

# Revealing Stratification Dynamics and Catalytic Renewal Strategies for Ancient City Historic Districts: A Case Study of Sanyi Street in Jingzhou Under the Lens of Urban Catalyst Theory

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**Abstract:** *As a significant component of China's historical and cultural heritage, Sanyi Street in Jingzhou Ancient City has encountered the dual challenges of preservation and development amid the ongoing urbanization process in recent years. Grounded in urban catalyst theory and cumulative layer theory, this study conducts a stratified analysis of the historic district from both spatial and temporal dimensions. It systematically delineates the historical development trajectory and cultural significance of Sanyi Street, while examining its spatial configuration, architectural styles, street scales, and landscape systems. Subsequently, a renewal strategy for the ancient city historic district is formulated through point-based, linear, and intangible catalysts. This approach effectively reconciles the inherent tension between preservation and development in Sanyi Street, facilitating an integrated coexistence of historical heritage and contemporary urbanity. The findings not only provide a scientific foundation for the protection and renewal of Sanyi Street but also offer valuable references for the conservation and revitalization of other historic districts.*

**Keywords:** Protection of historical districts, Urban catalyst theory, Cumulative layer theory, Sanyi Street in Jingzhou Ancient City, Renewal strategy.

## 1. Introduction

The theories of urban catalyst and stratification provide new ideas for the protection and renewal of historical blocks. The core idea is to introduce new elements or reactivate old elements in the city, and through small-scale and incremental design and intervention, stimulate the potential of the area and promote the sustainable development of the city [1]. The stratification theory emphasizes analyzing the evolution process and current characteristics of historical blocks from two dimensions of time and space [2]. Taking Sanyi Street in Jingzhou Ancient City as the research object, this paper analyzes the spatio-temporal stratification characteristics of the ancient city block from the perspectives of urban catalyst theory and stratification theory, and proposes appropriate renewal strategies according to the catalyst theory, hoping to provide reference for the protection and renewal of similar historical blocks [3].

## 2. Overview of Urban Catalyst and Stratification Theory Research

As the important basis for constructing the renewal strategy of the ancient city historical block in this paper, the urban catalyst theory and the stratification theory are first cognized conceptually to lay a solid foundation for the subsequent use of the stratification theory to analyze the stratification of the ancient city historical block and then constructing the renewal strategy of the historical block by means of urban catalyst.

### 2.1 Urban Catalyst Theory

The urban catalyst theory is a concept proposed by American urban planners Wayne Attoe and Donn Logan at the end of the 20th century [4]. This theory was first elaborated in the book \*American Urban Architecture - The Catalyst of Urban

Design\*, which promotes the continuous and incremental development of the city by introducing new or reactivating old urban elements and forms a virtuous cycle [5]. The proposal of this theory provides a new perspective and method for urban renewal and historical block protection.

The urban catalyst theory has great flexibility and adaptability in practical applications. By introducing and activating different catalyst elements, it can address different types and scales of urban renewal and historical block protection issues. For example, in the renewal of old urban areas, the attractiveness and vitality of the block can be enhanced by repairing and revitalizing historical buildings, introducing cultural and creative industries, and increasing public space.

### 2.2 Stratification Theory

The concept of "stratification" originated from geography and was later introduced into the field of historical and cultural protection. It holds that the heritage and landscape in the city are the combination of nature and humanity, and are the "stratified" expressions of the dynamically changing historical time. The stratification in the field of cultural heritage is regarded as the successive accumulation of urban historical landscape elements in time, with the attribute of dynamic change [6].

Its characteristics are manifested in diachronicity and synchronicity. Diachronicity starts from a longitudinal perspective, emphasizing the excavation and sorting of historical cultures in different periods, and exploring the cultural connotations and evolutionary logics contained between different historical strata [7]. Synchronicity starts from a horizontal perspective, focuses on the element composition in each period, analyzes and discusses the changes of a single element in its time course and the

historical and cultural connections of other related elements, and realizes holistic protection. Through the relationship of temporal and spatial stratification, from static to dynamic, from single entity to system, from modern times connecting history and future, the multi-faceted connections of history and space in terms of culture and function are integrated to achieve the systematicness and integrity of protection [8].

The material and non-material in the stratified space exert a radiation effect, including the overall development of the city at the macroscopic level and the protection and restoration of buildings at the microscopic level, etc., becoming an important driving force for the generation and evolution of the urban landscape heritage [9].

### **3. Temporal and Spatial Stratification Analysis of the Historical and Cultural Block of Jingzhou Ancient City**

#### **3.1 General Situation of Sanyi Street in the Historical and Cultural Block**

Sanyi Street in the historical and cultural block is located in the central area of Jingzhou Ancient City and has rich historical and cultural heritages. It is not only the carrier of historical culture but also an important place for the daily life of the residents of the ancient city. It has witnessed the historical changes and development evolutions of the ancient city and has important historical, cultural and social values. There are tourist attractions such as the Chengtian Temple Stele, the Historical and Cultural Tourism Area of Jingzhou Ancient City, the King of Chu Chariot and Horse Formation Scenic Area, and Jingzhou Museum near it.

According to the investigation, there is currently no systematic and complete functional zoning plan for Sanyi Street, and the green space utilization rate is relatively low. Most of the buildings in the current Sanyi Street are dilapidated. The facilities are aging, the wires are old, the environment is relatively poor, and there are quite a few potential safety hazards. The infrastructure in the street is not perfect enough and needs to be strengthened in management and renovated again. Sanyi Street faces the dual challenges of protection and development. How to achieve the modernization and sustainable development of the block while maintaining its historical and cultural characteristics has become an urgent problem to be solved.

This paper will analyze Sanyi Street from two dimensions of "time - space" through the stratification theory, explore its stratification, find the connections between different dimensions, analyze the current situation, and then propose renewal strategies based on the urban catalyst theory.

#### **3.2 Stratification Exploration in the Time Dimension**

The stratification exploration in the time dimension is a crucial step in analyzing the historical block of Sanyi Street. By sorting out its historical evolution and cultural value, we can comprehensively understand the historical development context and cultural accumulation of the block, providing a scientific basis for subsequent protection and renewal work.

#### **3.2.1 Historical Evolution**

During the Ming and Qing dynasties, Jingzhou Ancient City, as an important military town in the middle reaches of the Yangtze River, Sanyi Street was the main commercial and residential area and began to take shape. The layout of the block was regular, with shops lining both sides of the street, making it the central area of commercial activities at that time. There were many representative buildings in the block, such as temples and traditional residences. During the Republic of China period, due to wars and social unrest, some buildings in the block were damaged to varying degrees. Nevertheless, Sanyi Street remained an important living area for the ancient city residents, carrying rich historical memories and cultural heritages.

In recent years, with the acceleration of urbanization, many traditional buildings and historical relics have been damaged during urban expansion and renovation, and the historical features and cultural value of the block have been gradually eroded. In recent years, the government and all sectors of society have begun to attach importance to the protection and renewal of Sanyi Street in order to protect and inherit its historical and cultural heritages.

#### **3.2.2 Cultural Value**

Sanyi Street carries rich historical cultures. The public spaces in the block, such as squares and teahouses, are important places for residents' daily communication and social activities. In recent years, with the enhancement of cultural protection awareness, the cultural value of Sanyi Street has been emphasized. The government and social organizations have protected and promoted the cultural value of Sanyi Street by organizing cultural activities and establishing cultural heritage protection areas. These measures have enhanced the cultural connotation of the block and provided more opportunities for community residents to participate in culture.

### **3.3 Holistic Association in the Space Dimension**

#### **3.3.1 Spatial Form**

The spatial form of Sanyi Street has typical characteristics of traditional urban blocks. The block presents a regular grid - like layout, with commercial shops and traditional residences distributed on both sides of the main roads. The spatial structure of the block is compact, with dense buildings and wide streets, forming a urban space with clear functions and reasonable layout.

With the development of social economy, modern buildings have been newly built in the block, forming a block style that combines the old and the new. The commercial function of the block has been further enhanced, and the space utilization has become more diversified. In the later period, due to wars and social unrest, some buildings were damaged. At the same time, with the expansion and transformation of the city, some traditional buildings and historical relics were demolished, and the historical features gradually disappeared. The construction of modern buildings and infrastructure has changed the spatial layout of the block, making it more

adaptable to the development needs of modern cities. This process has also led to the loss of historical culture.

### 3.3.2 Architectural Style

There are a large number of representative traditional buildings in Sanyi Street, and their architectural styles have obvious traditional characteristics. Most of the buildings are of wood and brick structure, and the roofs mostly adopt the hip roof or the gable roof. The decorations of the ridges and eaves are exquisite, with a strong southern ancient city architectural style. The wood carving and stone carving techniques on the building facades are extremely exquisite.

It is extremely diverse in form and function, including both traditional residential houses and new public and commercial buildings. Since 1949, new architectural styles and technologies have built some modern residential and commercial buildings in the block. These buildings are more in line with the needs of modern life in terms of function, but there are significant differences in style from traditional buildings, resulting in changes in the overall block style and weakening of historical features.

### 3.3.3 Street and Alley Space Scale

The street and alley layout of Sanyi Street has typical traditional characteristics. The main roads are wide and straight, with shops and residential houses distributed on both sides, forming clear commercial and residential areas. The secondary streets and alleys are relatively narrow, connecting the main roads and residential areas, providing a relatively private living space. The street and alley network in the block is compact, and the functional areas are clearly defined.

### 3.3.4 Block Landscape System

The natural landscapes in Sanyi Street are mainly green spaces and water bodies. The green space parks in the block are important places for residents' daily activities, and the water bodies and lakes add vivid natural landscapes to the block. The natural landscapes contrast with the historical buildings in the block, forming a unique urban historical landscape.

The cultural landscapes in Sanyi Street include historical relics and cultural symbols, such as ancient wells, stone tablets, sculptures, and memorial arches, etc. They not only display the historical and cultural value of the block but also enhance the historical atmosphere of the block. These cultural landscapes enrich the cultural connotation of the block and improve the overall quality of the block.

## 4. Construction of Renewal Strategies for the Historical Blocks of Jingzhou Ancient City

After conducting a stratigraphic analysis of the historical blocks of Jingzhou Ancient City from two dimensions of "time - space", the urban catalyst theory is used to carry out micro - updates, a small but refined model, on the historical blocks of the ancient city. Update strategies are constructed through point catalysts, line catalysts, and non - material catalysts.

### 4.1 Point Catalysts: Updating the Spatial Form of the Block

The point catalyst strategy mainly realizes the renewal and activation of the block by adding new public spaces, improving infrastructure, and reshaping the landscape system within the historical block. This method emphasizes targeted renovation and optimization in local areas, and through point - like intervention measures, it drives the overall improvement of the entire block to update the spatial form of the block.

#### 4.1.1 Adding Public Spaces

Add small squares and parks to provide places for residents and tourists to relax, entertain, and socialize, enhancing the attractiveness of the block. At the same time, add multi - functional public spaces such as community centers and cultural activity centers to meet the needs of different groups. These spaces can not only provide venues for cultural, educational, and entertainment activities but also promote communication and interaction among community residents, enhancing cohesion and a sense of belonging.

#### 4.1.2 Improving Infrastructure

Improve the roads and transportation facilities in Sanyi Street to enhance the traffic convenience and safety of the block. Repair and widen the main roads and secondary streets in the block, set up public transportation stops and parking lots to facilitate the travel of residents and tourists. At the same time, improve the water supply, drainage, and power facilities in the block, update and maintain the old water supply pipe networks and drainage systems to solve the water use problems and poor drainage problems in the block.

#### 4.1.3 Reshaping the Landscape System

Preserve the historical memory and cultural value of the block by protecting and restoring historical landscapes within the block, such as ancient trees, stone tablets, and traditional courtyards. For example, protect and restore the ancient trees in the block, set up protective fences and landscape signs to introduce the history and cultural background of the ancient trees. Repair and maintain the stone tablets and traditional courtyards to restore their original appearance. Through multi - level landscape design, enrich the landscape level and spatial experience of the block.

### 4.2 Line Catalysts: Unclogging the Block Road System

Based on the previous point catalysts, line catalysts emphasize unclogging and improving the block road system to enhance the traffic convenience and spatial connectivity of the block from "wide streets - narrow alleys", making the traffic system of the block more complete, thereby improving the overall function of the block and the quality of life of residents.

#### 4.2.1 Wide Streets: Unclogging the Road Network and Road Repair

The "Wide Street" is the main road in the block. As the backbone of the block's transportation, its functionality and

accessibility directly affect the traffic conditions of the entire block and the travel experience of residents. To improve the traffic convenience of Sanyi Street, the following measures are taken to repair and widen the main road.

First, inspect and repair the existing main road. Repair and maintain it to improve traffic safety and comfort. Then, appropriately widen the main road. Change the original one-way lane to a two-way lane, add parking spaces and non-motor vehicle lanes on both sides of the road to enhance the functionality and diversity of the road. While repairing and widening the main road, optimize the traffic organization in the block. Set traffic lights and marking lines to regulate traffic flow and driving order; set pedestrian crossings and

overpasses at main sections to ensure the safety of pedestrians; set bus stops and taxi stands at appropriate locations to facilitate the travel of residents and tourists.

Finally, enhance the road landscape to improve the environmental quality and visual effect of the block. Through landscape design, improve the environmental quality of the road and enhance the attractiveness and livability of the block. Set green belts and flower beds on both sides to create a green and lush street landscape; set benches, trash cans and lighting facilities beside the road to enhance the functionality and convenience of the road. Figure 1 shows the schematic diagram of the road system of Sanyi Street on the "Wide Street".



**Figure 1:** Road System of Sanyi Street on the "Wide Street"

#### 4.2.2 Narrow Alleys: Incorporate Capillary Paths and Weave New with the Old

The "Narrow Alleys" are an important part of the internal connection and circulation in the block. By adding and optimizing the fine traffic network, improve the accessibility and connectivity of the block, promote the internal vitality of the block, and achieve the goal of weaving new with the old [10].

Capillary paths are the small alleys and pedestrian paths within the block, which are important channels for residents' daily travel and activities. Through them, improve the internal connectivity and accessibility of the block, plan and build new paths within the block to connect the main public spaces and residential areas, form a pedestrian network, clear obstacles, and ensure the safety and smoothness of the paths. At the same time, improve the walking environment to enhance the livability and attractiveness of the block. Set green landscapes and art installations at key nodes to improve the environmental quality and visual effect of the paths. Set leisure and entertainment facilities at the nodes, such as small squares, outdoor cafes, etc., to enrich the walking experience; organize various community and cultural activities along the line to enhance the vitality and interactivity of the pedestrian paths.

#### 4.3 Intangible Catalysts: Carry on the Historical Cultural

##### Context of the Ancient City

Intangible catalysts are to carry on the cultural context of the historical block through cultural and social activities. By repairing historical buildings, promoting cultural dissemination and introducing commercial formats, stimulate the cultural and economic vitality of the block, and achieve the sustainable development of the ancient city block.

##### 4.3.1 Repair Historic Buildings and Preserve the Urban Cultural Context

Historic buildings are important cultural heritages of the ancient city blocks, carrying rich historical memories and cultural values. Through repair and protection, the historical context of the city can be effectively preserved and inherited.

Evaluate and classify the historic buildings in Sanyi Street. Develop a repair plan, adopt technologies and materials that conform to the characteristics of historic buildings, and maintain the original appearance and historical style of the buildings, such as wood carving, brick carving, and stone carving. Repair the exterior facade and interior decoration of the buildings. At the same time, pay attention to detail processing to ensure that the repaired buildings are both historically authentic and meet modern usage requirements.

#### 4.3.2 Linkage among Ancient City Areas to Promote Cultural Dissemination

After repairing the historic buildings, integrate and plan the historical areas around Sanyi Street to form a coherent historical and cultural area. Integrate the historical resources inside and outside the blocks to build a systematic historical and cultural network. Repair and connect the ancient city walls and streets inside and outside the blocks to form a historical and cultural route. Link with other areas to carry out cross-regional cultural exchange activities to enhance the cultural radiation and influence.

#### 4.3.3 Introduce Commercial Formats to Stimulate the Vitality of the Ancient City

In the process of introducing commercial formats, pay attention to the combination of commerce and culture to enhance the cultural atmosphere and commercial value of the blocks. Transform historic buildings into cultural theme stores and art studios, selling cultural products and artworks with local characteristics. Combine cultural activities and commercial activities to create a lively commercial atmosphere, attract more residents and tourists to participate, enhance the economic and cultural value of the blocks, and stimulate the vitality of the ancient city.

## 5. Conclusion

After conducting a layered analysis of the Sanyi Street Historic Block in Jingzhou Ancient City, this paper proposes renewal strategies in combination with the theory of urban catalyst. Through the comprehensive application of point catalysts, line catalysts, and non-material catalysts, the ancient city block is renewed to continue the historical context, thereby enhancing the vitality and sustainable development ability of the block and achieving the harmonious coexistence of history and modernity.

The renewal strategies proposed in this paper are highly feasible and practically significant. They are not only applicable to Sanyi Street in Jingzhou Ancient City but also have important reference value for the protection and renewal of other historical blocks. By combining theory with practice, comprehensively analyzing and understanding the unique values and characteristics of historical blocks, and formulating scientific and reasonable protection and renewal plans, it provides reference and guidance for the historical blocks of other cities. It is hoped that the results of this study can promote the further development of the protection and renewal work of historical blocks and contribute to the development and inheritance of cities.

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