Study on Spatial Renewal Strategies for Ancient Towns along the Eastern Zhejiang Canal from the Perspective of Cultural Context

Yujian Ding*, Shengwei Lang

Zhejiang University of Technology, School of Design and Architecture, Hangzhou, China

*E-mail:247389084@qq.com

Abstract. With the country's emphasis on cultural heritage protection and the development of ancient towns, the revitalization of ancient towns along the Eastern Zhejiang Canal has gradually become a social hotspot. As urbanization progresses rapidly and the canal's transportation function weakens, the functional relationship between the ancient towns and the canal has gradually diminished, facing significant challenges for transformation. Taking the integration of cultural context theory and the spatial layout of canal ancient towns as the starting point, this paper extracts the constituent elements of cultural context to form a research framework for the cultural context system of canal ancient towns. It proposes methods to continue the canal's cultural context through the reshaping of ancient townscapes, spatial narrative connections, and cultural industry inheritance. As a result, the goal is to construct canal ancient towns that blend traditional and contemporary elements, harmoniously integrating humans and landscapes. This paper provides new ideas and methods for the spatial renewal research of canal ancient towns in the new era.

Keywords: Eastern Zhejiang Canal, Canal Ancient Towns, Cultural Context System, Renewal Strategies.

1   Introduction

The ancient towns along the Eastern Zhejiang Canal possess unique water town scenery and rich historical and cultural heritage. Their issues of public space protection and renewal are directly related to cultural inheritance, town renewal, and the sustainable development of tourism. However, accelerated urbanization and the decline of canal transportation have gradually weakened the original commercial and transportation functions of these towns, posing challenges for their transformation.

In architectural field, "context" is used to describe the dynamic connections between buildings, and between buildings and cities, evolving into the inheritance of architectural culture. International research on context theory began with a focus on individual buildings and gradually expanded to the urban level. In China, context theory research started in the 1980s, with translation debates among scholars initiating the sinicization

process. With further research, scholars have systematically reviewed and interpreted the connotation and extension of contextualism [1], closely integrating this theory with cultural inheritance, urban renewal, historical protection, and other critical issues [2-4]. Nevertheless, due to the complexity of cultural backgrounds, accurately assessing and grasping context, as well as effectively integrating it with other related theories to build a more comprehensive and in-depth analytical framework, remain current challenges.

Domestic research on canal towns covers spatial form, historical evolution, and protection strategies, with in-depth explorations through graphic analysis, quantitative analysis, and other methods [5-11]. Foreign research mainly focuses on the role of canals in urban development, canal protection and renewal, and their commercial value [12-14]. In general, canal town studies primarily address current issues, protection strategies, and renewal models, often revealing numerous public space problems through field investigations and case analyses, and proposing corresponding protection strategies and renewal models. However, current research tends to emphasize material-level protection and renewal, with cultural inheritance and development still needing supplementation. Context theory emphasizes the integrity of the environment and historical continuity, which is highly suitable for regions with profound history and unique culture like the ancient towns along the Eastern Zhejiang Canal.

Therefore, this paper proposes a new approach that combines context theory with the spatial protection and renewal of canal towns. Context theory emphasizes the integrity of the environment and historical continuity, making it particularly suitable for places with profound historical foundations and unique cultures like canal towns. By combining the two, this paper aims to initially establish a spatial context system for canal towns, providing relevant guidance for practice.

2   Issues in the Current Spatial Status of Ancient Towns along the Eastern Zhejiang Canal

Ancient town spaces serve as open venues for residents' interactions, gatherings, leisure, and entertainment, embodying the diversity and vitality of town life. This study focuses on the waterfront, street, and neighborhood spaces of canal ancient towns. Based on Zhejiang's heritage protection plan, eight ancient towns, including Xixing, Yaqian, and Keqiao, are selected as research samples (Fig. 1), focusing on their core areas and scenic coordination zones. Field research reveals that the spatial renewal of canal ancient towns is closely linked to their functional positioning. Through this research, three major issues are summarized.
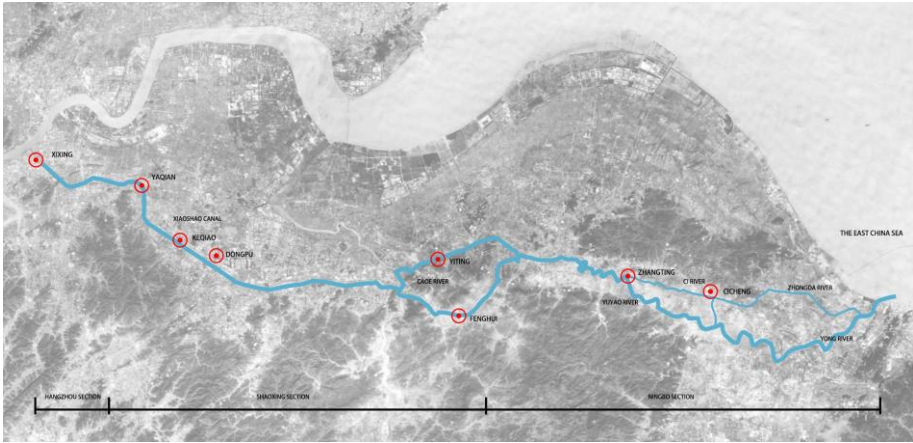
Fig. 1. Diagram of Sample Selection for the Study of Ancient Towns along the Eastern Zhejiang Canal (Image source: self-made)

2.1   Mixed Styles in Canal Towns

The canal ancient towns, thriving around the canal, boast a unique water town style but still face issues: **(1) Mixed streetscapes.** The development of ancient towns is often influenced by residents and external factors, resulting in the emergence of "new buildings" that clash with the overall style of the ancient town. **(2) Crowded street spaces.** Due to historical and geographical factors, the streets and alleys in ancient towns tend to be narrow. This unreasonable spatial layout leads to a lack of sufficient living space for residents, who spontaneously occupy surrounding areas for daily use, making the street spaces chaotic. **(3) Disordered ancient town environment.** With the decline of canal shipping, the canal lacks adequate governance. Meanwhile, the hygiene of the streets and alleys in ancient towns directly affects their cleanliness and aesthetics.

2.2   Lack of Spatial Narrative in Ancient Towns

The spatial narrative of ancient towns refers to describing their historical and cultural background through spatial elements. The current situation of canal ancient towns faces several issues: **(1) Fabricated spatial background.** During the development and renovation of ancient towns, the lack of in-depth insight and research into history and culture often leads to the misconstruction of the original historical layout, thereby losing the authenticity of their historical "narrative" spaces. **(2) Fragmented heritage distribution.** The spatial distribution of historical heritage in ancient towns is relatively independent, interspersed in complex residential areas, requiring complex navigation to access. **(3) Lack of historical information.** The lack of sufficient historical information elements in the streets and alleys of ancient towns makes it difficult for tourists to form a good spatial perception and walking experience, preventing them from experiencing the traditional culture of the ancient towns.

2.3   Insufficient Spatial Aggregation Capability

The spatial aggregation of ancient towns refers to their ability to attract and gather people and businesses. However, several issues remain: **(1) Poor accessibility.** The remote geographical location of ancient towns significantly limits their accessibility, making it difficult for tourists and visitors to find them, thereby reducing their attractiveness and narrative coherence. **(2) Lack of industrial configuration.** Insufficient industrial configuration in ancient towns not only hinders tourism development but also directly reduces tourists' overall experience, inhibiting their consumption desires and weakening the towns' market attractiveness and development potential. **(3) Deficiency in cultural inheritance.**   The lack of integration between traditional crafts and modern culture leads to the loss of cultural inheritance and affects cultural continuity. This makes ancient towns lack uniqueness and attractiveness in the tourism market, limiting their further development.

3   Construction of the Cultural Context System of Canal Ancient Town

The research combines cultural context theory with the spatial layout of canal ancient towns, analyzing the inherent logic and interrelationships of the cultural context from three dimensions: human connections, geographical context, and historical context. It extracts the elements and spatial manifestations of the cultural context, thus preliminarily forming a research framework for the cultural context system of canal ancient towns.

3.1   Analysis of the Relationship in Cultural Context

Geographical context serves as the material foundation and environmental support for cultural context, with geographical environment, natural landscape, and other factors having profound impacts on the formation of culture. The organic integration of regional characteristics and cultural traditions breeds unique cultural styles. In architectural practice, different ethnic groups select materials based on their environmental characteristics, thus shaping diverse urban landscapes and unique cultural connections.

Cultural context, as the core thread of culture, records the historical changes and development trajectories. Historical context, on the other hand, provides the historical conditions and momentum for the formation and evolution of cultural context. Contemporary society is also part of this historical evolution, with cultural, economic, and technological achievements being integrated into urban architecture, creating a cultural context relationship with unique characteristics of the times.

Human connections emphasize the central position of people in cultural context and the importance of humanistic spirit. As the subject of cultural inheritance and innovation, people shape unique cultural contexts through extensive exchanges, in-depth cooperation, and continuous innovation. At the same time, cultural context provides rich content and background support for human connections. (Fig. 2).
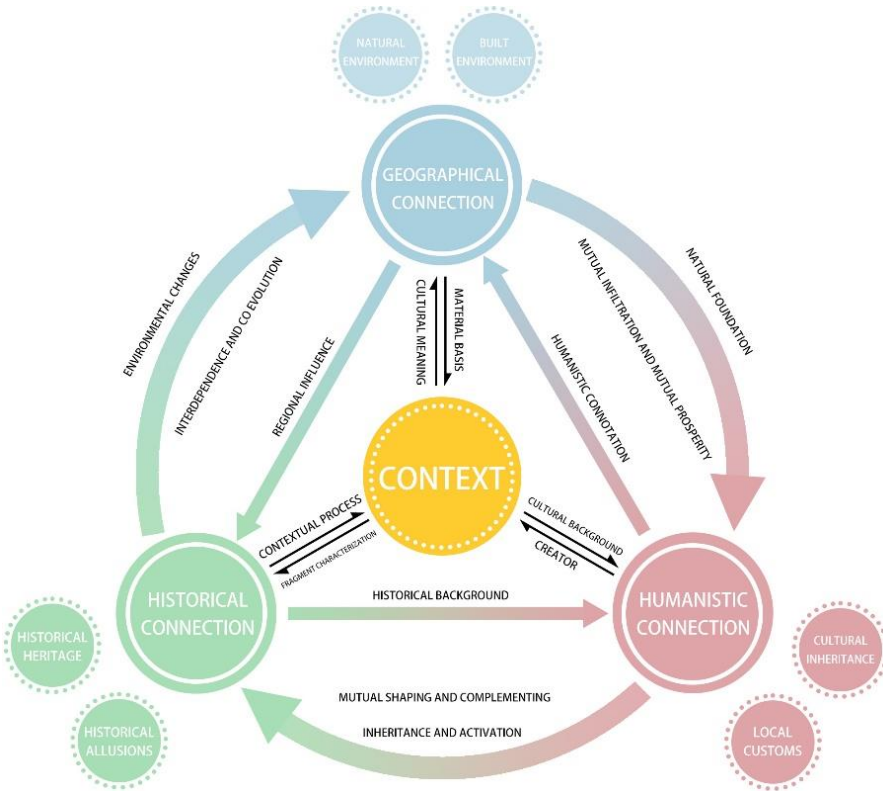
Fig. 2. Schematic diagram of the three-dimensional relationship analysis of context (Image source: self-made)

3.2   The Expression of Cultural Context

(1)Explicit expression.

It intuitively displays the context, and the architectural style and spatial texture of the ancient town are most obvious. The unique architectural style and form showcase cultural imprints and historical evolution, while carvings and stone slabs tell ancient stories, reflecting the harmonious coexistence and cultural integration between humans and nature. The spatial texture of the ancient town also reflects the historical context and cultural heritage, and the street layout and alleyway direction display a clear expression of the cultural context.

(2)Implicit expression.

Revealing the inherent logic and spiritual essence of culture, although not intuitive, deeply affects cultural inheritance and innovation. Implicit elements such as values, thinking patterns, and spiritual pursuits, such as cultural soul, subtly influence people's behavior and thinking, making culture thrive. In the ancient town, implicit expressions are reflected in daily life, social customs, and traditional festivals, which together constitute the unique charm of the ancient town culture. (Fig. 3).
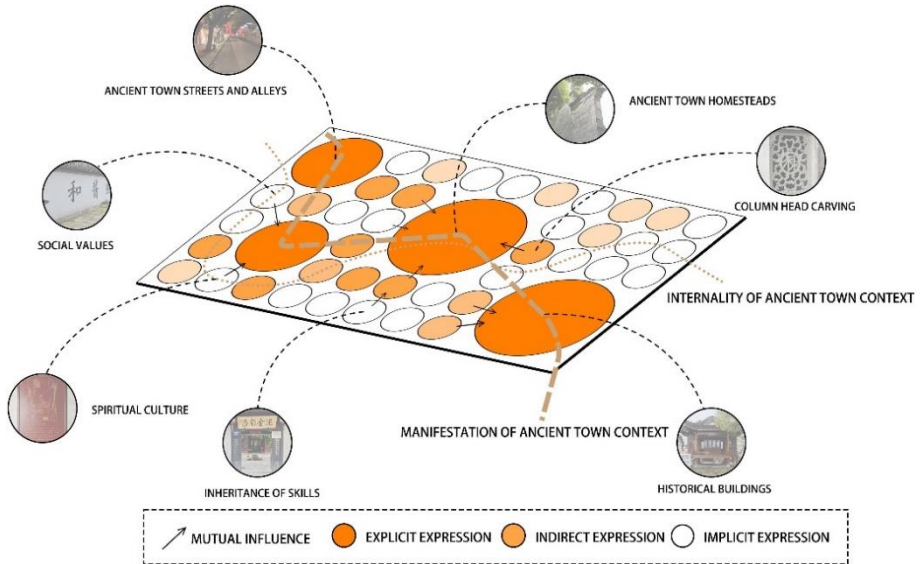
Fig. 3. Schematic diagram of the visible and hidden forms of context expression (Image source: self-made)

3.3 The Constituent Elements of the Cultural Context

Based on the in-depth analysis of the cultural context theory in the previous sections, this article endeavors to dissect the inherent logic and interrelationships of the cultural context from three dimensions: human connections, geographical context, and historical context. Six essential components of the cultural context are identified: natural environment, built environment, historical heritage, historical anecdotes, cultural inheritance, and customs. Among them, the natural and built environments are closely linked to the geographical context, reflecting the profound influence of the geographical environment and spatial layout on the cultural context. Historical heritage and anecdotes are rooted in the historical context, revealing the shaping role of historical background and development trajectory on cultural inheritance. Meanwhile, cultural inheritance and customs are based on human connections, showcasing the enrichment and transmission of social culture and interpersonal relationships in the cultural context.

The explicit elements of the cultural context are primarily manifested in the adaptation of ancient towns to the natural environment and are also embodied throughout the construction process of the subsequent built environment. Moreover, historical heritage, as a condensed historical fragment of ancient towns, possesses unique research value and manifestations. The implicit elements of canal ancient towns are primarily reflected in historical anecdotes, cultural inheritance, and customs. Historical anecdotes document the states of ancient towns in different periods, complementing historical heritage. Cultural inheritance, the cultural essence passed down through generations, embodies the wisdom of a nation. Customs, on the other hand, are behavioral norms

and values that people have commonly adhered to over a long period of time, influencing their way of thinking and behavior patterns.

3.4 Construction of the Cultural System Framework for Canal Ancient Town

The framework construction of the cultural context system of canal ancient towns is based on multi-dimensional analysis and explicit-implicit expression of the cultural context, summarizing six key elements of the cultural context and analyzing their specific spatial manifestations(Fig. 4). Through a thorough analysis of cultural context theory, this study identifies six core elements of the cultural context and explores their composition and manifestation in ancient towns. The natural and architectural environments jointly shape the current status and characteristics of the ancient towns, while historical buildings and water conservancy heritage testify to their profound historical culture. Historical allusions, cultural inheritance, and customs are the cultural essence of the ancient towns, transmitted and enriching the artistic and cultural heritage of the towns through forms like classics, skills, and traditions. The integration of these elements constructs the unique cultural context of canal ancient towns.
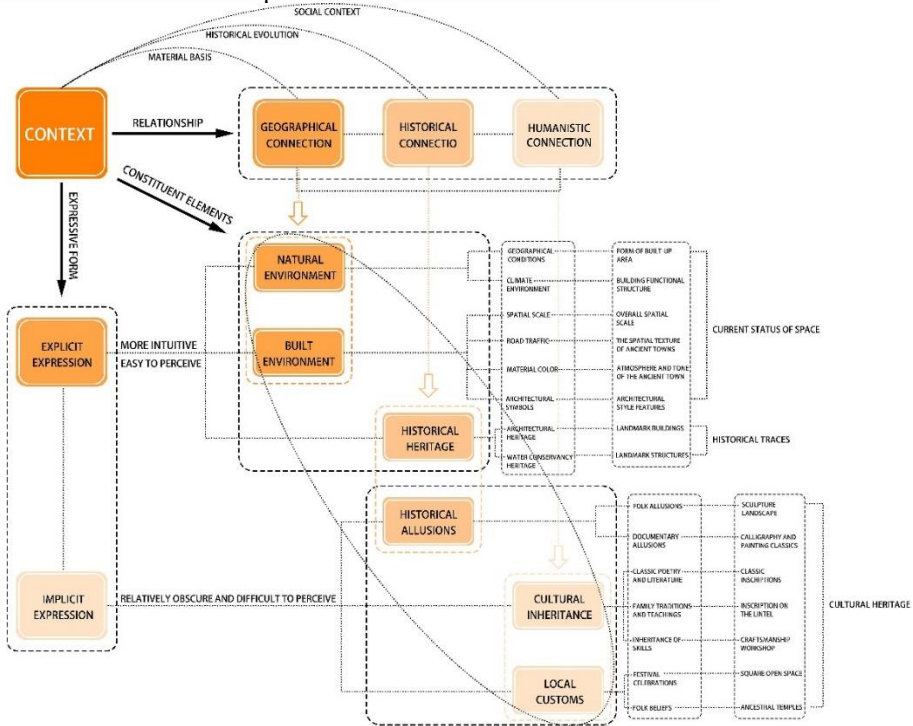

Fig. 4. Schematic diagram of the cultural system framework of the Canal Ancient Town (Image source: self-made)

4   Spatial Renewal Strategy of Canal Ancient Town

This article integrates the elements of cultural heritage and the space of the Canal Ancient Town, and proposes corresponding updating strategies for the six elements of cultural heritage. Among these elements, the natural environment and the built environment jointly shape the overall style of the ancient town; Historical heritage and historical allusions have a profound impact on the spatial narrative of ancient towns; The cultural heritage and customs have been concentrated in the industrial development of the ancient town [15-17]. (Fig. 5)
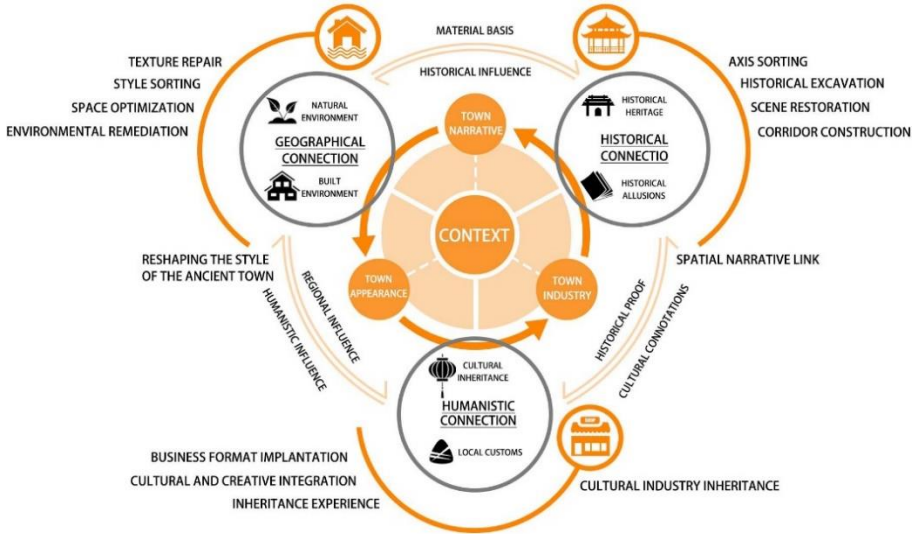

Fig. 5. Schematic diagram of spatial renewal strategy for Canal Ancient Town (Image source: self-made)

4.1   Reshaping the Style of the Ancient Town

(1) Ancient Town Texture Repair. This study uses the context slicing model to solve the destructive construction problem of ancient towns, tracing and reshaping their historical style and cultural characteristics. It is recommended to plan and clarify the core protection area and edge buffer zone of the ancient town, forming an effective protection level. For the core protected area, adopt local demolition methods to restore the original texture and recreate the unique style of the ancient town; For the edge buffer zone, combining the original texture with urban development, re weaving the space to achieve the integration and transition between the ancient town and urban space. At the same time, limit the height of surrounding buildings and maintain the overall style of the ancient town.

   (2) Restoration of Street and Lane Scenery. This study deeply excavates the well-preserved historical and cultural heritage in ancient towns, revealing its cultural conno-

tation and historical background, including important figures, events, cultural traditions, and their connections to the town's development. To showcase the value of these heritage sites, it is recommended to set up explanatory signage around the heritage, provide detailed information, and design creative murals to vividly present the town's history and culture, enriching visitors' experiences. These measures will comprehensively showcase the value of the ancient town's cultural heritage and promote cultural inheritance and development. For example, a sign can be placed next to Fenghui's Nine Lion Bridge to facilitate people's recognition of it.

(3) Optimization of Street and Lane Space. In response to the situation where the streets and alleys are relatively narrow, residents occupy more space in the streets and alleys, and pedestrians have a poor walking experience, it is necessary to classify and rectify them. Firstly, for the mixed street and alley spaces, unified management of vehicle parking, clothes drying, etc. should be implemented to standardize the street and alley spaces while meeting the living needs of each household as much as possible. For the vacant land in the streets and alleys, optimization should be carried out by adding facilities such as rest seats, which can serve as both a gathering space for residents and a resting place for tourists, improving the quality of the street and alleyway space.

(4) Improvement of the Ancient Town Environment. The ecological environment of the canal is one of the important resources of the canal ancient town, and protection and governance should be strengthened. Measures can be taken to control water pollution, protect water sources and waterways, strengthen greening and ecological restoration work, and improve and enhance the ecological environment along the canal. In addition, strengthen environmental hygiene management, improve cleaning quality, and maintain the cleanliness and tidiness of the streets. We should also strengthen publicity and guidance for garbage classification and recycling, and enhance residents' environmental awareness.

4.2   Spatial Narrative Links

(1) Accessibility optimization. To address the issues of poor accessibility and difficulty in identifying entrances in ancient towns, this study proposes optimization strategies: establishing a scientifically reasonable road axis, ensuring smooth traffic through measures such as setting up signs and optimizing traffic signals; Set up spatial markers that coordinate with the ancient town culture at key nodes to enhance identification; Carefully design the landscape and cultural display on both sides of the axis, create an atmosphere of the ancient town, and showcase historical and cultural heritage.

(2) Historical Heritage Excavation. This study delves into the well preserved historical and cultural heritage of the ancient town, revealing its cultural connotations and historical background, including important figures, events, cultural traditions, and their association with the development of the ancient town. To showcase the value of these heritage sites, it is recommended to set up explanatory signs around the heritage site, provide detailed information, and design creative wall paintings to vividly showcase the history and culture of the ancient town and enrich the tourist experience. These measures will comprehensively showcase the value of the cultural heritage of the ancient town and promote cultural inheritance and development.

(3) Historical Scene Restoration. This study explores the historical and cultural heritage of the Canal Ancient Town and explores the use of 3D virtual projection technology to restore historical scenes, providing visitors with an immersive experience. At the same time, the grand scenery of the canal is presented through night light shows and other means, creating a cultural journey that transcends time and space, allowing tourists to intuitively experience the historical charm of the ancient town.

(4) Heritage corridor construction. For the problem of scattered distribution of some historical and cultural heritage, solutions can be taken such as building pedestrian walkways, setting up transportation routes, and providing tourism transportation tools. For example, using shipping to admire the cultural heritage along the canal. At the same time, transitional spaces can be added between scenic spots, allowing tourists to better experience the historical atmosphere and cultural characteristics of the ancient town during their travels.

4.3 Cultural Industry Inheritance

(1) Waterfront Business Integration. Renovate and transform houses, shops, and warehouses along the riverbanks, incorporating new business formats to revive the prosperity of ancient towns. Taking Xixing as an example, appropriately restore the once bustling docks and shops along the canal, while Fenghui Ancient Town showcases quaint teahouses and pubs along the street river, allowing visitors to intuitively experience the canal charm of the ancient town. The new business formats can provide visitors with diverse consumption options and enhanced tourism experiences, while also bringing more economic benefits to local residents.

(2) Integration of Cultural and Creative Industries. Establish a cultural exchange platform, encouraging the participation of local residents, cultural institutions, artists, and others to share cultural insights and resources. Encourage artists and cultural institutions to integrate modern elements into the poetic and painterly culture of ancient towns, such as installing modern art installations, creating modern artworks, and introducing modern cultural activities. This will enrich the cultural diversity of the ancient towns and attract more young visitors.

(3) Intangible Cultural Heritage Inheritance and Experience. Host folk cultural festivals to showcase local traditional handicrafts, cuisine, and performances, attracting the participation of more tourists and residents. Promote traditional handicrafts of the ancient town through various channels to generate income for local residents. Additionally, conduct training on intangible cultural heritage inheritance and integrate it with tourism, such as developing tourism routes themed around the inheritance experience of Cicheng's intangible cultural heritage.

5   Conclusion

From the perspective of cultural context theory and taking space as the entry point, this paper attempts to initially establish a research framework for the cultural context system of canal ancient towns. Addressing the current spatial issues of canal ancient towns,

it proposes three spatial renewal strategies: reconstruction of ancient townscape, linkage of spatial narratives, and inheritance of cultural industries. These strategies aim to provide theoretical support and strategic guidance for solving practical issues in spatial renewal of canal ancient towns in eastern Zhejiang, promote sustainable development and cultural inheritance of the towns, and serve as a valuable reference for the protection and utilization of canal ancient towns.

Bibliography

1. Sun Junqiao. Toward a New Literatism [D]. Chongqing University, 2012.
2. Tao Feifei. Evaluation of Public Space in Historical and Cultural Neighborhoods on the Basis of Literary Veins Theory [D]. Tianjin University, 2021.
3. Wan Liangliang. An overview of urban culture research[J]. Architecture and Culture, 2018, (10): 65-66.
4. Wu Xiaochen. Research on the Spatial Units and Protection of the Cultural Context of Xi'an Historical and Cultural City [D]. Xi'an University of Architecture and Technology, 2020. DOI: 10.27393/d.cnki. gxazu. 2020. 000643.
5. Lv Weilu, Li You. Study on the revitalization strategy of Fenghui ancient town based on spatial morphology analysis[J]. Interior Design and Decoration, 2022, (07): 120-121.
6. Ruan Yisan,Wang Jianbo. Ancient Town of Jiangnan Canal-Changan Ancient Town__... Research on Historical Neighborhoods of the Research Center for Famous Chemical Cities_Ruan Yisan[J]. Urban Planning, 2010, 34(02): 97-98.
7. WU Xiao, WANG Lingjin, QIANG Huanhuan, et al. An overview of the historical evolution of ancient towns in the Grand Canal (Jiangsu section)-The example of Jiangsu historical and cultural towns[J]. Urban Planning, 2019, 43(04): 93-106.
8. YANG Chunman, ZHANG Fan, GENG Huizhi, et al. Ancient town revitalization strategy in the context of the construction of the Grand Canal National Cultural Park[J]. Architecture and Culture, 2022, (11): 2-9.
9. HUANG Yun, LU Weilu. Research on waterfront space morphology of ancient towns of Zhejiang East Canal Taking Xixing Ancient Town as an Example[J]. New Art, 2022, 43(05): 254-259.
10. Zhang Shiyang, Wang Binlu, Jin Aibo Analysis and Planning Inspiration Study on the Environmental Correlation Mechanism of the Grand Canal from the Perspective of Spatial Integrity: Taking the Zhejiang East Canal as an Example [J] Chinese Garden, 2023, 39 (08): 43-49.
11. Gao Yuanjing Research on the Development Strategy of Characteristic Historical Towns of the Grand Canal (Shandong Jiangsu Zhejiang Section) from the Perspective of Cultural Route to Cultural Network and Cultural Ecology [D] East China University of Science and Technology, 2023.
12. Hanh Vu-Thi-Hong. Canal-side highway in Ho Chi Minh City (HCMC), Vietnam – Issues of urban cultural conservation and tourism development[J], 2006.
13. Amrousi ME, Elhakeem M, Paleologos E, et al. Engineered Landscapes: The New Dubai Canal and Emerging Public Spaces[J], 2019.
14. Karimi Merve-Okkali-Alsavada-and-Kayvan. UP 8 (3) - The Spatio-Functional Role of Navigable Urban Canals in the City_ Cases From London and Amsterdam[J].
15. Zhao Xiaolong,Lin Dongpang. Traditional villages based on rural settlement imagery... An example of Banshan Village, Fushan Township, Huangyan, Zhejiang_Zhao Xiaolong[J].

Journal of Zhejiang University of Technology (Social Science Edition), 2017, 16(03): 272-276.

16. Ji Haidi, Liu Zuo, Dan Zhidao, et al. Research on Urban Renewal Design Strategies Based on Place Context Theory: A Case Study of Wangfushan District in Nanyang City [J]. Journal of Nanyang University of Technology, 2021,13 (02): 90-97. DOI: 10.16827/j.cnki.41-1404/z.2021.02-015.

17. Cang Qianqian, Lv Weilu. The Application of Cultural Genes in Public Facility Design - Taking Keqiao Ancient Town as an Example Popular colors, 2020, (04): 51-53.