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Assessment on the Collective Memory of Urban Heritage: Case of Hengshanfang in Shanghai

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ABSTRACT

Urban heritage is an important component of a city. The revitalization of urban heritage is a necessary process of urban renewal and development. Collective memory reflects the temporal interaction between subjects in cities and objects of heritage sites. To build a framework and evaluate the revitalization of urban heritage, the study utilized the collective memory theory and a comprehensive methodology comprising space syntax, investigations, and interviews to evaluate the integration, interaction, and identity of urban heritage in the revitalization. Integration includes the multiscale spatial integration, historical information, scattered memory and modern needs at heritage sites. Interaction refers to the various spatial interaction and the interaction between subjects and objects. Identity reflects the perception by the public. Its findings propose a comprehensive framework to assess the collective memory of heritage sites, and suggests that their collective memory can be enhanced through cross-scale space, various subjective and public perceptions.

KEYWORDS

Urban heritage, Collective memory, Space syntax, Hengshanfang

1 INTRODUCTION

Urban heritage is one of the important elements of urban texture, carrying the cultural context and historic value of this city (Orbasli, 2002). Revitalization of urban heritage is the utilization of new functions, new uses, and various measures to conserve heritage sites with minimal interference (ICOMOS, 1979). The purpose of revitalization is to maintain historic information, support sustainable activities, and achieve its vital development without damage. A major focus on the assessment of the revitalization of urban heritage was its physical adoptions (Li and Zhai, 2019) and intangible inheritance (Wang, 2019), rather than the comprehensive consideration of revitalized space, cultural connotation, and various subjective participations. Through the theory



of collective memory, the coordination between the revitalized part and modern needs can be achieved, the interaction between subjects and objects can be balanced, and the identity of places can be realized.

The definition of collective memory was proposed by Hugo von Hofmannsthal in 1902 (Schider, 1978). Halbwachs defined it as “permanent memory of a group and remembering selective and agreed memories among the group” (1925). Nora proposed the conception of memory place, which integrated the memory and physical carriers for the first time (1989). She pointed out that the collective memory not only existed in the mind of people but also in the physical space. Hoskins (2001) regarded the collective memory as a means of renewing the past of groups. It can provide self-identification and a sense of belonging to a group or a community (Brockmeier, 2002; Casalegno, 2004). Ricoeur demonstrated that the temporal influence of collective memory would be on physical spaces (2006). Assmann extended this theory into cultural memory and formed a completed path to form collective memory (2011).

Mumford mentioned that cities would be with memory (1968). Urban memories were deeply rooted in urban places and societies, and connected places and people (1968). Urban heritage as one of the most important carriers of urban memory demonstrated the full life circle of heritage sites from its beginning stage to current situations. The collective memory of urban heritage was initially proposed by Aldo Rossi. He regarded the urban heritage, people, and newly emerged certain artifacts as the locus of the collective memory (1984). Rees considered that the collective memory of urban heritage reflected the temporal interaction between the urban subject (users) and urban objects (physical space) (2008). Thus, the collective memory of urban heritage is the compound of group perceptions for physics, practice, knowledge, and emotions, reflected through intangible elements and intangible elements. Relevant research was divided into two types: constructivism and functionalism. Constructivism emphasized current reconstructions to prolong the memory. Functionalism considered of the essence of collective memory to be an integration, including its historical and current information, architectural space, and surroundings.

The significance of the collective memory of urban heritage is the integration of its memory information, the interaction of subjects and objects, and the realization of the local identity (Lu, 2020). However, current research on the assessment of the collective memory of urban heritage focused on the construction of indicators, including tangible parts (Rak, Lipa, and Barbasiewicz, 2021), intangible parts (Balzani and Rossato, 2022), and surroundings (Liu, Butler and Zhang, 2019), assessment on the current situation (Huang and Wu, 2021) or revitalized results (Guidetti and Robiglio, 2021) of heritage with mapping or questionnaires, and the discussion about the revitalized institutions of urban heritage from the perspective of planning (Zhang and Brown, 2022). Most of the research emphasized data calculations, rather than connecting the data analysis with spatial configuration and social properties in practical and visual ways.



The adoption of space syntax can fill in this gap. Space syntax is a science-based and human-focused approach that explores relationships between space and its relevant human behaviors (Hiller, 1999). It can create public perceptions based on topological structures and connected social properties with spatial configurations at different spatial scales (Hillier, 1999).

According to the analysis above, the assessment of the collective memory of urban heritage can divide into three parts: integration, interaction, and identity. Integration indicates the combination between historical information and modern needs, as well as the coordination of spaces at various scales, including microcosmic space (buildings), intermediate space (public space), and macrocosmic space (neighbor structure) (Hillier, 1999). Because the memory of urban heritage was always invisible and fragmented, revitalizations need to collect valuable information and reproduced them in heritage sites, driving the public to perceive these memories and understand their connotations. For example, Peter Eisenman utilized physical symbol alterations to demonstrate the urban texture, history of the courtyard, and family memory in his design of House IV (Frank, 1994).

Interaction includes spatial interaction at various scales, as well as the interaction between subjects and objects. Functions of urban heritage would be changed after revitalizations, which drives users of these functions to alter. Thus, the participants in the revitalizations would change as well, and influence the collective memory of these heritage sites. When the definition of collective memory was proposed initially, it referred to the importance of subjective participation: Collective memory was the thing that was co-constructed, shared, and inherited by the groups in the society (Halbwachs, 1925). Assmann (2011) and Connerton (1989) continued this topic and regarded that the collective memory could be traced from the interaction between people and place.

Identity is the core of the collective memory of urban heritage in the revitalization because heritage was closely connected with particular physical carriers, daily lives, and production space. Its development was the results of the perceptions by the public, which reflected their identity. Kevin Lynch (1960) pointed out the importance of place identity when he studied relationships among architectural space, human behaviors, and the environment.

Therefore, this study utilized space syntax and interviews, to evaluate the collective memory of urban heritage in the revitalization. Indicators include the integration, interaction, and identity of urban heritage. Integration can subdivide into the integration between historical information and modern needs at various spatial scales, and fragmented memory in different phases. Interaction includes spatial interaction at various scales and the interaction between people and space. Identity is the understanding and perception by the public at urban heritage sites (Figure 1).

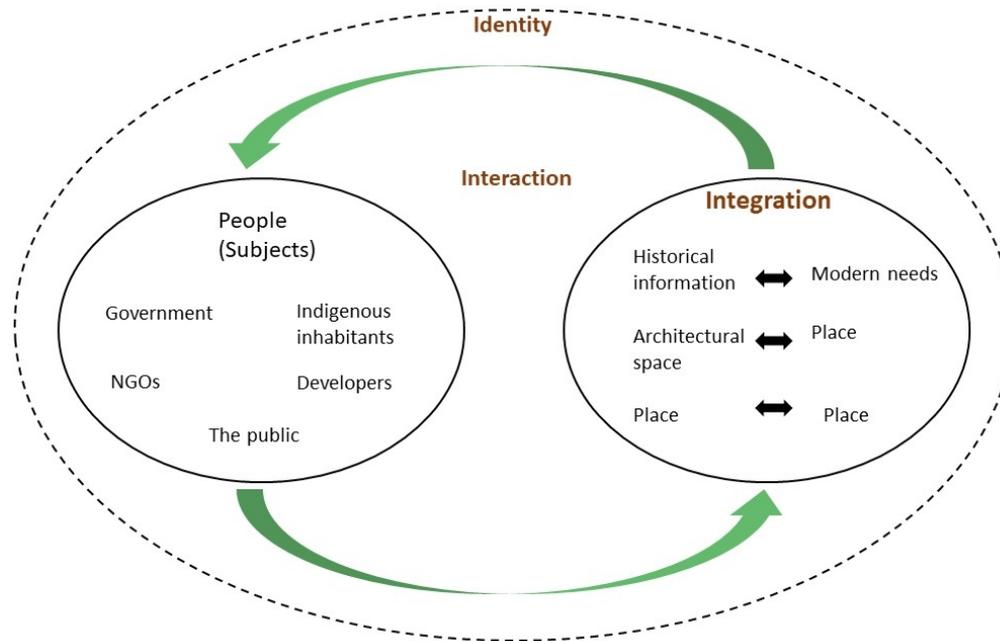


Figure 1: Assessed framework of the collective memory of urban heritage

2 METHODOLOGY

2.1 Study area

The research selected Hengshanfang and its neighborhood structure, Hengshang-Fuxing Historic Area, as the case to analyze. Hengshanfang was a newly completed project in 2015, located at No. 880 Hengshan Road. It is composed of 11 bungalows and 2 lines of terraces with an area of 7306 m². As one of the essential revitalized projects at Hengshan-Fuxing Historic Area, its revitalization reflected the concept that repairing the old as if it were the same old. The original residential area has been replaced with a comprehensive commercial area integrating boutique shopping, upscale restaurants, private studios, and offices. Although it is located at the commercial center of the Xuhui District, it provides tourists a quiet place to enjoy their lives, owing to its unique spatial distribution and design.

Hengshanfang is located in the southwest of Hengshan-Fuxing Historic Area. Therefore, the study selected the Hengshang-Fuxing Historic Area as the neighbor structure to analyze. Most of this area is located in the Xuhui Area of Shanghai. It is the largest historic area in Shanghai with various featured bungalows. Hengshan-Fuxing Historic Area was formed at the beginning of the 20th Century. There are over 2000 historical buildings in this area, and most of these historical buildings were built from 1919 to 1941, accounting for almost 40% of the total number of historic buildings in Shanghai.

The development of Hengshanfang is divided into three phases: the beginning phase, the development phase, and the revitalized phase. The first phase was begun at the end of the 19th

Century, with the setup of concessions in Shanghai. Hengshanfang was located at the frontier of the French Concession and was an upper-class community. Its architectural design was influenced by the French style. In 1928, factories had begun to build around, such as Guangzhong Dyeing Factory and Tao Hung Hua Rubber Factory. Until 1948, with Shude Mansions and Hengshan Hub built, the original layout of Hengshanfang was formed.

The second phase was begun at the end of the 1950s for the policy of returning property rights to public ownership issued by the government. The local administration had begun to systematically lease private property through public-private ways. Since the 1960s, the habitat conditions of Hengshanfang worsened owing to the Great Cultural Revolution. Many immigrants moved there and the landlords had to share their rooms with them. 72 households lived in a mansion at most at that time.

The third phase was begun in 2008 for the governments, as the property owner shall not reclaim unoccupied houses for reallocation or compensate amounts of money for habitats. Problems including aging issues, narrow environment, poor hygiene conditions, limited privacy, and the lack of public space drove the government to revitalize this place in 2008. Currently, its revitalization was finished and was revitalized into a modern place.



Figure 2: Layouts of Hengshanfang in the three phases (Resource: The Free Trading Co. Ltd and Googlemap)



Figure 3: Layouts of Hengshan-Fuxing Historic Area in three phases (Resource: The Free Trading Co. Ltd and Tianditu)

2.2 Data collections

Qualitative methods can demonstrate the subjective perception of sites. Interviews are the optimal way to compensate for the deficiency of spatial analysis. For this selected case, 15 stakeholders were selected for depth interviews. The interviews were conducted from four categories: (1) staff at Hengshanfang (n=3); (2) indigenous inhabitants (n=4); (3) Tenants (n=3); (4) visitors (n=5), who have witnessed the revitalization of Hengshanfang or experienced it temporarily. Staff worked at Hengshanfang, and some of them witnessed the development the revitalization of Hengshanfang. One of them started his business at Hengshanfang and had various opinions on the development of Hengshanfang. Indigenous inhabitants had worked and lived at Hengshanfang for many years, while most of them had to move away after the revitalization because the government asked them to leave. Some of them lived near here because this place provided valuable memory for them. Behind Hengshanfang, there is a residential area. We interviewed tenants there including the reasons that they chose to rent here, how long have they lived, and so forth. In addition, we interviewed visitors randomly at Hengshanfang and asked relevant questions as well.

Table 1: Categories of interviewees (n=15)

Interviewee codes	Interviewees details
Category 1: Staff at Hengshanfang	
SC 1	Shop owner of a restaurant in Hengshanfang
SC 2	Employee of the local community
SC 3	Employee at a Café of Hengshanfang
Category 2: Indigenous inhabitants	
CR 1	Aged 62, lived near Hengshanfang for 30 years
CR 2	Aged 17, lived near Hengshanfang for 17 years
CR 3	Aged 56, lived near Hengshanfang for 32 years



CR 4	Aged 38, lived near Hengshanfang for 30 years
Category 3: Tenants	
HAC 1	Aged 28, lived near Hengshanfang for 4 years
HAV 2	Aged 25, lived near Hengshanfang for 1 year
HAC 3	Aged 32, lived near Hengshanfang for 6 years
Category 4: visitors at Hengshanfang	
VC 1	Aged 33, came to Hengshanfang twice
VC 2	Aged 35, came to Hengshanfang many times
VC 3	Aged 36, came to Hengshanfang almost every day
VC 4	Aged 42, came to Hengshanfang many times
VC 5	Aged 35, came to Hengshanfang three times

2.3 Space syntax

The revitalization of public space and surroundings was analyzed with space syntax. Space syntax is a science-based and human-focused approach that explores relationships between space and its relevant human behaviors and cultural phenomenon (Hiller, 1999). It can simulate the possible effects of spatial designs on the people who occupied or moved around the sites with conceptual models: the convex space, the isovist field, and the axial line.

The convex model was usually adopted for a small scale. Isovist model was adopted for the public space, and the application of axial was dominantly for the macroscopic view. These models are also subdivided into integration, segment, and intelligence models, which demonstrate the validation of the formation of urban heritage and its social properties. Integration is the agglomeration between certain elements and other elements in a spatial system, reflecting the centrality of this space in the overall system (Hiller, 1984). Warm colors indicate high connectivity, accessibility, and visibility. Cold colors mean low connectivity, accessibility, and visibility. Intelligence is the ratio of local integration and global integration. A value higher than 0.5 indicates a close connection between the partial space and the entire distribution. Segment means gathering in a certain space. However, much research in recent years has focused on its application to transportation (Garau, 2020) with the axial model, and the internal space of buildings with the convex model (Zeng et al, 2020). There were merely integrated applications of these models. This study can fill in this gap to build a cross-scale assessed model and utilize the axial and isovist models to assess the relationship between the spatial configuration, subjective participation, and local identity.

Thus, the study selected the spatial configurations at microscopic scale (buildings), intermediate scale (public space), and macroscopic scale (neighbor structure) of Hengshanfang as cases to



analyze, and combined its spatial functions and participants to assess the integration, interaction, and identity of collective memory in its revitalization.

3 RESULTS

3.1 Buildings

Table 2: Variation of buildings at Hengshanfang

	Functions	Participants
No.5 Building	Living (1920s)	Inhabitants (1920s)
	Living (the 1950s)	Inhabitants, tenants (the 1950s)
	Private studio (After 2008)	Visitors, shop owners, employees (After 2008)
No.7 Building	Living (the 1920s)	Inhabitants (1920s)
	Living (the 1950s)	Inhabitants, tenants (the 1950s)
	Shop (After 2008)	Visitors, shop owners, employees (After 2008)
No.8 Building	Living (the 1920s)	Inhabitants (1920s)
	Working (1950s)	Workers (1950s)
	Shop (After 2008)	Visitors, shop owners, employees (After 2008)
No.10 Building	Living (the 1920s)	Inhabitants (1920s)
	Living (the 1950s)	Inhabitants, tenants (the 1950s)
	Bookstore (After 2008)	Visitors, shop owners, employees (After 2008)
No.15-19 Buildings	None	None
	Living (the 1950s)	Tenants (1950s)
	Office and shop (After 2008)	Shop owners, employees, staff (After 2008)
No.20-23, 25-28 Buildings	None	None
	Living (the 1950s)	Tenants (1950s)
	Office and shop (After 2008)	Shop owners, employees, staff (After 2008)

The significant revitalized buildings were No.5, No.7, No.8, and No.10 Buildings in this project. No.5 Building is a private studio. It was composed of two independent bungalows. However, the two bungalows cannot provide enough space for customers and designers separately, which drove owners to connect them with a glass corridor. The interactive space increased, and the decorated glass created the "visual excitement" to vitalize the old buildings and add attraction to this site. No.8 Building was designed by Atelier Archmixing. It was an office of the factory and was revitalized into a teahouse currently. Innovate material was adopted on its external wall so that it can be luminous at night. However, the forms and colors of these altered bricks are similar to the original ones, which preserved traditional decorated features, but attracted people, particular at night. No.10 Building is a bookstore, including the bookshop and the entertainment place. Its external wall was replaced by glass to weaken the external and internal borders.



Figure 4: Hengshanfang

Through the table above, in the three phases, the participants have changed. In the beginning, most of the residents were elites. The south parts were bungalows and lived upper-class people. The northern parts were new terraces and lived middle class people (CR3). The classification of this place was clear. Then, the tenants increased, and many more immigrants were moved there. They not only worked there but also lived there. Most of the residents were workers (CR1). The classification became obscure. Currently, after revitalization, Hengshanfang became a leisure place, and its consumption level is higher than its surroundings (SC1). People came here for business, or to rest to have brief lunch (SC2). Most of the inhabitants were moved away.

3.2 Public space



Table 3: Variation of the public space at Hengshanfang

Public space	Functions	Participants
A	Working or rest (the 1920s)	Staff at the factories (the 1920s)
	Working or rest (the 1950s)	Staff at the factories (the 1950s)
	Recreation (After 2008)	Visitors, shop owners, employees, staff around (After 2008)
B	Working or rest (the 1920s)	Staff at the factories (the 1920s)
	Habitat living (the 1950s)	Habitants, tenants, and staff (the 1950s)
	Recreation (After 2008)	Visitors, shop owners, employees, staff around (After 2008)
C	Habitat living (the 1920s)	Habitants (1920s)
	Habitat living (the 1950s)	Habitants, tenants, and staff (the 1950s)
	Rest (After 2008)	Habitants, tenants, employees, visitors, and shop owners (After 2008)
D	Habitat living (the 1920s)	Habitants (1920s)
	Habitat living (the 1950s)	Habitants, tenants, and staff (the 1950s)
	Recreation (After 2008)	Visitors, shop owners, employees, staff around (After 2008)
E	Habitat living (1920s)	Habitants (1920s)
	Habitat living (the 1950s)	Habitants, tenants, and staff (the 1950s)
	Recreation (After 2008)	Visitors, shop owners, employees, staff around (After 2008)
F	Habitat living (After 2008)	Habitants (1920s)
	Habitat living (After 2008)	Habitants, tenants, and staff (the 1950s)
	Habitat living (After 2008)	Habitants and tenants (After 2008)

According to Figure 4, Area A, Area D, and Area E are recreational places and observe the highest visibility and accessibility. Area F and Area C are living spaces with relevant low integration, demonstrating their independence. People tend to gather at Area A and B, rather than Area E. The intelligence of Hengshanfang is high, illustrating its optimal planning of revitalization. However, the global integrations of Area A and Area E are higher than their local integrations, and the global integrations of Area F are lower than its local integration. Thus, Area A is relevant open to the public, while Area F is a private space.

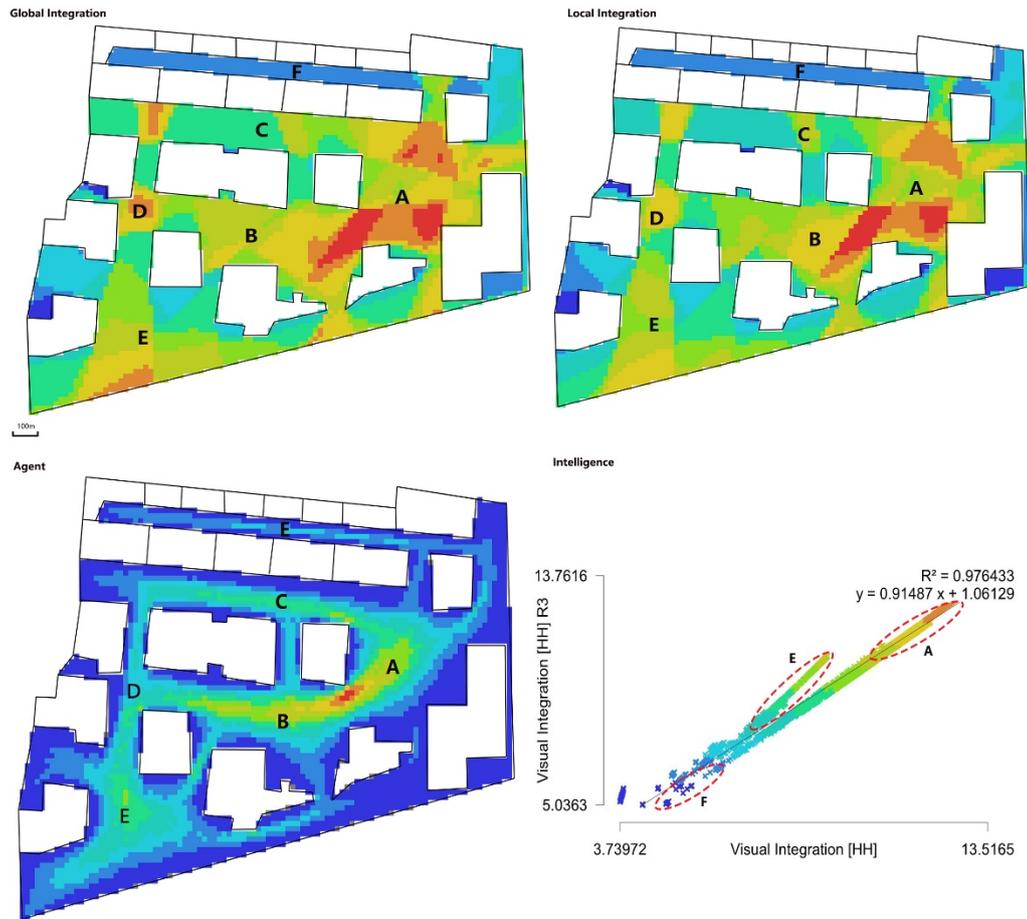


Figure 5: Spatial analysis of Hengshanfang with space syntax

The analysis is related to the variation of the public space at Hengshanfang. Area F and Area C were residential areas. Inhabitants lived in these two areas in the first phase (CR2). Then, with the development of industrial development in Shanghai, immigrants moved there, which stimulated the growth of tenants. Currently, Area C is a private office, and Area F is a working area. Most of the inhabitants moved away, while new tenants and shop owners moved in. Several offices and studios were built and needed private space. Area A, B, E, and D were industries and bungalows in the first phase. The participants were mainly upper-class inhabitants. The public space covered a large area. In the second phase, immigrants moved in and rented rooms in these houses. The public space was divided into several small areas and formed the current layout. Designers preserved its layout in the second phase but altered its functions. The factories and bungalows were altered into entertainment places. Visitors and staff from corporations around can drink coffee or rest there to enjoy their lives (VC2, VC5).

3.3 Neighborhood structure

According to Figure 5, in this historic area, the south of Hengshanfang is observed with high global integration, optimal visibility, and accessibility, demonstrating its openness. The local integration of the north on Hengshanfang is high, which demonstrates its inferior visibility and

accessibility. The intelligence of this area demonstrates that its entire planning needs to improve for its value is about 0.5. In addition, the local integration of Hengshanfang is higher than its global integration, which means this place is suitable as a quiet and private space compared with the entire historic area.

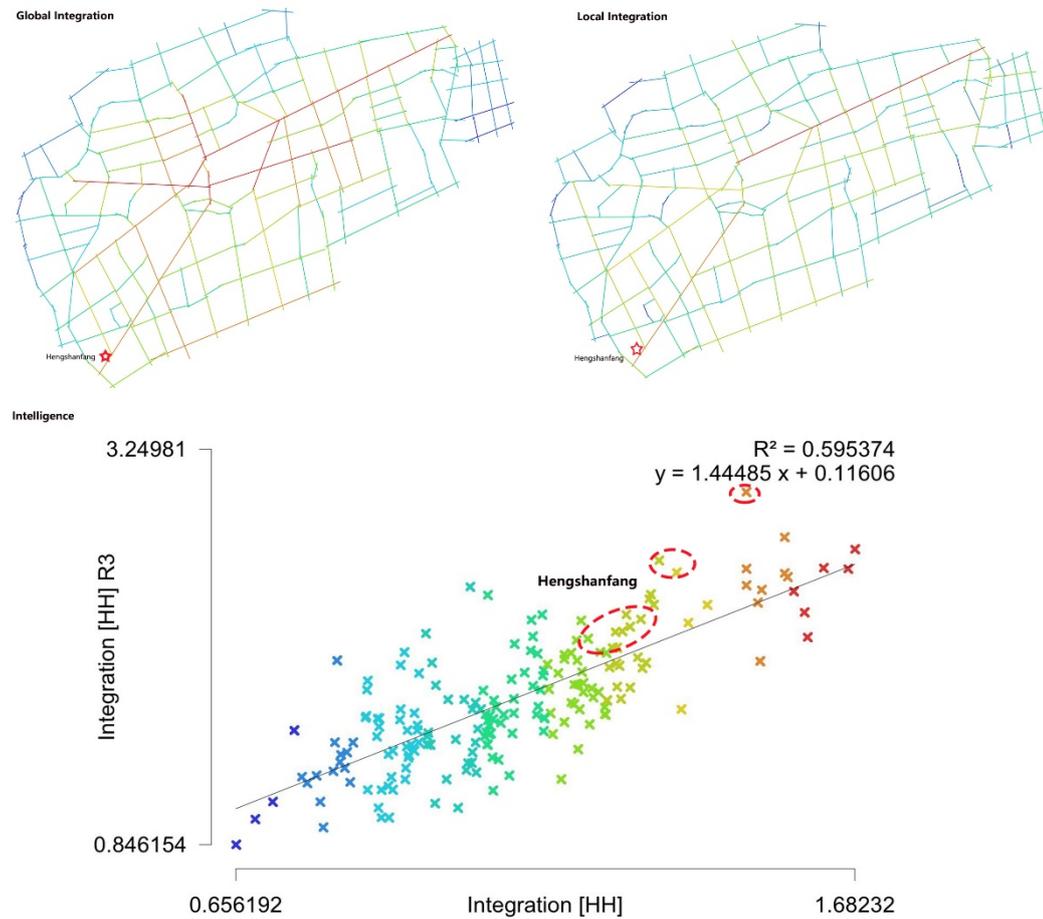


Figure 6: Spatial analysis of the Neighbourhood structure with space syntax

4 DISCUSSION

4.1 Assessment on the collective memory of Hengshanfang

(1) Integration

The revitalization of Hengshanfang not only realized the spatial integration at various scales, but also the coordination of historical information and modern needs, reflecting its cultural connotation, inheriting historic contexts, and satisfying modern lives.

For the microscopic scale, these revitalized bungalows and terraces can not only meet the modern need but also preserve the memory at different times. Their internal space was altered for commercial or working functions while their featured decorations and constructions were preserved. Most of their revitalizations adopted traditional materials and methods. For example, doors and windows of bungalows were adopted the black energy-saving aluminum alloy to

coordinate with the old patterns. The external walls of the new terrace were decorated with light yellow embossing with cement spray, and the external walls of bungalows to the north of Hengshan Mansions were decorated with dark yellow embossing with cement spray, to accommodate the surroundings (Figure 7).



Figure 7: Integration of the collective memory of urban heritage

The revitalization of the public space at Hengshanfang has also preserved its memory and integrated it with modern lives. For example, a camphor tree has been preserved since the 1920s in the front of No. 15 and No. 12 Buildings. This camphor tree witnessed the development of Hengshanfang at different times and became a significant symbol in this place even nowadays. Its preservation added attraction to this place, and visitors came here to take photographs. Tao Hung Hua Rubber Factory and Guangzhong Dyeing Factory were located at Hengshanfang. Although they moved to the suburb, their landmarks, pipes, and tubes were preserved. Designers also put old props in the public space to reproduce the memory of this place, and fashion props to add vitality without damaging the coordination with their settings (Figure 7).

For its entire layout, the revitalization preserved the original layout and divided the place into two parts, new terraces in the north and bungalows in the south. The north area was built as a quiet and independent space because it was utilized for working. The architectural decorations



have preserved historical features. The south area is dominantly for commerce and recreation, thus it was built as an open space with optimal accessibility and visibility. The materials and colors of the aisles in this area have maintained their previous patterns with the width of 2m or 3m, which reconstructed the scene of old Shanghai. However, the details of the architectural decorations in this area added modern elements and enhanced the vitality of its public space, such as the luminous decoration of the No.8 Building and the glass curtain wall of No.5 Building (Figure 4).

From the perspective of neighborhood structure, its revitalized result needs to improve. One of the aims of revitalization is the inheritance of the collective memory, and the result can be shared with the public rather than limited to a certain area. Hengshanfang is located in a relevant private and close space, which cannot closely connect with its entire planning of the historic area. In addition, the revitalization mainly catered to the elites, and most of the inhabitants moved away (HAC3 and SC2).

(2) Interaction

Interaction includes spatial interaction and spatial interaction with people. The buildings of Hengshanfang with high global integration always have optimal visibility and accessibility. The south area of Hengshanfang is located in an open space, thus buildings in this area can attract more people, and become important revitalized objects, such as the No. 8 Building, No. 5 Building, and No.10 Building. These buildings also enhanced the interaction between the internal space and the external space when they attracted people through design.

In the public space, the south area is relevantly open, and was dominantly for business and communication. Shop owners at the place with high global integration put some chairs and tables and made an additional outdoor leisure space, to enhance the interaction of people with the space. Lights were installed inside the pipes on the ground and added attractions to this place at night (Figure 8).

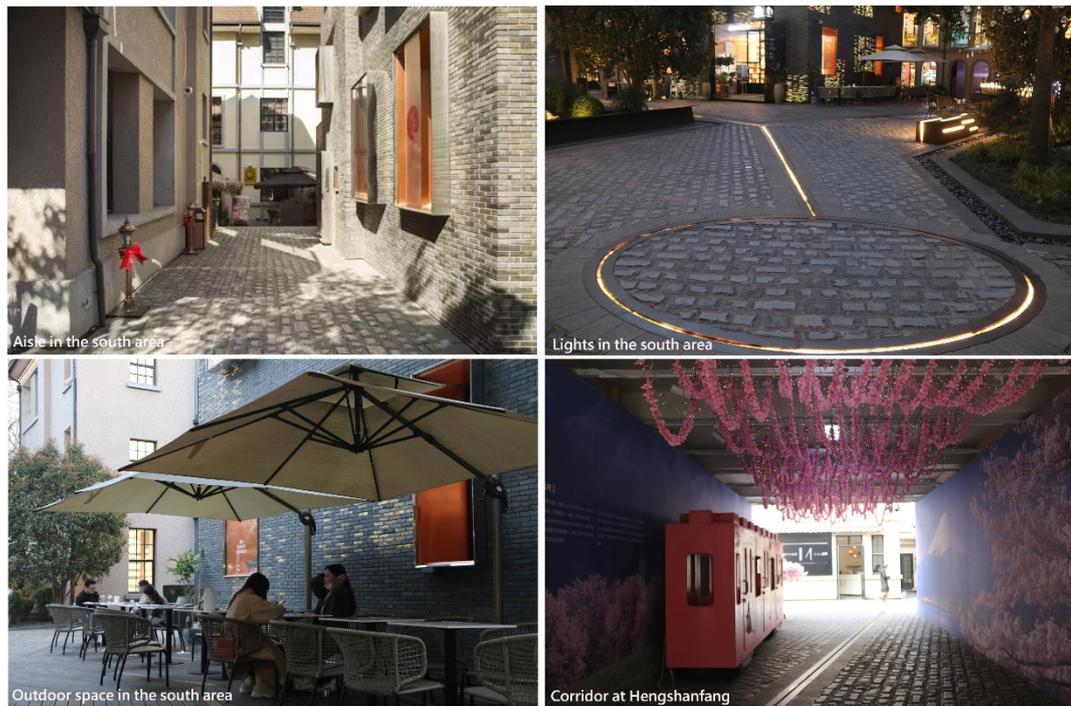


Figure 8: Interaction of the collective memory of urban heritage

The north part is quiet and private, which is suitable for working and residence. To avoid the distraction of the two spaces, designers removed the first floors of No.12-15 Buildings and built a corridor to connect these two parts. Visitors can acquire different perceptions through this corridor.

The interaction of its neighbor structure needs to improve for the subjective at Hengshanfang lacked variation, and most of them were visitors or staff around. Surrounding residents merely came here. According to the interview, most of the visitors at Hengshanfang were white-collar working around, and they tended to drink coffee or had lunch there (VC3). Some visitors came there to meet friends because the shops there were suitable for upper-class people (VC2). Some visitors came there for business because Hengshanfang can provide them with a quiet and clean place to communicate although it was located at the business center (VC1). Some visitors and staff said that the restaurants here were overpriced and they would not spend money here. They would go to other malls around because they were cheaper (VC3 and SC2).

(3) Identity

For the integration and interaction of Hengshanfang, its architectural space and public space have preserved much memory information. Thus, the subjects and objects interacted with each other, and various participants can perceive cultural connotations and historic value in the interactions, which enhanced their identity to some extent. For its entire neighbor structure, the collective memory needs to improve, for its development is discordant with its surroundings. The subjective participation lacked variation, and inhabitants merely stayed here. The identity of Hengshanfang



can only be perceived by visitors. For inhabitants, their collective memory has been lost and their identities are weak.

4.2 Implications

In all, the revitalization of Hengshanfang for its collective memory is not a successful trial. Thus, to improve the collective memory of urban heritage in the revitalization, implications are proposed as follows: Urban heritage has authenticity and integrity. The collective memory of urban heritage in the revitalization needs to consider the site itself and the coordination with its surroundings, the conservation of its historical information at heritage sites, and the balance with modern lives. Collective memory is fragmented and invisible. In the revitalization, designers need to explore the memory information, couple them, and reproduce them according to their spatial configuration as well as social properties.

Collective memory is also the result of the interaction of multiscale spatial interaction. Open space and independent space in a heritage site have their features. As a part of urban heritage, they need to interact rather than divide into two separate parts. The space with high global integration tends to design as an open space to attract more people. Characteristic decorations in open space can reflect the collective memory of heritage sites, and add vitality to the space. The space with high local integration tends to design as an independent space, and utilize for private functions. It can also be built to reconstruct or reproduce historical scenes, which makes people identify with their experiences.

Subjects of collective memory include various actors, such as inhabitants, visitors, shop owners, and so forth. They play an essential part in the revitalization. Their perceptions of the revitalization take a huge part in the identity of heritage sites. Thus, maintenance of the variation of subjective participation needs to consider in the revitalization.

5 CONCLUSIONS

Prior work has built an assessed framework of the collective memory of urban heritage in the revitalization with space syntax. It expands the assessment to three dimensions, connects the memory from physical space at three scales with various subjective participations, and combines space, people, and social properties to make this framework more complete. In addition, the study also adds the quantitative method to the qualitative methods to make the analysis more credible and direct.

This comprehensive framework emphasizes spatial integration and the interaction between subjects and objects. People involving the revitalization of urban heritage not only include the upper class but also the public. The result of the revitalization lead to the identity of urban heritage. Some implications are also proposed afterward, which provides a new perspective for future research. However, this article is at the primary stage. Future work should continue



including detailing the assessed framework and the application with other software, to enhance the preservation of collective memory and the development of heritage sites.

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