

# Study on the Spatial Form of Suzhou Historic District Based on Urban Morphology and Architectural Typology

Taking Pingjiang Road in Suzhou as an Example

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**Keywords:** Urban Morphology, Architectural Typology, Suzhou Historic District, Pingjiang Road.

**Abstract:** Based on the urban morphology and architectural typology, this paper focuses on the historic district in Suzhou, a famous historical city in China within 2,500 years. And proposing the urban development strategy about protection and renewal of Suzhou, which is known as the ‘Oriental Venice’ for its unique city texture. However, in the past two decades, China’s urbanization construction has developed rapidly. Over pursuing speed and economic benefits, the city’s cultural heritage was destroyed and the urban characteristics gradually disappeared.

This paper will introduce the conceptions of urban spatial form and texture, and summarize the urban texture characteristics of Suzhou ancient city. Taking the Pingjiang Road of Suzhou as the research object, and analyzing the edge space, river and road structure, courtyard space conformation and features of street and alley. Meanwhile, the urban morphology and architectural typology of Suzhou ancient city are concluded by combining with the whole structure of Suzhou’s historic districts in order to propose development strategies for urban construction correspondingly.

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## 1. Introduction

Facing the pressure of the “Building City Movement” in the new era, there is an urgent need to definite the city’s characteristics in order to avoid the problem of urban homogenization. However, with the continuous development of urbanization, the traditional historical blocks which witness the long historical changes of the city are inevitably involved in the development of the city, and the problem of excessive commercialization of historical blocks is prominent. Therefore, by deepening the interpretation of the historical block, exploring a reasonable protection mechanism, the historical block will enhance its positive role in the urban structure. The research object of this paper is mainly concentrated on the historical district of Suzhou (Figure 1,2), China, which has various streets form, and the urban form and architectural style have distinct characteristics of traditional residential space in the southern region of China. It aims to explore the significance of the architectural form elements and its historical context through the typological research methods.

## 2. Methodology

### 2.1. Urban Morphology

The urban form has experienced the development and evolution of a certain period of time, the constantly developing urban form represents the historical geographical features of the city, reflecting the unique natural environment and historical development process of different regions. The essence of urban morphology is based on the large-scale study of urban plan and the comparison of urban textures during different historical periods, in order to reveal the inner rules of urban form, determine the direction of urban development and architectural design, and make new architectures adopted into the urban environment.

### 2.2. Architectural Typology

The social science such as philosophy and psychology are introduced into architecture. Though the study of historical buildings in the city, the characteristics of architectural prototypes are abstracted, the internal order of architecture is searched, and the formation mechanism of urban spatial characteristics is explored

### 2.3. The range of Research Object

Suzhou is located in the south of the Yangtze River Delta, on the east bank of Taihu Lake, and one of the megacities in East China. It is one of the 24 historical and cultural cities announced in China. In order to strengthen the study of Suzhou's urban form, spatial type and community

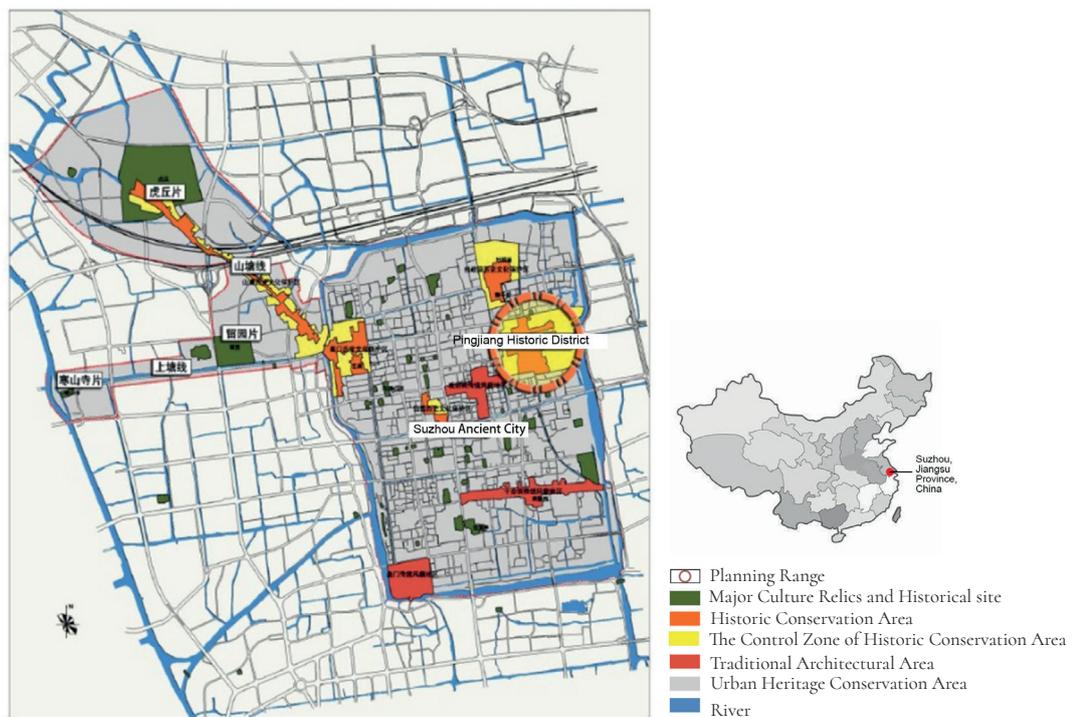


Figure 1. Site Map of Suzhou.  
(Resource From: National Research Center of Historic Cities, Tongji University)



Figure 2. Pictures of Pingjiang Historic District .  
(Resource From : <http://www.pj-road.com/h-col-156.html>)

structure, the Suzhou Pingjiang Road Historic District which is preserved well is selected as a typical sample of this study.

The Pingjiang Road Historic District covers an area of 116.5 hectares. It is located in the northeast of Suzhou's old city, which east to the outer river of the city, west to the Pingjiang River, north to Baita East Road and south to Ganjiang Road. In the Pingjiang Road historical district, there is a world heritage architecture named The Couple's Garden Retreat, 3 national-level cultural relics preservation units, 15 provincial-level cultural relics preservation units, 45 historical buildings and more than 20 notable formers's residences, 4 ancient Chinese memorial archways, and 16 ancient bridges. The block maintains the traditional pattern with one river -one road or one river-two roads. It is a typical residential area in Suzhou. According to the protection planning strategy of Pingjiang Road historical district, the block is divided into the following three levels (Figure 3):

#### *Level 1: Pingjiang Riverside and Street Protection Area*

It is also known as the "visible range" zone in Pingjiang historic district with a protected area of 8.68 hectares. The purpose is to protect the historical features along streets and rivers, control the construction activities strictly, ensure the continuation of the historical features. Furthermore, the architectures which located along the river or major streets maintain unified by reconstructing or transforming the damaged buildings.

#### *Level 2: The Key Area of Pingjiang Historic District*

There are three major planning strategies following. Restoring the buildings with high historical value along the river in Pingjiang historic district, which is 23.83 hectares. Paying attention to the relationship between ancient architectures and cultural relics. Allowing to renovate the interior conditions of residences in order to satisfy modern living standards.

#### *Level 3: Pingjiang Historical Preservation District*

The whole Pingjiang historic district covers an area of 42.94 hectares, which is designed to protect the buildings and environment with water features. For example, by renovating and updating areas those are not match to the historic districts such as some factories or warehouses which eroded some historical blocks, these architectures' functions will be corresponding with the whole block, and styles will be in harmony with the surrounding architectures.



Figure 3. Preserved Level Map of Pingjiang Historic District.

(Resource From : Ruan Yisan, Liu Hao, *An Exploration of the Strategic Thinking and Theory of Preservation Planning for the Pingjiang Historic District in Suzhou*, *Planners*, vol .15, no. 1.99, 1999)

### 3. Analysis

The urban texture preservation of Pingjiang Road historic district is relatively complete. The double chessboard structure combined by rivers, roads, lanes and alleys forms the skeleton of the whole block. Architectures and courtyards are similar to cells to form the whole neighborhoods. Using the method of urban morphology to analyze this block, some conclusion can be drawn: (Figure 4)

#### *Neighborhoods*

The Pingjiang historic district is dominated by the parallel Pingjiang Road and the Pingjiang River. On the east and west sides of the main axis, several cross lanes intersect with the main axis in the form of stone bridges, which create 8 different spatial nodes.

In addition to the commercial use of the building on the main axis, the interior of the block attached to the horizontal lanes is still dominated by the residential function. The private space of the residents and the public space of the tourists are mixed in the neighborhood, and a transitional space is naturally formed. The public space serving the small-scale residents group has formed two different types of public spatial scales due to the difference in privacy. The transition from public to private has created a multiplicity and mixture of spatial levels. Judging from the status quo of survey, the entire block has concentrated on residential, commercial and other functional elements, even some of them have mixed features in the vertical dimension. Although

in order to ensure the pace and order of the residents in the block, the government avoided large-scale commercial development on the horizontal branch roads inside the block, the commercial public space has been squeezing the residents' public space, which is an irreversible space erosion in the era of commodification.

### *Lanes and Alleys*

The block basically maintains the original road pattern, which is divided into three levels: streets, lanes and alleys. (the width of streets and lanes are between 3m and 6m, and the width of alleys are between 1m and 1.5m). The roads in the block generally do not take straight lines instead of taking different width roads to form interesting space. Lanes and alleys are not only traffic spaces, their linear characteristics indicate the spatial structure and direction. Despite the horizontal and vertical directions, the spatial variation is tiny, the small change of space suggest a sudden transform in spatial properties. The building is built along the street and formed a certain angle to the road to creating a small square or a landscape node.

### *Courtyards*

Most of courtyards inside this block are private spaces processing by one family or sharing by multiple family. The traditional dwellings in southern of China present the morphological characteristics of space. Many dwellings form complex clusters of plagues, which are divided by lanes or rivers that surround the outside of residential group. These group boundaries are prone to generate positive public space and stimulate the neighborhood's communication.

## 4. Conclusion

This paper interprets the internal relationship of volumn, space organization and urban texture of the historical block of Pingjiang Road in Suzhou from the perspective of urban morphology, and summarizes the spatial characteristics of traditional buildings in the historical district in the

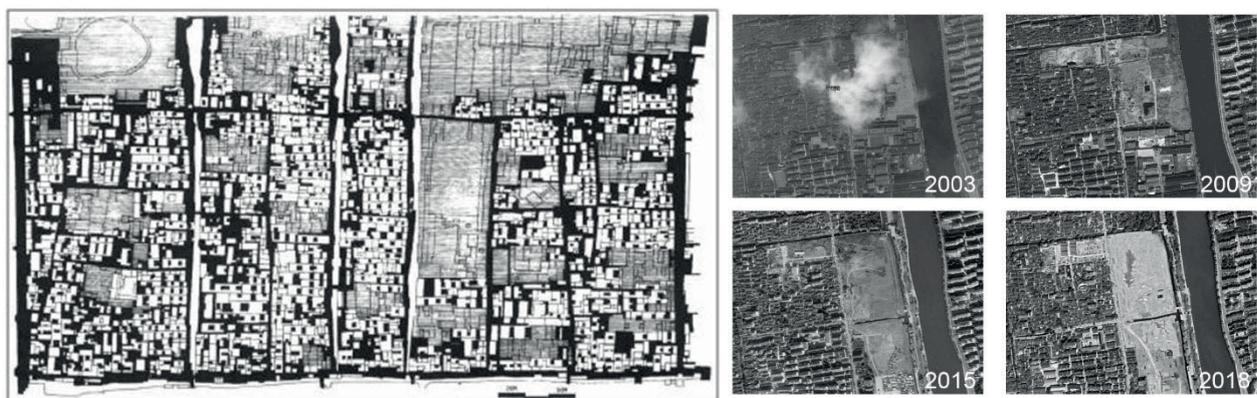


Figure 4. *Analysis of Space Organization of Pingjiang Historic District.*  
(Resource From :Ruan Yisan, Liu Hao, *An Exploration of the Strategic Thinking and Theory of Preservation Planning for the Pingjiang Historic District in Suzhou, Planners*, vol .15, no. 1.99, 1999 and Google Earth).

southern region of China based on neighborhood, lanes and alleys, courtyards. Urban historical blocks have their growth laws in the long-term development process. Strengthening the deep excavation of urban forms and architectural types in urban historical blocks will help build cities' characteristics and stimulate vitality.

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