

Research on Sustainable Renewal Design of Commercial Streets in Bengbu Old Town

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Abstract

THE PACE OF urban development will not stop. Only through sustainable renewal can street space adapt to the development of the city and maintain the vitality of the space. The old city street is one of the most important public Spaces in the city. The renewal of street space is of great significance for the improvement of city quality. This study takes the commercial streets in the old urban area of Bengbu City as an example, and on the basis of studying relevant theories, puts forward the sustainable design method of commercial streets, which mainly includes the following points: 1. The use of sustainable design ideas for the whole life cycle. 2. Humanistic display improves the cultural connotation of streets. 3. Humanized design strategy. 4. Construct continuous commercial street space.

Keywords

Old City; A Commercial Street; Sustainable Design.

1. Introduction

On August 30, 2021, the Ministry of Housing and Urban-Rural Development issued a Notice on Preventing Large-Scale Demolition and Large-scale Construction in the implementation of urban renewal actions [1]. Implement city update action to comply with the law of development, respect the people will, from the layout of the construction, reconstruction, expansion way to upgrade the old village, old plant, old old neighborhoods and villages district functions such as stock, complete urban old village transformation, transforming a batch of large old blocks, adjust measures to local conditions of a batch of villages. On October 8, 2021, anhui provincial government office issued by the "on the implementation of urban renewal action plan to promote the development of city of high quality for [2], clear will be implemented in anhui province town of reconstruction of old residential area, urban shantytowns, transform and upgrade of urban distribution and old buildings, urban infrastructure repair short board and so on ten big project, promote the development of city of high quality, We will continue to meet the people's ever-growing needs for a better life.

2. Literature Review

Kong Jianyu is the problem of city image construction of Peking University, published "the road to landscape, and the communication of the mayor (China building industry press, 2003), he pointed out that China's current dynamic streets landscape image in the history of the construction and urban beautifying movement similar to that of emphasis on air, neat, geometry, illuminative visuals, Including the axis of the landscape avenue, large etiquette and memorial square; Southeast university professor Jiang Difei issue of urban morphology vitalism "1 (southeast university press, 2007) is the understanding of the phenomenon of contemporary urban space and environment, he emphasized the" dynamic "vision of urban morphology, and the further study of how to construct a dynamic city, how to abstract the concept of" dynamic

"associated with the set up of city image; In his discussion on urban "micro renewal" (Time Architecture, 2016), Li Yanbo of Tongji University believes that urban micro renewal is a positive response to macro policies, industry trends and social demands in the context of the current stock construction in China. CAI Yongjie and Shi Qingjun's Exploration of Shanghai Old City in a Graduation Project of Daily Demand-oriented Urban Micro-Renewal (Times Architecture, 2016) analyzed the daily demand-oriented urban micro-renewal strategy in detail, and discussed the new mode of spatial quality improvement in the old city micro-renewal under the economic new normal. In Ma Hong and Ying Kongjin's Exploration of Community Creation Path under the Background of Shanghai Urban Organic Renewal with Micro-renewal of Community Space (Times Architecture, 2016), through the analysis of the completion process of Shanghai community space micro-renewal cases, the community creation path and the role positioning of the government in community micro-renewal are discussed. Yuan-yuan zhang in the Shanghai style street walking space research on micro renewal design (design, 2021) by combing style street walking space related concepts, government policy, field survey found style street walking space exists some problems to be solved, introduce micro update ideas and explore its in solving style street space walk the path of the actual problem.

The main practical case studies include Guangzhou Yongqing Square, Xiamen Zengcuo, Wukang Building, etc.

Conclusion: Through the review of relevant domestic literature, it is not difficult to find that the domestic research on urban renewal of residential and commercial areas is gradually increasing, and the relevant theoretical research and design practice provide a good preliminary basis for this research. However, there are few researches on the renewal of Bengbu old urban area, and the relevant theoretical research and design practice are seriously insufficient. Today, with the rapid development of cities, small third-tier cities like Bengbu still face new problems and challenges in the transformation of old urban areas and improvement of living environment. How to properly solve and improve the renewal and transformation of such cities has become an important issue restricting the high-quality development of cities.

3. Basic Methods for Sustainable Renewal Design of Commercial Streets in Bengbu Old City

Urban renewal is now referred to the new level, the large open to build in the future city will be reduced, more is to repair and renovation of old buildings, both heavy face, heavier lining, in to improve the living environment of urban residents at the same time, the continuation of the urban context, provide more recreational leisure living space for urban residents, rich people's spiritual life. The commercial streets in Bengbu old town mainly have the following points: 1. Lack of historical context and humanistic thought. In the whole street environment, the culture and style characteristics of the urban street landscape are completely ignored, which cannot reflect the local "firework atmosphere" of Bengbu, and there are few relevant landscape pieces or historical and cultural walls to show it. 2. Street public facilities and structures need to be optimized. In the street layout, the storefront steps extend differently, which is very easy to cause road congestion. In the street facade layout, the shop signs are old and different in size, and the old wires are disordered, which cannot achieve a harmonious and beautiful effect visually. 3. Humanized design needs to be improved. Lack of accessibility and lack of open space for pedestrians.

3.1. Life-cycle Design Strategy

The "whole life cycle" refers to the "design decision - design research and development - production and manufacturing - use and maintenance - recycling" of product materials, and the

sustainable utilization of materials is realized at every stage. In 1969, the United States put forward the concept of "Life Cycle Assessment" (LCA) for the first time, which means that the Life of products and all links should be considered in the design stage [3]. That is, the whole cycle of product "design decision - design research and development - production and manufacturing - use and maintenance - recycling" should be designed rationally. In decision-making stage, to the whole environment into consideration, old town in relative to other areas of the city, its itself is a complex area environment, we need to establish the relationship between the environment - product - people, first of all, through a large amount of data investigation, starting from the demand of people, from the old environment, choose the reasonable material, match the special environment, So as to achieve control in the early stage; In the design, development and manufacturing stage, we should adhere to the concept of "green design" and consider the treatment of waste, wastewater and other pollutants in the production process. Another point, should adopt modular processing method, modular is conducive to improve the efficiency of production, reduce unnecessary assembly time, reduce the overall consumption of the product, so as to reduce the consumption of human and financial resources; In the use of maintenance phase, this phase, to coordinate the relationship between the play to the government, enterprises and people's, the government is dominant, enterprise is the producer, the people are users, bengbu old town commercial street and living environment be in harmony are an organic whole, almost want to consider the relationship between the business environment and living environment, maintain good whole space environment, In this way, the renovation of old neighborhoods can be given new meaning; In the waste recycling stage, this stage means the end of the product life, but its value can still be reflected in other aspects. The production process of the first four stages is itself a green and sustainable process, with simplified recycling and innovative utilization. From the perspective of the whole life cycle, we should explore its social value, historical and cultural value, and realize the organic unity of external and internal.

3.2. Explore Local Cultural Characteristics

Culture is a necessary policy for our country's development. Different regions and different environments contain different culture. Urban culture is a means of connection between people, architecture, space and city. Sustainable renewal design advocates to protect the integrity of the spatial form and historical context of street walking, so that the cultural context of the street can continue and develop. Urban development is not only economically sustainable, but also culturally sustainable [4]. It is precisely because of the regional characteristics of culture that the features of each city are different from the city image, so as to avoid the phenomenon of urban homogeneity. Bengbu is located on the bank of Huaihe River. It not only has a long farming culture, but also the mysterious ancient Shuangdun culture, Huagudeng opera art culture and Dayu culture. The rich history and culture can be expressed through modern design methods.

In the reconstruction of old urban areas, public facilities are one of the necessary elements in the construction, which reflect the material, spiritual and cultural attributes of urban construction through the design manifestations such as modeling design, decorative art and material characteristics. In addition, the old city is the witness of the city weathered, and these traces show the different charm and characteristics of the city from the side. This requires designers to fully consider the preservation of the original and historical block cultural symbols when excavating and using local characteristics, and carry out cultural innovation and design innovation on this basis. The specific method is to deconstruct, analyze and restructure the recessive or explicit regional culture, and integrate the decorative meaning of culture into the environmental transformation to give people visual cultural impact. Taking Bengbu Hua-Gu-Deng as an example, the traditional presentation of Hua-Gu-deng art is dynamic. We can

transform the dynamic form into a static one for presentation, which can be planar or three-dimensional. The plane display mode is to display the art forms and props in the Hua-Gu-deng art performance in a plane way, such as paper-cutting, and to present public facilities by means of enlarging and material replacement.

3.3. Humanized Design Concept

The so-called humanized design concept is more people's behavior habits, physiological conditions, ways of thinking, etc., on the basis of the original design, the product is optimized and upgraded, so that the experiencers can use more convenient and comfortable. Safety, sharing and people-oriented are the main aspects of street humanized design [5]. First of all, security is the most important aspect in the renovation of urban space environment. In the old city commercial streets, messy wires, cables, bare light boxes, old sewer openings, should be the designer should pay attention to the hidden dangers. In terms of safety, another point of concern is the establishment and improvement of safety facilities for the elderly, the disabled, pregnant women and other groups. As an important part of public facilities, the purpose of improving accessibility facilities is to form a complete and continuous barrier-free walking environment. Perfect barrier-free facilities can provide people with high-quality walking experience, provide continuous and convenient walking space for pedestrians, reduce the impact of environmental reasons on people's travel, and improve the safety of street space. The commercial streets in Bengbu old town cross with the old residential areas. The commercial streets not only meet the needs of commerce, but also meet the needs of residents in daily life. Secondly, sharing concept is another important concept of humanized design. Sharing means that anything in the street space can be used by the main body, which also reflects the inclusiveness of the whole environment. Sharing is also free, and it has a strong degree of freedom. When designing some landscape facilities and landscape sketches, we can combine traffic facilities and commercial buildings, such as sidewalk traffic lights and barricades with green plants, so as to build a more vibrant urban street space. Finally, the concept of people-oriented design. People-oriented is one of the core of humanized design, which requires designers to fully understand the needs of local consumers, take demand as the guidance, look for the relationship between people and the environment in the design, and truly achieve human design [6]. The people-oriented design concept can be divided into children (as shown in Figure 3), young and middle-aged people, and the elderly to carry out targeted design and transformation, which is conducive to comprehensively grasp the effectiveness of sustainable street design and improve the quality of street environment.

3.4. Construct Continuous Street Space

The architectural styles on both sides of the streets in the old city are varied due to the environmental reasons at that time. How to achieve spatial coordination and unity is the key to build a continuous spatial street. I think we should start from the following three points. First of all, it is necessary to control the wholeness, and at the same time, the wholeness should contain diversity. Sustainable street renewal should not be a traditional "big demolition and big construction", but a local, hierarchical and spatially organized transformation with the existing style as a whole [7]. For example, some landscape pieces can not be completely eliminated, to retain their original characteristics, on this basis for innovation and design. Through the renewal of local space design, the optimization of the overall form is realized, and the overall integrity of the street space is also improved. Second, to achieve visual unity. To achieve visual unity, the main goal is to unify the facade of the building (Figure 4). Outdoor billboards and signboards attached to buildings are important elements of the landscape along the street. At the same time, its standardization is also an effective means to improve the quality of urban street landscape environment and improve people's quality of life. This measure has been fully applied in many urban design management at home and abroad. But under a lot of affection on

the one hand, outdoor advertising, signs often takes the form of out from building external wall, attract the attention of pedestrians, on the other hand the streets flooded with a large number of chaotic billboards, colorful, super scale signs and to set various billboard on the road and display products, become the important reason for the destruction of street landscape. Bengbu Old street can integrate the farming elements of the Huaihe River basin into the design of the facade of the shop, such as spring plowing and autumn harvest, which not only realizes the unity of the street facade, but also realizes the integration of culture. The last point is the reconstruction of the contour of the street outside. The renewal of the contour of the street mainly focuses on the proportion of the sky, the green scene and the ground. When people walk on the street, they pay attention to the surrounding environment and scenery all the time. Commercial streets are concentrated places for people to travel and play, take photos and punch in. The important significance of reconstructing the contour of streets is to attract passers-by to stand here, and to drive more consumers to play here, so as to increase the flow of people and improve the economic development of streets.

4. Conclusion

The renewal of commercial streets in old urban areas should be carried out sustainably on the basis of in-depth understanding of people's needs, which is conducive to the development of the whole city and the dissemination of history and culture while awakening the vitality of streets. Based on the current situation of commercial streets in Bengbu old town, this paper proposes four sustainable renewal design methods, including life-cycle design, integration of local cultural characteristics, humanized design concept and construction of continuous street space, hoping to provide certain reference for the renewal of commercial streets in other old town in the future.

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