



REGENERATION OF UNUSED SPACES - DESIGN TO ALTER PERCEPTIONS

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ABSTRACT

In the context of economic development, due to the rapid development of urban construction, a large number of idle spaces have emerged. These spaces waste urban resources, affect the image of the city, and contain unstable factors. Therefore, this paper focuses on exploring the question of "how to regenerate unused space". The author first investigated and studied some unused spaces in Jiangning District, Nanjing City, and compared and analyzed the design and transformation cases of idle spaces at home and abroad. After summarizing and summarizing, most of them can only provide solutions for a single space, which cannot be economical and reproducible. Through research and design analysis, the author hopes to explore and design an outdoor furniture module system, which can activate the value of these unused spaces and drive urban development through the combination of different forms of expression. Improve the perception of these unused spaces by nearby people, thereby opening up new design ideas for solving the problem of urban unused spaces

Keywords: unused spaces, regeneration

1. Introduction

With the rapid development of society and economy, the process of urbanization is speeding up, and people's transformation of cities has never stopped. The replacement of old and new cities is not only a "death", but also a "rebirth". Once upon a time, the urban development of "spreading the cake" has caused a variety of urban diseases to the current large-scale cities, seriously damaged the city's profound history and culture, erased people's "memories", and blocked the natural and cordial exchanges between people. However, in the context of the new normal economic development, urban construction has also begun to enter a new stage of stock optimization from incremental expansion. Space renewal has become a new theme. The transformation and utilization of unused urban space can improve people's living environment, improve urban quality and effectively stimulate the vitality of urban space to achieve urban "renewal".

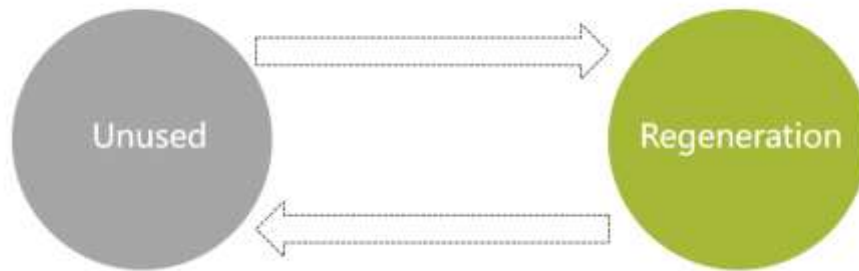


Figure 1 Diagram

1.1 Background

Jiangning District, located in the southeast of Nanjing, Jiangsu Province, China, is one of the eight main urban districts of Nanjing, an important national science and education center and innovation base, an advanced manufacturing base, transportation and logistics hub and airport hub in the eastern region of the country. Jiangning encircles the main city of Nanjing from east to west and south, and the aviation, shipping, railway and highway transportation systems converge. It is an important hub for Nanjing's external communication. With a total area of 1561 square kilometers and a permanent population of 1926100, the area I investigated is the Baijiahu Business District in the center of Jiangning District, which provides leisure and entertainment accommodation for nearby residents, urban white-collar workers, students and tourists



Figure 2 Position

1.2 Research



Figure3 Park;Roof platform; Under the viaduct



2. Objectives of the study

- 1) Explore the systematic method of updating the urban unused space, and develop and reuse the unused space.
- 2) Design an outdoor furniture module system that activates unused urban spaces through different combinations.

3. Materials and methods

3.1 Research objects

Unused space usually refers to the negative urban space that has not been fully utilized or can not play a role in the city. With the rapid development of cities, there are many unused spaces. They can be roughly divided into three categories according to their original uses:

1. Public surplus space dominated by traffic surplus, green space and temporary idle land
2. Private surplus space mainly including corner areas and old private houses
3. Industrial leftover space dominated by old docks, old warehouses and workshops

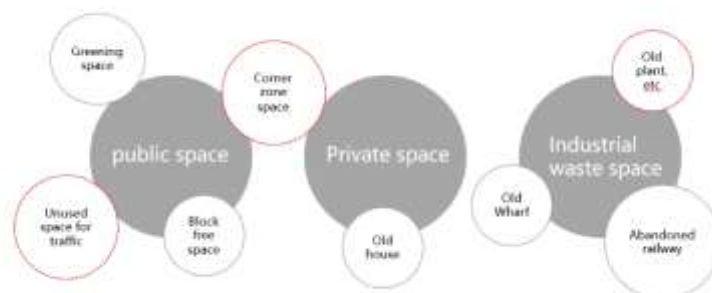


Figure 4 Unused space classification

The surplus space of a city is a universal problem in the world, not a problem of a city. As long as the society is developing and the city is under construction, unused space will always exist. This paper mainly discusses how to solve these three problems of unused space through design.

3.3 Problem analysis

1. The old factory was abandoned mainly because the buildings and facilities in the original space were old and had no use value.
2. Large area of poor lighting, easy to gather illegal activities
3. The space is monotonous
4. The space was abandoned and evaded by residents



3.4 Research method

This paper mainly adopts the method of literature research: by searching for keywords such as "unused space" on the academic platform, summarize the existing research results of predecessors on unused space, and collect outstanding successful cases at home and abroad;

Summary method: Deeply explore the existing literature on idle space, and try to find a theoretical basis for the research direction of this paper. Obtain relevant literature for classification and summary, which can help the author clear up his ideas and lay a foundation for forming his own design ideas later

Site survey method: after fully understanding a large number of cases, conduct a macro analysis of them, and select typical idle space transformation cases such as schools, viaducts, roof platforms, abandoned chemical plants for on-site investigation. In order to comprehensively understand the composition, age class, education level, living habits, main needs and other contents of the surrounding personnel, so as to better design and grasp the form of art installations, After on-site investigation and questionnaire investigation and data collection and analysis by Shenzhen People, the unused space will be activated and reused in combination with various aspects by judging the actual site and surrounding environment of the project

3.5 Case study

1.Gooood (2021) asks a question through this project : what if we expected highways to give something back to the places they cut through? A flyover can provide some shade in a hot city, and creates a small area of land that can't be developed with tall buildings. It's not such a crazy idea to make that into a public space.The design transforms the overbearing elements of concrete infrastructure into the public space of the entire local community, adds much-needed facilities and greening, improves mobility, and creates a strong visual identity for the region. On a larger scale, the design provides a repeatable approach to sustainable urban development.



Figure 5 One Green Mile. Source: www.gooood.cn

2.The roofs of Rotterdam have enormous potential, especially those of Het Nieuwe Instituut. With the panoramic view from its distinctive pergola, the building by Jo Coenen inspired the design team to create a platform 29 metres high. At 600 square metres, the platform is large enough to host a variety of events and meetings. It offers

a view of the city, of the Museum park, and of the neighbouring MVRDV-designed Depot Boijmans Van Beuningen Gooood (2021).



Figure6 Pink roof platform. Source: www.gooood.cn

Through the Case study, it is found that, as shown in Figure 4, the space under the Viaduct is deserted and evaded by residents by designing and creating a community space; Problems such as large areas of poor lighting and poor mobility. As shown in Figure 5, the new function of activating unused space on the roof is demonstrated through the use of temporary scaffolding structures and the recycling of floor materials. To achieve sustainable development of the city.

3.6 Materials

The materials selected for design are environmentally friendly and pollution-free, which can be divided into three categories Class refers to materials that can be recycled and reused, such as metal, stone, anti-corrosion wood, plastic, etc; The second type is biodegradable materials, such as paper, bark, sawdust, rattan weaving materials, recycled pine, etc; The third type is materials that can be used as building raw materials, such as sand, stones, gabions, red bricks, stones, logs, etc., which are selected based on the actual usage scenario.

4. Results

- 1). Explore principles and strategies for regenerating unused space

This paper mainly analyzes how to regenerate unused space, and according to different types of idle space, improve their utilization rate, and puts forward the concept of temporary art installation design. She added a temporary art installation based on the original unused space attribute. The activity of the site is improved, so that the site is no longer idle. The temporary art installations in the site can be moved at any time according to the needs, which will not pollute the site and will not affect the reuse of the site. Analyze the research status at home and abroad, through case study, and then propose solutions to regenerate unused space according to the actual site survey status of unused space, causes of formation, and existing attributes of space.

- 2).Design a "temporary art installation" to activate unused space



According to the current characteristics of unused space, the regeneration of unused space should meet the principles of function, sustainability and people-oriented. The design can make the site a new site that can be used. Be harmonious with the surrounding environment and people. At the same time, it should be representative.

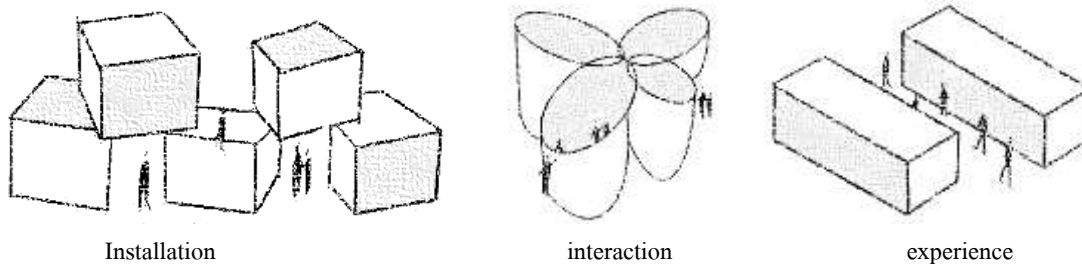


Figure7 The Diversity of Modular Art

5. Discussion

The current renovation design of unused space has its uniqueness, as it is a separate design for a unique site without any duplication. However, the modular furniture system design proposed by the author is an important component of urban sustainable development construction. It not only improves urban land use efficiency, but also provides an interesting activity place for surrounding residents. At the same time, it stimulates people's desire to explore, attracts them to stop, and increases communication between people and space. Therefore, through reasonable design and utilization of urban idle space, not only can a more distinctive public environment be created, a positive public environment atmosphere be created, but also urban vitality can be enhanced and urban content can be enriched. It has certain promotion value.

5.1 Design exploration

A stall is an important place in everyday life. In a crowded street or square, amidst the bustling crowds, a family of three strolling, playful children, off duty staff, intimate couples, and a young man sweating profusely just out of the stadium The photography booth is named "Selling Happiness" and records beautiful moments among the crowds, capturing the beauty and current happiness.

The design of the stall setting device uses a motorcycle as the carrier for easy movement and easy operation. The overall color scheme has chosen a bright yellow and white combination, which is fresh and warm, warm and unrestrained. The graphics are presented in a combination of color blocks and lines, with a concise processing. This can enhance the vitality of unused space.

Existing problems: The size is too small to support the entire theme of the paper, the economic benefits are not high, and the user group can have more choices.



Figure8 Option 1

5.2 Design exploration

The design is inspired by natural beehives and is presented in a modern way, achieving highly flexible use and layout, making it appear static but highly adaptable, giving it another vitality. This design can also be changed according to the environment and occasion of the community.

The 'hexagonal module' attempts to meet many different community scenarios simultaneously with a highly flexible system. Change its layout and form through its placement, and evolve into objects that meet the needs according to different occasions or activities. Provides space for activities such as rest, chat, and play, thereby updating unused space.

Existing problem: Hexagonal shapes are too common without certain uniqueness, and one of the modular bookshelf combination spaces has certain limitations in indoor use, which does not meet the scope of previous unused space research, and the materials are too single.

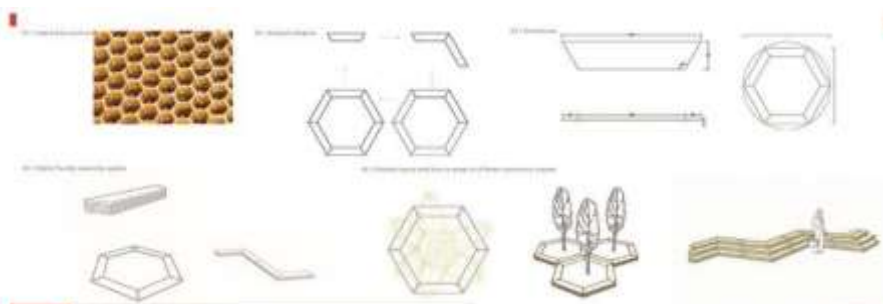




Figure9 Option2

6. Conclusion

During this period, I explored various solutions, but there were some problems in the early stages. Finally, under the guidance of Ajarn, the final idea was to design a modular furniture system to explore unused space solutions, which can obtain inspiration based on different spatial scenarios to meet personalized needs.

The final shape of the module I want to design is similar to "z", with a single module height of 1000mm

As shown in Figure 10, the design inspiration for the "Z" shaped module comes from the common wire mesh in daily life. Select one of the individual shapes to refine and simplify to form a specific design element, and on the basis of meeting structural safety, use artistic intervention and overlay new functions to reflect the renewal of unused urban space.

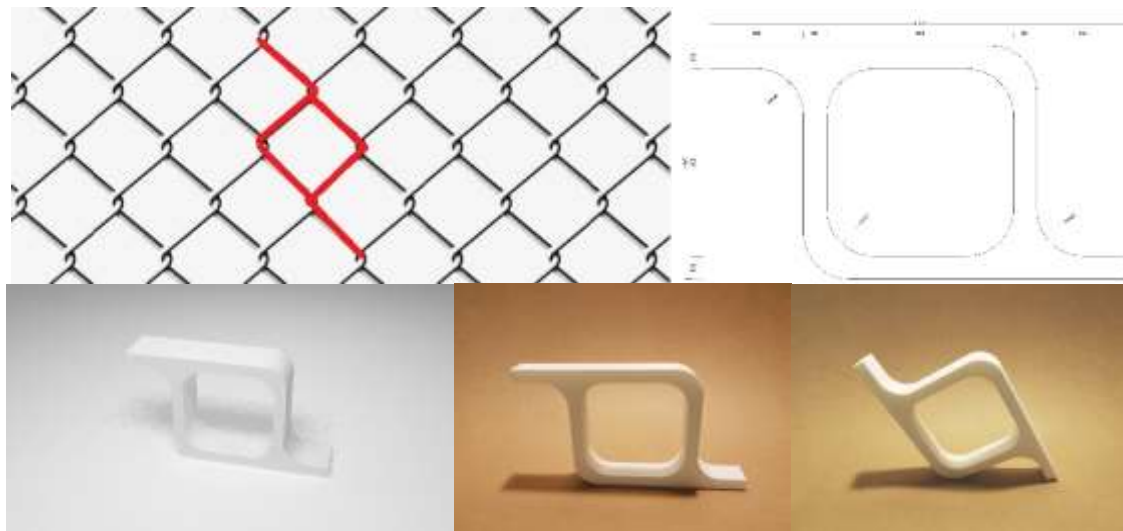


Figure10 Module



Figure11 Module Structure Link

The first scene space is a park space, where a modular outdoor furniture system is designed and trees are integrated into the system, while also providing rest functions.



Figure12 Use space

The second scene space is the community, where a modular system can be used to design a versatile space for placing bicycles and other functions, which can improve the phenomenon of disorderly parking in the community.



Figure13 Use space

The third scene space: building roofs, where a modular system can be used to design a water tank product with functions such as collecting rainwater.



Figure14 Use space

The fourth scene space: under the viaduct, design a modular system that can be placed under the viaduct space, providing a temporary place for homeless people to belong.



Figure15 Use space

Finally, through the modular system project, a series of exploration designs for different unused spaces are carried out, updating the unused spaces and encouraging people to stay and play here. I hope people can participate in changing the current situation and updating the design of unused spaces.



Figure16 Use space



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