

# A Study on the Reconstruction of Rural Negative Space Landscape Based on Local Characteristics

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**Abstract:** As the ancient capital of 13 dynasties, Xi'an is characterized by the inheritance of historical context. It embodies the organic combination of cultural relic protection, transportation transformation, ecological improvement, cultural display and people's livelihood, making Xi'an a "historical living fossil" full of emotion and temperature. Xujiashuang is a typical urban village area. Combined with the historical context, it is also the main direction of the negative space transformation of urban villages. The continuation of the negative space transformation of Xujiashuang combined with this characteristic is undoubtedly an important way to promote economic development and inherit the historical context. The transformation of negative space should take the needs of residents as the starting point, and only through positive transformation and upgrading of residential buildings, streets and lanes, and activity venues, can it become a humanized space. Urban villages as the urbanization process, the products have been alienated from urban surrounding environment, this paper takes xi 'an high-tech zone Xujiashuang for example, in view of the present urban villages, through on-the-spot investigation induce negative space problem at present, and analyze the problems, finally put forward the corresponding solution strategy, in order to provide ideas for the modification of the city of negative space.

**Keywords:** Negative Space, Landscape Vibrancy, Active Transform

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## 1. Introduction

In his book "External Space Design", Ashihara Yoshinobu argues that scattered and unorganized spaces in the neighborhood, including intermediary spaces between buildings, corner spaces between roads and bridges, abandoned spaces of unknown use, and redundant spaces without design, all belong to the category of negative spaces.

Negative spaces are also known to as lost spaces, as Roger Transik, In Search of Lost Spaces, points to "underutilized and decaying spaces. These spaces are unpleasant, anti-traditional urban spaces that need to be redesigned and do not benefit the environment or the users; they have no definable boundaries and do not connect elements of the landscape in a coherent way". [1].

On the one hand, urbanization has led to a significant

improvement in the image of the city, and the architecture and landscape of the city have changed dramatically. On the other hand, under the city's glamorous image still has some "lost space", such as cohesive zone between buildings, traffic ancillary space (such as space under the viaduct, binjiang road space), and some of the abandoned underground space roof space (shelter, tunnel), etc. [2] It also include the urban village street space that cannot progress in the urbanization process, which has great difficulties in landscape enhancement. [3].

## 2. Overview of the Site

### 2.1. Location

Xujiashuang is located in the southeast of Guanghua Road, electronic city sub district, Yanta District, Xi'an, Shaanxi Province, and the north of Technology Road. It is adjacent to

Xi'an National High Tech Development Zone. It is a typical village in the city area. Currently, Xujiashuang Village covers an area of 202 acres and has more than 670 indigenous families and a large transient population of about 50,000 people. There are 14 main streets in this area, and the main economy of villagers comes from housing rental and village collective economic distribution. Multiple economies

and tertiary industries are the new trend of economic development in Xujiashuang Village in recent years. The towering old buildings squeezing the increasingly narrow streets, thus causing more space problems, is a microcosm of Xujiashuang Village, an urban village in Xi'an, which has common problems with other urban villages and special features. (Figure 1).



Figure 1. The location of Xujiashuang.

## 2.2. Development History

Xujiashuang Village in the early construction, coupled with the continuous occupation of foreign workers, so that the entire Xujiashuang Village to bear a larger flow of population at the same time, but also to the weak infrastructure construction caused a serious impact in the rapidly changing high-tech zone, Xujiashuang Village was abandoned behind the urban development, become the urban core of a piece of "moss". Incompatibles with the surrounding construction is an urgent problem to be solved in the new era. [7].

Xi'an's High-Tech District is one of the most modern urban areas in Xi'an, with its towering office buildings and the highest concentration of modern residential areas in the city. Therefore, Xujiashuang, which is located in the center of High-Tech District, is in close proximity to the fast-growing High-Tech District.

Xujiashuang Village itself, with different features and identities, has undergone updating and iterations with the development of the surrounding buildings in the high-tech zone, but it still retains its original appearance. [4] This has led to the village itself with the surrounding, street considered the status quo, village street alley, similar to that

of while carrying rich the vibrance of daily routine, but the business model that deviates more and more from the contemporary lifestyle, with crowded stores and breakfast stalls, causing inconvenience to residents in terms of traffic and travel.

## 2.3. The Significance of Negative Space Transformation in Urban Villages

Xujiashuang looks dilapidated in the high-rises high-tech zone, but as a complete administrative village, it is fully functional. The way of economic development is mainly stores on both sides of the streets, and the consumer group is basically the residents of the village in the city, so the development is not optimistic. In addition, the village has neglected its historical heritage in the development process and did not form the situation of economic development based on cultural heritage. [5].

As the capital of the 13th dynasty, Xi'an's historical heritage is the signature feature of the city, reflecting the organic combination of heritage protection, transportation transformation, ecological enhancement, cultural display and people's welfare. [6] It makes Xi'an "historical living fossil" rich in emotion and temperature. Combining with historical heritage is also the main direction of negative space



renovation in urban villages, and the continuation of negative space renovation in Xujiazhuang combined with this feature is undoubtedly an important way to promote economic development and inherit historical heritage.

### 3. Existing Problems and Analysis

This chapter mainly through the way of questionnaire, summarizes the existing main problems currently Xujiazhuang landscape, through to living in the fixed and rented people, young and old, freelancers and fixed employed different crowd investigation, summarizes the existing problems, and analyzes the reasons, and then puts forward the response measures. [8].

#### 3.1. The Main Problems of the Site

While high-density cities are a state of extreme urbanization, the status quo of urban villages is the state after one or more rounds of urbanization. As can be seen from the plan, the surrounding environment of Xujiazhuang is significantly different, with dense buildings and backward transportation facilities, and there is no mention of greening. Secondly, the problem of land ownership in urban villages has led to the wild growth of residential houses, which lack control measures and are not well integrated with the functions of the surrounding areas in the process of urban pattern. There are many inconveniences and constraints in the life-style of villagers, and their long-term stay in such an environment is likely to breed physical and psychological problems, leading to frequent crimes.

##### 3.1.1. Space Negativization

The buildings in Xujiazhuang area are multi-storey residential buildings. The first floor facing the street has shops, while the upper floors are mainly for residential purposes. Most of the buildings have aging building surface material and damaged building components due to the long construction period, and the new buildings added at a later stage have destroyed the architectural style and spatial texture structure of the whole area. And the buildings are covered with ropes, wires and other debris, the lack of infrastructure in the area, the only part also tends to age and far from meeting the needs of the new era of information life, the overall environment in the area is poor. The ratio between the width of the road inside the area and the height of the buildings on both sides is close to compact, and there are motor vehicles and non-motor vehicles occupying the road, and various modes of traffic coexist in the streets on both sides, and the mixed traffic reduces the safety of traffic and the capacity of the road. The ground floor along the street is mostly stores and service facilities facing the residents. The building interface is more fractured and not uniform in form, resulting in poor visual effects and great variation in the activities of residents. The area is short of landscape greening and corresponding service facilities, and there is no fixed and effective leisure space, so the overall space is in a negative state. (Figure 2).



Figure 2. Status quo of the figure.

##### 3.1.2. Traffic System Disorder

Xujiazhuang area has three external roads with moderate road grades and convenient traffic. However, the internal roads of the area have serious indiscriminate parking, occupy the road phenomenon, non-road space is filled with vehicles, shared bicycle pile up everywhere; at the same time the lack of traffic function of the classification, motorized, non-motorized, pedestrians mixed together; pedestrians wander freely, walkway slow space to be optimized; unlimited speed setting inside the road, slow traffic there are safety hazards. Walls or structures cut off access roads, forming multiple cut-offs and becoming more unknown and hidden spaces, and at the same time reducing the utilization of space and the probability of residents of existing settlements to meet and communicate with each other, which is not conducive to the formation of harmonious settlements. Therefore, the chaos of road traffic system in the area leads to the chaotic use of space and the degradation of living quality in the area, as well as the abandoned and misused space, such as garbage piled up in an open space and disposed of in the open, which has a certain negative impact on the quality of life of the existing residents.

##### 3.1.3. Neighborhood Alienation

Due to the narrow space, the lack of public activity space and the lack of environmental quality in the area, the frequency of residents' interaction activities is reduced, there are less people socializing in the area, and the internal space is severely lacking in functionality. Although the residents of the existing community may build a certain circle of social relations in the long-term daily life, the lack of spatial environment in the area will still have a fatal weakening effect on its formation and development, which has a profound impact on the construction of a harmonious society and a harmonious settlement in the new era.

#### 3.1.4. Lack of Landscaping

The lack of landscape greening space in the area leads to many problems. The living quality of residents in existing residential areas is poor, and the "green lung" function urgently needed in the city is lacking to alleviate the huge living population. At the same time, the lack of greening leads to the incomplete walking slow system, and the reduction of communication activities and vitality of residents in existing residential areas. In addition, the small spacing between buildings in the area and the lack of public space, the road occupation of motorized and non-motorized vehicles and sundries leads to more restricted landscape space.

### 3.2. The Reason of Negative Space in Xujia Village

#### 3.2.1. Functional Reason

A negative public space often loses its original function and becomes a place that does not consistently generate services and productive value, a place without purpose, function, or substance. The functional value is linked to the purpose of the visit, and an imbalance in function will directly lead to the disappearance of the visitor's purpose.

#### 3.2.2. The Reason of Location

If the functional reasons are the subjective factors that produce negative space, the locational reasons are the irresistible objective reasons. The massive loss of population, the transformation of regional industries, and the competition for traffic in urban commercial areas will all lead to the amplification of the negative side of the area. Therefore, it is difficult to go about solving the related problems in the area concerned. At the beginning of the project, it becomes difficult to increase the radiation rate across layers due to the lack of consideration of later changes in the current location. For example, the radiation of Xujiazhuang village was limited to a certain range and far from the outside world.

#### 3.2.3. Regional Image

So far, more than expected, urban development is lagging behind the market projects, often in the "old, broken, small" cured image, such as the space under the bridge, the parking lot area, or the old space in the urban village, it is difficult to escape the image of dark, damp, dusty, etc., even if how much more updated, as long as it is not A new world, it is difficult to escape from the solidified image. The image of Xujiazhuang Village as a dirty, messy and poor place is already deeply rooted in people's minds.

#### 3.2.4. Self-reasons

Old buildings and spaces usually imply designs and plans from the past, designs from decades ago that are difficult to adapt to needs and standards of today. The continuous withdrawal of human traffic leads to the gradual return of project functions to nothing. Due to the above reasons, there are a large number of negative spaces in urban villages. They are either a complete but single project, or a part of a project,

sometimes even a small separate area, whose functional and commercial value is severely lacking.

## 4. Response to the Transformation of Negative Space

In 1994, Roland Osterta, a German architect, proposed that "it is not space that creates life, but life that creates space". [9] It can be seen that the transformation of negative space should take the needs of residents as the starting point, and only through active transformation and upgrading of residential buildings, streets and lanes, and activity venues, can it become a humanized space. The landscape transformation of Xujia Village is mainly realized by the following means:

#### 4.1. Green Implantation, Creating Vitality

As a scarce resource, green open space is an effective scheme to promote the revival of urban villages, which can gather people and promote the redevelopment of small Spaces. In the reconstruction design of negative space landscape in Xujia Village, two aspects should be considered: the planning based on a large perspective and the urban micro-landscape darning work. Recently, with the rapid urbanization of large areas of cities and the emphasis on the concept of "urban double renovation", it is inevitable that urban design will form a relatively holistic planning thinking inertia. Holistic design is important, but to some extent, it leads to the lack of attention to the small-scale space such as negative space. Urban villages have narrow spacing between buildings and narrow roads, and there is no large site for transformation. The small scale space can only be redeveloped by means of landscape design. The structural grasp is like outlining the outline, only when the outer frame is proportionally correct, the details can be effectively depicted. [10].

The design exploration mainly focuses on the micro life of citizens, and the transformation of micro space in the existing space by landscape means, mainly through three-dimensional greening, rooftop garden, three-dimensional plant hangers and other ways to achieve the goal of green implantation. Rooftop gardens are explored and renovated and updated, not only green implantation, but also new functions are added to make urban agriculture a reality, and vegetables and flowers are grown for amusing oneself. [11].

Xujiazhuang Village is surrounded by high-rise buildings, which greatly affects the cultural heritage of the urban village, so the planning of the whole village is extremely important, and what kind of space to create and what kind of form to present is the problem to be focused on in the later stage of detail grasp. Stimulate the commercial value of negative space, cultural value as well as humanistic value, etc. [12] Although these places are always neglected by default, they still have value space and cultural space worth exploring when the orientation seems dead, which is the charm of urban villages.

#### 4.2. Import Function to Build Popularity

Stimulating the vitality of negative space is to some extent equivalent to giving it a new function, and the core functions and accumulated trends introduced can quickly take the lead. In an era of rapid urbanization, the cultural value is often overlooked and its commercial value is very profound, especially in the ancient city of Xi'an with a deep cultural background, how the village combines modernity and culture determines its own outcome, using the surrounding commercial functions, which itself contains the culture to attract people. High-Tech Road, Science and Technology Road, Baisha Road, and Guanghua Road enclose an area adjacent to Xi'an High and New Technology District, and the surrounding area can make it an important cultural activity area, commercial area and leisure area.

In urban villages with dense buildings, it is difficult to carry out large-scale renovation, so if we want to optimize the space, we can only choose to open up space in them and carry out "micro-transformation" to optimize the structure of public space. [13] The design explores the transformation and renewal of roads, traffic and stores, and the implantation of ecological and information devices to make the site more dynamic. The micro-spaces formed by revitalizing the gap spaces provide more possibilities for residents' activities and communication, such as small spaces for tai chi, square dance and other activities.

#### 4.3. Repositioning to Cope with Competition

From the internal point of view, with the development of the economy, the homogenization of various types of consumption in Xujiazhuang is serious, making it difficult to cope with the increasingly fierce business competition and separating from the needs of the target consumer groups, leading to a gradual loss of competitiveness. [14] From the external environment, with the rise of the Internet and the diversification and modernization of lifestyles, the old model can no longer meet the needs of most of contemporary people. Therefore, the village must pay attention to the mutual integration with its surroundings and provide fresh contents so that it can achieve a balance with its surroundings, thus making the space less negative.

### 5. Conclusion

With the continuous development of the city, the overall space is relatively stable, but the micro-space reflects uneven phenomena, which should cause concern when the landscape economy of urban villages lags behind. [15] This is not only a problem fed back during the development of urban village space, but also provides an opportunity for landscape transformation and enhancement at the same time. Negative space through positive transformation will benefit the integration of the whole urban space, and at the same time create new opportunities for landscape innovation in the city.

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