

Sustainable Conservation and Regeneration in the Face of Change: The Case of Ancient City of Suzhou

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Abstract

In recent years, based on the value of conserved historic towns and their contexts, there has been active exploration of methods to conserve urban heritage in the face of change, gradually combining the concept of conservation with organic regeneration. Strategies for urban heritage conservation are formulated with the identification and evaluation of heritage values as the foundation, and value conservation and inheritance as goals, emphasizing change management and sustainable urban development. Suzhou, a Chinese national historical and cultural city and a world heritage city, has preserved the traditional appearance of the ancient city and its dual chessboard spatial pattern of "parallel water and land, adjacent rivers and streets." This paper took the ancient city of Suzhou as an example, systematically reviewed its development, and assessed its value. In response to the current problems and challenges faced by the ancient city, it proposes specific strategies based on value-oriented historic city conservation and sustainable development concepts. The goal is to find sustainable conservation and regeneration methods that establish an organic connection between the conservation and development, promoting the comprehensive enhancement of the spatial environment quality and socio-economic vitality while ensuring the authenticity and integrity of the historic environment.

Keywords

Sustainable Conservation, Regeneration, urban heritage, Change, Ancient City of Suzhou

1. Introduction

The city of Suzhou is a "World Heritage City" and one of Chinese national historical and cultural cities, known for its profound historical deposits, rich cultural heritage, and beautiful garden landscapes. It was founded in 514 BC, more than 2,500 years ago. The site of the ancient city, encircled by a moat, has survived to the present day (Figure 1). Today, the ancient city of Suzhou is home to nine classical gardens that have been listed as "World Cultural Heritages", including the Net Master's Garden, the Lingering Garden, and the Humble Administrator's Garden. The ancient city is also close to the Grand Canal of China (the Suzhou Section of the Jiangnan Canal) and its associated river courses, as well as several historical and cultural blocks and cultural relics. It is an outstanding example of the wisdom of the "city of water" in China and even in the world. Adhering to the urban development strategy of "developing new districts while conserving the ancient city" and the policy of "comprehensively retaining the style of the ancient city", Suzhou has established an overall framework and system for the conservation of historical and cultural

heritages. Consequently, Suzhou has preserved and continued the “double-chessboard” pattern of “parallel water and land, adjacent rivers and streets” as well as the traditional features of “little bridge, running stream, and households” in areas south of the lower reaches of the Yangtze River. However, the ancient city of Suzhou is now facing a series of prominent problems, such as the overall degradation of water networks, the serious problem of population aging, the poor quality of the residential environment, and difficulties of conserving traditional dwellings. In this context, it is essential to systematically review the development and evolution of the ancient city of Suzhou, thereby identifying its values and features in terms of landscape patterns, water systems, classical gardens, and historical context. Guided by the value-oriented concept of conservation, utilization, and the sustainable development of historical cities, an organic link between the conservation and development of the ancient city of Suzhou needs to be established to conserve the authenticity and integrity of the overall historical environment. Further, ways of sustainable conservation and regeneration need to be explored, and the overall improvement of the quality of the spatial environment and the socio-economic vitality of the ancient city needs to be promoted.

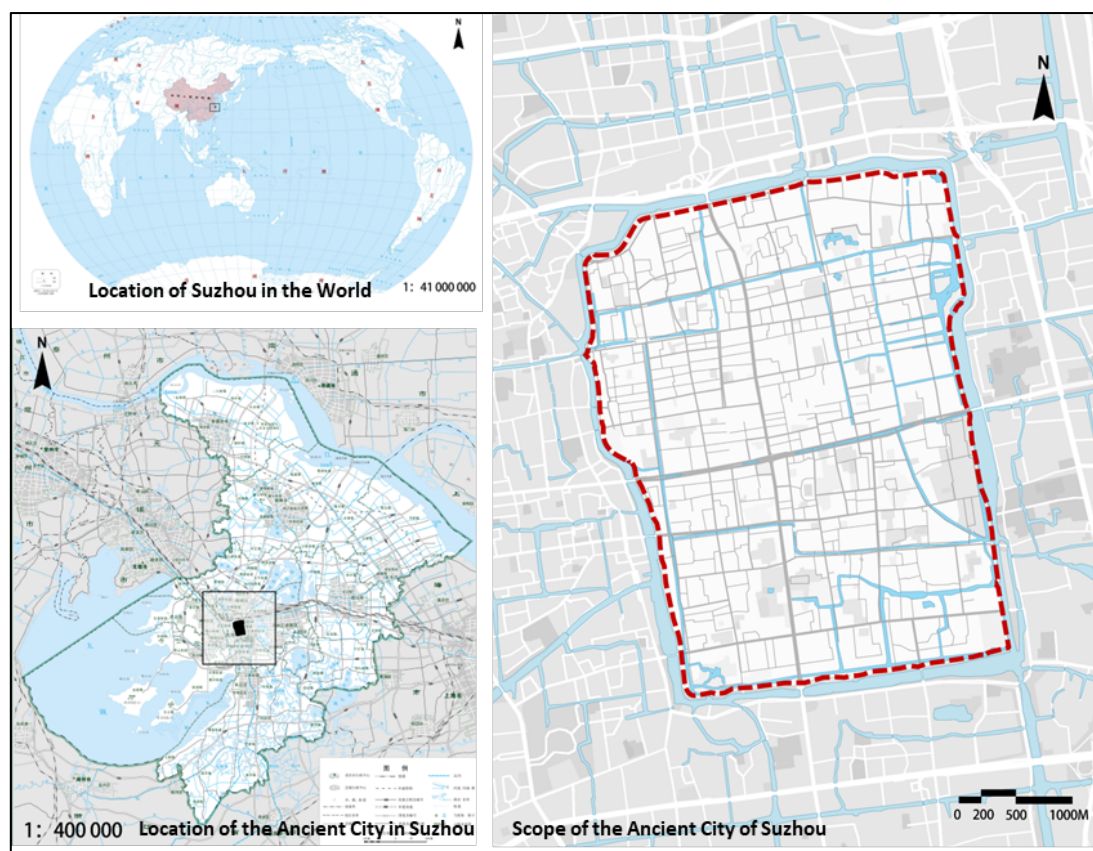


Figure 1. Location and scope of the ancient city of Suzhou. Source: Unless otherwise noted, all drawings in this paper are self-drawn by the authors.

2. Development, Evolution, and Features

The ancient city of Suzhou took shape during the heyday of the Song Dynasty. As a result of the sprouting of industry during the Ming and Qing Dynasties and the beginning of modern industrialization during the Republic of China, the structure of the city began to change. Roughly four major stages can be distinguished: transformation of structural morphology (1927–1949), decline of traditional features (1949–1977), emphasis on style conservation (1978–2011), and regeneration through optimization and improvement (2012–present).

In the first stage, the ancient city launched its urban construction based on the traditional pattern. Then, the traditional features were decline in the second stage. However, Suzhou began to realize that equal importance should be attached to both the conservation of the ancient city and urban development in the third stage. Therefore, with the planning strategies and the development of economic industry, Suzhou was able to comprehensively preserve and continue the traditional pattern and features by regeneration in the Fourth stage.

3. Values and Features

3.1. Unique pattern of mountain–water–city integration

The ancient city of Suzhou, located at the centre of the site, is “facing the mountains on one side, surrounded by lakes on seven sides; embracing rivers from all directions, circled by mountains and rivers in four corners”. It is a typical representative of the residential environment and spatial pattern of “living between mountains and rivers” (Figure 2).



Figure 2. Landscape pattern of the ancient city of Suzhou. Source: The landscape pattern of downtown Suzhou was derived from the Overall Urban Design of Suzhou (2020), and other drawings were drawn by the authors.

3.2. Model of planning, construction, and conservation of a “city of water”

The ancient city of Suzhou is a perfect embodiment of superior site selection and reasonable city layout. The idea of “water-centred” urban planning and the features of a “city of water” adapted to water systems not only hold special importance in the history of urban construction in China, but are also very rare in the history of cities in the world. In this regard, the ancient city of Suzhou is an outstanding example of the wisdom of the “city of water” in China and even in the world. In contrast to Venice with its irregular layout of roads and river courses, Bruges with its radial pattern, and Amsterdam with its concentric circles formed by circular canal water systems around the downtown, the ancient city of Suzhou is unique because of its orderly “double-chessboard” layout and rich water networks (Figure 3). The water systems within the ancient city are interconnected with the Grand Canal of China, forming an organic whole that still plays an important role in transportation, culture, and tourism today.



Figure 3. Different textural morphologies of typical “cities of water” in the world. Source: Redrawn from Google Maps (<https://www.google.com/maps/>).

3.3. Rich cultural heritages represented by classical gardens

The classical gardens of Suzhou are representative of typical Chinese gardens, and thus occupy an important place in the history of gardens. Currently, there are more than 50 classical gardens in Suzhou, nine of which have been listed as “World Cultural Heritages” (Figure 4). There are also more than 300 protected cultural relic sites, historical buildings, and other historical and cultural heritages such as ancient

trees, wells, bridges, and memorial archways. As a long-term regional political centre, Suzhou was the birthplace and core inheritance region of Wu culture. The ancient city is the most characteristic, textbook, and concentrated embodiment of the entire Wu culture system.

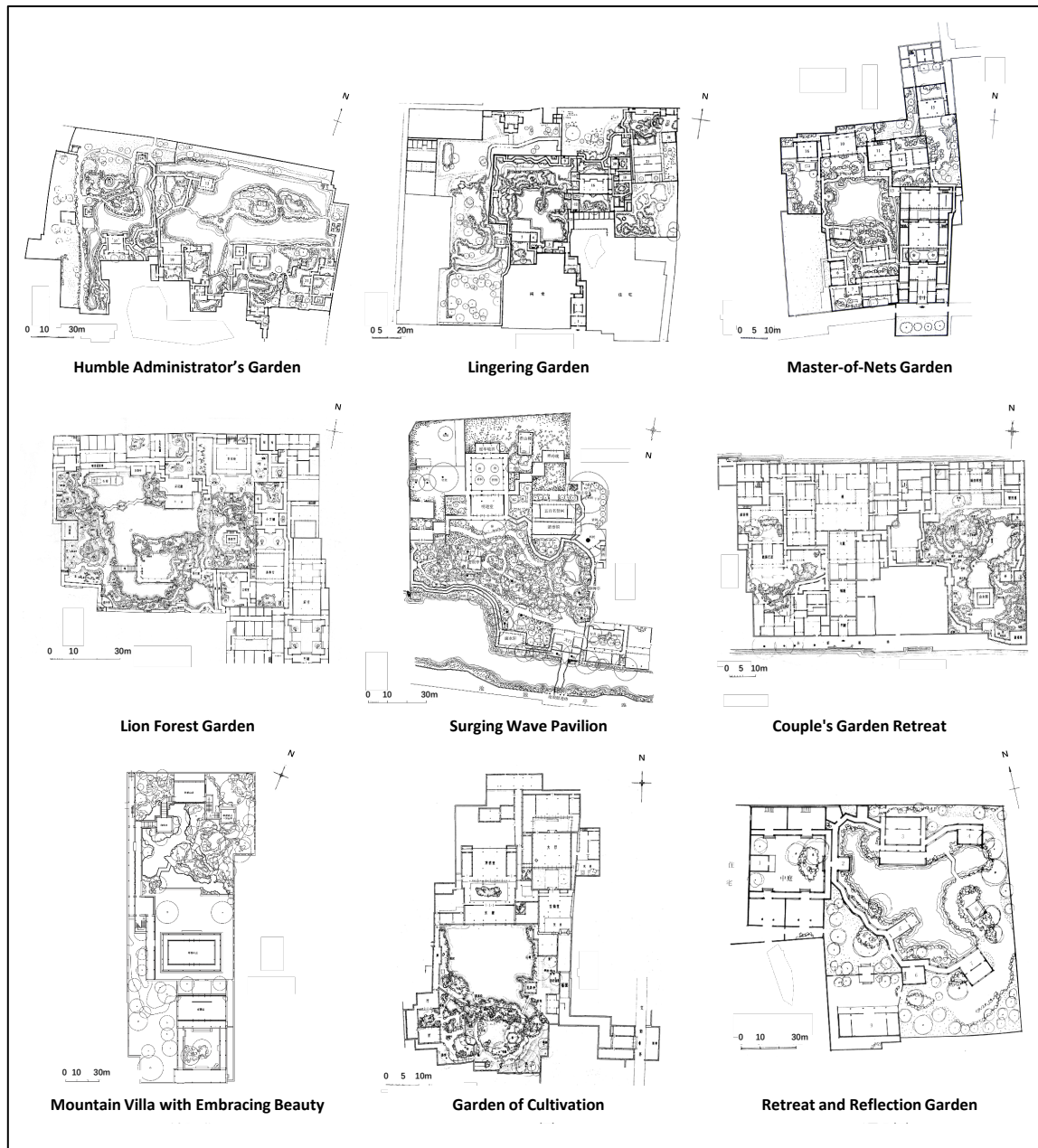


Figure 4. Plane layout of the Classical Gardens of Suzhou listed as “World Cultural Heritages”. Source: Reference (Zhou 1990).

4. Problems and Challenges

4.1. Overall degradation of water networks

Before the 1380s, the ancient city had relatively complete water networks and densely distributed river courses. However, over time, they began to shrink gradually. Urban development gradually weakened the

transport function of ancient river courses. Moreover, with the continuous expansion of the city, the demand for construction land and transportation facilities surged, many river courses were filled and levelled up to facilitate urban construction. Since 2012, several river courses have been restored, but their structural integrity has been undermined by the overall degradation of water networks (Figure 5).

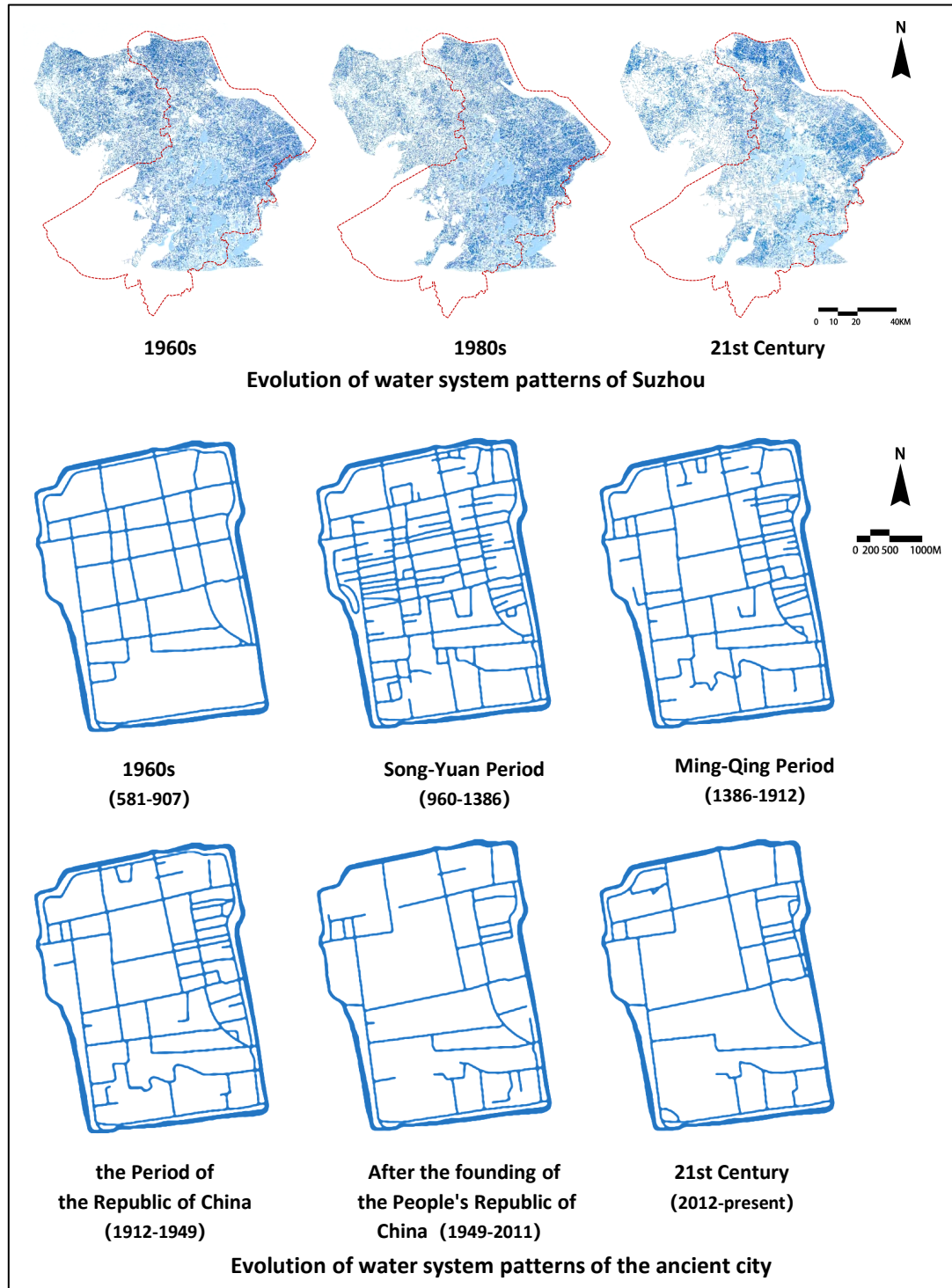


Figure 5. Evolution of water system patterns of Suzhou and the ancient city. Source: The water system evolution map of Suzhou was redrawn from Reference (WANG 2013), and that of the ancient city was drawn by the authors.

4.2. Serious situation of population aging

Compared with other parts of Suzhou, the ancient city has a higher proportion of elderly residents and a more prominent problem of population aging. According to data from the Seventh National Population Census of China, the proportion of people aged above 65 in Suzhou had exceeded 14% by 2020. This means that, according to international standards, Suzhou had entered the stage of moderate aging; however, the degree of population aging is even more serious in the ancient city (Figure 6). On the one hand, independent dwellings in the ancient city, built in the early years, often have a small net room area, which no longer meets the requirements of modern society for livability. On the other hand, new urban districts in surrounding areas are attracting more and more middle and high-income classes from the ancient city through the supply of high-quality educational resources, the creation of a comfortable residential environment, and the possibility of high returns on real estate investment.

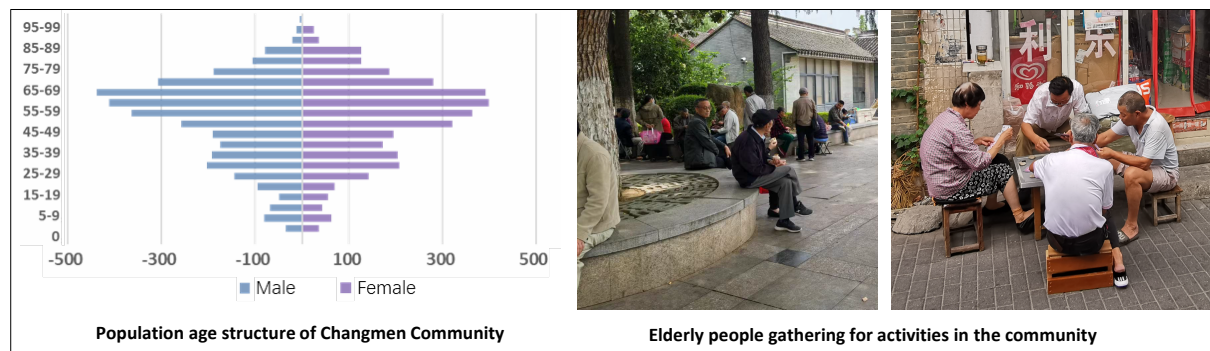


Figure 6. Serious situation of population aging faced by the ancient city.

4.3. Poor quality of the residential environment

Facilities in the ancient city that are insufficient, outdated, and poor in quality can no longer meet the needs of different age groups in modern society. In particular, there is a lack of open spaces, educational facilities, age-friendly facilities, and parking facilities. In 2021, the greening rate of the ancient city was 6.48%. Faced with problems such as the insufficiency and uneven spatial distribution of open spaces and the poor quality of the ecological environment, the ancient city failed to meet the needs of modern residents for public life. The main reason is that the ancient city already has high construction density, which poses challenges to regeneration and limits the land available for redevelopment.

4.4. Difficulties faced by the conservation and regeneration of traditional dwellings

Traditional dwellings in the ancient city, mostly built in the Ming and Qing Dynasties and the Republic of China. However, because of the wide distribution and large quantities of traditional dwellings, a comprehensive conservation of all traditional dwellings in the ancient city is nearly impossible. In fact, many uninhabited dwellings have already been worn down by years without repair or have suffered constructive destruction as a result of modernized renovation. Although Suzhou has been exploring ways to conserve the historical context of traditional dwellings and renovate them in a modernized, livable fashion, consensus standards have not yet been established. The property rights of traditional dwellings are highly complicated.

5. Recognition and Reflections on Conservation of Urban Heritages in the Face of Change

As a special type of heritage with multi-dimensional value and dynamic features, historical cities belong to the category of typical living heritages. In this regard, a series of questions need to be addressed: How can an association between conservation and regeneration be established based on the development laws of historical cities and the core values of historical cities? How can urban regeneration be comprehensively and correctly understood? What kind of urban regeneration should be adopted to improve the functions and quality of historical cities and realize both their cultural inheritance and sustainable development? Addressing these questions requires deep reflections on the conservation, regeneration, and regeneration of historical cities.

5.1. Trends of international conservation of cultural heritages

The international conservation of cultural heritages has gone through a development process of “monuments–historical areas–historical cities–urban heritages”. In this process, the objects of heritage conservation have been constantly expanded and diversified, and the concept of conservation has also been gradually transformed and deepened. Initially, heritage conservation focused on individual historical relics and sites as well as their surrounding areas (ICOMOS 1931, ICOMOS 1965). Later, the objects of heritage conservation gradually expanded to a complete series of heritages such as historical cities, historical gardens, cultural landscape, and intangible cultural heritages (ICOMOS 1982, ICOMOS 1987, ICOMOS 2004, ICOMOS 2005). In recent years, efforts have been actively made to explore measures for the conservation of urban heritages in response to changes, with the purpose of preserving the value of historical towns and backgrounds. There has been a tendency to gradually recognize the multiple values of cultural heritages, including historical, aesthetic, cultural, social, and environmental values, as well as to emphasize the combination of conservation and organic regeneration. Based on the identification and assessment of heritage values, urban heritage conservation strategies aimed at value conservation and inheritance can be formulated to promote the overall conservation of the historical environment and the sustainable development of cities (EH 2008, ICOMOS 2011, UNESCO 2011).

5.2. Major transformations in the conservation of historical cities in China

After more than three decades of rapid urban development, China has shifted from high-speed growth to medium and high-speed growth, entering a new stage of people-oriented transformation that emphasizes quality improvement. The new tasks faced by the conservation of historical cities in this stage include the improvement of the residential environment, the conservation of traditional features, and the enhancement of urban vitality. The National New Urbanization Plan (2014–2020) proposed to emphasize the construction of cities of culture. It indicated the necessity and importance of incorporating the conservation of cultural heritages into the overall social and economic development strategies of cities. The conservation of urban-rural cultural heritages is a complex social system project that is related to not only the inheritance of history and culture but also the improvement of urban quality and the promotion of the social civilization (ICOMOS 2005). The Opinions on Strengthening the Protection and Inheritance of History and Culture in Urban and Rural Construction (2021), issued by the General Office of the CPC Central Committee and the General Office of the State Council, proposed to promote the integrated development of the conservation and inheritance of history, culture, and urban-rural construction. This important document serves as an important basis and guideline for China’s urban-rural planning and construction in the new era. It is of profound strategic importance for continuing urban culture, highlighting urban features, enhancing urban cultural charm, and achieving urban sustainable development.

5.3. Strengthening the overall association between the conservation and inheritance of history, culture, and urban regeneration

Both “the conservation and inheritance of history and culture” and “urban regeneration” are important components of urban development. The conservation and inheritance of history and culture constitute an important prerequisite for urban regeneration. Adhering to the craftsmanship spirit, to integrate historical and cultural heritages into contemporary urban construction and social life and sustain and stimulate the vitality and charm of historical cities. Gradual and prudent organic regeneration should be adopted with a scientific, rigorous, and professional attitude. As a historical city with a long-standing history and profound deposits, Suzhou has preserved rich historical resources and many areas with fine traditional features. As an important spatial carrier of modern urban life and urban development, it is a living cultural heritage undergoing constant adaptive changes. The paths towards the sustainable conservation and regeneration of the ancient city of Suzhou should be adopted to boost its revival and sustainable development.

6. Paths towards the Sustainable Conservation and Regeneration

6.1. Strengthening the overall conservation of the spatial pattern

Efforts should be made to continue the overall ecological pattern of “mountains and rivers in four corners” and the important ecological corridors in Suzhou. Further, the overall pattern and style of the ancient city should be conserved, highlighting its “double-chessboard” pattern of “parallel water and land, adjacent rivers and streets”. Based on this framework, attention should be directed to the overall conservation of its morphological features, color tone, skyline, texture, landscape visual corridors, valuable buildings, and its typical elements such as river courses, ancient bridges, ancient trees, and ancient wells.

6.2. Optimizing the comprehensive capacity

Research on the capacity of the ancient city should strike a balance between the conservation and inheritance of history and culture and the improvement of urban development and vitality. The capacity of Suzhou is mainly composed of sub-capacities related to population, industry, tourism, space, and transportation (YANG and WANG 2023). To establish a comprehensive capacity assessment and optimal decision-making framework, the diversified development needs of the ancient city should be comprehensively considered. These are the improvement of its functional structure, the conservation and inheritance of its history and culture, the intensive use of land, and the improvement of the residential environment. It is also necessary to scientifically identify Suzhou's real capacity and existing problems, and to determine the reasonable limit of capacity optimization. Further, the overall structural morphology should be optimized, thereby realizing fine control.

6.3. Adopting small-scale progressive organic regeneration

Over the course of traditional urbanization based on incremental expansion in the past, the ancient city failed to coordinate the relationship between conservation and development. On the one hand, the excessive emphasis on the conservation of the ancient city, while achieving remarkable results in terms of conservation of physical spaces, nevertheless caused a series of problems. Examples of these problems are population aging, infrastructure aging, low economic vitality, and poor environmental quality. On the other hand, the blind pursuit of economic growth led to damages related to conservation and construction and caused problems such as over-development and destruction of traditional features. Therefore, to achieve the sustainable development of the ancient city, targeted measures adaptable to the characteristics of

different regeneration areas, such as preservation, conservation, regulation, improvement, repair, regeneration, and rejuvenation, should be taken to achieve steady, gradual, and diversified organic regeneration.

6.4. Fully utilize the endogenous force of public participation

Residents should be encouraged to actively and continuously participate in the whole process of regeneration. The will of residents should be fully respected during the regeneration of their dwellings. Regular community talks and residents' congresses can be organized with residents' representatives and other stakeholders. In these congresses, issues on the planning, design, project implementation, and other aspects of regeneration can be discussed, and residents' opinions and suggestions can be collected to realize the diversified governance and co-building of the ancient city.

6.5. Improving the supporting system of conservation and implementation

Under the overall framework of the construction of the national governance system, the regeneration of the ancient city should focus on connotative development. To establish a systematic framework for regeneration, the local government should promulgate relevant laws and regulations as well as policies, including regulations on urban regeneration, detailed rules for implementation, plans released in relation to various kinds of urban regeneration projects, and project implementation guidelines. By relying on the centre for conservation and management of big data platforms, a unified regeneration information system can be created, which can provide a service guarantee for the implementation and whole-life-cycle management of regeneration projects.

7. Discussion and Conclusions

The ancient city of Suzhou has experienced four major stages of structural morphology. Guided by long-term strict conservation, control, and active and effective dispersion policies, Suzhou has preserved and continued the "double-chessboard" pattern and the traditional features. Suzhou is an outstanding example of the wisdom of the "city of water" in China and even in the world. After entering this new period of development, Suzhou's ancient city also faces many new challenges. These include the overall degradation of water networks, the serious situation of population aging, the poor quality of the residential environment, the difficulties of conserving traditional dwellings, the impossibility to carry on traditional lifestyles, and the delay in adjusting regeneration policies.

In response to these challenges, Suzhou has adhered to the concept of multi-goal coordinated development and has actively explored paths for the sustainable conservation and regeneration of its ancient city with the ever-changing reality. It has also put forward several core strategies such as strengthening the overall conservation of the spatial pattern of the ancient city, optimizing its comprehensive capacity, adopting small-scale progressive organic regeneration, fully utilizing the endogenous force of public participation, and improving the supporting system of conservation and implementation. These strategies offer useful implications for the conservation and development of historical cities. In future research, the complexity and heterogeneity of the conservation status of historical cities need to be considered. Empirical research should be conducted on different types of historical cities to accumulate, identify, and summarize more replicable and transferable experiences as well as enrich existing theory and practice paradigms in relation to the conservation and regeneration of historical cities.

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