

Spatial Function Diversification: A Case Study of Medical Care Institutions

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Abstract. With the continuous improvement of living levels, people's health needs and psychological needs are getting higher and higher. The functional needs of living conditions and lifestyles are becoming more and more refined, so that the design of diversified spatial functions has emerged. In a limited space, the diversified design is rich in functions, efficient and coordinated, and has the characteristics of adaptability, richness, harmony, unity and intensification of multiple orders. This article explores the human activities, time dimensions and space dimensions in the design of diversified spatial functions. Taking the medical care institution—postpartum rehabilitation center as an example, the design reflects the diversified characteristics of spatial functions.

Keywords: Space Functions; Diversification; Medical Care Institutions; Postpartum Rehabilitation.

1. Background

With the improvement of modern living standards, people pay more and more attention to physical health and spiritual enjoyment. In the space, new functional layout structures and new functional content forms are constantly appearing, and more diversified development is trending. In the early stage, people tend to be more simple for the function, whether it is people or things, or space function, they tend to be full-time, dedicated and single restrictions; However, with the development of modern times, the traditional rites and spiritual beliefs are more to take their essence, eliminate their dross, simplify the complex, break the whole into pieces, and tend to diversified development, especially the space function. Modern people pay more attention to the functional diversification of space, make reasonable planning of limited and single space to make it more infinite, diverse and inclusive, further expand and optimize the space function, and better meet the needs of people, people-oriented and scientific development.

Take medical and nursing institutions - postpartum rehabilitation centers as an example, postpartum rehabilitation centers are gradually emerging in recent years with medical maintenance and rehabilitation as one of the institutions, mainly to provide maternal and newborn postpartum 18-42 days of scientific and healthy postpartum care services. To do the month is the unique fertility needs of East Asian women, after the end of maternal production, the mother will enter the confinement stage, the length of time varies from region to region, basically about 30 days. During the puerperal period, the main functions of the postpartum repair center are scientific and nutritious diet management, professional newborn care, postpartum mother's psychological adjustment and physical recovery and physical recuperation. In this small collection space, the postpartum rehabilitation center can provide not only hospital care, but also a more professional and comfortable health environment than the general hospital, and pay more attention to humanized services. Therefore, it is particularly important to study the diversification of spatial functions.

2. The Characteristics and Development of Spatial Function Diversification

2.1. Definition

Space has a variety of functional divisions that can meet the needs of people's life and activities, and different areas have different functions. Spatial function diversification means that the functions in



the space are very rich and there are many types. Functional diversification includes the following meanings: First, it has various functions and rich types to meet People's Daily physiological and psychological needs; The second is to give full play to the effect, the space is fully utilized, the utilization rate is high, to meet the needs of users at the same time, but also to obtain additional potential effects of space; The third is the stable relationship of mutual coordination of functions in the space, with flexible conversion between functions, mutual promotion and sustainable and stable development.

2.2. Peculiarity

Spatial function diversification should have a variety of perfect or potential functions, which can meet people's various forms of activities, and each function should coordinate with each other in its space and develop stably. At the same time, it should have the characteristics of adaptability, richness, harmony and unity of multiple order and intensification.

Adaptability: A single spatial function can only meet the single needs of a specific group of people, while a functional pluralistic space can meet the needs of a variety of different types of activities, provide relatively free activity conditions, and create different atmospheres according to its different functions. Its spatial scope is relatively concentrated, which can meet the overall needs of people in the same space, and it is more attractive in today's time supremacy, and space diversification is more adaptable.

Richness: Function and form are the key to space design. By expanding established functions or combining functions in an orderly manner, the role of space can be greatly enriched. The original space is specific and monotonous, while the diversification of space should make the space rich in functions and have a variety of connotations. Through the mutual extension, penetration and combination of each space, the utilization rate and compatibility of space can be improved.

Multi-order harmony and unity: In the diversification of spatial functions, the realization of various functions needs to have a certain order, richness is its external expression, and order is the core of its long-term maintenance and adaptability. The harmonious coexistence between various functions needs to meet certain unified conditions, so that the functions have mutual connections, pull the whole body, each performs its duties, while removing redundancy and simplifying. Diversified spatial functions complement and restrict each other, constantly revise, follow the common purpose of service, and maintain stability and lasting vitality, which is the characteristics of the harmony and unity of the pluralistic order with diversified spatial functions.

Intensification: The diversification of spatial functions has the characteristics of relative concentration. On the basis of realizing its functions, simple effects can be achieved through the combination of reasonable planning and orderly functions. Spatial diversification can effectively improve the overall benefits of resources, time and space, and at the same time, coordinate functions and maximize value, which is in line with the requirements of sustainable scientific development. Intensification is an important feature of spatial functional diversification.

2.3. The Development Trend of Diversified Spatial Functions

With the rapid development of science and technology, people have been greatly satisfied in the material life, while ensuring the basic life, there is also a further demand for physical and mental health. This requires the space not only to meet its basic functions, but also to achieve the characteristics of convenience, simplicity and diversification. In modern life, facilities and equipment with certain functions are gradually integrated and transformed. For example, in the office space, the tea room and the staff lounge can be diversified and transformed according to the time. In the dining space, private rooms and small banquet halls can be flexibly converted through the activity screen; The corridor or foyer of the shopping mall can be integrated and transformed with small display Spaces or customer rest places, so as to achieve diversified development of spatial functions, save

resources, save time and energy, so that people can get the maximum convenience and respond to the sustainable development concept.

3. The Research Content of Spatial Function Pluralism

Spatial function diversification is to serve human activities. Human activities are varied in different time ranges, so human activities, time dimension and space dimension are the main contents of the research on spatial function diversification.

By studying the form of human activity, the law of activity and the relationship between people, the spatial layout and spatial function are studied. Space function is closely related to people's activities, satisfying people's use and giving play to its value are the necessary conditions for space to realize functional diversification.

Time changes dynamically, and people perceive time changes in the spatial dimension. In the time dimension, reasonable arrangement and orderly organization can expand spatial functions and achieve the diversification of spatial functions. Time is dynamic, so there are many uncertain factors, through the analysis and research, summarize the law, to find a reasonable solution, is to further expand the diversification of spatial functions.

The scope of space is certain, people are active in the limited space, and to study the spatial functional diversity from the spatial dimension is to study the role of space itself. Space function is diversified, each function intersects with each other, interdependent, has always been you have me, I have your existence. In order to implement the diversification of spatial functions, it is necessary for all functions to adapt to each other, tolerate each other, and continue to develop cooperatively under the spatial dimension to achieve functional diversification.

4. Diversified Application of Spatial Functions

In modern space design, functionalization and diversification should be widely considered, and the purpose of the composition of a space is to realize the function. In the limited space, to achieve more functional coordination and coexistence, to achieve the maximum use of resources, is the inevitable development of The Times, but also the choice of human better life. Modern functional diversity is reflected in all aspects of the space, such as the campus, restaurant, library, bookstore and office areas.

The diversification of space functions is also reflected in all aspects of life. Taking "Shanghai Sanlian Bookstore" in Jiangnan Road, Wuhan as an example, it integrates reading, shopping, eating and playing, integrates tradition and culture, space and shape, and complements each other, so that customers can be immersed in it and bring multiple experiences. The bookstore is composed of five floors, mainly the book area on the third floor, supplemented by the spatial functions of the other floors, but the functional expansion of the other floors increases the flow of people in the book area on the third floor, so that each space develops harmoniously and promotes its function. The first and fourth floors are food areas with a complete range of snacks, sugar water, hot pot and Japanese food. The second floor is a hand-run cultural and creative area with rich types. Cultural and creative is a derivative of the theme of books on the bookshelf, the organic combination of bookcase and booth, and the interaction of books and cultural and creative works make the space more closely integrated (see Figure 1 and Figure 2). The presence of cat coffee adds more fun. The book area on the third floor, there are more than 20,000 books, rows of pure wood-colored bookshelves in the sky lantern like yellow lights embellished, the ancient atmosphere is more intense (see Figure 3); On the third floor, there are "flowers and rice paper" and movable seal, simple and romantic, all kinds of stationery, paper and pen style colorful and changeable; The existence of the cafe is more rich in space functions, you can drink coffee and eat a simple meal, you can also watch the performance of time travel drama, and customers can participate in it, and the fun is endless; In the "cultural relics" area opposite the cafe, coins, bronze mirrors, plants and flowers are also worth watching. The addition of music bar on the top floor makes the quiet bookstore on the fifth floor more dynamic. "Shanghai Sanlian

Bookstore" integrates bookstore, catering, exhibition, etc., combining reading space with leisure space, making the space more diversified and allowing people to have a better experience.

Functional diversification can be used in all aspects of the space, which greatly enriches people's life. At the same time, people enjoy enough convenience in the limited space. In the functional diversification, each function develops coordinately and benefits each other.



Figure 1. Shanghai Sanlian Bookstore



Figure 2. Shanghai Sanlian Bookstore



Figure 3. Shanghai Sanlian Bookstore (

5. Diversified Application of Spatial Functions in Medical and Nursing Institutions

With the development of The Times, medical and nursing institutions have been born, integrating medical treatment and health care as one, which is a concentrated expression of diversified spatial functions. Postpartum rehabilitation center, is the first choice of modern women in the case of conditions permit, set medical treatment, cultivation and rehabilitation as one, with scientific, professional, comfortable, contact and intensive characteristics. The postpartum rehabilitation center integrates the functions of hospital, club, home, etc., and coordinates and compensates with each other in diverse areas. It takes physical and mental health as the first priority to maximize the care of mothers and newborns. The diversified space design of postpartum rehabilitation center meets the various needs of mothers and newborns, which is the embodiment of humanization, especially improving the postpartum psychological needs of mothers.

Taking this design as an example, the designer starts from the perspective of maternity and fully considers the postpartum needs of maternity. "Yue Sheng" postpartum care Center mainly focuses on independent living rooms for pregnant women. The postpartum care space designed this time has three levels, namely standard room on the first floor, suite on the second floor and VIP suite. Taking the standard room on the first floor as an example, the standard room on the first floor has an area of 52.8 square meters. The partition curtain is set in the middle of the maternal sleep interval and the sleeping area of the sister-in-law, so as to provide the maternal with an independent space as far as possible and ensure that the maternal rest space is not affected (see Figure 4 and Figure 5). The VIP suite on the second floor is equipped with a separate maternity room. The newborn is taken care of by the maternity nurse, which can ensure that the pregnant women have enough rest; At the same time, two toilets are set up, and the internal bathroom is only for one woman to use, with good health area and privacy.



Figure 4. Maternity rest space



Figure 5. Maternity rest space

The postpartum care center has set up a visiting doctor's office, equipped with professional equipment and doctors, medical monitoring of mothers and newborns at any time, the visiting doctor's office can provide medical services for mothers, and has a variety of rehabilitation functions, with professional

infrared light, physiotherapy and other rehabilitation means. It integrates medical treatment and recuperation into one, and achieves diversified spatial functions.

5.1. The Application of Comfort Principle in Medical and Nursing Institutions

Comfort refers to the space in the premise of meeting the activities, the user feels comfortable and suitable within the scope, is a higher evaluation of space quality. The representative postpartum rehabilitation center of medical and nursing institutions embodies the important role of comfort. The mother is extremely weak after the end of the production, but also shoulder the heavy responsibility of feeding the baby, at the same time, the mother during the whole pregnancy due to changes in the body hormone homeostatic, mood swings, may have depression and anxiety and other psychological problems, so the comfort of the living environment requirements are higher, at this time the comfort of the bedroom combined with privacy design, will make the mother more secure. For example, the use of sound absorbing materials in the room to ensure the privacy of each private space; At the same time warm colors and comfortable furniture for spatial configuration. The postpartum care center integrates medical treatment, recuperation and rehabilitation, provides one-stop services for parturients, coordinates the diversity of spatial functions, takes comfort as the main principle, and achieves satisfaction for parturients, infants and even their families.

5.2. The Application of Scientific and Professional Principles in Medical and Nursing Institutions

In the postpartum repair center, the science is fully played. Pregnant women and babies from the postpartum and postpartum rehabilitation center from check-in to leave after the strict scientific and professional care, no matter clothing, food, or housing have scientific plans and arrangements. Scientific nutrition of the meal, according to the reasonable proportion of nutrition, is conducive to the recovery of the maternal body, but also conducive to the growth needs of the baby. At the same time, there are scientific and reasonable arrangements for the life, leisure, sports, etc. of newborns and maternity, and there are special guidance and care. In addition, the postpartum rehabilitation center has set up a classroom for parents to help teach new parents to feed their babies scientifically, so that new parents are busy and orderly, and it is also conducive to the health and harmony of the family. In the limited spatial functional structure, each spatial function is allocated scientifically, for the sake of mother and child from many aspects such as time and energy, people-oriented, scientific development, and give full play to the scientific and professional principles of diversified spatial functions.

5.3. The Application of the Principle of Connectedness in Medical and Nursing Institutions

Connectedness refers to the close connection between adjacent Spaces, and the space is easy to use. The associated space is placed in the same space block in a combination or combination way, so that it plays the effect of one plus one greater than two. In the postpartum rehabilitation center, the requirements for spatial connection between mothers and infants are further improved. They are weak, but the spatial functions they need are not a lot, and they have complete life activities, so they need to have more diversified functions in a limited space. At the same time, the function that was easily ignored can play its functional role again through the connection, making the space function more convenient and providing space attraction, which is difficult to achieve in an independent space, and is an important manifestation of the diversification of space functions. For example, the psychological counseling room is available for mothers and expectant mothers to receive psychological counseling (see Figure 6), but there is a waiting area outside to protect their privacy. Waiting areas are set up in the massage room, the lactation room, the newborn swimming room and the psychological counseling room, and some are also set up observation areas, combining multiple interrelated areas (see Figure 7) to improve the functional diversity of the connected space.



Figure 6. Psychological counseling room **Figure 7.** Multifunctional area

5.4. Application of Intensification Principle in Medical and Nursing Institutions

Resources are the precious wealth that human beings depend on for survival. Intensification is to create more functions of resources and maximize their value under the premise of saving resources, using resources and sharing resources. Postpartum restoration center, set medical treatment, health care and restoration as one, the independent hospital, nursing institutions and post-natal recovery institutions into a whole, in this overall spatial structure, the space to play its maximum benefits, not only to achieve a centralized role, but also to achieve the effect of saving, so that the intensive features of diversified spatial functions are particularly prominent. For example, the combination of baby swimming room and bath room saves space. The design also takes into account the needs of parents, and there is a whole wall of glass partition to facilitate parents to see the specific process at any time (see Figure 8); In the relatively small space of the standard room on the first floor, the organic combination of the kitchen and the living room (see Figure 9) makes full use of the space, and fully meets the needs of maternity, which is the intensive embodiment of multiple functions.



Figure 8. Baby swimming room and bathroom **Figure 9.** Kitchen and living room

6. Conclusion

Diversification of space function is a prominent feature of modern space design, which is the embodiment of people-oriented. In a diversified space, people have a more perfect and thoughtful space experience and spiritual enjoyment. Through the analysis of diverse examples of different Spaces, and the design of medical and nursing institutions represented by postpartum rehabilitation centers, the connected Spaces are combined to enrich spatial elements, make resources intensive, and maximize spatial benefits. In addition to medical and nursing institutions, many Spaces in life can play their functional diversification characteristics, such as shopping malls, amusement parks, campuses and communities. The diversified design of space is in line with the people-oriented, conform to the trend of a kind of design, has a strong practicality, but also has a good prospect of development, should be widely used in modern production and life.

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