaching should create a cordial feeling small scale space, to improve the degree of comfort of the use of teaching building communication space, which is the composite of the students psychological needs. Appropriate scale coupled with appropriate facilities, to improve the vitality of the building is very helpful[5].

4.3 Communication space design principle

1) *Principle of human nature*

People but not users of architectural space and architectural space is the founder, in today's architectural design should be taking into account the needs of the users, a variety of activities, in line with the teachers' and students' behavior and mind demand. Students are the main body of the university campus, their various psychological and behavioral activities have an important influence on the design of college buildings. Factors of students in teaching building communication space design is placed in the first to allow users in the architectural space free safe and comfortable is our designers to the pursuit of the target, no matter how elegant magnificent space without taking into account the user's feelings, is a failure of design, so consider to college students psychological and physiological needs, practical and thoughtful to creating all kinds of conditions for the majority of students.

2) *Open principle*

Teaching and open teaching modern, enhance the teachers and students of classroom space environmental concerns, the communication space has become the main content of teaching of architectural design and space design and teaching space design are equally important, in the teaching of various functional space, multi-functional communication space arrangement has no specific function. To create humanistic environment effective techniques, based on the behavior, ingenious planning, combining static and dynamic, orderly space, the formation of multi-level space, cultural content and organic living facilities into, such as information, exhibition, and leisure space into the waiting hall or atrium, restaurant, canteen and rest to the hall into people's activities in a process to make life more content into the communication space, so as to create a natural, warm, wet Rich and convenient communication space, shape optimal learning environment.

3) *Adaptability principle*

Because the use function of the teaching building communication space is varied, and the behavior of university students is regular and time, so their demand for communication space is also diversified and multi-level[6]. Therefore the design of the communication space of the teaching building to on the basis of the content based, besides the communication space of adaptability but also use efficiency, many colleges and universities building communication space use efficiency is not high has was placed in front of us, teaching complex communication

space different from other public buildings, the period of user behavior is ought to be paid attention to in the design space, single function space has not adapted to the new situation, a single functional space must use efficiency is not high. The time of learning behavior is reflected in: when the class is concentrated in the classroom, and the number of classes is increasing dramatically, very crowded, the number of spare time and very few. The time period of the students' behavior caused a lot of waste to the public space. So designers in the design of communication space to give it more features, make it become a "complex space". Generally speaking, the multi function design of the communication space of teaching building is an effective way to solve the space use efficiency.

5. Conclusion

In today's education mode, the communication has been as an important means of acquiring knowledge, the quality of the teaching building communication space design from a certain extent, affected the teaching quality. Teaching building communication space is not only can help students consolidate the knowledge in class, expand extra-curricular knowledge, can also mediate fatigue, improve the efficiency of class, for the modern college

students' quality education provides interaction platform. In addition, to cater to the needs of modern education mode for multidisciplinary cross, promotes the communication of cross major in the teachers and students, exercise the students' cooperation ability, improve the comprehensive quality of students. Therefore, for the teaching building communication space is meaningful to study.

References

- [1] Wang Dong. A preliminary study on the design of college buildings of humanity[J]. Shanghai: Shanghai construction science and technology, 2008.2: 42-43.
- [2] Zhang Yan. The contemporary university building public space form design[D]. Tianjin: Tianjin University, 2006.
- [3] Wang Han. Research of communication function and the design of teaching building in University of grey space-Taking Southern China area as an example[D]. Shenzhen: Shenzhen University, 2010.
- [4] Jin Xin. Domestic colleges and universities teaching building atrium space research[D]. Chendu: Southwest Jiao Tong University, 2011.
- [5] Wang Dan. Analysis of the organization of college teaching building space China[D]. Shanghai: Tongji University, 2008.
- [6] Yu Fei. Traditional Street humane research[J]. Shanxi Architecture, 2008, 34(8).